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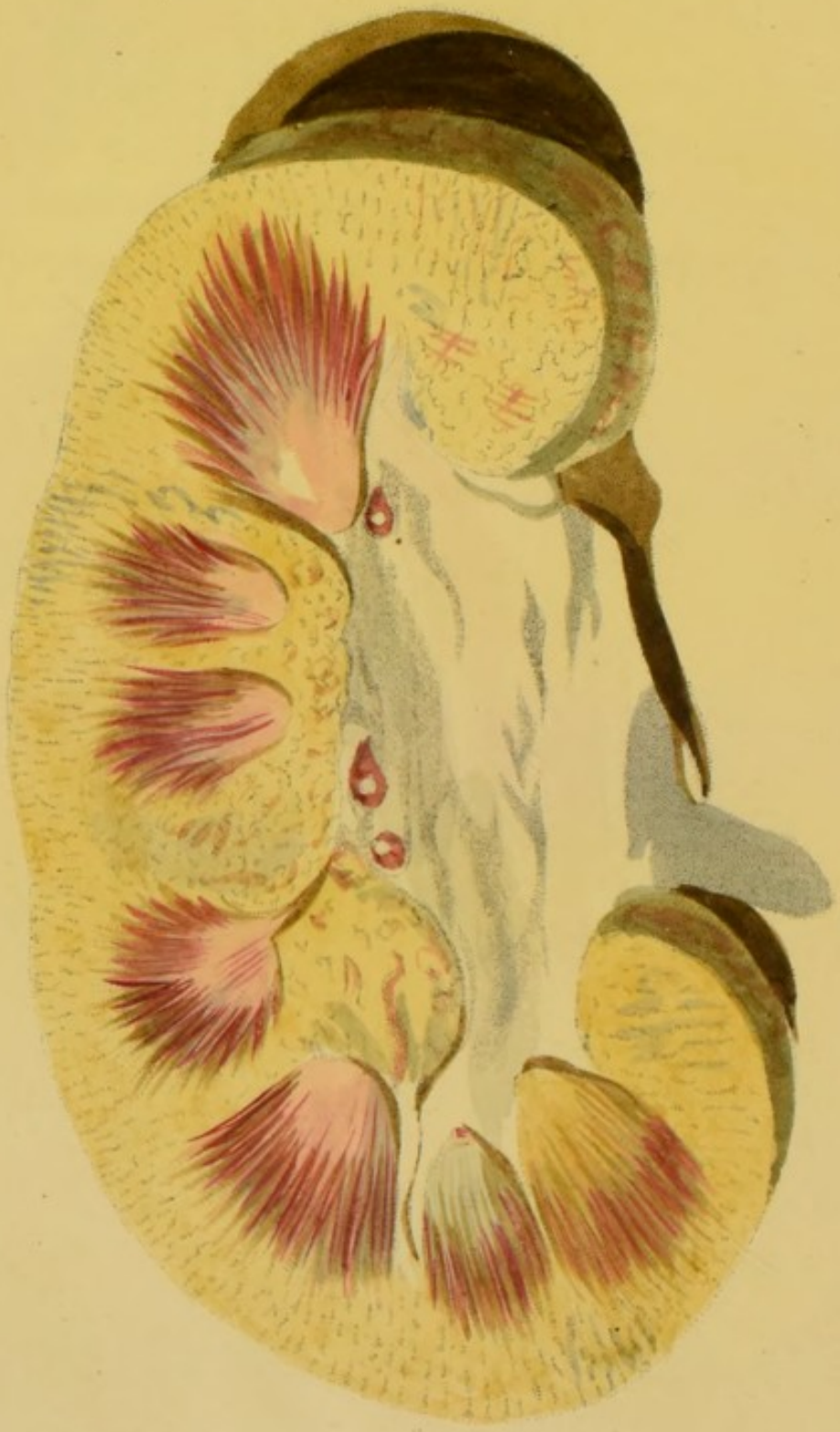

Allen & Whay 6 Trinity St

ON

DROPSIES,

CONNECTED

WITH SUPPRESSED PERSPIRATION,

AND

COAGULABLE URINE;

BY

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INTRODUCTION.

In the following pages will be found the result of my experience in cases of Dropsy, characterised by suppressed perspiration and coagulable urine, and which I do not hesitate to call *Renal Dropsy*. To Dr. Bright belongs, in the first instance, the merit of first distinctly tracing this disease to the kidneys; and, consequently, to him is due whatever important practical results have now been, or may hereafter be, derived from this fact. Having, for above eight years, enjoyed the most extensive opportunities of studying chronic diseases, as a Physician to the Clinical Hospital of Sir Patrick Dun, I have deemed it a duty which I owed to the public, to avail myself of those opportunities, in testing the accuracy of most of the medical opinions

which have appeared within that space of time. When I first read the statement of Dr. Bright, connecting coagulable urine with diseased kidney, I was quite unprepared to admit its correctness; and I have become a convert to his opinion only by virtue of a long series of observations, many of which were instituted in the expectation of overthrowing it. As I proceeded, new views presented themselves with regard to the peculiar treatment, and the exciting cause of the disease, which I now, from a conviction of their accuracy, venture to submit to the judgment of the profession. It was my intention to have subjoined a detailed account of the individual cases on which the following remarks are founded, which being, for the greater part, taken from the exact records of my patients in Sir Patrick Dun's Hospital, much weight would thereby be added to what is here advanced, more especially as in the treatment of those cases I consented to have my hands, in a great measure, tied up, in order to ascertain the precise effect of certain agencies. But, having observed that, of late, details of cases attract little attention, and that they are, in fact, seldom read, I have omitted them; and I now publish my observations in this brief

form, leaving their truth to be determined by the future experience of practitioners.

