On
Bright's disease of the kidney

Laurence Mackenzie
The affection of the kidney, now to be treated of, is one which derives peculiar interest, from the frequency with which it occurs, the peculiar character of the structural changes in which it is supposed to consist, and the variety, and complexity of the diseases with which it is complicated. It is here spoken of under the appellation of "Bright's Disease," but it has received a different name from nearly every one who has written on regard to it. Some of these names arise from a wish to distinguish the nature of the morbid process, on which in different cases, it has been supposed to depend, others have been applied to it which bear reference to one or more of the symptoms or secondary affections, by which it is accompanied. Dr. Bright in 1831 published the first systematic account of it, under the title of "Diseased Kidney in Dropy," with which he imagined the renal affection to be
especially connected. Before that period, observations had certainly been made, which would eventually have led to similar results, but as Dr. Bright first clearly illustrated the disease of the kidney, as connected with certain symptoms and diseases, he has been universally reckoned as its discoverer.

The observations of Bright were in 1829, followed by those of Dr. Chittenden (Ed. Med. and Surg. Jour.), and in 1831 Dr. James Syme published his views on the same subject. In these the state of the blood and urine was especially illustrated.

Dr. Osborn, in 1834, published the results of his experience in regard to the disease, particularly in reference to certain points of treatment, under the title of "Nature and Treatment of Dissease accompanied by Coagulable Urine and Suppressed "Production".

Dr. Bright in 1836 published his "Cases and Observations illustrative of Renal Disease accompanied with the formation of Albunin in Urine".
In the following year appeared the work of Rayes, in which he described the
"Pellicular Albinoscence." This was followed in 1830 by the treatise of
"De l'Albuminousion ou Hydrophoie causee par maladie des Reins," still indicating
the supposed receipt any connection of Bright
Air case and Tubosy.
In 1839 Dr. Colles then published a lucid
work on "Giramula Degeneration of the Kid
ney."
About this period Bautur, Hect and
Elsee, especially the latter, began
to make the first in their investigation
on the exact anatomy of the kidney as
seen also by the Microscope.
The first observations on the same subject
made in this country were communica-
ted by Mr. Goolden to the Med. Chir.
Society of Edinburgh, bearing to what
willing after he described as "Degenera-
tive Nephritis."
So the Medical Chir. was a show of this.


for 1846 and 1847 there appear the papers of Dr. Johnson and Mr. Senex, the former of whom has expanded distinct views of observations in "Bright's Disease" by which he means that form afterward to be described as "Fatty Degeneration" and on the inflammatory affections of the kidney. Senex's paper treats of the inflammatory form under the title of "subacute inflammations of the kidney."

The recent articles of Dr. Gardiner (Medical Jurist 1848) have likewise contributed to illustrate this subject.

From this short notice of the principal treatises written upon this present affection, it is obvious how many different appellations the same disease has been treated of. In the present state of knowledge it might appear advisable to designate the disease as has been lately done, in reference to the Morbid Synepheria in which it may be supposed to consist, but the want of any
Why set an information in regard to these, renders proper the employment of a term such as "Bright's disease" which includes the varieties of the affection, without involving any hypothesis, in regard to their essential nature.

A consideration of the disease at length will naturally include an account I. Of its pathological Anatomy II. Of its symptoms, at different periods III. Of its causes IV. Of the secondary affections which accompany it V. Of the prognosis, both in regard to the primary and secondary diseases VI. Of the treatment both of the primary and secondary diseases.

1. The pathological anatomy of the kidney in reference to Bright's disease appears to embrace, 1st. Those general and grosser changes of the tissue, which are visible to the naked eye 2nd. Those minute changes visible only by the microscopes, including the theories which have been advanced as to its real nature and
The connection of the app
earances visible to the naked eye,
with those last alluded to.

The character of this description
presented by the kidney, have referre
to the magnitude, form, and Constitution
of the gland, the nature of its external
surface, its colour externally and internally,
and the relation which the cortical
layer bears to the tubular substance.

The magnitude of the kidney varies ex-
ceedingly. It may be increased, which
as a general rule is to be observed
during the earlier period of the disease.
Kidneys are described by Rayn to exist
so that they weighed 12 lb. instead
of 10 which is their natural weight.
It may also be diminished and this usu-
ally happens towards the termination.
The form is occasionally altered, especially
in the lobulated form it sometimes assumes
in the last stage.
The consistence may be harder or softer than
is natural. The former is peculiar to the
later period while the latter is generally
found at the commencement.
The surface of the kidney is best seen after
removal of the investing tissue, which can
in general be readily done. It is some
time smooth, at other times rough, frequently
presenting a granular or even botryoidal
appearance. A smooth kidney is in
general large while a rough one is
usually small.
The external surface is sometimes of a
paler colour than is natural; sometime
more red, the latter being characteristic of
the acute form especially in its early
stage. It is often mottled in vari-
ous ways, sometimes brown and grey, other-
times brown or purple and yellow, frequently
necroticated by deep cavities containing old blood.
Internally the kidney sometimes appears
of a darkish red having a congested
hyperemic appearance, affecting the glom-
gerally or the cortical substance only,
which exhibits since red distinctivity
of the vascular thrie, the red spots
of which, as well here as often be stated or are due to extravasation of blood. This increased reddening characterizes the acute type.

Frequently the internal surface is free from necrosis, this being observed chiefly in the cortical substance, which has the vascular tissue more or less imperfectible.

The internal surface are all in conformity to these changes of appearance, exhibiting appearances indicative of a change of structure which at least in the first instance is confined to the cortical substance, though the tubular is eventually often affected and the radiating structure opened out. The renal substance, thus changed, is sometimes homogeneous and smooth as seen on a section being made; sometimes more or less roughly granular or tubular at the.

In a history of diminished size, the cortical substance is decreased, and the outer extremities, of the tubular masses, consequently
approach the surface. When the gland is enlarged, the cortical substance is also increased, and to this the renal side of the kidney is always principally and often entirely due.

The changes exhibited are, as has already been stated, to a certain extent characteristic of different periods of the disease. Dr. G. B. L. (in Great Degeneration of the Kidney) divides the course of the affection into three stages—an incipient, a middle, and an advanced. In the incipient stage, when the disease is in the acute stage, the kidney is in general large, flabby, and of a dark red colour, presenting the typical appearance already described, and occasionally also marks of granular deposition. Where the affection is not of the acute form, the appearances exhibited are in a minor degree those which occur at a more advanced period. The gland is generally of the usual size, a diminution being very rarely seen.
In the middle stage are to be seen more distinctly those changes of structure, which the kidney has been stated to exhibit. The acute form, if it have previously existed, has given place to actions of a more chronic kind. The surface is seldom found granular or botryoidal. It is seldom diminished in size, sometimes it is found increased, but in most cases it is near the ordinary bulk.

The advanced stage is attended by an extension of the changes which take place in the earlier periods. The tubular substance is often invaginated, and in some cases almost entirely obliterated; a single tubule alone, occasionally remaining free. In section the kidney presents a granulate or smooth appearance. The surface is frequently granular or botryoidal. The whole gland is pale and anaemic, though when very small they may have the usual colour. Sometimes the gland is soft; sometimes extremely hard; occasionally tubercle-like masses are seen.
among the after matter, likewise cysts
the nature and formation of which will
be considered hereafter. The kidney
is sometimes of the ordinary size, occa-
sionally it is larger, but as the majority
of instances it is smaller.
In addition to the general appearances,
which are presented at different periods,
a number of combinations of these have
been separately described by different
authors. Dr. Bright has enumerated
3 great varieties: Stone 5, Phlegm 6 and
Phlegmancy 8, while recent authors have
endeavored to class them, according to
their supposed origin in certain malady
procures. A consideration of the differ-
ent kinds either of, would occupy too
much space, and the principal forms
are likewise incidentally alluded to under
these heads.
Besides the changes peculiar to the sub-
stance of the kidney, certain parts
intimately connected with it are
liable to be affected. An inflam
of the obliteration of the clefts, where the renal substance was completely degenerated, but been recorded by Dr. Polson, but has recent authors some faulted to confirm this observation. The renal bodies, according to Payen, sometimes contain fibrous connections adherent to their parietes, and extending to their principal ramifications and the state he tisagives to be attended with greater destruction of the cortical substance, than is generally met with.

The same author states, that the pelvis and calyces of the kidney are frequent by the seats of inflammation both in the acute and chronic forms of the disease. The supra renal cisterns are often enlarged and elevated, and Dr. Chesebrough states that even the fat around the kidney, becomes hardened. The changes in the renal structure which have been alluded to, are often almost always found on both sides of the body, but very frequently to a greater extent on one kidney than the
the other. It has indeed been stated that not an item of the disease have never been seen on one side only; and when it is considered as well afterwards be seen that the cause, which induces these, is constitutional, it is not easy to see how one kidney alone should be affected.

