Thesis

on the

Dropsy following Scarlatina

Field Flowers Sutton
The method, I propose to take in treating of the Disease, which so frequently occurs as a sequel of scarlet fever, is the following.
First, will be given a brief history of the disease: then, the frequency of its occurrence, relatively, to the severity of the preceding fever; to the age; and to the position in life of the individual: next its symptomology. Thencein, will be discussed the pathology of the kidneys, and their agency in the production of albuminous urine: following which, will be considered the rationale of the Drapical effusion: and lastly, the treatment of the disease.
The Dipsy, which so frequently supervenes upon an attack of scarlatina, is alluded to by Motton; who describes an epidemic of that fever as it occurred in London about the end of the 17th century: from which it would appear that he regarded that resulting Dipsy as a very dangerous sequel of the disease.

In an account of scarlatina, as it prevailed at Vienna, in 1762, Plenius states that more died of the Dipsy, than of the fever which preceded it.

On the other hand, Dr. Sims & Wells, who published histories of the epidemic scarlatina of 1780, think Dipsy a symptom of trifling importance.

Cullen says it seldom requires any remedy: while Bateman & Armstrong pass over this secondary affection with but a slight notice.

Authors differ as to the degree of intensities of the previous year, after which it is most liable to occur; some thinking that a severe, others that a mild attack, is most frequently followed by Duphials Accumulations.

Plenius favours the former opinion. "He says, "the following observations concerning this
obstetrical tumour occurs particularly to be noticed.

And indeed, firstly, because that acutephlegmatous state follows most commonly in the case of those who are affected with ulcers or malignant eruption of the mammary. "I have been hitherto a great swelling of the whole body following a very mild attack," says Dr. Withering. Secondly, because those who experience great desquamation of the cuticle, are wont to have greater swelling than others. Notwithstanding, I have observed very great swelling in those who had no desquamation of the cuticle (Chap. viii. page 16).

Dr. Withering, who also wrote on this subject, holds opinions somewhat similar.

It is now more generally believed that anasarca, or general Edema, depends upon the mildest attacks of scarlatina, at least in the great majority of instances; and that, not because there is anything in a mild attack which in itself predisposes to Edema, but that the body is so violent that a severe degree of fever would be more likely to induce the disease; as proving a greater quantity of hurtful material to be circulating with the blood.

And from the circumstance, that extreme debility generally follows the more severe forms of scarlatina, leaving the various tissues of...
the body more liable to inflammation and its
sequences. The peculiar state may be accounted for in the
following manner:—after a short attack of fever the
patient is unable to leave the house for some length of
time, during which period cutaneous temperature,
goes on unchecked, the skin meanwhile regains its
healthy condition, and thus becomes fitted to bear
changes of temperature—therefore cold, the exciting
cause, being withheld, the patient generally escapes
the sequelae of the disease.
On the other hand, when scarlatina sets on in its milder
forms, in many instances continuing but for a
day or two, sometimes indeed, for a week or two, sometimes indeed. The rash peculiar
to it, has never been perceived by the parents or
friends. They may have noticed the child to be
suffering under a slight degree of fever, with headache,
and sickness perhaps, which have ever the likely
disappearance. The danger is apprehended, and con-
sequently it is again allowed to attend school,
so play in the open air. And thus applied by
hindering perspiration, checks the eliminatory
processes, materials from the body; and as
a consequence we have effusion of fluid into the
vascular tissue, or into one or other of the veins
varities. The following is one of the many examples we have of Diphtheria, resulting from a mild attack of the preschool. I was called to Dr. Hamilton to see a child whose face and extremities were slight by swollen. I made most anxious and repeated inquiries as to whether the child had been previously unwell, but received from its parents distinct answers in the negative. He had not they told one been confined to the house for a single day. I prescribed some purgatives and diuretics; and thought it unnecessary to call back for two days. When I did call to my utter astonishment the child was dead, and what the less surprised one another child, a year or two older, was affected in exactly the same manner, and was evidently in great danger. I found upon examination both of the children living, child circumstances is in unison with my subsequent experience, as to leave no doubt of this being a case of Diphtheria following scarlatina.