It will be observed, that the first part of this treatise was published in January 1834, having been read some months previously at the Dublin Medical Association, and that the latter part was read before the King and Queen's College of Physicians in Ireland, in December last. Although I have not literally complied with the rule laid down for authors by Horace [1], yet I feel that I have exercised a due degree of caution, and that I have not hastily rushed before the public with propositions which will not stand the test of experience. Both before I commenced, and since I finished writing the following observations, I have had under my care numerous cases of this disease not included in the detailed account above-mentioned; and the results have been the same, *without a single exception.* I therefore call upon any Medical Reviewer, who may deem these pages worthy of his notice, to deny *their truth only in as far as he can do so by the aid of actual observation.*

There are, no doubt, many improvements to be suggested in the treatment of dropsy with coagu-

[1] Nonum prematur in annum.

lable urine, upon which I have not entered. For example—what I have stated respecting the injurious effects of diuretics, is not to be understood as absolutely interdicting the use of them in every case. When the skin has been opened, and the coagulation of the urine diminished, they are admissible; but still in small doses, and at intervals, so as to avoid a continuous irritation of the kidneys. It is observable of diuretics in general, that they either act at once, or not at all. And when they do act, it is frequently not continuously, but at intervals. Hence arises a necessity of varying them: and if this be true in other dropsies, it applies with peculiar force to the disease now before us. When their use in renal dropsy has been followed by increased secretion from the kidneys, and subsidence of œdema, we shall generally find, upon examination, that the patient enjoyed the advantage of external warmth, and that bleeding, opiates, or other means proper to subdue the irritation of the kidneys were at the same time in operation. Hence the cures commonly attributed to diuretics I rather ascribe to the subsidiary treatment; and my observations convince me that, if the swellings are removed by diuretics, while the function of the

skin remains impeded, the disease has a constant tendency to return, and that it becomes more intractable at each relapse, unless prevented by the supervention of a chronic diarrhœa, which, for a time, supersedes the healthy secretion of the skin, but ultimately terminates in disorganization of the mucous membrane of the bowels, to be succeeded by a slow but certain prostration of the vital forces.

The restoration of the healthy state of the skin, on which I here lay so much stress, has appeared to be no less important in other diseases. Since the following pages were written, I succeeded in producing general perspiration in two cases of diabetes; and although I purposely refrained from giving these patients any increase of animal diet, yet I witnessed not only a steadily progressive diminution of urine, but a restoration of its healthy state. In these cases the morbid appetite and thirst were discouraged by a daily allowance of extract of liquorice, until the renewal of the functions of the skin having taken place, the urine became natural, and the appetite was reduced to the standard of health. The great neglect of the skin in modern practice is remarkable, when contrasted with the care bestowed on it by the older

physicians; and can be accounted for by its want of healthy action being evidenced only by remote consequences, and not by local and tangible effects. Hence, although unwilling to inflict a new name on the profession, I have ventured to introduce the term *Anidrosis*, as designating that peculiar disease of the skin, which consists in its not perspiring.

In the plate is represented a view of a kidney in an advanced stage of this disease. The yellowish grey, granular mass, impermeable to injections, is seen filling up the cortical portion of the kidney, while the tubular portions have become contracted, insulated, and more or less indistinct, towards their mamillary extremities. For the injection of several kidneys in this disease I am indebted to the skill and kindness of Mr. Carlile, demonstrator at the Anatomical School of Trinity College.

DUBLIN, 71, HARCOURT STREET,
31*st March*, 1835.

THE

NATURE AND TREATMENT

OF

DROPSIES

ACCOMPANIED BY COAGULABLE URINE, AND SUPPRESSED PERSPIRATION.

PART I.

FROM THE DUBLIN JOURNAL OF MEDICAL AND CHEMICAL SCIENCE. JAN. 1834.

It has been frequently observed, that dropsy should be considered rather as a symptom than a disease. Its occurrence in parts of the body previously sound, as a result of diseases of certain viscera, of debility, or of some impediment as to the functions of circulation or respiration, ought to have directed attention to the diseased actions believed to produce it, for information as to its nature and treatment. The classifications of dropsies hitherto adopted are about as rational and useful as would be a classification of diseases accompanied with excessive perspiration, under the

title *ephidroses.* Such classifications, embracing various affections, are injurious, by investing with a name a combination which is only a mental abstraction, and which has no actual existence. The connexion formed by including affections which happen to produce serous deposits, under the name *Dropsy*, has now begun to be dissolved. It is so well established that many of them arise from different and opposite states of the system, that in most cases inquiry is instituted as to the previous history of the disease; and few such affections are suffered to remain under the obscure denomination of dropsy, without some attempt being made to discover the *cause* of the serous effusion.