After this notice of the principal changes in the structure of the kidney, in so far as these are visible to the naked eye, comes the consideration of the pathological conditions observed, by aid of the microscope. 

This subject has been involved in some confusion by the different terms which different writers have applied to the disease here treated of under the name of "Brights disease", which is now understood to embrace the varieties spoken of by recent authors. It may, however, for convenience, be divided into 1. The urge form, and 2. That rarely known under the name of "Fatty Degeneration."

1. In considering the urge form, it may
in the first instance be supposed, to what form a degree of inflammation, the change about to be described are due. It does not really appear, as stated by S. C. Linz, that the nephritis is in this case different from the ordinary nephritis, which may terminate either in the ordinary result of nephritis or in degeneration of the renal substance. Solog is of opinion that "true nephritis" differs from that which terminates in renal degeneration, by the occurrence of pain, nausea, and vomiting and the absence of edema, but none of these distinctive marks are invariably true. Rayer thinks this affection of the kidney to be due to a form of nephritis characterized by albuminous urine and which he hence terms "nephritis albuminurica," but this definition is also in error since "true nephritis" is said in some cases to be attended by albuminous urine. Mr. Simon has lately stated that while some renal nephritis are acute, the majority are subacute, and that more fre
Tumoral enlargement of the kidney or any other gland, with consequent mixture of albuminous matters with the proper loction is evidence of disease. While signs of the disease are in general, by no means acute, the latter alone does not appear to prove that signs of the disease are present, and would indeed exclude the "Fatty Kidney," afterwards to be described, under the same head.

The distinguishing and exciting cause of the disease will be afterwards considered, but it may in the meantime be observed, that the immediate cause of the disease, usually is the attempted elimination of different albuminous matters. The consequence of the irritant cause is, in these, it may, in particular, at least in the acute stage which often preceeds the chronic form, and which is accompanied by quickened and increased formation of the epithelial cells of the convoluted tube, which in reason to throw off their albuminous matter from the system. The consequences of the disease:
a term, congestion of the vascular system of the kidney, and imperfect formation of the secreting cells, which are of an opaque appearance, and small size, are that the area of the blood is not eliminated as it should be, and that the stream and frequently all the constituent of the blood pass into the tubes, and are washed down to a greater or lesser extent, causing the urine to present appearance afterwards to be noticed.

The tubules in the pyramidal bodies are little affected though they may appear to have their cells in a reseed, from those of the convoluted tubules being washed into them. The reason of this lies in the different character and purpose of the former which resemble the cells of the general epithelium.

The manner in which the cells are thrown off from the convoluted tubes has given origin to the name of Acute Fermann "Acute Nephritis." (Johnson).

The acute form of Bright's disease termed
also in the chronic r.

ili, from which may
exist as much from the commencement, but
according to Johnson in Rheumatic and
Gouty persons. It is termed by lui "Chronic
Degenerative Nephritis" and in the first
instance exhibits much the same change
as I am already been described, though
of course occurring more slowly.

After the acute form has merged into the
chronic or when primary chronic r.
ili has been of some duration, the convoluted
tubes become blocked up by accumulated
matter, and secretion is arrested.

The changes thus far described, were in
this country first noticed by W. Godwin
and afterwards very fully treated of by
Dr. Johnson and W. Simon (Phil. Trans.
1847) who agree in regard to
what has hitherto been stated. But
they differ widely in regard to the ul-
timate progress of the chronic stage.

Simon states that after a time, some of
the tubes may be still seen to be blocked
up, but that in other cases they have
burst, and no trace of tubularity remains that the interspace is provided by cysts above 4000 of an inch in diameter, but varying much in size, and "nucleated." He supposes them to be intended to compensate for the destruction of the inter-tubular cells, and to increase in size, by the reception within themselves of the matters they have secreted. Many of the Walsheglionian bodies, are according to him, now extinct, from the pressure of matters within the capsules.

Johnson on the other hand thinks, that after a time the accumulated matters are washed away, and the convoluted tubes left bare, or nearly so, or lined by cells similar like those found in the tubers of the pyramidal substance; this removal being effected by secretion from the Halvignian bodies. He thinks the formation of cysts to be due to the dilatation of the tubers, because he has
seen these dilated; because the tubes secrete the fluid contained by the cysts, because secretions of oil sometimes take place in the tubes, and are occasionally found in the cysts. Since there is no reason to suppose they have any other origin, and as in consequence of the diminution in the number of cells, there is a corresponding diminution in the quantity of blood sent to the organ which would not be the case, did the cysts really supply their place. In regard to the respective accuracy of these two opinions as to the formation of cysts, it may be remarked, that independently of further observations the opinion of Johnson appears the more probable. Besides Dr. E. Gardner (Pract. Sect. Aug. 1848) remarks that they are only occasional products; that he has never observed nuclei in them, but that he has seen presence of their exterior covered by nucleated epithelial cells, a nucleus alone.
For these reasons it is scarcely possible that the opinions of Simon can be correct although that of Johnson is not yet fully proved. The subsequent contraction of the kidney may depend upon the separation of the epithelial cells, and consequent obliteration of the tubular structure. Simon thinks it is due to removal of the cysts followed by contraction of the fibrous tissue, but from the comparative rarity of these, this explanation cannot be received as the general one.

After the consideration of the inflammatory form of the disease, comes that of the next variety, termed the "Fatty Separation of the Kidney".

3. The existence of fat in the tubes of the kidney in a state of disease was first satisfactorily demonstrated by these who made the condition producing by its occurrence in "Fibrosis of the Nephritis" in this country the affection has been fully investigated by Dr. Johnson. Reade. I.

(20)
ers it essentially to consist in an increase of the oil contained to a small extent in the cells of the healthy kidney. Particular sets of tubes may be affected by this aggregation of their fatty contents, and projecting on the surface join the granulations of Bright afterward to be noticed. As in the right form, the cells of the tubes in the pyramidal portions, and likewise those of the Malpighian capsules are little affected. The consequence of the accumulation of oil, in the manner now mentioned, is the compression of the vascular planes surrounding the tubes, upon which follows a state of passive congestion. The effect of the compression, according to him, produces particularly great, in the case of the kidney, if the manner in which the spaces are disposed, and the existence of a fibro-cellular matrix. Active congestion may also occur, but this he attributes to the increased amount of labour imposed on some cells by the engage
ment of others, congestion of either kind she considers to follow the changes in the cells. To the congestion thus produced, he thinks due the presence of albumen in the urine, which also presents characteristic features afterwards to be mentioned. When the deposition of oily matter takes place rapidly, and generally, the kidney becomes smooth and mottled, and no subsequent diminution of size takes place but when deposition is more slow, and occurs in certain parts of the gland only, atrophy eventually follows, from the suppression of the affected portions obliterating the tubes and reflexes in their neighbourhood.

Such are the views of Hunter in reference to this form of the disease, and they are not only in many respects very improbable. Rejections have however been made to the precise statement which the matter in reference to these pathological changes.
deposition of the fat, as quite unexpected, but doubtless has been entertained as to how far this is to be considered as independent of superficial action. As regards the account he gives of the congestion of the kidney, it may be remarked that it is read in apparently probable of the experiment of Dr. George Robinson (Med. Clin. Trans., vol. xxiv) who showed that after tying the renal vein of a rabbit the urine first sent out a clear, active, albuminuric state resembling those which it assumes in Bright's disease. But Dr. Gray then has remarked that congestion is not like to follow the congestion Johnson describes, and also that the effects of the cortical substance of the kidney invariably exhibit a diminution in fulness proportional to the degree of suprarenal excitement. I shall endeavor the probability of the theory of fulness these facts show that the changes take place in the urine, and here after to
be noticed cannot depend on the concentration he describes. That they do however follow on some change anterior to the dispersion of fat seems likely from the experiments of Simon on cats confined in a dark cell. After confinement for a certain time the kidneys of these animals present ex all the appearances of the "Fatty Kidney" but the urine, although globular of oil might be detected in it, did not contain albumen the same time afterwards. From these facts it may be concluded that the pathological changes which the kidney undergoes in "Fatty Degeneration" are not yet fully understood. The characters which are peculiar to the left E and "Fatty" forms of degeneration have now been mentioned; but these by no means always occur separately. Left E action may be so readily superimposed on the latter form, admitting that that is so likely of
but actually non-vital. It is a combination of both is probably more frequent than either singly.