Now necessary it is then, to examine carefully into the history of a patient, when called to see a case of scarlet fever, and see whether the child has been affected some days previously with the usual symptoms of scarlet fever, even though no rash has been observed at the same time acquiring receiving answers in the negative, as to his ever having been affected.
With that year, we have strong presumptive evidence of the disease being really scarlatinal Diphys. In the few cases I have had the opportunity of observing, the Epidemic effusion had always preceded by a Night of Sealed Fever. This variety of Diphys is seldom observed in adult life; although Dr. Blackall had two patients (women), aged respectively, 46 and 50 years. Dr. Wells never saw one affected with this disease, older than seventeen.

Children and very young persons are generally the sufferers. Its greater prevalence at this time of life, cannot be referred to age as a predisposing cause. For when we remember the fact, viz, that the contagion of scarlet fever spread far and wide, leaving very few children unaffected by its influence, and that a very limited number take the disease a second time, considering also how small a proportion of those who labour under the year become Diphysial; it is not surprising that Diphysy resulting from such a year, is very rare in adult life.

Cold being the primary exciting cause of this Diphysial state of the Body, we
naturally expect its greater prevalence in winter in cold, and damp situations; likewise amongst the half-naked children of the poorer classes, as they are thus more liable to be exposed to the formerly mentioned exciting cause.

"We often see," says Dr. Wells, "several children of a family become affected with Dysentery after核算, whilst the children of another family who have lately returned under that fever, but among whom no instance of Dysentery has yet occurred. This seems to depend in part upon a similarity of constitution derived from common parents, and in part upon a sameness in the external circumstances in which children of the same family are commonly placed.

The symptoms denoting this malady, generally manifest themselves on the twenty-second or twenty-third day after the commencement of the previous fever; in some cases at an earlier, in others at a later period. Dr. Wells pronounced his patients out of danger, if no symptoms of the disease occurred before the end of the fourth week.

Dr. Darwell mentions the case of a woman,
who became anastaeous, as late as six months 
after the commencement of the preceding 
period. This favourable case scarcely be called a 
true case of scarlatinal choking, for many 
other diseases might have arisen during 
such a long interval, quite as liable to be pro-
ductive of a similar state of the loesy.

Symptoms.

Serious effusion is usually preceded for a day 
or two, by paleness of the face, gradually increasing 
obeity, languor, a feverish fretful manner, 
loss of appetite, a general distress and uneasiness 
caused by nausea vomiting. Presently the eyelids 
grows, hands swell, becoming puffy to the touch; 
the swelling extends—abdomen, secretion, legs, 
and lastly, and last, all participating, and giving 
nrise to what is termed general anaesthesia; 
the pulse is slow, frequently intermittent at the 
outset, but it afterwards becomes more frequent 
the urine is at first watery, high coloured, 
or for a time entirely without colour. Such are 
the symptoms which usually precede, and 
accompany this disease. So long as effusion is con-
fined to the subcutaneous serous tissue, the 
danger is not great. But as the disease advances
Headache, great irritability, contracted pupils, followed by convulsions, generally because these symptoms are not perceived, convulsions or paralysis being the first indications of affection of the brain; sometimes indeed convulsions precede the general anasarea, at least this is said to occur by Barrow (Praxis Medicæ, 1056, 129).

Again when the urine is very scanty, or entirely suspended, coma with or without convulsions, may come on, owing doubtless to poisoning of the blood by urea, which is obtained in that fluid, from the obstacles offered to its elimination by the obstructed kidney, and skin.

But by far the most common, and most to be dreaded, of all these secondary affections, is hysterica, before the occurrence of which general anasarea is much more marked than when other internal parts of the body are attacked according to Wall. The further remark, that when affusion occurs within the fluid, there is much more pain complained of and the appearance of danger is much more quickly perceived, than in other kinds of hysterica; and that patients will frequently recover from this disease, when, if it had arisen from other causes, and proceeded to the same extent, we should have dead
little hope of amendment. He explains this in the following manner: in this form of hydrothorax, the cause of the effusion does not remain to long in operation, as in other varieties of that disease: it also is produced by a want of balance between the secreting and absorbing powers of the vessels; and that when this balance is again re-established, there is only a certain quantity of fluid in the cavity, which is thus rendered if no organic injury be induced, by the capacity of its accumulation.

It would appear, therefore, that there may be amasacrdone, or that it may be accompanied with death of one or other of the secreting cavities; or that the circular tissue of the lungs may be the seat of the effusion. When convulsions continue during the presence of amasacrdone, the latter frequently disappears; but returns again on the cessation of the convulsions, owing to a metabolism of the fluid from the one to the other. The peri toneum is said to be very rarely the seat of this cephalical effusion; and that when it does occur, it is generally in connexion with disease of the mesenteric glands. I have a case now under treatment.
suffering from ascites, whose history is the following. 