One kind of dropsy, however, has been suffered to remain longer under investigation than any other. It is not necessarily accompanied by any distinct local pain, and is not preceded by any disturbance of function, cognizable by ordinary observers, and it has been the work of many years to trace it to a diseased state of the kidneys. The first careful examination of the urine in dropsies was instituted by the late Dr. Wells. To him

succeeded Dr. Blackhall. Both these observers perceived that, in a great number of dropsies in which the urine coagulated by heat, there was evidence of inflammatory action, and that, in such cases, bleeding was productive of very marked benefit. Hence arose the class of dropsies designated inflammatory: and the practice with respect to these was much improved, and rendered more successful, by combining bleeding with diuretics; to which latter class of medicines the treatment had been hitherto exclusively confined. In addition to the cases adduced by Dr. Blackhall, we have those recorded by Dr. Crampton, in the Memoirs of the Association, which prove the benefit derived from bleeding in some cases, which, until this mode of depletion was practised, were progressively approaching a fatal termination. Here, however, the inquiry rested, till Dr. Bright made the important observation, that coagulable urine was connected with a diseased state of the kidneys. Since the publication of his work, Drs. Gregory and Christison have brought before the public large collections of cases and dissections, which all

bear testimony to the truth of Dr. Bright's observation. The cases of urine coagulating by heat, recorded by Drs. Christison and Gregory, were eighty-seven in number; and amongst those the granular deposit in the kidneys was always detected when examination after death took place. When these cases are added to the series of cases described by Dr. Bright, it must be confessed that they form a body of evidence to fix the pathology of an obscure disease, which merits the most serious consideration, in order to decide on the affirmative or negative of the proposition which they appear to establish. And yet, what has been their reception on the part of the Profession? A few statements were made, which, even if taken in their full extent, are inconclusive, and the truth of the discovery has been obscured by doubts and hesitations, rather than controverted by facts or arguments. The facts produced in opposition, so far as I have been able to collect them from the article *Dropsy* in the Encyclopædia of Practical Medicine, and from Dr. Copland's Dictionary, are the following:—

1st. That coagulable urine has occurred in adults who appeared to enjoy good health, and also in children.

2nd. That in some persons it can be produced by taking pastry, or other indigestible articles of diet.

3rd. That Dr. Darwall has adduced an instance of a woman who died from disease of the heart, and in whose lungs there were scattered tubercles, in whom the kidneys were found in Dr. Bright's first stage of disease, although the urine did not coagulate.

We shall consider these statements in their order :—

1st. The continuous secretion of coagulable urine by an individual, who, notwithstanding, remains in the undisturbed possession of health and strength, would prove, either that the secretion was not the result of disease, or that, if so produced, the disease must be unimportant, and inadequate to the production of any sensible disturbance of the functions. Whether such an instance as this can be produced or not, it is im-

possible for me to say; but I may be allowed to state, that in a considerable number of trials I have not found one example; and experience enables me to assert, that many instances may be found of coagulating urine, which appear to be cases of health, but which an attentive examination would prove to be connected with disease. I may adduce, as a specimen, the case of a young man, who, about a year ago, had palpitations, and œdematous swellings, for which his medical attendant prescribed bleeding and other remedies, with good effect, and then sent him to the country for the restoration of his health: he was lately brought to town, preparatory to the resumption of his ordinary avocations. He made no complaint, the palpitations and swellings no longer existed, and he believed that all his ailments were at an end: but the eye of his anxious mother perceived that there was still something wanting to perfect health, and he was submitted to my examination. His appearance was healthy, his appetite and sleep natural, and the only circumstance which affected him was an anxiety as to the motions of his heart,

in consequence of the opinion which his former attendant had entertained, of its being the seat of an organic disease. The heart's action, however, was natural: there remained then no complaint. I requested that a specimen of his urine should be brought, and, on observing its pale and cloudy appearance, tried it by heat, and found it to coagulate. Hence was opened a new field of inquiry; and it appeared that this young man, who, to a superficial view, would have appeared healthy, had a sensation of a dull weight in his loins, was in the constant habit of passing troubled urine, with dense mucous clouds, had dry skin, which never perspired except after the most fatiguing exercise, and altogether afforded complete evidence, that the kidneys were in the state which has been described by Dr. Bright.

It is true that in fevers, and other inflammatory diseases, an albuminous deposit is obtained on adding a saturated solution of corrosive sublimate. This urine is high coloured, and abounds in urea, yielding abundant crystals when treated with nitric acid, without requiring any pre-

vious evaporation. No coagulation, however, is effected by heat, unless it be so long continued at the boiling point, as to evaporate a large proportion of the water. There are also some individuals, who secrete constantly urine of this description, and in whom it may be traced to a habit of drinking very sparingly, by which a concentrated urine is produced. That a greater quantity of albumen in the urine is required to produce coagulation by heat, than by corrosive sublimate, is manifested by the following experiment:—I procured some urine secreted by an individual under these circumstances, which threw down an abundant coagulum to corrosive sublimate, but not to heat; and I found that an addition of a fortieth of its quantity of serum caused a cloudiness barely perceptible, a considerable time after it had commenced boiling, and that nearly twice that proportion was requisite to enable it to form a coagulum. Thus it appears, that such a proportion of albumen as may coagulate with corrosive sublimate, may be consistent with health, but that the quantity producing coagulation by heat is so

much greater, as to require a diseased state for its production.