The dissected anatomy of the kidney has now been treated of, both as observed by the naked eye and by the aid of the microscopes. It now remains to be added how far the chronic action mentioned under the former head can be explained by reference to the minute anatomy of the kidney.

34. Enlargement of the kidney may depend on an increased amount of blood in the organ; but the principal cause of increase in size is in the soft tissue form, the increased cell growth, soft exudation and tend of the presence of extravasated blood which takes place into the tubes. It may also arise from the thickening of the tubes which is said occasionally to occur.

In the form of fatty degeneration, it is due to the deposition of oil already noticed perhaps also to the dilatation and thickening of the tubes.
Diminution in the size of the kidney occurs almost always towards the termination of the nephritic focus and in the way already mentioned. In the form of fatty degeneration, it follows the slow and partial deposition. The various changes in the form and character of the external surface are due to the same general manner in which the convoluted tubes are affected; the granulations of Bright are produced by the projection of groups of these, in either form of the disease, though usually in the right.

When the kidney is of a softer consistence than its natural, this is to be attributed to its local engorgement, to partial accumulation of fat, when this is recent, or to general accumulation at all its stages. Hardness is usually met with in glands which are atrophied, and is due to the causes which produce that state.

The paleness which the kidney sometime,
exhibits depends upon the diminished quantity of blood in the organ, while the deeper hue sometimes seen is due to the increase formerly noticed. The mottled appearance of the external surface is caused by exudation of different fluid appearing in the intervals of the venous plexus. The appearances which the kidney presents externally are to be accounted for in the same way. The fact of the existence of morbid change almost solely in the cortical substance is probably to be accounted for by the more complicated structure and function of that portion of the gland.

After the consideration of the morbid anatomy of the affection, comes that of its symptoms.

II. The local symptoms of many diseases are very distinct and point unequivocally to the affected part. Those of Bright's disease are however very different, and presenting in the early stage of the acute form, its existence and progress are hide
ated chiefly by the effects produced upon
the peculiar secretion of the organ and
the system generally. In addition to
the local symptoms, the disease is chiefly
to be discovered 1st. By the condition of
the urine, 2nd. By the state of the
blood, and 3rd. By the development of
certain secondary affections which re-
quire separate treatment and will be
considered under another head.
Before mentioning these it may be well
in the first instance to notice the more
general distinguishing features of the
great varieties of Bright's disease.
The acute form is in its early and acute
stage attended by the ordinary marks
of acute fever; by pains in the bones accom-
panied by pressure and sometimes shooting
downwards, frequently also by pain in
the region of the stomach, vomiting and
constipation. There is frequent and painful
to change of albuminous urine, scanty
in quantity and often changed by admixture
with blood. Fever usually occurs with
in forty-eight hours of its commencement. Complete recovery from this form of the disease may take place; or death may take place usually in the way of coma, a result especially common when the urine is suppressed, or it may terminate in the chronic form, by which term is to be understood either the condition of chronic inflammation or of fatty degeneration. In this form the local symptoms are by no means so well marked as in that of the acute infective disease. There are the same lumbar pains but to a less extent. sickness and vomiting often occur. There is likewise frequent micturition, and there is the same tendency to lower infusion to dropsy and to death by coma. The changes in the constitution of the blood affected by the renal disease produce a peculiar paleness of the countenance a "leucopenia megalica" which often first draws attention to the state of the body itself, especially when accompanied with
Sleepy however slight. Dr. Chisholm has remarked that the skin may be either of a pale transparent and waxy appearance, or of a dingy brown as usually occurs in persons naturally of a dark complexion. According to Dr. Peel there is nothing very distinctive in this appearance which he states may be mistaken for the anaemia of chlorosis. It is possible that the latter may be true; at the same time there is something in the countenance of persons laboring under Bright's disease which is very characteristic. The skin is at the same time almost always dry, and the patient if not relieved becomes more and more feeble. The acute form may at any time supervene on the chronic and the symptoms become for the time being those of the former. Such are the more general characters of both forms of the disease, and it now remains to consider particularly the state of the urine and blood.
1st. The wine cannot fail to be affected by the different changes which occur in the substance of the Kidney, and its morbid characters may be conveniently be stated under the heads of quantity, density, appearance, and lastly constitution, both as exhibited by chemical analysis and as examined by the microscope.

In regard to the quantity of the urine it may be remarked that different authors estimate very differently the amount of urine passes daily in the healthy state, but assuming the average quantity to be from 35 to 50 oz. as stated by Sir Frederick C. in considerable latitude must not be allowed in this respect.

In the acute form the urine is, as was remarked, diminished in quantity, it seldom reaches one half of the normal amount, and in some cases suffusion takes place. In the advanced phase of the disease, it is seldom diminished at all frequently increased. It may however be diminished in the case of with
Current acute Huff's a tendency to cause
spermatogenesis drawn from the density will 
also to a certain extent depend on the
gravity which is conceived to be that of 
healthy urine. Thomsen states it at 1010;
Dr. Proust 1018 to 1035; 1020 or 1035 (includ-
ing all varieties between 1018 and 1030) is 
the estimate of Dr. Christiano. In the 
early period of the disease it is rarely
lowered, being according to Proust seldom
below 1.017, while as the affection advances
the density according to the same author
ranges from 1000 to 1015; in the case men-
tioned by Dr. Christiano it was as low as
1001.5.

Before ascertaining the density of the urine
it is necessary to remove from it the album
in it may contain, and before drawing any
inference from it, to regard it in connection
with the amount which is formed, if
the first point be not attended to, the
Sp. Gr. is reckoned several units higher
than it really is, and in regard to the
latter, it is evident that as a fixed amon
of matters ought to be exerted by the
Kidneys, a larger quantity of urine contain
ing a smaller amount of solid matter may
given bulk, might produce the same mix
as a smaller quantity of such matter.
Various changes of colour are to be met
with in the urine. Pes has named five
varieties, 1. that which is of the natural
colour I. That which is lighter than its nature
al 3. That which is dusky or smoky,
4. That which is dark greenish and 5.
That which is blood coloured.
The first form presents nothing worthy of remark.
The second is due to a diminution of the
solid matter in proportion to the water;
the third depends on the presence of uric.
the two last contain blood, the hematuria
having in the fourth undergone some unknown
chemical change.
The principal peculiarities observed in
regard to the constitution of the urine
in Bright's disease are the presence of
Albumin, the deficiency of urea, and of
saline matters generally, and also the
occurrence of various matters, derived from the kidneys and presenting under the microscope characteristic appearances, presently to be noticed.

The amount of albumen in the urine of Bright's disease is subject to great variety. Its presence is best detected by the tests of heat and Nitric Acid. Heat should be applied, at first, chiefly to the upper part of the tube containing the urine, and the Nitric Acid applied afterwards. In this way the albumen is separated, and the appearance presented by the urine varies from appearance conversion into a gelatinous mass to the appearance of a slightly hairy aspect. If heat alone were employed no precipitate whatever would form in those cases in which the urine is not Acid, and according to Ross even in some cases where it is Acid. Heat may likewise cause a precipitate of the earthy phosphates which closely simulates the appearance due to the
Coagulation of Albumen.

If Nitric Acid alone be used there may according to Bees be some difficulty in detecting Albumen actually present if effervescence take place on its addition, as he states that the bubbles catch up the flocculi of albumen, which are concealed in the froth. This effervescence is he remarks almost always produced when the acid is added to warm urine, which ought not to be tested until it be allowed to cool. It may also produce a precipitate of Nitric acid, when no albumen is present, not distinguishable from the latter by the eye. It is said also to produce a white precipitate in the urine of persons who have been using Extrapilla or calciili, which is how ever easily distinguishable, without the application of any chemical test, by the tinkle with which the urine in such cases generally p r o s p e c k s, and by the precipitate not falling in a short time to the bottom as it does in the
case of albumen. By a conjunction of the tests of heat and Nitric Acid error is in almost all cases avoided.

The above is certainly the most suitable method of detecting the presence of Albumen, creasote, cresylic sublimate, ferric carbonate of Yttria, Acetic Acid and Muriatic Acid have all been proposed as tests but are inferior to the two first mentioned.

As regards the value of the detection of albumen in the urine, as a diagnostic mark of Bright's disease, it must be determined in what other circumstances it occurs there, for that it is found in other cases is now universally admitted, although Dr. Pembrose has denied this.