Mr. Jones, 4 years of age. His mother stated, that his face began to swell about 14 days after being attacked with 
leukemia, which was very mild — only keeping him confined to the house for two days. This I ascertained on Dec. 1st. On examination the eyelids, feet, hands were edematous. The abdomen also slightly distended, 
but not so much as to impede respiration, the sounds of 
which were normal. The heart action was increased in frequency. 
Jugular weak. Tongue white, affixed to frenum, a good deal of 
trist, naso-sinus. Urine scanty, high coloured, and turbid 
depositing a white sediment on cooling, albuminous as 
formed by heat and nitric acid. He was ordered a dose of 
castor oil, with a warm bath, and warm baths of the 
P. Peri-Om. 3 times a day. Potassium nitrate also as a drink. 
The edema gradually diminished, but the ascites 
increased up to the middle of Dec., it was to go on to such 
considerable degree. The pulse still quick & weak. Massive 
urine the same. Marked increase of albumen in the urine, which was caused a larger quantity. P. Peri-Om—continued 
with light nourishing diet. Dec. 28 erste A. et H. 
was ordered.

Dec. 28 ascites much less, pulse still weak. Not a 
little firmer than previously, albumen scarcely 
discernable. Treatment continued as before.
In the kind of disorder now under consideration, we should pay particular attention to the state of the urine: for by observing the changes it undergoes, during the progress of the disease, we gather most important information as to the actual condition of the renal organs; and not only does it indicate in this way, the cause, which produces disease, but its approach may be detected long before, prior to any more obvious symptoms, by a daily examination of the urine.

I formerly mentioned, when detailing the symptoms of disease, occurring as a consequence of scarlatina, that the urine is rubbed at first in very small quantity, high coloured, and turbid. If it is allowed to remain at rest for some hours, a white plug-like matter gradually sinks to the bottom of the vessel, leaving the supernatant fluid clear, like pale common urin. When the urine becomes plentiful during the progress of the disease, it still presents a turbid appearance, when cooled, owing to the floating about of small shreddy particles. After some hours, the urine becomes of a pink colour, also turbid:
which likewise deposits a sediment on being allowed to stand. Plancis says it is often pink at first. Dr. Wells, on the other hand, says that it does not become pink, till about the seventh or eight day of the disease, and then only in a few cases; he considers it of very bad omen, as patients about recover very quickly, when the urine presents a pink appearance; for it depends upon the real matter of the blood. This he determined by testing with boiling water, which caused it to become of a dirty brown colour to be deposited, leaving the supernatant fluid clear. On washing the small black grains, to throw down, with water, it became coloured by them; on again subjecting this to heat, flakes formed as before; proving they were blood corpuscles. Rosen also states, that the urine is not only dirty, but like water in which flesh had been washed.

If we expose a portion of urine, coloured by a patient, who is labouring under cancerous consumption, upon scarlet paper, to action of heat, the flakes which condensed it turns, will be disturbed, before the heat rises to the
boiling point; when that is reached, the wine becomes opaque, from the collection
of curdy-like particles, which on cooling sink down
to the bottom of the tube used for testing; but
if this be present in the wine, any ammonia,
or soda, the compound albumen forms
with these alkalies, is not coagulable by heat.
The earthy phosphates may be precipitated
by heat, even though no albumen is present.
We avoid these sources of fallacy, by testing
the urine with nitric acid; which possesses
the property of precipitating albumen in a
fusible form; and likewise of converting the
previously precipitate, which heat brings down.
Again, if the urine contains either acetic,
or hydrochloric acid, it will form a com-
 pound with the albumen, which is soluble
in water, and uncoagulable by heat. So that
after the application of heat, nitric acid
should be added in excess; for even though
no acetic, or hydrochloric acid is present
if we use only a small quantity of nitric
acid, it will form a compound, soluble
in water, and not coagulable by heat.
When, by means of heat and nitric acid,
products gradually disappear: the fitznea
ear remaining after the cell, had nearly all
have been completely lost sight of.
The appearances, just described, were distinctly
visible in the urine of the boy named (age 10).
I examined it again on March 4th, noting
then remained of such crystals of letter being
all that was seen in the field of the microscope.
If therefore, along with albuminous urine, of
low density, we can detect the opalescent
minute matter in the deposited material, then
can be no doubt, that some change, of a chemical
character, is going on in the structure of the
kidney. That such alterations, in the con-
stitution of the urine, aided by patients
suffering under nearlatical disease, will be sufficiently proven by the following
analysis.

