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"On some of the Secondary
Consequences of Bright's
disease of the Kidneys"

by Stewart Locke

Ever since the discovery which has immortalized the name of Bright, scarcely any subject in medicine has occupied more of the attention of pathologists, than the disease, or variety of disease with which his name has been coupled. Innumerable have been the discussions as to whether, the conditions grouped together under the term of "Bright's disease of the kidney" really constitute one or many distinct affections. While some, particularly amongst German

pathologists, are inclined to regard these different morbid conditions, as merely successive stages of the same disease; others, and perhaps the majority, believe that a variety of specific diseases are grouped together under one common name.

It is not however to the discussion of this point, important as it is, that I propose devoting the present paper; but to a sketch of some of the secondary affections consequent upon these morbid conditions.

Still as in order to render subsequent observations intelligible, it will be necessary for me to adopt some sort of classification; I propose using that most commonly employed amongst medical men generally, without reference as to whether the various conditions arranged under it are specifically distinct or not.

1. The Congested Kidney (the condition accompanied by acute dropsy

consequent upon Scarlatina or other causes)

2. The large white Kidney, and

3. The Small Contracted Kidney.

Concerning the importance of the various secondary consequences of these affections, it will scarcely be necessary to say anything. this will be evident to every one who remembers. First of all; the very frequent occurrence of Bright's disease; and then the insidious nature of its accession in many instances, that frequently an attack of Coma or Convulsions, or the occurrence of some internal inflammation, is the first thing to attract the attention of the patient or his friends, and to excite the suspicions of the physician that there may be some lurking disease of the Kidneys; and lastly that it is to these secondary affections, that treatment is as yet, chiefly applicable.

(1) Brit. & For. Red. Cross Review Vol. IX

1. Dropsy - Dr. Christison makes the Remark, that according to his observations, three fourths of all Cases of dropsy are connected with diseased Kidneys. Amongst all the Secondary consequences of Bright's disease, this is by far the most frequent; but it is by no means a necessary accompaniment of the disease, for there can be no doubt that many Cases occur and go on to a fatal termination, without the appearance of this symptom. Of 430 Cases of Bright's disease Collected by Ferrieh, from various sources 54 never had dropsy. (1) It seems to be of almost universal occurrence however, in the first and second forms of the disease; while in the Small Contracted Kidney the appearance of dropsy, to any amount at all events, is not by any means so general.

(1) Guy's Hosp. Reports Ser. ij Vol. viij

(2) Johnston - Med. Times and Gazette.

The dropsy consequent upon renal disease is of the variety termed "general dropsy": it is for the most part first observed in the cellular tissue, and this is soon followed by ascites, hydrothorax, and hydropericardium in the cases where this symptom is urgent. Dr. Willk's observes that if there is oedema of the genital organs the dropsy is probably renal (1). This is perhaps too general a statement. It is commonly thought that renal dropsy may be distinguished from cardiac dropsy, by observing its mode of accession, that whereas in the latter, the oedema is first observed in the feet and travels upwards, in the former it is first observed in the face and back of hands. But cases are recorded of renal dropsy where the oedemas first appeared in the feet, and made its way upwards, (2) so that the rule above given is not without its exceptions.

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This symptom may be rapid or slow in its accession according as the disease is acute or chronic.

The dropsy itself may be the cause of death, by the interruption of respiration due to oedema of the lung, hydrothorax, or oedema glottidis; by impeding the heart's action; or by producing extensive erythema from distension of the skin.

The fluid effused in Bright's disease differs somewhat in composition from that effused in Cardiac dropsy. It contains less albumen, the result of the impoverished condition of the blood; it contains urea also in appreciable quantity, uric acid so far as I am aware has not been detected in it. A curious circumstance has been observed by some, viz. that the amount of albumen in the fluid varies in different situations. A table is given by Ferrieh, showing that the fluid effused into

(1) Brit. & For. Med. Chic. Review

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(2) Christian on the Kidney

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the plasma and peritoneum is much richer in albumen, than that found in the areolar tissue. (1)

Probably two or three circumstances con-
cur in causing dropsy in Bright's
disease. First, in very many cases
there is but a scanty secretion of
urine, and the blood is thus ren-
dered more watery than normal.
Secondly, the well known effect of
Bright's disease in causing a remark-
able diminution in quantity of
the red blood corpuscles, is great
as to lead Dr. Christieson to remark
that "he is acquainted with no na-
tural disease, at least of a chronic
nature which so closely approaches
hemorrhage in its power of impover-
ishing the red particles of the blood" (2)
has doubtless a great influence in
producing dropsy.