When the kidney is merely congested, albumen may be detected in the urine; but the obstruction of the circulation which may be supposed to originate this condition in a kidney previously healthy, as well as will afterwards be
stated often precede any renal affection. It may also be detected in the urine, when there is discharge of blood from any portion of the mucous membrane of the urinary passages, and from whatever cause. When the presence of albumen is due entirely to this cause, it will not be detected after the disappearance of the red corpuscles. The same remarks apply to the presence of pus in the urine. (Sobot, Togni et al.) The presence of albumen in the urine is according to Beer an occasional though of course rare source of fallacy. The use of all articles of diet, such as cheese, pastry or may cause the presence of albumen in the urine. Beer has in fact stated that this appearance is fallacious, but it is impossible to doubt that in certain individuals, it really does appear in the urine under the circumstances as mentioned. It also occurs in the state of constitutional irritation induced by the use of mercury.
according to some writers. This statement has however been denied by others, and in the majority of cases it certainly cannot be detected, although in others it is present. The connection between albuminous urine and gouty affections may be then noticed; the question regarding the true affection will be afterwards noticed.

In pregnancy the urine is sometimes albuminous.

In delirium tremens it is also stated to be occasionally so.

Towards the close of life, and in fever recovering from Asiatic cholera albumen is to be found in the urine, but although these phenomena are interesting they are not of any great practical importance. As a general rule it may be stated that the presence of albumen in the urine, not caused by Bright's disease, is rare.

Albumen is frequently absent from the urine in the late period of Bright's disease, but it has also been found to disappear.
after the action of powerful fungative and diaphoretic remedies.

The next feature of importance concerning the constitution of the urine in this case is the diminution of urea and salt. The solid ingredients in the healthy condition amount to 67 or 68 parts in 1000, and of these urea forms about 30 per cent. In the later period of the disease the two are sometimes only 2 parts in 1000, a much lower, while the salts generally are like wise diminished. By obtaining the cry of the urine filtered from the albumen it may contain, together with the quantity thereof in a given time in ion of the amount of urea and salt content may be obtained.

In addition to the changes hitherto described, cut and diagnostic appearances are presented by the occurrence of foreign matters derived from the mucous passages. The feature most conspicuous to the maned eye is the lazy line which depends upon
the presence of mucoid, but the most
exact information is to be derived from
examination of the sediments which
frequently are observed in this disease.
These may consist of the lithic acid,
lithate of ammonia, triple phosphate,
but alone or mixed with the latter are
to be found matter characteristic of
the disease. In that form of Bright's
disease described as the sericit, Stimson
remarks, that there are to be distin-
guished,
epithelial cells, lens-like
cells, nuclei and fibrous casts of the
tubes. The epithelial cells, as Rees, No. 78

ca. by Rees, are of two kinds, the syphi-
oidal arise from the smaller tubes, and
the flattened which come from the tubes
of the pyramids. The fibrous casts
were first described by Dr. Franghion;
they are almost transparent and color
lip cylinders, cut among imperfect cells
or blood corpuscles. Blood corpuscles. Note 6
are in deed frequently found in such
deposits, and exhibit various aspect.
ances, being enlarged or corrugated in different cases.

In that form termed "Fatty degeneration," the principal appearances are few oil globules, compound granular cells, and epithelial cells laden with oil.

Proceeding with regard to this state in the first place that he has been oil globules excited by a kidney bearing no relation to the fatty kidney, indicating and somewhat contracted, and he supposes that to depend on various action of the kidney, simulating carbonaceous matter, practically the result of hepatic function. In regard to this it may be remarked that the fact of the kidney being "more a and somewhat contracted" did not necessarily prove that it had been come in with fatty degeneration, since the glass generally presents characteristic hemolymph the deposition of fat carbon slow and gradual; besides it is not stated what was the condition of the liver, and circumstances which would have been noticed.
tant in determining the probability of such action. It is known that the presence of oil globules in the urine is rare, but irrespective of any specific form which may be entailed in regard to the renal disease, and the absolute amount of fat which may exist in the kidney, it must be admitted that the former are more frequently to be met with than the incagines, either free or contained within the epithelial cells. Several well-marked cases occurred during the present year, in the wards of the Royal Infirmary.

The principal facts in connection with the deposits which occur in the urine when the kidneys are affected by one form or another of the disease have now been detailed; but when it is considered how readily such action may be set up in a kidney previously fatty (admitting in the meantime, that the latter form is non-

is evident with what facility a combination of both forms must occur.
and the urine consequently exhibit a complication of the appearances already described.

It now remains to be considered, how far the character of the urine, enumerated can be explained by reference to the morbid anatomy of the affaction. Bonnay and opinion is that the office of the tubules consists in eliminating the solid contents while the Malpighian bodies separate the water. The small quantity of urine passed in the acute stage of the same may be explained by considering the nature of the action in this case already described; in the more advanced periods of the disease, Johnson attempts to explain the increase in quantity often met with, by supposing that after the tubules are incapacitated for their functions, the Malpighian bodies remain at most only congested, and are stimulated to increase action by the matter necessarily retained. It is hence to be feared that this ingenious theory
is not in all cases confirmed by the result of actual observation; the haematuric and edema are often practically extinct when the increase exists, which we attribute to their greater activity.

From what has already been stated, it is obvious, that the changes which occur in the kidney must tend to interfere with its power of secretion. Different authors have offered different explanations of the precise way in which they do so, which are however little more than convenient methods of expressing the fact (Pothuau, 1856). It is probable that those changes in the constitution of the urine, which have been mentioned are due to affection of part, or of the renal structure. It has been supposed that, when the urine in the advanced period of Bright's disease ceases to be albuminous, this is owing to the complete calcification of the kidneys. The appearance of the deposits is of course to be explained by the changes of this
the which may exist in any particular case.

The next subject of consideration is the state of the blood.

The composition of the blood in febrile disease, like that of the wine, varies according as acute symptoms are or are not developed and according to the stage of the affection. The malarial changes observed may be as acute as they affect the liver.

The character of the liver may be considered as they concern its fibres, its albumen, its bile, its contents, and its oil.

In the early stage of the acute form, the fibre is increased, and the usual appearances characteristic of acute rustic are presented on coagulation. The albumen is deficient, because it fails off with the urine, as it has been supposed because the fibre is enough to form from it. Hence as Dr. Chisholm shows, the more coagulable the urine is, the less is the serum. In the more advanced
Periods of the disease, the quantity of albumin is usually normal, except when a copious
of acute illness takes place. It has even been said in some cases to diminish in quantity.
The albumen which in healthy blood forms from 65 to 69 parts in 1000 is in early and
acute cases reduced occasionally to such an extent as to form only 16 parts in 1000.
(Waddington) In chronic cases there are the same facilities for examining the
blood in the acute or early stage, but there can be no doubt that it is in it almost
domesticated. In the later stages
the quantity decreases and consequently
the density of the serum which had
previously been lowered is raised to the
normal standard (102.9 to 103.1). The am-
out of albumen may be even increased.
It may of course take place
incidentally from acute affection even
in the more advanced period of the disease.
In the early and acute stage of the affec-
tion when a comparatively small quantity
of urine is passed, one may be very
determines in the serum of the blood, but if the urine reach in excess its normal amount, the presence of urea is only recognized. As the disease advances, it often disappears from the urine; but towards the termination of the affection it reappears. This subject was first illustrated by Dr. Christian (in 1829). The fact of the urine containing albumen while it was deficient in albumen by Tolson and others to suppose that the albumen was formed from the urine. Their chemical composition is certainly very similar, but Dr. Christian has shown that in cases where the urine contained but little urea, the quantity of albumen in it was small, and that in others where there was much urea there was also much albumen. Reese has stated that the urea in the blood is considered to be greater in quantity than it really is, from the presence of albumone, which cannot be distinguished from it in an algebra.
However be said with certainty on this subject, at present.
The salts of the blood are according to Dr. Crescioni in the first stage decreased in
the same proportion as the albumen, they
afterwards rise to at least the normal proportion.
The oil of the blood is thought to be increased,
producing the fatty and appearance seen so
frequently in the early stage. Rose refers this appear-
ance to the ordinary effect of chylification.
Perhaps the most remarkable feature
of all is the decrease which takes
place in the red corpuscles. This may, Note 8,
progressively as the disease advances.
About the commencement it may be
said that the proportion is nearly
normal, 1 in 25 parts of the blood in 1000
in the male, and 1 in 50 in 10,000 of the female
according to Locarnini generally 12.41
per cent according to Schmidt.
As the disease advances however the
reduction goes on, and sometimes with
great rapidity. A case is mention
ed by Dr. Crescioni in which the
proportion was only 327 in 10,000 of blood. This change may be more allied to the effects of hemorrhage than of any ordinary exhausting disease. The external surface acquires the peculiar tex of its former described, and by this appearance alone or in conjunction with one of the local signs of affections to which this state of the system is disposed, attention is often for the first time directed to the state of the kidney.