Gallephie. About eight years
of age, (york after Leaplatine), Oct 30.
Urine paler than natural; slightly turbid,
from the presence of flocculent matter; gives
a considerable magnesia on the application
of heat, and nitric acid. On examination,
with the microscope, it was found to contain small casts of the amorphous tubes with rounded cells, such as are described by Golding Blix, under the name of organic globules, but which are violently no other than the cells and nuclei of the kidney tubules. Specific gravity 1.016.

Analysis

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<th>Component</th>
<th>Quantity</th>
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<tr>
<td>Water</td>
<td>964.96</td>
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<tr>
<td>Salts</td>
<td>3.5</td>
</tr>
<tr>
<td>Amoeba</td>
<td>6.82</td>
</tr>
<tr>
<td>Urea</td>
<td>1.23</td>
</tr>
<tr>
<td>Extractives</td>
<td>9.5</td>
</tr>
<tr>
<td>Fixed ash</td>
<td>7.7</td>
</tr>
</tbody>
</table>

21st Amout of urine taken at 2.24 hours 81.37.
Ph 92-1011. Yellow turbidity.

25th 4th urine taken at 2.24 hours 26.05.
Considerable amount of light fluorescent deposit consisting of casts of the urinary tubes, &c. Ph 92-1013.

Analysis

Water: ............... 971.14
No. 9. Rumine of 24 hours. 30 cc. Ph. 97. 1611
characters as to defeat, the same as before.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Water</td>
<td>974.44</td>
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<tr>
<td>Bile</td>
<td>25.56</td>
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<tr>
<td>Urine</td>
<td>9.57</td>
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<tr>
<td>Albumen</td>
<td>6.48</td>
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<tr>
<td>Uric acid</td>
<td>1.81</td>
</tr>
<tr>
<td>Extractions</td>
<td>6.7</td>
</tr>
<tr>
<td>Direct rule</td>
<td>3.71</td>
</tr>
</tbody>
</table>

Nicol: a hog 6 years old, suffering
from Analactria. After leukastenia
Oct. 30th 1851 urine mixed in small quantity, gave
an abundant secretion with heat and
wax, and acid. In turds, well contains tur-
pered in it a flocculent matter, which, when
examined with the microscope, is found
to contain casts of the kidney tubule, and...
rounded cells, evidently identical with the nuclei of the secreting cells of the kidney.

Specific gravity 1.010.

Analysis showed it to consist of

Water: 97.710
Solids: 2.290
 Urine: 5.6
Albumen: 8.95
Uric acid: 0.2
Extractives: 3.8
Prescribed salts: 8.95

No. 7th Urine passed in 24 hours 10.03. Sp. Gr. 1.010
the same as above.

No. 5th Amount of Urine passed in 24 hours 12.03. Sp. Gr. 1.011.

Analysis:

Water: 97.3.2
Solids: 26.8
 Urine: 7.7
Albumen: 8.12
Uric acid: 0.8
Extractives: 4.5
Ash: 3.9
19

Our 9th urine passed in 34 hours 29 05.

By 97 1009 contains less deposit, but is pale in colour.

Analysis

Water ______ 980
Salt ______ 20
Urea ______ 5.6
Albumen ______ 6.2
Uric acid ______ 3.5
Extraneous ______ 4.8
Ash ______ 8.6

From the above analysis it would appear that the urine is diminished in quantity and of low specific gravity in this disease, notwithstanding the addition of albumen. This depends obviously enough upon the sensible diminution of urea, and the other solid constituents of the urine.

When the pathology of the kidney is being considered, I shall endeavour to account for the presence of albumen in the urine, as well as for the appearances which are revealed by the aid of the microscope.
Pathology of the Kidney.

The morbid anatomy of the kidney, explains, in a very satisfactory manner, the cause, which produces the unnatural constitution of the urine. The following are the general peculiarities of such a kidney:—it is increased in size, of a red or purple colour externally, on a cut surface may be seen the malkighian bodies, projecting silt-like, and turgid with blood, which oozes freely from the incised gland. Mr. Hamilton, who paid great attention to this subject (see) to scarlatinal Drunken, published an account of some cases which had been under his charge, and which proved fatal owing to the superincumbency of pleural effusion into one or other of the dorsal cavities. The kidneys were found after death to be, as follows:

Case 1st. The glands were softer than natural, of a dark red colour internally, to hard and indeed in the tubular structure, as to under the strick scarcely discernible.