The albuminous urine observed in children is very probably of frequent occurrence, which yet does not diminish the importance to be attached to it in the case of adults. The urine of children is at all times different from that of adults, in the proportion of its constituents. The quantity of urea and of uric acid is much less; and those are the deficiencies which are usually connected with albuminous urine in the adult. Hence we must not admit the value of albuminous urine as a symptom of a certain disease in the adult, to be diminished by the fact of the same being often secreted in infancy. The secretion is so different, that what is healthy in the adult would be esteemed morbid in the child, and consequently no comparison can be instituted between them.

2d. Here, however, we are met by the alleged fact, that certain healthy individuals are able, at any time, to produce a secretion of urine, coagulable by heat, merely by taking pastry, or certain other indigestible articles. Now this fact, if

worth any thing as an argument, amounts only to this:—'Coagulable urine is not an indication of the presence of a certain disease of the kidney, because it may be produced by eating indigestible substances.' In this proposition it is assumed, first, that the transient appearance of coagulable urine is the same thing as the continuous secretion of it, which alone constitutes the indication of the organic change of the kidney, of which we are treating; and, secondly, it assumes that this pathological phenomenon can only be produced in one way; and that, by showing that one way, it is proved impossible that it can be produced in any other. According to this mode of reasoning, we might prove that tenesmus is not an indication of dysentery, because it can be produced by aloetic purgatives; or that coma is not a symptom of apoplexy, because it can be produced by drinking spirituous liquors.

3d. Dr. Darwall's case of uncoagulating urine, in connexion with the first stage of diseased kidney, as described by Dr. Bright, carries no weight as an objection. The first stage of the disease is with

difficulty distinguished from the natural state, and is most likely to be confounded with, and appears almost identical with, that paleness of the kidneys, spleen, and liver, which occurs in scrofulous cases. And this was evidently a scrofulous case; as appears from the presence of tubercles in the patient's lungs, as stated by Dr. Darwall.

Those are all the adverse facts which I have been able to collect. But I find, with regret, that by some this important discovery has not been resisted by facts, but depreciated by loose observations, which deserve animadversion, when we consider the injurious effect which such may exercise on the progress of medical science, not so much with reference to this individual question, as to the investigation and settlement of medical questions in general. The truth of the statements made was not impugned; the extent of the field of observation—Guy's Hospital, and the Royal Infirmary of Edinburgh—has not been denied; the number of the observations recorded must have been admitted to be greater than has, within many years, been brought to bear distinctly on any one individual

proposition in medical science. And yet all these circumstances were dismissed with the trite remark, that *further observations are required;* a remark which is as applicable to the discovery of the Circulation, as to the question before us. By this remark we might throw an air of doubt over the best established propositions. It is so easily made, and, withal, so true when applied to every subject, that it is impossible to prove its impropriety. To this, however, has been joined the observation, that the writers, and the writers' friends, have not had opportunity to observe the connexion, and, therefore, they do not only disbelieve it themselves, but call upon others to do so, without producing a *scintilla* of evidence whereon to ground our disbelief, except the fact that *they* have not had, or have not availed themselves of, the opportunities of examining the question by the test of a sufficient number of experiments. This must forcibly remind us of the village lawyer, who, when his client had been convicted of stealing a sheep, by the positive testimony of three witnesses who saw him steal it, replied, that that evidence went for nothing, inasmuch as

he could produce many more credible witnesses who did not see him steal it. Thus, because those gentlemen have not seen the connexion between coagulable urine and diseased kidney, we are not to be permitted to credit the evidence of those who have seen it; and all the facts before us,—the result of long and laborious inquiries on this subject, —are to be dismissed with the unmeaning, because universally applicable aphorism, that *further observations are required!*

The number of cases of coagulable urine which came under my notice, and the details of which, for reasons stated in the Introduction, I have determined to omit, was thirty-six. Of this number examinations after death evince the disease of the kidneys in nine cases; while the remaining cases prove the existence of the same disease, so far as it is susceptible of proof, by similarity of symptoms, of cause, of collateral circumstances, and of *adjuvantia* and *lædentia;* and I can with truth aver, that I have witnessed many more cases which are not sufficiently detailed for the present occasion, but which, without any exception, corroborated the

truth of Dr. Bright's proposition. The negative evidence in my possession is too copious to be detailed. It is, however, decisive as to the question at issue. It consists of numerous cases of dropsies, connected with diseased liver, impediments of circulation, or respiration, or general debility, which terminated fatally, in which the urine was examined before death, and found not to coagulate, and the kidneys were found to be free from disease; also cases ending fatally, but unconnected with dropsy, in which the kidneys were healthy, and the urine did not coagulate. This evidence appears to me peculiarly valuable, inasmuch as during the last three years I have anxiously sought for every opportunity of examining the kidneys of every individual in whom the urine had been examined during life; and in no one instance have I met with coagulable urine without diseased kidneys, or healthy kidneys with coagulable urine. When I take this, my personal experience, in connexion with the great number of cases recorded by Drs. Bright, Christison, and Gregory, very few even of the most generally admitted facts in pathology appear to be grounded