It is clear that neither of these
circumstances separately, is neces-
sary for the occurrence of dropsy

in the great majority of cases, for either condition may be absent, and yet dropsy be produced. While in many cases of the Small Contracted Kidney, the condition of anæmia being present, but where there is an abundant flow of urine, dropsy does not occur; in a few others it does, although diuresis still continues unabated. On the other hand in cases of acute dropsy following scarlatina, as Dr. Christison showed, there is no reduction in quantity of the red corpuscles of the blood; although the other condition of scanty secretion of urine is generally present.

But further, there is evidence to show that both these conditions may be present, and yet dropsy not necessarily follow. Dr. Johnson, I think, has shown it to be extremely probable that another circumstance comes into operation in producing dropsy, viz.

(1) Guy's Hosp. Rep. Ser. I Vol. I

obstruction to the flow of blood through the Capillary system.

Dr. Bright long ago observed that hypertrophy of the heart was a very common accompaniment of disease of the kidneys. Out of 100 Cases recorded by him in a tabular form there were fifty-two Cases of hypertrophy of the heart, and in twenty-two of these there was neither disease of the valve nor of the Aorta. (1)

Out of 292 fatal Cases collected by French, the heart was hypertrophied in 99, and in 42 of these the hypertrophy was simple.

It is held by some (and Dr. Henderson supports this view) that this is mere coincidence; that the renal disease and the hypertrophy of the heart are effects of one common cause viz. intemperance, which we know to be one of the most common antecedents of renal disease.

It appears to me that this will

not account for so many Cases. We have no evidence that simple hypertrophy of the heart is a common result of intemperance; and in cases of Cirrhosis of the liver, another very common effect of drunkenness, it does not appear that the complication of simple hypertrophy of the heart occurs in nearly the same proportion, as in cases of Bright disease.

Dr. Bright suggested two explanations of these cases, one of which was "that the altered quality of the blood as affects the minute and capillary circulation as to render greater action necessary to force the blood through the distant subdivisions of the vascular system." That certain alterations of the blood have a tendency to impede the capillary circulation, we have evidence from the experiments of Dr. Reid and of Magendie and Poisenille.

(11) Dr. Todd on Urinary disease.

The former observer found, that blood prevented from being oxygenated passed less readily through the systemic Capillaries. The latter experimenter observed that on the introduction of alkalis into the blood, a great retardation of the Capillary Circulation, and even dissep took place (1). Reasoning from analogy it would appear extremely probable, that the urinary constituent being retained being retained in the blood, have the same sort of influence in causing impediment to the Capillary Circulation; and if so, this would be, as Dr. Bright originally suggested, a sufficient explanation of the occurrence of simple hypertrophy of the heart.

Dr. Johnson goes so far as to regard the very occurrence of simple hypertrophy of the heart as almost sufficient proof that such Capil-

(1) Johnson on the Kidneys

(2) Brit. & For. Med. Chir. Review Vol. IX

large obstruction does exist; and this obstruction is one of the Circumstances which he believes to have great influence in the production of dropsy. (1)

It would appear that this Circumstance alone is not sufficient for the explanation of all Cases, any more than either of the other two Conditions; and as previously stated, two or more of these Conditions probably occur in most Cases.

Frerichs says "acute dropsy has the same cause as the Kidney disease; it is the consequence of paralysis of the Capillaries of the Skin and Subcutaneous tissue excited by exposure to Cold"; but I am not aware that he brings forward the slightest amount of evidence in support of this hypothesis. (2)

Various plans have been proposed for the treatment of the dropsy. In acute Cases, Cupping from the

loins seems to be of undoubted service especially if there be any local pain. After this, perhaps the conjunction of purgatives and diaphoretics is the preferable mode of treatment, though Dr. Christison showed that even in these cases, we need not be afraid of giving diuretics, if it should seem necessary. The patient should have a warm bath occasionally, or probably still better, a vapour bath, or a hot air bath. A very good form of purgative is the Compound jalap Powder of the Pharmacopoeia; elaterium has often proved of great service, and if one could be sure of obtaining it good, it might be used with advantage; but it is so subject to adulteration that it becomes a very uncertain remedy. Dr. Christison employed gamboge to a great extent and found it very useful. Should these means fail, which probably

(Omitted)

D-Christies found in some of his cases that diuresis was induced more speedily after the operation of a brisk purgative.