Case 2nd. Was that of a boy, who died of a chest affection very early in the disease. Both kidneys were found to be mottled on their exterior, one softer, the other harder than
than natural.

Case 50. that of a girl. The kidneys were found large, soft, red, and partially mistaken externally. Dr. Hunt records a fatal case of extralateralis. In which the kidneys were seen to be enlarged, and contained their pelvis a great quantity of red coloured serum. Their vessels were engorged with blood, the whole substance of the gland was softer than natural, of a bluish colour, having the appearance of a fatty colonic-uremic blood was easily pressed from the incised surface by a scalpel. (Edinburgh Medical Journal vol. xi vii. page 9.)

Inflammatory action may be set up in the kidney, either by local, or constitutional causes; thus, the irritation produced by a stone in the bladder, or ulcer on the lining, or by structure of the urinoma, may end in inflammation of the renal organs. On the other hand, the constitutional causes which lead to such an inflammation depend upon some abnormal condition of the blood; for instance, the presence of that fluid of fatty matters, or of some peculiar fever poison, which tending to be eliminated, stimulate the kidney to increased action.
In searet fever there would seem to be some mysterious poison circulating and acting injuriously upon the system; the body is indeed called all its power, in order to expel this noxious material. The channels naturally chosen for its expulsion are:

Firstly, through the pores of the skin, along with the perspiration.

Secondly, through the kidney, with some of the matters forming part of the urine.

Thirdly, through the lungs, combined with the watery products of respiration.

Lastly, its expulsion is to some measure effected by being cast out of the body, along with fecal matter.

By such means its effect upon the body, especially the depressing influence it exerts upon the nervous system, is to a certain extent modified; even now it excites inflammation of the skin, terminating in an increased development of epithelium and edema matter of the cuticle, which peels off in sheets, to such an extent sometimes, that the skin of the hands and feet separates nearly entire. Some portion of the same poison is carried
to the kidneys, there to be eliminated, and in like manner produces increased development of epithelium, and subsequent coagulation. True, if the kidneys were previously healthy, and no obstruction occurs to the cutaneous transpiration, during the elimination of the previous matter, in due time its expulsion will be effected by their combined actions; the skin and kidneys, again, again their healthy condition and the patient be restored to health. If however during the process of elimination, any stop is put upon the function of the skin, the whole work of excretion falls upon the renal organs: for we know that the one acts in a manner existing of the other; that in winter the amount of urine is increased, perspiration being at the same time diminished, whereas during summer cutaneous exhalation is pre-dominant, the quantity of urine being proportionately decreased. So that where the function of the skin is obstructed, not only is there a larger amount of fluid to be excreted, but also an active irritation, the result being great congestion of the glands, and increased evolution of cells.
more than is commensurate with the necessity of a healthy kidney. Physiological sense is relaxing that all secretion is accomplished by the activity of certain elements from the blood by means of nucleated cells which cells grow, become discolored and lose their definite form, their substance and discharge their contents—the matter evacuated by the rupture is the secretion of the renal glanses. There is a certain resemblance between the cells of all true glanses. Thus each cell is a cavity surrounded by a membrane, containing in its interior a nucleus, and nucleolus, with the peculiarity matter required for its growth, this area, with the other blood constituents of the urine alone promotes the growth of renal cells; likewise the biliary secretion conduces hepatic cells, proving that there is a mutual adaptation between cell, and the matters they secrete, since both renal and hepatic cells are very similar; although less characteristic. Similar to itself, and easily distinguishable. It is beyond our powers of reasoning to explain why renal cells should secrete area, and hepatic vesicle bile. But the fact is
incontrovertible. We are only sure that it is one of the many peculiar previsions of nature. From this it will be apparent that when a material substance to be secreted, cells are enclosed for the purpose.

Dr. Johnson says, the increase in number of slightly altered epithelial cells, in aqueous disease, following scarlation, is a certain indication, that material not naturally forming a part of the renal secretion, are being secreted by the kidney. These materials are doubtless combined with the cells, and their secretion, from the bladder, is effected by the growth and development of cells. The increased quantity of blood in the kidney and the increased cell-formation, are mutually connected.