on such a body of evidence. I have had under my care one case which may be esteemed an exception: in this the urine was rendered slightly turbid, and threw up a froth when heated to the boiling point. On dissection, the peculiar granulated structure was scarcely discernible; but one of the kidneys contained within its proper tunic, at its posterior surface, a mass of cancerous structure, presenting fungus hæmatodes, schirrus, and medullary sarcoma, altogether about the size of half an orange. This mass did not extend to the pelvis of the kidney, but was closely connected with both the cortical and tubular structure, from which it was difficult to separate it without causing a rupture of the adjacent parts. This occurred in a case of chronic bronchitis and emphysema, terminating in œdema of the lungs, and was unaccompanied by any complaint of pain or uneasiness in the part. In the other kidney there was an unusual hardness of the mamillated extremities of the tubuli, and an indistinctness in the striæ, exhibited by them on a transverse section; the cortical structure of this kidney being very little altered from its usual

appearance. In this case the slight coagulation was probably produced by the cancerous disease now mentioned, which, being closely connected with the interior of the kidney, caused irritation, and consequently a morbid secretion.

Some other combinations of circumstances deserve to be noticed. In a case of acute nephritis, in which both kidneys were filled with abscesses, and in which the urine contained a purulent deposit, there was no coagulation by heat; hence (so far as one case can prove) it appears that coagulation does not belong to suppurative inflammation of the kidney. In another case one kidney was filled with abscesses, and the other contained the grey granulation. In this case the urine corresponded to the state of both kidneys, by presenting a purulent deposit, and also coagulating. In a third case the substance of one kidney was entirely absorbed, being almost reduced to a bag, formed by its investing membrane and pelvis, in consequence of tumors formed within its uretur, which prevented the passage of the urine into the bladder, and by pressure caused absorption of its

substance; whilst the other kidney was enlarged to double its natural size, and deformed in shape by a large deposition of the grey substance: and in this case the urine was light coloured, and coagulated.

It appears from the experiments of Dr. Christison, that the urine in those cases is of less specific gravity than healthy urine, and that the urea is always diminished; the quantity rarely exceeding one-half, and in some cases amounting only to a fifth of that in health, whilst he, at the same time, has proved its existence in the serum of the blood. This is confirmed by the observations of Prevost and Dumas, who found, in their experiments on animals, that when the kidneys were extirpated, urea appeared in the blood; thus proving that this substance is not *produced*, but merely *eliminated*, by these organs. When an injection is thrown into the artery, even in the most successful manner, it will not penetrate into the greyish deposit. The cortical portion of the kidney is the chief seat of the deposition; yet we sometimes find it filling up, and encroaching so much on the other part, that

the tubular portion is limited to small, insulated portions; and in these cases the tubuli increase in density, and become more confused together, the nearer they approach their termination in the mamillated processes. In some of the most acute cases I found the lining membrane of the pelvis and upper portions of the ureters in a state of the highest vascularity, resembling crimson velvet. The changes produced on the size of the organ are remarkable, and in my observations appear to follow this rule,—that, in the more recent cases, the kidneys are enlarged beyond the natural standard; while in long confirmed cases they are reduced in size, and become hard in proportion; the cortical structure appearing to be removed, and replaced by the grey deposit.

The examination of the urine in this disease must be conducted according to one fixed rule, otherwise we shall constantly meet with apparent contradictions. The urine should be that which is passed in the morning before breakfast. It should not be examined till it has cooled. It then is usually of a pale citrine colour, simi-transparent or trans-

lucent, but not transparent like healthy urine; and at the bottom of the vessel there is an opake, whitish cloud, consisting of the mucus of the urinary passages, and differing from healthy mucus by its greater density and opacity; while in other cases it differs from the healthy state by containing no mucous cloud. On heating this urine, in a spoon, over the flame of a candle, white coagula are formed in those portions of the fluid next the metal, long before the heat has advanced to the boiling point: and when the heat is continued afterwards, the coagula become more firm and distinct. The lesser degrees of coagulability are signified by its not taking place till the fluid has boiled, or till some of it has been evaporated; by no coagula forming, and the fluid being rendered merely turbid; and, lastly, by throwing up a froth when boiled, which appears to be produced by the smallest quantity of albumen that can satisfactorily be tested by heat.

I may here mention, incidentally, that I use this mode of examining urine in other diseases beside dropsy, and without any expectation of meeting albumen. When urine with a copious sediment

occurs, and it is desirable to ascertain whether it consists of uric acid and the urates, or of the earthy phosphates, I pour off the clear urine, and heat in a spoon the sedimentous urine which remains at the bottom. If the sediment consist of uric acid and the urates, it becomes perfectly clear before the heat is raised to the boiling point; and the sediment is restored to exactly its former state on cooling. If the sediment consist of the earthy phosphates, no such changes can be produced.

The quantity of urine in this disease is variable, being not remarkable for scantiness, as is the case in other dropsical diseases. On the contrary, in most cases it is nearly equal to the drink, and in some cases exceeds it, approaching in this respect to the diseased secretion of diabetes.