Such are the general characters of the blood in Bright's disease; the causes of which are next to be considered.

III. The Causes of Bright's disease are not yet completely agreed upon by different writers. They may be conveniently divided into the perpetuating and exciting.

Since the renal disease appears to consist essentially in the attempted elimination of malignant matters from the system, and the deposition of fat (or at least diminished state containing fat), it is obvious that whatever produces the existence of such matters
in the blood, and whatever tends to in-
duce the deposition of such a substance
as occurs in the "fatty" kidney must be
considered as at least predisposing cause
of the disease. It is not therefore won-
ear that the principal of these are the
occurrence of several febrile affections es-
specially scarlatina, intemperate habits,
and the coruscous diathesis.
Scarlatina is a very common cause of the
renal disease, and it might be expected
from analogy that the form induced
would be that described by Johnson under
the name of D esquamative Nephritis.
It probably acts as a predisposing cause by
in incapacitating the skin for the due
discharge of its function, and by the
necessary existence in the blood of the
pois on peculiar to it, which stimulates
the kidneys to excrete excretion, with
or even without the concurrence of a distinct
exciting cause.
It may be remarked that several cut-
aaneous affections, especially syphilis.
Eczema act as predisposing cause. Dr. Bright thought that affection of the skin was the only possible "primary cause" but this of course, is far from being the truth.

The scrofulous diathesis is the next great predisposing cause, and it is probable that the form of renal disease to which constitutions so affected are liable, is the one described under the name of "fatty degeneration."

The tendency which the scrofulous diathesis gives to the development of Bright's disease was first noticed by Dr. Chisholm, who likewise observed the frequent coexistence of the latter and "florid ulcerous monalis. This has been noticed by Polon Watson. It is however frequent to be observed, and irrespectively of direct observation, it seems likely that such would be the case for several reasons. Without regarding the structural analogy of the fatty liver and fatty kidney as by any means quite certain
it is obvious that the very frequent occurrence of both in the same individual which will hereafter be noticed, made it highly probable that they depend on the same constitutional peculiarity, which in the case of the former is without doubt the scrofulous diathesis. According to the view of Rees, whose conception of a form of Bright's disease, so consistent in the deposition of albumous matter, would render the connection with a scrofulous state of the constitution still more evident, the analogy of the fatty kidney to the fatty liver is doubtless, but neither the views of Johnston nor of Rees can be considered as quite certain, so that the chief argument in favour of the connection of scrofula and renal degeneration lies in the confluence of the two former diseases. Although the scrofulous diathesis tends especially to the occurrence of fatty degeneration, the form of disease universally admitted to be inflammatory of course likewise occurs from the influence of other causes, and may
exist alone in the kidney is very frequently accompanied with the latter variety.
The comparative rarity with which this affection is detected in those who inhabit the
country may to a great extent be explained by the immunity which such persons gen-

erally enjoy, from a tendency to scrofulous affections; while its frequency in towns is

surely, especially, due to the opposite reason.

Intemperate habits also predispose to the occurrence of Bright's disease; and to this

fact Dr. Lightowens refers the liability of the inhabitants of this country to suffer from

it. Its frequency in the middle period of life (between 30 and 50 years of age), and

the very large proportion of cases which are met with among the members of cer-
tain professions.

It seems likely that such habits may

 predispose to the occurrence of either form

of the renal affection. By producing

increased action of the kidney, and prob-

ably, also by disturbing the assimilative

processes, they must tend to the occurrence
of the infertile form, while by aggravating any tendency to vesicular disease they may produce the so called non vesicular variety.

In regard to the exciting causes of Bright's disease, it may be remarked that probably all the precipitating ones may likewise become exciting. A large pro-
portion of at least the chronic cases commence and go on without any further appar-
ent reason for their occurrence, and from the manner in which the latter causes act, it is evident that this must be the case.

However in most, though not in all of the acute cases, there is some appreci-
able exciting cause, and this usually is exposure to cold in one from another.

The effects of cold are best illustrated in the acute cases which follow Scar-
latura, in these circumstances it probably acts by exciting an additional amount of
tLabour on organs already excessively active.

The powerful influence it exerts, is evident
from the more frequent recurrence of such cases in winter than in summer, as noticed by Pliny. and from the fact that, although it is stated that patients who have had much desquamation of the cuticle are most subject to such attacks, still it is after the lighter cases of scarlet fever the renal disease usually happens because exposure to cold is then most frequent. Various substances, as mercury, calomel, or were formerly thought to produce Bright's disease; it is probable however as cannaker says, that the albuminous condition of the urine which occurs is not attended by a corresponding affection of the kidney. When this state of the urine occurs after the use of certain articles of diet, the case must offer as certain evidence. The gumal coulousions have been said to produce Bright's disease, but it is clear as has been recently shown, that the urine of an albuminous character, is not in the majority, if not in all of such cases unaccompanied by any renal renal disease.
According to those the disease has been induced by a blow on the loins, but such cases, if they occur, are rare.

The causes of Bright's disease have now been considered, and from their variety and nature, it is evident how very common this affection must be. According to Dr. Christianon three fourths of all deaths which occur are renal, and from this fact the frequency of the disease may be conceived. In fact, indeed, it states that only one half are renal; but this discrepancy may probably arise from the greater frequency of Bright's disease in Great Britain on account of the intemperate habits formerly alluded to. The proportion of cases of the renal disease is increased by the fact that they are not necessarily attended with dyspepsy.

It does not appear to be confined to any particular age. As has already been stated, it is most common in middle age, but it also affects the very old and the condition of the kidneys in some infants.
at birth, shows that even the fetuses who may be affected.

It was formerly supposed to be much more common among the lower than among the better classes. Obtaining the better are by accidence to intemper ate habits, to know by lithy to be of scrofulous constitutions, and by exposure to the effect of cold. At the same time it is certain, as it staked by Dr. Christie, that much of the difference formerly supposed to exist in this respect is due to the want of acquaintance with the characters of the affection, as the habit of practitioners not engaged in hospital practice.

The Inflated anatomes, the symptoms and the causes of Bright's disease have been treated of, and it is now proper to consider the secondary affection.

II. The numerous and important class of diseases termed secondary are so called be cause individual labouring under the renal disease are liable to be affected by one or more of them. Some of them occur
so frequently as to be almost universal con
comitant; others are comparatively rare.
The principal secondary affections are 1.
Tecopy, both of the cellular tissue, and the
serous cavities. 2. Erysipelas. 3. Diarrhoea.
4. Central affections. 5. Infl. of the serous

The generation of the liver, and diseases
of the heart might likewise be added
with propriety, although doubt have been
entertained, as to whether they precede
or follow the renal affection.

1. Tecozy of the cellular tissue in Arasace
though an extremely common is not a
necessary attendant on Bright's disease,
as was formerly imagined. It occurs
both in the acute and in the chronic
forms of the affection. In the acute, as
was formerly stated it seldom fails to
make its appearance within forty-eight
hours of the commencement of the disease
and presents the usual characters of
acute drosey. The auriculae are frequently
general, but in other cases, as remarked by Dr. Lacteau, it is found only in the face and below the jaw, where it may remain after disappearing from the rest of the body. This variety is well exemplified in the sacca which occurs as a haggle of material. When acute attacks disappear, in the chronic form, this area is of course apt to recur. In the chronic form of Bright's disease an area likewise occurs independently of acute action, and is of the papillary kind. It is usually general, it accumulates in certain parts more from the absence of principle of gravitation, edema of the lower limbs frequently occurs from this cause; edema of the lower eyelids, of the alae of the nose and of the ankles often draws attention to the cause which originates them. Edema of the lung does not occur so frequently as in cardiac derangement, but generally as an area is often in the former case also attended by a certain amount of edema of the lungs. There is dyspnea, and from the fluid gravitating to the lower part of
the lungs, expectoration is to be kept up. Drops of the serous cavities are much less common than an asc ominous; they seldom occur to any great extent unless there be disease of other organs and are always accompanied by the former. In regard to the relative frequency with which such accumulations occur, the Reports of Dr. Bright (Engl. Med. Rep. 1836) show that in 100 cases of the renal disease, effusion into the cavity of the pleura took place in 41 cases; into the cavity of the pericardium in 23 cases, into the peritoneum also in 23 cases, while serous effusion had taken place beneath the pericardium in 29 cases partly distending the ventricles in 5.