If a portion of kidney (undergoing such change) be examined with the microscope, the convoluted tubes may be seen crossed with cells, in all stages of development, amongst which othert of a dense opaque appearance are observable. Dr. Johnson says, the cells, developed by inflammation, either from those existing during health, by being smaller i
life, and more dense and opaque in structure. But, beside the cells, there are portions of coagulated gelatin, some bladelike cells. The cells may also be found blocking up the cavity of the straight tubes, and the collecting passages. This, in their passage from the convoluted, through the straight tubes. The essential changes in the structure of the kidney, then, are, a greatly increased vascularity, and a superabundant accumulation of epithelial cells. The larger state of the vascular system of the kidney, is kept up, and increased, by the great number of root of epithelial cells, which together with the fibrinous cast, collect in masses, obstructing and producing gradual dilatation of the urinary tubes. Just as when fat collects in the cells, which in their turn compress the vessels, ramifying upon their walls, producing in this way a congested condition of the Malpighian Bodies. The uriniferous tubes it appears are surrounded by a fibrocellular matrix, the meshes of which have a circular outline, in which the tubes are placed. Each ring surrounded by several fibrous rings. Moreover, the tubes fill up the spaces in which they
are enclosed; it follows, that dilatation of the tubes, necessarily leads to compression of the network of vessels which surround them, and all of the vessels ramifying in the fibrocellular tissue: therefore, the circulation through the vessels is retarded; producing congestion of the delicate vessels, forming the Malpighian tufts, and subsequent rupture of their walls, giving rise to the blood, which is seen in the tubes. It would appear, therefore, that the secretion of noxious material from the blood, by means of the kidney, stimulates that gland to increased action; which is evidenced by the great development of epithelial cells. The congested state of its vessels causes transudation of serum, the vessels to rupture, and discharge their contents: the fibrine of the blood is extravasated, coagulates, and makes itself to the kidney tubes. From the obstruction, these effects produce, we account for the reddish-glow of urine; and by the partial washing out of blood corpuscles, fibrinous casts, epithelial cells; these together with albumen, are to be noticed in the urine, during the progress
of leucocrotal abscess.

It is brought forward by some as an argument against the Dyshy, following specification, being dependant upon fatty degeneration of the kidney that those who labour under leucocrotal Dyshy for the most part recover: whereas such as are affected with Bright's kidney may be relieved, but never permanently recover. In Christianity it is believed, that fatty degeneration may be cured if kept in time and treated judiciously. But the argument against the Dyshy was under consideration. Arising from fatty degeneration is generally fallacious; for the following reasons: Those who suffer from Bright's disease, are generally of adult age, men in the lower ranks, often addicted to the use of alcoholic spirits, subject therefore to continual inclemencies of atmospheric inclemencies, these bodies weakened by interferences I want: the disease being from such causes complicated with itself, quite as deadly to life, and which frequently cause the death of the individual, among which may be mentioned phthisis, organic disease of the liver &; it is no wonder, that with such complications, and such variety
causes of disease still remaining in operation, that fatty regeneration is so little amenable to treatment. In the other hand, children, their health as yet unbroken by intemperance, and not having had many long years of stability preceding the affection, our hopes of success will be more promising. But, nevertheless, the affection of the kidney, which depends upon scarlet fever, is not a fatty degeneration of that organ; although it may as almost lay the foundation for that far more serious affection; by debilitating the system, perturbing nutrition, and consequently producing that malassimilation of fat, which leads to its deposition in the cells lining the tubular system of the kidney.

The congestion of the kidney, which occurs as a consequence of the elimination of a process that results from the elimination of fatty matters, posses many characters in common. Thus they both are the effects of some abnormal material circulating with the blood, which, in its struggle for elimination, produces a turgescence of the vascular system of the kidney, leading to affection.
of albumen, coagulation of album, which gives rise to albumen in the urine. In such the urine is less in density, deficient in urates, and other solid matters. Their secondary affections are also somewhat similar: such as strachal affusions, coma, etc. Yet well marked differences do exist, some of which are the following. Thus, the inflammatory action, which is induced by the irritation of a genitourinary, occurs generally in children whose health may have been good previous to the attack of scarlatina. Males and females are equally liable to be affected. The congestion is but of temporary duration, and in most cases easily removed, if treated judiciously. Whereas fatty degeneration comes on generally in adult life. Males are the most liable to this disease, from their necessarily being more exposed to its exciting causes. In the urine of persons labouring under Bright's disease, shown under the microscope, fat cells to be floating about in it. Lastly, the disease is very little amenable to treatment. From the causes previously mentioned.
Pathology of Diphtheria