The state of the skin is one of the most important facts connected with the disease. In all my cases perspiration was extinct, except in a few in which it occurred in the head, or in a transitory manner in the palms of the hands. When the perspiration was restored, in every instance a removal of the dropsical swellings immediately fol-

lowed. As this part of the subject, however, leads directly to the plan of treatment which I have to recommend, and which differs from that hitherto adopted, I shall postpone this, along with the consideration of the other symptoms of this remarkable disease, to the next opportunity.

PART II.

READ BEFORE THE COLLEGE OF PHYSICIANS, JANUARY 18, 1835.

On a former occasion I stated the facts which appeared to me to prove that albuminous urine, when continuously secreted, ought to be considered as a symptom of disease of the kidneys. Since that time I have continued to enjoy the same opportunities of observation as before; and, though I have anxiously sought for evidence, either adverse or favourable to this opinion, I have not met with a single instance of urine coagulating in a constant manner, in which an opportunity of examination

after death was afforded, that did not present the disease of the kidney; nor, on the other hand, an instance of the disease being found in the kidney after death, in which, on taking a specimen of the urine in the bladder, it did not coagulate. On a review of the notes of all the fatal cases I am also enabled to state, that the extent of the disease discovered after death has been, in every instance, in proportion to the degree of coagulation. Thus, when the urine only frothed on the application of heat, the kidneys, although gorged with blood, contained the grey, granulated structure exclusively in the outer portions of the cortical substance, and especially at the extremities of the gland; while in cases of complete coagulation, the entire cortical substance was filled, or rather superseded by the deposition now mentioned, and the tubuli were both compressed and rendered indistinct. In some of the cases which have last occurred, I have also to mention that the emulgent veins were filled with a substance resembling the buffy coat of the blood, but of a curdy texture.

I wished to pause before bringing forward this

second part of my observations, in order to be enabled to ascertain the precise effect of several remedial agents. I was much surprised to find that this disease, which last year and in former years had been so frequent, had now become comparatively rare; and consequently a greater delay took place than I had anticipated. During this summer and autumn, however, it has been nearly as prevalent as formerly. The fact appears to be, that chronic as well as acute diseases take place more in consequence of peculiar changes in the atmosphere, than from any other agency acting on our organization. They, like acute diseases, occur epidemically, but move as it were in a larger cycle, and cannot be observed in a limited space of time; and hence their epidemic character has escaped notice. Those who have the charge of large hospitals will, however, be able to recall to their recollection periods in which chronic rheumatism, dropsies, chronic bronchitis, or diarrhœa, prevailed, as well as those which were signalised by the simultaneous occurrence of acute diseases.

I have been favoured by a communication from

Dr. Barlow, of Bath, referring to a paper on dropsy with coagulable urine, published by him in the *Midland Medical and Surgical Reporter*, in May, 1832, which I regret not having seen. He has no doubt of the general truth of Dr. Bright's conclusions, and has considered him to have established the fact of a connexion subsisting between organic disease of the kidney and coagulable urine. I am happy to bring forward, from so eminent a practitioner, this additional evidence, of which I was not aware when I wrote the first part of this paper. Dr. Barlow has had the kindness to mention the particulars of a case which appeared to him one of albuminous urine arising from a derangement, *only functional*, which I shall give in his own words:—

"One of the earliest and most remarkable cases of the acute kind that I have met with, occurred in a hale, active man, who became a patient of the Bath United Hospital in May, 1830, for extensive dropsy of a highly inflammatory kind. The urine, when first tested in this case, coagulated by heat alone into a solid mass. By active treatment he got well, and was discharged in July. This man, a common

labourer, has continued well ever since—in constant work; to which he would hardly have been equal, if organic disease of the kidney, such as Dr. Bright has described, had remained."

With the utmost deference to very high authority, I conceive that the above case is an instance of *merely functional disease.* The continuous morbid secretion, always presenting the same difference from the healthy state, and accompanied by effusions into the cellular texture, are evidences of *a change, not fugacious, but permanent;* and when the cure of such a case is obtained, there is as much evidence of an organic disease being cured, as when a hepatitis, or gastritis, is brought to a successful conclusion. Although the highest acknowledgments are due to Drs. Bright, Gregory, and Christison, by whose extensive collections of facts, and laborious investigations, the connexion between albuminous urine and disease of the kidney was first ascertained, (a connexion which previously had been barely suspected,) yet the fact which they have established has not been at all examined with

reference to the influence which it ought to have on the treatment of the disease, and has hitherto remained unproductive. In those cases the urine differs from that of health by the presence of a considerable portion of albumen, and by the deficiency of urea. The quantity of the secretion, however, is variable, being more frequently in the healthy proportion to that of the drink than diminished. This last circumstance, occurring in a great majority of cases, first led me carefully to observe the perspiration, and the state of the skin. The result of my observations has been, that this peculiar disease stands in an intimate relation with the suppression of the healthy discharge from the skin, its connexion being so constant, that they may be fairly presumed to stand in the relation of cause and effect.