Dr. Christianson has laid down four rules in regard to renal disease. 1st. That the disease is present in a large proportion of cases of nephritis. 2nd. That it is present in all cases where the excretory ducts are not open to the surface. 3rd. That it is present in all cases where there is disease, escape by the urine, diabetes. 4th. That it is
present in all cases when the urine not by
above the ordinary standard is below 1010
in density. The second of these remarks
has been objected to by some; it has been
stated that the character of not passing
very slowly rather on the rapidity of acci
dental than on the local origin of the dys-
Dr. Bell's case however states the fact as the
result of observation.
The occurrence of distress in Bright's disease
is of great interest (Arch. Soc. de Med. 1836) to
acetate, to the tunics of the blood, in the early
stage by the loss albumen, and latterly by the
decomposition of the serum albumin. In the late
form, where the urine is scanty, an addition
of a great amount of effusion is obviously prob-
2. In estimating the comparative frequency
of dyspeptic affections in this disease
it must be remembered that a large
proportion of persons affected by it, are
of sanguineous constitution, and have previously
been addicted to intemperate habits, and
that consequently the functions of the
stomach are likely to be altered.
spectacle of the neural disease altogether.
However, admitting this, dyspepsia of a chronic character is of peculiarly frequent occurrence in the present affliction. Chronic vomiting especially, extremely difficult of remedy is apt to occur; it very generally commences without any apparent cause, and is most troublesome in the morning.
Dyspeptic affections are usually met with after the neural disease has been in time as for some time.
3. Drank a little dyspepsia occurs chiefly at an advanced period of the disease. The watery state of the blood, and consequent tendency to effusions, are probably the circumstances which chiefly tend to produce it. The ura in the blood has also been supposed to have an irritating effect on the mucous membrane of the intestine. It may be produced by improper diet or the use of cathartic medicines in the advanced period of the disease.
The greater frequency of diarrhea in Edinburgh than in London or Paris has been noticed by Dr. Chirstison, but the reasons of this difference are not yet known. Dr. Rees is of opinion that it is now more common in London than it was some years ago, but if this supposed increase do not result from more attentive observation of the cases which do occur, it must arise from circumstances not at present ascertained. It has been stated by Dr. Chirstison that an irritant may carry off a constitutional dyspeptic affection and then cease. But in general its occurrence is productive of much evil.

4. Central affections tending to produce death by coma are not much common. From their great frequency, if not from the causes to which they are due, they may be considered rather in the light of natural terminations of the disease than of ordinary secondary affections. According to the Report of Dr. Bright
they constituted the immediate cause of death in 90 out of 70 fatal cases.

On examination after death there is often no visible mark of change in the brain; in some cases there is a collection of serous fluid in the ventricles, in others there is a coagulation of blood; and in a few, tumours pressing on the brain are the apparent cause of death. The two latter cases are rare, and the aœmence of death when there is no local lesion, and when there is no cause of affection are accounted for in the first case by the state of the blood in Bright's disease; the fatal space being intensified by the urine accumulated in the lymph; while in the second it is supposed to be owing to the pressure of the fluid accumulated in the ventricles and beneath the arachnoid.

It is easy to see the effect the accumulation of fluid has in producing coma, but the effect of the cerea is more doubtful. That the accumulation of it in the brain does produce these affections
certainly appear probable from the fact of their recurring themselves when great diminution in suppurative of the urine has taken place, but Dr. Lister has observed that the blood may be leaked with ease without the occurrence of such affections at all.

Walsen has suggested, that the watery condition to which the blood is at length reduced may have something to do with the somnolent symptoms. This theory if true would however explain only some of the cases of coma which occur. In the whole it may be said that the one which succeeds to the use the powers of producing coma may be the most plausible notion that explains the somnolent cases which do occur and exist. As a cause of a low type was supposed by Osborne to be the cause of the cerebral affection, but that affection does not occur with any means the frequency with which is supposed. It to do.

The affection the malacic anemia of which has now been noticed generally commences...
with increased drawings, the comatose state becomes deeper and passes into complete coma in an atten de by convulsions, while coma with convulsions, or even into convulsions alone. The first form is much the most common. The cessation of epilepsy with the renal disease has been noticed by Dr. Bright but is rare. Death by coma may occur at any period of the disease. When it occurs in the early and acute stage, the progression of the symptoms is rapid, but when it happens after the renal disease has been of some standing the comatose symptoms begin in an irregular manner and according to Dr. Bright death does not occur till after the lapse of at least a week from the commencement of the symptoms.

5. Inflammation of the serous membranes are extremely common and intractable. Dr. Bright has stated that out of 100 cases of the renal affection there were marks of recent inflammation of the pleura in 76 cases, of peritoneum in 12 and 13, of the pericardium in 8, and that a low form of
Machado existed in 13 cases.

Plenicry is thus the most common of these affections. It seldom occurs in a clear marked form; it is more frequently of a latent character, and is masked by dyspnea on bending (Copley). According to the same author it is seldom found in connection with other secondary affections; but it is probable that the cataract are by no means necessarily con

hined with it. You make my cards and are not so frequent. The cataract in general it is sometimes tubercular.

The serous inflammations generally occur in the early stage of the disease, and it has been observed that they may be frequent, due to the atmosphere’s exposure which induces the renal disease itself. They are certainly in most cases to be attributed to such exposure; but in all probability this generally takes place, after the renal disease has been formed. They obviously occur in this way when they take place, as they sometimes do at an advanced period of the disease. Their greater frequency in London than in
Edinburgh or Paris has been noticed by Dr. Christianon. This fact cannot easily be explained by any reference to atmospheric peculiarity.

6. Bronchitis of a chronic nature is far the most common of the pulmonary signs which occur in Bright's disease. It seldom attains acute action and according to Payen is present in seven-eighths of the chronic cases. Dr. Rees states that latterly it is aggravated by standing to effusion. It is probably usually caused by cata

7. Pneumonia is by no means as common as bronchitis. Generally both lungs are affected and the manner and extent of affection varies. It seldom presents very distinct characters and is often overlooked. Rees mentions that it is often detected by the movements of the subcut.

It is most common in the advanced stage.

8. Chronic rheumatism is very common in the advanced stage, but the affection is rather of a neuralgic than of a true rheumatic character. Dr. Christianon
has observed that it is not common to
there is much droopy.

9. Erysipelas and a number of other cutaneous affections are frequently associated with Bright's disease. T. B. S. Bland remarks that they occur either from the weakness a state of the system, the disposing the individual affected to suffer mortally from injury accidentally received, or from the drooping air tension. It must likewise be remembered that when Erysipelas prevails as an epidemic, persons of debilitated constitution are peculiarly liable to suffer from it. It is also to be expected that the disease occurring under such circumstances would be likely to end unfavorably.

Diseases of the heart are very common in persons affected by the renal disease.

The change which most frequently occurs according to T. B. Bright is hypertrophy, with or without valvular disease. In 52 out of 100 cases mentioned by him hypertrophy was present; in 34 of these there was no valvular disease, but in 11 of the 34 the coats of the
data were diseased; in the remaining 18 of the 52 cases there was valvular disease, in 27 cases only was the heart quite healthy. The proportion of cardiac disease which this examination would indicate, is larger than accords with the experience of some writers. Bayl found the heart diseased in only one fifth of the cases with which he met. It is now generally admitted that the proportion is very large. Some instead of considering the cardiac disease as secondary imagine that it precedes the renal one, by causing congestion of the organ. It is probable from the description of persons in whom Bright's disease often occurs, may by the operation of kind as causes occur without any peculiar connection; but a small number of cases can however be ranged under this head. When there is support of both, without such comic change, the renal in all probability precedes and causes the disease of the heart; but it would be scarcely possible to account for the latter, without supposing some such change in the nature of the blood as occurs in the present disease. The fact of the hypertrophy
generally keeping pace with the progress of the
cranial disease, as mentioned by Dr. Bright, may
be readily accounted for by supposing this.
As to the manner in which the muscular
tissue of the heart may be supposed to have
this change produced upon it, Dr. Bright
imagined that the blood changed in
its constitution as formerly described stimul-
at ed in a higher degree the activities of the
organ and thus induced hypertrophy,
so that it is affected the capillaries that
it required greater force than formerly
to carry the blood through them.
Dr. Watson has on the other hand im-
agined that the changed blood produced
in the first instance anaemia of the mus-
cular tissue of the heart; that dilatation
of the cavities follows; and that the
dilate a walls as they labour more be
come thicker.

Of these three hypotheses the last appears
to account best for the hypertrophy and ease
of explaining the dilatation frequently met with,
but whatever may be the immediate cause.
of its production it appears not able that in such cases the cardiac change follows not precedes the renal.