Having now described the morbid appearances of the kidney, and causes which are suffixed to produce such appearances, together with the agency or elicited kidney exercises, in the production of albuminous urine, it becomes necessary to lay a few words regarding the mode, in which, officinal objections are produced. Allusions have already been made to this part of the subject, when the different situations in which fluid is liable to be escaped was being discussed. There are many and wide diversities of opinion, respecting the causes, inducing diphtheria after scarlet fever. Dehility, by some, is held to be the chief agent in its production. There is little doubt that dehility does operate injuriously upon the system; inasmuch as it prevents the necessary, and healthy process of absorption and assimilation to the blood, of materials fitted for the repair of the tissues. These constantly require to be renewed, as having being destroyed, being for a certain time, during which they leave a special end. Afterwards reading down
becoming disorganized, and reduced to a fluid condition, again to be reabsorbed into the blood, from which part is cast out as excrement, the other portion mingled with new matter purified from the primary digestion. Finally supplies the necessary force for new growth. Any cause, hindering this healthy process cannot fail to induce deterioration of the blood. It therefore loses its proper consistence, becoming more fluid. Blood globules, fibrin, albumen, disappearance of these constituents abound. This makes the absorption of fluids, forming the circulation of the general membranous extrinsic substance, at least of the experiments of Dutcher are correct, showing that a fluid requires to be of a thinner constitution than the fluid into which it is absorbed. Deity may certainly produce duty; but it requires some time to make it act in this way, the duty coming on slowly; whereas the reverse is the case in duty following starvation; it appears suddenly, a day or two perhaps after, the application of an enemy, cause, and frequently disappears as rapidly.
Again the healthiest children are as liable to be affected as those of a weak, and sickly constitution: lastly, the opacity is generally found to follow mild attacks of scarlatina for reasons before spoken of.

Dr. Jones & Cullen say that scarlatina has a tendency to weaken the alimentary system, incapacitating it for the carrying away of floculent undigested secretions and canaries. But the lacteals & lymphatics take little share in such absorption. Their functions are in the former set of vessels, the absorption of chyle in the latter. That of removing the putrifying and decaying constituents of the body.

Whilst it is now generally believed that the veins are the medium through which effusion and absorption are effected. Thus if the general vein is tied, oedema of the foot and leg is produced; effusion of the jugular vein causes effusion into the areolar tissue of the face, in certain forms of disease, as inflammation of ears leading to fibrinous deposit (of which phlegmonous salient is a characteristic example) enlarged liver, and pregnancy, also as
in like manner sometimes one and all obstructing the renal return and an undue plenitude of the veins results, in consequence of which, jaundice occurs. Consequently, when such obstruction to the renal return is removed, absorption quickly ensues. Again, that the alterations properly be called, are not in reality may be sought forward the fact, viz., during jaundice there is great emaciation proving that fat is absorbed. Such persons are also easily affected by mercury, which must be absorbed before it can produce any action upon the body. Various other examples might be adduced; but these sufficiently disprove the assertion that the jaundice is referable to inefficient activity of the lymphatic system. The origin of far lateral jaundice may be ascribed to three causes. Thus:—

Firstly, it may be owing to inflammatory action seizing on the tissue of the part, into which the water is passed.

Secondly, it may occur as a consequence of inflammatory action in another fact situated at a distance from the seat of affection.
Thirdly. It may arise from a combination of the two former causes.

In support of the first, may be brought forward the following, from Barreto's. He says, that two kinds of swelling, sometimes supererog upon the disappearance of the rash, peculiar to the fever, one warm, and the other cold. The former is firm & tender, but retaining the impression of the finger; the kind of swelling is accompanied by a hard, and frequent pulse, difficult respiration, moving, a dry and white tongue, great thirst; and lastly a scanty flow of urine. The Physician of Florence first observed this: and remarked, that patients, who were treated by diuretic, speedily died. On collection, it was found, that the lungs, pleura, intercostal muscles, diafragma, kidneys, and urinatory, were all more or less inflamed. They therefore bled from the arm, repeating the operation if necessary, by which means all were cured.

Hence, says he, "All the Physicians of Florence in observing this affection, laid it down as a rule, to employ the antiphlogistic regimen." Dr. Hamilton relates the post mortem appearances of a patient, who had been
The right pleural cavity was intensely inflamed, and presented an extensive coating of lymph, having a honeycomb appearance: three parts of exudate in a fluid were taken from the right cavity of the chest.