The force of the circulation in this disease appears to be depressed by the action of some specific agency not as yet ascertained. The surface and extremities are uniformly cold—the latter being either livid or pallid; and, on reviewing my

collection of cases, I find that in all of them the pulse was low, undulating, and ranging from sixty to ninety, except when they were complicated with inflammations; and that in those cases it was considerably less frequent than usual.

The perspiration was either completely extinct, or confined to occasional breakings forth in the head or chest, the palms of the hand, or soles of the feet. The skin was dry and shining, harsh to the touch; and, on examining it with a lens, the usual eminences belonging to the orifices of the follicles were no longer to be found, and the orifices themselves were hardly perceptible, except when they appeared like black dots, in consequence of being filled with the residue of old secretions.

Whenever general perspiration came on, either spontaneously, or in consequence of medicine, then the cases always terminated favourably.

The suppression of the cutaneous discharge must be attended with important changes, if we consider merely its quantity as determined by several observers. And although there is a great difference in

the results of their observations, yet they ought not to be passed over in our estimation of this the most remarkable and most uniform circumstance connected with the disease.

According to Dr. Bryan Robinson of this city, the perspiration is to the urine as 1340 to 1000 in youth, and as 967 to 1000 in old age.

Sauvages, who resided in the South of France, found that from sixty ounces of ingesta were passed off five ounces of fæces, twenty-two ounces of urine, and thirty-three of perspiration. Gorter, in Holland, assigned to the excretions nearly the same proportions; while Dr. Keill, of Oxford, found the perspiration to be less than the urine in the proportion of thirty-one to thirty-eight. This, however, was objected to by his contemporaries as being the result of a too liberal allowance of wine, the diuretic effect of which is well known. According to Linnings, who made his observations in South Carolina, the perspiration exceeded the urine during the five warmest months of the year, but was exceeded by it during the seven coldest. In all

these observations it was proved that the perspiration was most abundant in youth, and the urine most abundant as old age approached.

While those observations are sufficient to show the average proportion of superficial exhalation, and of urine, in a state of health, they are incomplete in not determining the proportion of exhalation of the lungs, as distinguished from that of the skin. This latter deficiency was supplied by the experiments of Lavoisier and Seguin. These were principally performed by placing an individual in a bag of gummed silk, accurately fixed round his mouth. The difference between the ingesta and the sum of excretions, and the weight acquired by the bag, gave the amount of pulmonary exhalation. This experiment was varied in different ways; and the result was, that the cutaneous was to the pulmonary transpiration as eight to five. Although it is much to be desired that those experiments should be repeated, and although, even in the most skilful hands, much diversity of result would be the necessary consequence of the difference of temperature, of age, and of constitution, yet enough has

been ascertained to prove that the fluid which is thrown off by the skin in health is to the urine, on the average, as ten to eleven. If the quantity of the cutaneous discharge is imperfectly ascertained, its chemical analysis is no less a desideratum. It is known to be decidedly acid, and to contain most of the fixed salts which are found in the urine; and when the water of it has evaporated, it leaves a deposit which is irritating to the skin, and in hot climates creates a necessity of constant ablution and change of apparel, in consequence of the acrimony which it acquires by heat. The sudden repression of this secretion in any given part of the body, is usually followed by an inflammation or excitement of some organ, or peculiar system of organs, according to the peculiar temperament of the individual. Thus, cold water long applied to the feet will produce in one inflammation of the conjunctiva, in another bronchitis, and in a third diarrhœa; or a partial draft of cold air blowing on the neck will cause in one cynanche, in another inflammation of the schneiderian membrane, and in a third rheumatism of the muscles of the neck,

according as the individual has been rendered liable to these affections by previous attacks of them, or by peculiarity of constitution. When cold is applied over the whole surface in a continuous manner for some time, and no inflammation or general fever has resulted, then an increased secretion from the kidneys is usually observed, and the necessity of frequent evacuations of the bladder during the frosts of winter has become proverbial, and is familiar to every one. When the suppression of the perspiration, however, instead of being transient, is rendered permanent, then permanent irritation of the kidneys is produced, and in the great majority of cases the result is the disease of the kidneys now before us; while in some comparatively rare instances diabetes, and in others more numerous chronic diarrhœa, with bronchitis, are the consequences.

On reviewing the causes of the disease in thirty-six cases, in twenty-two individuals it could be directly referred to suppressed perspiration. One of these was Thomas Leahy, a remarkably vigorous man, in his thirty-fifth year, of sober habits.

It appears that he was inconvenienced by the excessive perspiration of his feet, and that at the suggestion of a friend he wore fuller's earth in his shoes in order to repress it. The effect was immediate. The perspiration ceased not only in his feet, but also in every part of his body. Diarrhœa soon came on; and, when this was subdued by appropriate remedies, universal œdema, with coagulable urine, succeeded. Although, under the treatment adopted, the œdema was removed, yet the healthy action of the skin was never restored, and I am informed that his dropsy returned. In another of those cases the commencement of the disease was attributed to cold bathing: but the most frequent cause of it was remaining in wet clothes. As the excitement consequent on the suppressed perspiration takes place in the secreting portion of the kidney, and neither in the *tubuli*, nor in the membranes, no acute pain is perceived; and the patient is usually barely sensible of a weight in the loins, or of a thrilling sensation shooting down the thighs. Hence has arisen the obscurity which has attended the formation and establishment of this organic disease.