When there is such cardiac depression, whether of the ordinary kind or that peculiar description common in Bright's disease, when there is a true disease the hypertrophy may be explained in the ordinary way, if either is to be an in such circumstance, if at exact time of occurrence the cardiac and renal affection should be referred. The disease of the kidney must in all cases be considered as dependent on a certain state of the blood, and if the cardiac obstructions have originated from a similar cause, it is evident that a connection subsists behind them; if the valvular obstruction be merely of the ordinary kind no connection can be supposed to exist unless the cardiac be supposed to in due the renal disease. That disease of the heart may by causing congestion of the kidney induce Bright's disease has been supposed by many, and the idea derives probably from the similarity which exists between
the state of the gland thus caused, and its condition in the early part of the acute stage. But in the former case the congestion is the chief cause supposed to originate the disease, while in all the ordinary cases of the latter the congestion is a condition due to the irritation produced by the attempted elimination of melanomata in the blood. Under these circumstances it appears proper in the absence of any conclusive evidence on the subject to consider the production of Bright's disease in this way as by no means fully proved, although in some cases it apparently takes place.

In connection with this subject it may be stated the blood vessels are apt to undergo changes of structure, especially by the deposition of matters, sometimes of a nature peculiar to this disease. (2) The hard and furry character of the pulse at the radial artery often met with is stated by Poer to depend on calcareous or accessory matter deposition.

The affections of the liver can scarcely be deemed
Secondary though they occur very frequently in individuals labouring under the renal disease. Bright, out of 100 cases found the latter four to only 40. Raye found that it was disease in about a third of the cases he examined after death. The most common form of disease is the "tubercular line" of Bright and Agy, faty degeneration is less common. There appears however to be a difference in this respect, between the two forms of the disease of the kidney, for Johnson states that in 203 cases of "fatty kidney," there were compared with fatty line and that is of the remaining few had the fat naturally contained in the cells increased.

The occurrence of the first form of hepatic disease is to be accounted for by the fact of a large number of persons affected with Bright disease having been addicted to intemperate habits. Perhaps the proportion of individuals whom Bright found to have the liver diseased was greater than occurred to Raye from the great prevalence of intemperate habits in England than in France. The fatty line of course arises from the wrongful constitution which is the
cause of the form of renal degeneration it accom-
pnies; the estimate of Johnson is however
perhaps too high.
Since the forms of renal and hepatic disease
are due to the same cause it is obviously of little
importance which occur first; and the prob-
ability is that no certain rule can be laid
down in reference to this.
When ascites is a prominent symptom in
BRIGHT's disease, hepatic affection is to be
suspected; the other symptoms present seldom
fulfill.
It has been stated that in all the cases in
which the liver is affected in BRIGHT's disease
the spleen is also altered in structure.
The pericard is occasionally affected, but
little is known in regard to these cases.
Pericardial convulsions have been stated, on
good authority, to occur invariably when there
is BRIGHT's disease; although this has been
recently denied, by some.
To the description of the secondary affections
stands the consideration of the Prognosis
both as relating to them and to the primary
disease.
V. The prognosis in regard to the affection of the kidney naturally varies according as the action is acute or chronic.

By the acute form is of course in this instance meant that class of cases which commence as such; the nature of those in which acute action merely influence or alter previous chronic is very different.

The prognosis of the acute cases is commonly favourable; death may occur soon after the commencement of the disease, but if this does not happen, a large number of cases, if proper treatment be employed, get eventually quite well. The reason of this appears to be that the character of the symptom is such as to attract attention to the seat of disease, before any great change of tissue has taken place, and also from the nature of the causes which often produce them. Once greatly those cases which follow can later a are perhaps more likely to recover completely than those which occur under any other circumstances, because in the former the chief causes of disease are the interrupted
to the function of the skin and the presence of the fever poison in the blood, conditions likely to be of a temporary nature. In those cases where the disease is produced by causes of a somewhat different kind, particularly long continued intemperance, the progress is not so favourable, and a large proportion of them pass into the chronic form. As regards the chronic form it may be remarked that the causes which produce it are very generally deep-rooted in the system and not likely to be operatively temporary. It cannot however be said that it is in all cases incapable of cure. If the disease be recognized at its commencement, recovery may even then take place. But as it commences usually in an insidious way, attention is seldom directed to it until the modd changes formerly noticed have affected more or less of the delicate structure; the consequence of which is that the remainder is kept in a state of undue action which tends directly to keep up the disease. In such a condition as this the normal structure can never
take place; but individuals is affected a may
for a long period experience but little inconvenience
from this change, and Dr. Chiriston has sug-
gested that in such cases it may though
not area be accused. In very many
cases however the disease goes on, and the patient
perishes either in acute accession, or by one or
other of the secondary affections peculiar to the
advanced stage. After the disease has
for a while disappeared, it may return, and
Dr. Chiriston contrary to the opinion of some
thinks that this should not be called a return
of it having all along existed in a latent form,
for which latter reason there appears
to be no good reason, although it is very great.
The prognosis in the next place depends so
much on the secondary affections with which
the renal disease is complicated.
The amount of dropsy which exists over the
body is by no means always proportional to the
danger. It is only when it accumulates extensive
that constitutional symptoms are apt to appear.
Dyspepsia and a chronic vomiting are unfavour-
able, more especially the latter. When then
is structural change of the stomach as some

times occurs in the advanced stage this might
more so.

Diarrhea though in rare cases beneficial is
generally counteracted and tends to exhaust the
patient. If there is ulceration or other affections
of the intestine or mucous membrane it is
very naturally very unhealthy.

General affection are almost always
fatal and demand immediate attention in
whatever stage they may occur. The cir-
cumstances under which they are apt though
not certain to occur have already been men-
tioned.

Pneumonia when obstinate has been remark-
ed by Dr. Beart also generally to precede death.
When acute which is comparatively rare
occurrence it is sometimes followed by lobular
Pneumonia (Crisis).

Pneumonia occurs chiefly in the advanced stage
and is an unfortunate complication from the
inability of the system to sustain the heavy
any abstraction of blood.
The same rule also applies to the subject of the
Serous membranes when acute. They are further generally associated with a variety of other affections. Rheumatism of the kind formerly mentioned is exceedingly debilitating.

But acute affections are apt to be hæmorrhage diaprepis as, as was stated often prove untoward. Cardiac affections are from their nature very serious, they likewise increase the renal malady, and have as might be expected much influence in increasing the uriniferous effusion.

Bilious affections also tend to aggravate the disease of the Kidneys.

The consideration of the treatment of Bright disease follows that of the prognosis.

W. IV. This division of the subject may like the last be treated of as regards the renal disease itself and the secondary affections with which it is complicated. It may be in the first instance remarked that the treatment of the disease of the Kidney will be modified according to the particular form of it which may in any case be present. When the acute infirm form occurs it is to be treated much in the same way.
as similar affections of other internal organs are. It must, however, be ascertained whether the acute itself is really the commencement of the disease and has not occurred in a kidney previously affected by the chronic form; for in the latter case the condition of the blood contra indicates an amount of depletion which would otherwise be useful.

General blood-letting should in the first instance be practiced freely, unless the condition of the blood shows the disease to have formerly existed, in which case great caution must be observed. Bayer has remarked the difficulty with which the vein in the arm is reached, when there is excessive anaesthesia, and the occasional occurrence of hemorrhage and syncope as after the necessary incision. It has also been stated that there is a great tendency to phlebitis if it be not properly closed.

Local blood-letting is useful, after sufficient conduction of the general, when the condition of the blood contra indicates venesection, and when the symptoms are not so urgent as to require it."
great, crysipelas may follow, though more rarely than in the case of septic ecthyma.

Diaphoretic remedies are useful, and always safe. Besides the use of warm clothing, especially flannel, the chief means employed for increasing the action of the skin which is almost always hot and dry are the employment of warm and hot air baths, particularly by the latter, and the administration of Dover's powder, lauwur powder, &c. Dr. Christian thinks the first to be the most useful, as it allays pain and irritability at the same time. Some, as Rees, are partial to the use of Antimony, which excites at the same time a laxative and a diaphoretic action.

Laxatives are always useful either alone or in some recommendation, in such combinations as that mentioned by Dr. Christian (the Al. Colchica et Hyoscymus). The use of very energetic purgatives is only indicated by the tendency to diarrhoea, but this will of course be influenced by the character of the secondary affections.

Diuretics are not to be thought of except in connection with secondary affections.
head, their utility will be considered.
By the use of such remedies as those the primary acute symptoms may be completely removed, or the disease may pass more or less undetected into the chronic form, when the treatment of that variety is demanded. When the acute symptoms have disappeared, great care should be observed in avoiding the different causes of the disease. According to Payer, a milk diet for a few days is serviceable.
The treatment of the chronic form is very different from that of the acute.
Lactation is for the reasons already stated to be employed with great caution. Lastly, it is useful in the congestion of the kidney, formerly described. Lactation is not demanded in the treatment of the renal malady itself.
The functions of the skin should be carefully kept up; and the means to this end already mentioned are often useful.
Purgatives of a powerful kind are advisable, where there is excessive depravation tendency to coma. Functions are of course unnecessary.
under other circumstances.