The state of the skin should also be attended to.

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will not very often be the case, Cream
of tartar and digitalis may be em-
ployed as diuretics.

In the Chronic form of dropsy,
while the bowels should not be allowed
to become constipated, the diuretic
plan of treatment seems suitable.
Cream of tartar, or squill and digitalis
may be administered; sometimes
a combination of diuretics seems
more serviceable than any single
drug. The exhibition of some salt
of iron apparently proves useful
by improving the condition of the
blood. If remedies administered
internally should fail in removing
the dropsy, acupuncture may be
employed, and sometimes give
great relief; or a single incision
at the lower part of the leg may
be made; sometimes the abdomen
requires to be tapped in order to
let out the fluid. These operations
should never be resorted to ~~more~~

except in extreme cases, as erythema and even sloughing may follow. Formerly patients were not allowed to drink freely in order to quench the extreme thirst from which many suffer, in case the dropsy should be increased as it was thought; but this rule is now in a great measure disregarded, as it is found that the dropsy is not increased by the patient being allowed to drink freely -

Next to dropsy, various cerebral affections are among the most common consequences of Bright's disease. Of 241 cases collected by Frerichs from various sources, 94 died from one or other affection of the head. Dr. Christison regarded coma as the natural termination of the disease.

The cerebral affection consequent upon Bright's disease present a great variety of aspects. According to Dr. Addison the general

Character of these affections, is marked by a pale face, a quiet pulse, a contracted or undilated and obedient pupil, and the absence of paraplegia. He has given the five following different forms.

1. A more or less sudden attack of quiet stupor; which may be temporary and repeated; or permanent ending in death.

2. A sudden attack of a peculiar modification of Coma and Stupor; which may be temporary or end in death.

3. A sudden attack of Convulsions; which may be temporary or terminate in death.

4. A combination of the two latter, consisting of a sudden attack of Coma and Stupor, accompanied by constant or intermittent convulsions.

5. A state of dulness of intellect, sluggishness of manner, and drowsiness, first preceded by giddiness

(11) Guy's Hosp. Reports Ser. J Vol. IV

dimness of sight, and pain in the head; proceeding either to Coma alone, or to Coma accompanied by Convulsions; the Coma presenting the peculiar Character already alluded to." (#1)

D: Addison regards the stupor accompanying some of these forms of cerebral affection, as peculiar, and to a great extent characteristic of the Coma connected with Venal diseases. He says "that it has not the deep, rough, guttural, or nasal sound of ordinary apoplexy, but it usually presents more of a hissing character." I think I am able to confirm this statement by my own observation. It is however a good practical rule to test the urine for albumen in every case of Coma or Convulsions.

A degree of delirium is very often present, before the Coma comes on. It is generally muttering in character; never, so far as I am aware,

(1) Hemiplegia not infrequently occurs shortly before death, but in such cases there must be some definite organic lesion of the brain.

is it violent.

But a very few of these Cases exhibit on post-mortem examination, any appreciable lesion of the head sufficient to account for the symptoms which preceded the fatal termination. Of the 94 Cases before mentioned as collected by French there was Cerebral hemorrhage in six, Meningitis in one, Cerebral softening in one; leaving 86 to be accounted for by some less appreciable Cause. (11)

That the occurrence of these Cerebral affections bears no relation to the amount of dropsy, seems well established, for many Cases occur where there is not the slightest appearance of dropsical effusion.

Dr. Johnson indeed asserts that Cerebral affections are more common in consequence of Contracted Kidney than of any other form of Venal disease (the very form least liable

to be followed by deep sleep.

Pathologists are therefore pretty well agreed, that it depends on some morbid condition of the circulating fluid. What that particular condition is, has however been the subject of much discussion.