On the other hand, many authors state that they never saw any appearances that would indicate inflammation, having been the cause of the pleural exudate accumulation. In such a case, the fluid is the exudation of the pleura.

In all cases, a large amount of serum fluid was contained in the cavities, pleura, and peritoneum; but no trace of inflammatory action could be detected.

It may be easily supposed, that the same action, which produces inflammation of the skin and kidney, might also affect the serous membranes, in a precisely similar manner: or that these structures, are more liable to become inflamed, if the patient is exposed to sudden and great changes of temperature during the period of convalescence, from an attack of scarlatina. It is said, that in Russia and Berlin, scarlatina is seldom
dependant when kidney disease. They suffer
cold act upon the tender skin, and obstruct
the exit of purifiable matter, which produce
a slight local congestion, and immediate
effusion into the subcutaneous arterial tisue
a slight degree of fever accompanying the
effusion.

The second cause of this aqueous accumula-
tion arises from an overdistension of the
blood vessels, which is produced by the
obstructed state of the two great veins
for the draining off of the watery parts of
the blood; or, the thin and dilated
consequently the fluid leaks into the
and as the weaker tissue and dermis membranes
are moistened by such fluid during health,
yet the are the most convenient recipients if
that a mechanical effusion takes place
into their cavities into one or other
accordingly to circumstances. At the same time,
inflammation may attack these parts either
from the aeriality of the fluid to effused,
or from other causes of inflammatory
action: so that as before remarked, the
first and second causes together produce a third.
Treatments

A patient having had an attack of scarlet fever should be sedulously protected from all exposure to cold, wet or fatigue. When the acne particles are being formed, he ought only to venture from the house on fine days, until the new skin becomes sufficiently hardened to bear changes of temperature. When constitutional symptoms do occur, the vesicular tissue being the only part affected, the treatment to be adopted is, first, application of leeches to the limbs; for we know that the kidneys are the seat of congestion, second, diaphoretic remedies, of which the warm bath is one of the most efficient; this may be employed every night, and purgatives ought to be administered. If diuretics are used, they should be of a non-stimulating nature. The tincture of the muriate of iron has been found very useful in diminishing the amount of albumen in the urine. Probably by exerting a tonic influence on the renal capillaries.

If during the presence of anaemia, indications of inflammation attacking any of the intestinal parts become manifest, bleeding, along with purgatives, and small doses of
mercury should be employed; for even though the febrile excitement may not arise from true inflammation, i.e. an inflammation which would cause fibromous Ypogeys, yet we know that there is a venous plethora of the tissue which will inevitably lead to exudation (the more readily from the circumstances, that the serum of the blood is of a thin constitution, owing to the remaining away of its albumen through the diaphragm) if the over-distension of the tissue is not promptly relieved. If feasible, we should present the application of fluids; the very presence and pressure of which will seriously embarrass vital organs, even though it may not interfere with life— which nevertheless is very likely to happen if the fluid be poured into the pleura, or membranes of the brain. If the true effects of depletion we have numerous examples. Thus: Dr. Macleod related cases which were cured by blood letting. In the same journal, another instance of its usefulness is recorded (ib. Med. Surg. J., vol. 19, p. 225, & vol. 20, p. 135). Dr. Abercombie related two cases cured by it. Dr. Seward is another number of the same volume tells of one of his patients who recovered
under the use of the lancet (Ed. Medico-Juridical Journal vol. xi). Dr. Wood also gives several instances of recovery amongst the cases of Moott's hospital who suffered from dysentery after the epidemic scarlet fever of 1835-6. He employed pleurallettion in all cases, where symptoms were present indicating affection of the head or chest. For two days, moreover, all patients who have had any severe convulsive fits will frequently recover under the free use of the lancet (Ed. Medico-Juridical Journal vol. xi).

Dr. Overbach describes the dysentery which followed an epidemic of scarlet fever at Dresden. It proved very fatal; one in three dying. The treatment will probably account for this mortality, as it consisted in stimulant diuretics, with neglect of depletion and of all antiphlogistic means.

When the dysentery assumes a putrid character, our treatment of course will be chiefly toxic, such as quinine in small doses, combined perhaps with a little rhubarb, together with small quantities of a bland, gentle diuretics. The diet must be light, nourishing—and if the patient will allow of being removed—chance of cure would be beneficial.