Mercury cannot be administered so as to produce its constitutional effect, without great danger. Patients labouring under Bright's disease are to be affected suddenly and violently by its use, and there is every ground for suspicion that its use may cause the disease.

Counter irritation by the application of black

juice and rutos is useful and has been recomended by Parke.

The employment of iron is often of service. Note I

and this might naturally be expected from

the characteristic deficiency in the red cor

puscles. So important do some consider its

use, that they place it above all other remedies.

It may be given in a variety of forms; it is often

dissolved in combination with hydrogogue

cathartics to as to remove the watery condition

of the blood.

It may be stated generally that when

the urine contains albuminous at the occurred of any other very soon marked by

the use of astringents such as Bell's Acid,

cathartics are most suitable. Even in such
cases however little benefit is often derived from their employment.

The diet of persons affected by the chronic renal disease ought to be of a nature capable of supporting the system in its enfeebled condition. I have thought that if urea be detected in the blood, the avoidance of subgozened food would be suitable. This idea however probably too early from a false assumption, and has not been confirmed by recent observations (Soder Water). It has likewise been tegarded from the supposed "fatty" nature of one form of renal disease that the avoidance of fat might prove beneficial. In regard to this it may be remarked that in such circumstances any great amount of food, any fatty matter is unsuitable from the digestion it may produce, but the beneficial effect of cod liver oil in scrophulous diseases which was shown to be one proves the principle to be erroneous. Besides it is exceedingly doubtful how far the form of disease referred to is connected with a mere deposition of fat.

The treatment of the renal disease has now been detailed, and in the general, if at least
Chronic cases it is to be feared that it will prove unwarranted so far as concerns the disease of the kidney itself. Much more can be affected by attention to the secondary affections the treatment of which is now to be considered.

Dropey in the form of Anasarca is as was stated a very general concomitant of both the acute and chronic forms of renal degeneration.

When it occurs in the acute form it requires in the first instance general bloodletting, and the same caution is of course necessary as was enjoined in reference to the affection of the liver.

After the acute symptoms have been removed by antiphlogistic treatment, the ordinary evacuating remedies must be made use of.

Diaphoretics are as was stated the least objectionable class, and in particular hot-air baths are found very serviceable in this way. It is states that dropey dependent on renal disease alone may invariably be removed by the use of such remedies, but this is by no means always the case, and very frequent recourse must be had to those otherwise not so suitable.
Diuretics are very effectual in causing removal of the dropsy, and though their employment is not advisable when diaphoretic remedies suffice, the objections which Ulame Bright and several more recent writers entertain to them do not appear to be so valid as might be supposed. As stated by Dr. Christian, they do not increase the amount of albumen in the urine, and it may fairly be supposed that the irritation they produce is of a nature different from that which affects the kidneys in the present disease. Those drugs are of course most suitable which do not unduly stimulate the organs. The bitter root of Potassa and digitalis appear to be of this kind, and a combination of them has been recommended by Dr. Christian, who likewise has found the decoction Koparri and Alqulfe service. The first of the latter is according to some of little use, but it is at least a very suitable vehicle for other drugs. A number of other diuretics have been used in this disease, but the above are the most proper, especially the combination of the cream of tartar and digitalis, the action of which may be pros
moted by giving a medicinal pill every evening for a few days till the flux of urine takes place, or by an emetic of the cachou and tartar emetic if it have been employed for some time without effect. When there is a tendency to diarhcea the cream of tartar is not suitable. Ruysch thinks those radicles the best of all diuretics, but the same credit has not been given to it by other writers. Diuretics may be usefully combined with diaphoretics. Purgatives for the reason formerly mentioned should be used only in extreme cases; at least in Edinburgh. Those drugs which carry off most fluid are the best; such as gamboge, salaf, bitartrate of potassa, saliureum, and cotton oil with the compound oil of crepost or mafa. Dr. Chesterton thinks the best of these to be the gamboge with bitartrate of potassa, saliureum and the cotton oil with the oil of crepost and mafa. The last of these I have observed to be very useful.

Iron is frequently of service in the way formerly mentioned. It may be given in the form of a pill, with diuretics or by its a gorge cathartic. Mercury is not suitable. According to Pres
it was the property of destroying red blood, but whether this be true or otherwise the evil consequences above mentioned appear more than to counterbalance the small chance of benefit from it. By the use of the remedies which have been mentioned the ansa area is generally restored, diminished, or at least prevented from increasing.

In some cases however it does increase, and the integument at length thickens, and a fluid wedge in all cases affording relief and in a few cases effecting a cure. Before this happens however it is proper to remove the effuse a fluid artificially, which may be done by blistering, by making incisions into the limb, or by acupuncture. From what was formed, it is in regard to the condition of the integument, it is evident that the last is the most suitable, since there is least danger of inflammation, and of softening, though these do occasionally occur. It is said that serious consequences may to a certain extent be avoided by making the incisions at more distance from each other, as few in number as possible, and not confining any appendages.
tions by the same opening and in different directions, it is considered by some to be very suitable.

Cerebral affections require very active treatment. Diuretics are considered by Dr. Christison as the principal remedies; and it appears strange that what our opinion may be can obtained as to their merits in ordinary cases, their employment should be totally disregarded by many in the present instance.

When the tendency to coma occurs in the early stage the diuretics are combined with general bloodletting and purgatives. Cupping over the mastoid process or nape of the neck is useful when cerebral congestion appears to exist. Blistering on the same part have been found useful. Unfailable treatment must be employed at the beginning of the local symptoms in the early stage, there is little chance of success. In the advanced state, death is almost always the termination of the condition.

The acute inflammation which occur as secondary affections must be treated in the ordinary way; great care being however observed in the employment of general bloodletting as a remedy, since from the condition of the blood already considered, it is highly probable, or even certain, that the system...
may be sure to endure an amount of de-
flation very suitable for the part.
To enter fully into the treatment of all the sec-
ondary affections would necessarily infer the con-
tinuation of much labor, leaving us no necessary connec-
tion with the renal disease. I will not then
for further notice the treatment, the peculiar
character of which depends chiefly on the in-
tractability of their nature, and the condition
of the system, with which they are connected.

Note.
A This form of renal acæ generation cannot be con-
sidered as strictly renal I. The different varieties
of kidney are probably, as stated by Dr. Allen, due
to infarction, and not of a healthy kind.
It has recently been attempted to be shown that the
"fatty kidney" does not deserve its name, and that the
oil contained is not greater by any means, than that
in ordinary tubercular disease. Dr. Rees has given
a number of analyses in proof of this.
The absolute amount of fat in the organ can of course
only be determined by actual analysis, but so far
as examination by the microscope is concerned, there
certainly appears in many cases to be a remarkable accumulation of oil within the secreting cells, and so far an analogy to the fatty liver.

Pus globules are apt to be confounded with the ordinary mucous globules; the slightly granular appearance of the latter is peculiar (Beevo) but the distinction is not always easy.

Feller is of opinion that the red colour of the urine is in the congested stage due to the presence of blood coloured by haematuria; and afterwards to the presence of blood corpuscles.

The peculiar appearance referred to here may be understood as relating to the presence of blood in the urine, especially in the early stage.

The great cause of the general diminution of the red corpuscles is not yet fully known. Beevo has advanced a theory, in which he attempts to explain the changes which occur, by supposing that the diminished density of the liquor sanguinis is in the early stage prevents the due influence of the chafe on the corpuscles.

Bright's disease is according to some observers always secondary to Pline, where they are combined organic changes are sometimes found in the
stomach in the advanced stage; especially in
flammatory affection, and softening, ulceration,
and fungous and encephalic tumours (Spleen).

Dr. Johnson is of opinion that the affection of the
values is often of a fatty nature.

Gulliver has shown the atheromatous and islet
or matous depositions to be fatty in their character;
but Silicean further supposes that an increase
of the oly matter the rebels naturally produce, not
visible to the eye, may be the cause of the cardio
changes which have been mentioned; this how
ever is a mere hypothesis.

2. The tendency to secondary affections, as stated by
Dr. Christian, due to the debility produced by the
changes in the blood which have described, and
consequently any treatment tending to correct the
latter, may diminish the liability to the former.

Lawrence Mackenzie

From illness during a considerable part of the season
I have not had time to say so much in regard
to these grants, as I would otherwise have wished.

L. M. H.