The view that would at first most naturally suggest itself is, that these conditions depend upon the contamination of the blood by urea; consequent upon the decreased elimination of that substance by the kidneys; and hence the term *uraemia*. There are difficulties however, in the way of receiving this explanation, for many cases are recorded by Dr. Christison and others, where the blood was loaded with urea, and yet there was no head affection. Dr. Henderson is of opinion that such an apparent anomaly, may be explained on the supposition, that different individuals may have a varied degree of Ins-

ceptibility to the action of the poisons. It is a well known fact, that narcotic poisons produce very various effects on different persons. Thus a dose of opium which might be taken with perfect impunity by some individuals, would prove fatal to others. It may be too, that the system becomes accustomed in some measure, to the gradually increasing contamination of the blood by urea, just as it is known to do in the case of opium. There are some facts which would tend to support such a view; for instance, it is a matter of observation that affection of the head is very common after a sudden and great diminution, in the quantity of urine excreted; and this even in chronic cases, where the blood may have been for a long time contaminated with urea, but where the amount has been very gradually increased,

until, owing to the secretion of urine being suddenly diminished after exposure to cold, a rapid addition to the amount of urea in the blood has taken place, and some cerebral affection has followed. Dr. Christison makes the remark that "the absence of any affection of the head, notwithstanding that the blood was, so to speak, poisoned with urea, is a fact which I have repeatedly had occasion to remark in the advanced stage of granular disorganization of the kidney, but never in its early stage". And according to Johnson "the cerebral functions remain unaffected, a few ounces of urine only being secreted daily, only in chronic cases and where the urine has been gradually ^{reduced} increased in amount."

Dr. Christison in his work on the kidneys gives it as his opinion that "the impoverished condition of the blood contributes very powerfully

to the operation of the real immediate Cause or Causes of the Coma in this disease". Dr. Watson makes a similar suggestion, and supposes that the stupor and Coma of Bright's disease are analogous in their origin to the similar symptoms of Spurious hydrocephalus, where a state of anemia is present. Of course these observations only apply to the chronic form of the disease; for as Dr. Christison pointed out, the blood is not impoverished in the acute form.

A very ingenious view of the matter has within the last few years been brought forward by Frerichs. This observer believes that it is not the urea itself that is the Cause of the Cerebral Symptoms; but that this substance is first decomposed into Carbonate of Ammonia, and he supports this doctrine both by the result of observation of

(1) Brit. & For. Med. Chi. Review - Vol. 14

Cases of Bright's disease, and of experiments on animals.

He states "that when the symptoms of uræmic intoxication, Coma, Convulsions &c. Commence; carbonate of ammonia is mixed in considerable quantity with the expired breath, and that the quantity of the ammonia is in proportion to the intensity of the uræmic phenomena" (1). He says "that he has repeatedly demonstrated the ammonia contained in the expired air of Sick Men, and of animals into whose veins urea was injected after extirpation of the kidneys; reddened litmus paper quickly turned blue in the air issuing from the mouth and nostrils; a rod moistened with hydrochloric acid produced when held in the same air a more or less thick Cloud." He adds "that the blood in every case in which the symptoms of uræmia are present

Contains Carbonate of Ammonia."

For the corroboration of these observations French injected a solution of Carbonate of ammonia into the veins of animals, and Convulsions and Stupor were the consequences. In order to explain the Circumstance that Cerebral Symptoms occur in one Case of Bright's disease more than another, French supposes that a peculiar Ferment, present in one set of Cases and not in the other, is the Cause of the Conversion of the urea into Carbonate of ammonia. What that Ferment is, and why it should be produced in one Case more than another, he offers no explanation.

Further observation seems necessary for the corroboration of this doctrine. So far as the matter has been attended to, in this Country at least, the results of experience have been rather opposed to the theory of

(1) *Talk a Urinary Disease.*

Frerichs. He himself says, that in order to demonstrate its truth, it must be proved that in every case of uræmic intoxication, a resolution of urea into Carbonate of ammonia takes place. Now both Dr. Todd and Dr. Johnson have failed to detect ammonia in cases of Bright's disease complicated with cerebral affection. In a case of forty Kidney (small contracted kidney) recorded by the former, in which there were delirium, convulsions and Coma; the blood was tested for Carbonate of ammonia in vain; reddened litmus paper failed to detect it in the breath and sweat (1); and Dr. Johnson in a late number of the Medical Times and Gazette records a case where he also failed to detect ammonia in the breath of the patient; a rod moistened with hydrochloric acid evolving less of the white fumes in the case of the

patient, than in that of some of the bystanders.

I may mention that I had lately an opportunity of testing the blood of a patient in the Infirmary, (under the care of Dr. Warburton Beattie,) who was becoming Comatose from Bright's disease. No fumes were produced when a rod moistened with Acetic acid (which is a more delicate test than the hydrochloric) was put into the upper part of the tube containing the blood; or adding lime water to the blood no smell of ammonia could be perceived, and the rod moistened with acetic acid was not even then affected: no effervescence was produced on the addition of hydrochloric acid to the blood. I also tested the breath of the patient for ammonia (by means of the rod moistened with acetic acid, and of reddened litmus paper) with similar want of success.

Theoretically speaking the agency of a ferment (as supposed by Ferrius) does not seem very probable; for while this ferment, whatever it may be, is found in some cases only of Bright's disease, it seems to have been present in all the animals, into whose veins urea was injected; the kidneys having been previously extirpated.

It would seem rational that for the proper treatment of these cerebral affections, our remedies should be applied to the kidneys, and experience seems to confirm this view. The great object would appear to be to occasion diuresis. Dr. Johnson speaks highly of the usefulness of Cupping from the loins in these cases. Purgatives and diuretics may also be given with some hope of success however small that may be.

Besides the cerebral affections of

(1) Guy's Hosp. Reports. Ser. II. Vol. 7

(2) Brit. & For. Med. Chir. Review
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the nervous system already men-
tioned; there are a few minor dis-
orders sometimes met with in
Bright's disease. A degree of ama-
rosis is not un frequently observed.
It was noted in 5 out of 37 Cases
recorded in a tabular form by
Bright and Barlow. I have my-
self seen it well marked in two
Cases which occurred in the Royal
Infirmary, under the Care of Dr.
Warburton Bebie. Dr. Bright
thought that this affection generally
appeared at an advanced stage
of the disease.

Impairment of the Sense of hearing
is also sometimes observed. In 8
out of the 37 Cases just mentioned,
there was deafness or "tinnitus Au-
rium"; and in 4 out of 41 Cases
observed by Forrichs these symp-
toms were present (2).

Cramps in the legs have also occa-
sionally been observed.

11 Guy's Hosp. Reports. Ser. ij Vol. viij

These affections are no doubt due to the same Cause or Causes as the former conditions previously adverted to.

Various inflammatory lesions are well known to be of frequent occurrence in the Course of Bright disease.

Bronchitis is very commonly observed; indeed Dr. Willk. states that "he is not sure, if all the symptoms were numerically taken, this would not be more universal than any other single symptom, albuminous urine alone excepted." (1)

This statement must refer to a slight amount only of bronchitis. Out of 100 Cases recorded by Dr. Bright in 13 were traces of this affection observed after death.

Pneumonia is another not unfrequent complication. Of the 252 Cases collected by Frerichs, this lesion was present in 27, or

(1) Brit. + Fr. Gen. Chir. Review. Vol. IX

about 1 in 11 Cases: it was apparent by the Cause of death in 20 out of 241 Cases Collected by the same author, some observed by himself and others taken from the writings of various observers, including Bright, Barlow, Christian, Solon and others. 11

The class of serous membranes seem especially liable to become the seat of inflammation in the course of renal disease. The pleura is the one most frequently affected: 16 cases of recent pleuritis occurred among the 100 before mentioned as recorded by Bright; while 40 more exhibited traces of a former attack. Of the 252 cases collected by Frerichs, the pleura was the seat of inflammation and exudation of lymph in 35. Much stress cannot, I apprehend, be laid on those cases where old adhesions were alone observed; as it is 20

very common to meet with there, after death from almost any cause.

Peritonitis is of rather less frequent occurrence; it was found recent in 12 or 13 of the 100 Cases of Bright's and in 33 of the 292 of Frerichs.

Pericarditis is much more rarely seen than either of the two former affections. Dr. Christison does not, in his work on the Kidneys, record a single Case where this Complication existed. Dr. Bennett in the late edition of his "Principles and Practice of Medicine" remarks that he has not seen a single Case of Bright's disease, where this lesion was observed; and seems to doubt if there is any connection between them.

It appears to me however, well established that pericarditis is sometimes the consequence of renal disease. Dr. Bright himself records eight Cases of recent pericarditis

(1) *Med. Chin. Trans. Vol. xxviii*

out of 100 of renal disease; and indeed the case recorded by him as among the first which attracted his attention to the connection existing between dropsy, albuminous urine, and renal disease, was complicated with this inflammation.

But it was Dr. Taylor who first attracted special attention to the fact of pericarditis being a consequence of Bright's disease. Out of 31 cases of pericarditis observed by him 9 were complicated with Bright's disease, and no other cause of the inflammatory lesion could be traced. (1) This affection was observed in 13 of the 292 cases of Frerichs.

It seems strange that Dr. Bennett should never have met with it, for it is sometimes seen in the Edinburgh Infirmary. In my own very limited experience of renal disease, I have seen one case

(under the Care of Dr. Warburton
Beylie) where a distinct pericardial
double friction sound was heard
a day or two only before death;
and Dr. Beylie kindly informs
me that he has repeatedly seen this
affection complicating Bright's
disease.

Arachnitis has been very rarely
indeed observed.

These inflammatory lesions doubt-
less depend on the contaminated
condition of the blood.

They are well known to be very
little amenable to treatment.

To bronchitis and pneumonia
probably the same treatment should
be applied, as when these affections
occur in other circumstances;
always bearing in mind the de-
bilitated condition of the patient
in the majority of cases.

As for the serous inflammations,
whatever may ^{be} said of the efficacy

of bloodletting and mercurials in these affections when uncomplicated, I suppose few would be found who would treat them leniently when complicated with Bright's disease of the Kidney.

But a few of these cases could bear bloodletting to any amount, and it is well known that the action of mercury is apt to be very severe and uncontrollable when the Kidneys are affected with disease. If counter-irritation be employed, it may be better to produce it by other means than Cantharides, as this is apt to cause a slight and temporary albuminuria even when there is no Kidney disease. I am inclined to think that if diuresis could be induced, that this would be the best plan of treatment.

Erythema has sometimes been observed; as previously mentioned

it is apt to follow acupuncture or incisions made for the purpose of relieving the dropsy. When occurring independently of these, it has been generally ascribed to the tension of the skin caused by the dropsical effusion. There is some reason to think however, that it is sometimes, like the inflammations previously adverted to, the consequence of the contaminated condition of the blood; as it has been observed to supervene after the dropsical effusion has commenced to decline.

Symptoms of irritation of the gastro-intestinal mucous membrane are very frequent complications of renal disease.

Pyrosis and flatulency are sometimes urgent. A case is mentioned by Dr. Johnson, where a man died in a fit of urgent dyspnoea apparently occasioned by flatulent distension of the stomach, coming

or after partaking of a hearty dinner.

Chronic vomiting is apt to be very troublesome: it was found in 11 out of 42 of French's Cases. The vomiting very often occurs in the morning, or the patient's first awaking from sleep. It is with difficulty controlled. Dr. Christian found Creosote the most serviceable remedy in these Cases; if this should fail Hydrocyanic acid, or medicinal naphtha may be tried.

According to French's, diarrhoea is not so frequent a symptom as vomiting. As long as it does not exhaust the patient too much, perhaps it is better that it should not be interfered with; as by it as well as by the vomiting, urea seems to be eliminated. But when excessive or too much protracted an attempt should be made to restrain it, as it has sometimes proved fatal by

the constant drain exhausting the system. The ordinary astringents may be tried: opium should be administered with caution, otherwise a state of narcotism may be very speedily produced.

Very frequently no lesion of the mucous membrane is discovered after death; sometimes however, marks of inflammation or ulceration of the intestines are observed.

As the subject of hypertrophy of the heart, as a complication of Bright's disease, has already been incidentally discussed under the head of "dropsy" I shall not further refer to it here.

Disease of the blood vessels has frequently been observed: out of the 100 cases of Bright, in 17 was there more or less disease in the coats of the aorta. Mr. Paget pointed out that the capillaries of the brain are often fatty in Bright's disease;

"this is common with hypertrophy of the heart" says Dr. Johnson "consider the subjects of this disease very liable to cerebral hemorrhage." Whether this is a consequence of Bright's disease, or merely an effect of the intemperance which is so frequently the cause of renal disease it would be difficult to say.

Purpura and epistaxis are symptoms that have sometimes been observed. Cases of the former are recorded by Dr. Bright and others.

Dr. Todd believes that epistaxis is more frequently observed in cases of the small contracted kidney, than in any other form of renal disease.

These symptoms are no doubt due to the impoverished condition of the blood.

The last complication that I shall refer to here is Chronic Uremia. Dr. Christison, I believe, was the

first to point out the consequence
 of renal disease: also that it is
 less common when there is much
 dropsical effusion than when the
 anasarca is considerable, and these
 observations have been confirmed
 by Dr. Johnson ^{and} ~~that~~ others. The
 pain has its seat in the muscles
 rather than in the joints. Dr.
 Christies found warm baths
 more useful than medicine, ad-
 ministered internally. If any
 medicine be given he recommends
 Colchicum, combined with Morphia
 or Opium.

Stewart Lockie.