The next frequent cause is the abuse of diuretic drinks and medicines. Of the thirty-six cases, ten occurred in confessed drinkers of ardent spirits. One of these was able to follow his trade, until the circumstances attending the fire at the Custom-house afforded him an opportunity of indulging his passion for liquor. After drinking whiskey out of his hat to an extent which he was unable to define, he lay on the ground in a state of insensibility till late on the following day; and in addition to dry skin, and urine frothing by heat, he exhibited a complication of ulceration of the larynx, enlargement of the liver, and violent neuralgia of one of the frontal nerves. Yet in this individual the perspiration was restored, and he was freed of the œdema, and much relieved in all other respects. The confessed drunkards in my list of cases are limited to ten; but if we could ascertain the truth respecting the mode of life of all our patients, there is no doubt that many more would have been added to this number.

Diuretic medicines also have appeared to me to be a frequent cause of the disease. Squills and the

diuretic salts, although of the utmost importance in many affections of the thorax, yet when long continued, as they often are after the true indications for their use have ceased, become the means of bringing such on again by producing over excitement of the kidney, and this disease as a consequence.

With regard to the influence of other diseases. Of the thirty-six patients, four were scrofulous; three laboured under pericarditis; and three under valvular disease of the heart. This last connexion has been placed in rather a prominent point of view by Dr. Bright. In my cases the two diseases appeared to be combined only by both being the result of one cause, namely suppressed perspiration; and a great number of valvular diseases of the heart have occurred to me without any disease of the kidney, except the usual deficiency in secreting power; which, as a necessary consequence of impeded circulation, comes on towards the fatal termination of such diseases.

Of the thirty-six cases which came under my notice, two originated in the remarkable Influenza which visited us in the spring of 1833. That

epidemic was distinguished from most others by the following circumstances:—1st, The copious discharge of urine, which was observed in almost every instance, from the commencement to the termination. 2dly, The remarkable debility; and 3dly, The permanently pallid complexion which succeeded, and which in many young persons has continued, and thus deteriorated their appearance since that time. From those circumstances it is to be apprehended that many of the cases of impaired health, which commenced after that Influenza, were connected with suppressed perspiration, and that in them this peculiar disease of the kidney established itself. Besides the two cases now mentioned, I ascertained, in three or four cases of paleness of countenance after that Influenza, that, although unattended with swellings, yet the urine frothed on the application of heat.

Of the thirty-six patients, eighteen laboured under bronchitis in different degrees of intensity; eleven had gastroenteritic inflammation, denoted by thirst, vomiting, or diarrhœa; and the two diseases were in six instances combined in the same

individuals. Thus it appears that nearly two-thirds of the entire number laboured under inflammation of the mucous membranes. It is also to be observed, that in every case, before improved by treatment, the appearance of the mucus in the urine was such as belongs to irritations of the bladder and urinary passages, not forming a transparent cloud in the lower part of the vessel, as in health, but collected into dense opake flakes, and, for the most part, resting flat on the bottom of the vessel. The co-existence of those affections with the disease in question is best explained by this circumstance,—that they are all the effect of the one cause, namely, *obstructed perspiration.*

The fatal cases amounted to nine; and of this number four were amongst the confessed whiskey drinkers.

The mode in which death takes place when the disease is not disturbed by complication with other diseases is interesting, not only to the pathologist, but to the practitioner, who is thereby warned of the fatal tendency of certain symptoms which otherwise should be disregarded. In almost all my

fatal cases, when not complicated, it terminated life by the production of a low form of arachnitis; as was evinced by examination after death. This brought to light opacity of the arachnoid and fluid in the ventricles; the medullary fibres of the brain, however, being unusually firm and distinct. The invasion of this form of arachnitis was announced in the case of John Smith, (who laboured under pericarditis, with copious effusion into the pericardium,) by indistinctness of vision, and moaning during sleep, by gradually increasing somnolence, and depression of spirits; and on the day preceding his death he had several seizures of general convulsions, and remained in a state of stupor during the intervals.

In the case of Anne Doyle there was a large effusion into the right cavity of the thorax. About three weeks before death she began to complain of sounds in her ears resembling the ringing of bells. Although appropriate means were used to relieve the head, yet fits, with foaming at the mouth, insensibility, resembling that of epilepsy, and violent

pains at the vertex, continued, with intervals, to her death.

In the case of John Hacket, aged five years, who also laboured under enteritis, and in whom were found several knots of *intersusceptio* in the intestines, death occurred suddenly, but was preceded by convulsive contractions of the right arm; and in addition to opacity and adhesions of the arachnoid and fluid in the ventricles, there was a softening of the surface of the anterior convolutions of the brain.

In the case of Thomas Caffray, who had been relieved of the œdema, and of the most urgent symptoms of chronic bronchitis and emphysema, an imprudent exposure to cold, and subsequent excess in spirituous liquors, were immediately followed by diarrhœa and delirium; the function of respiration being nearly unaffected. Within three days from the invasion of those symptoms he was found dead in his bed, having walked about the ward in a delirious state within a few hours of his death.

In the case of James Brown, who also suffered

under pericarditis, the fatal event was preceded by a stupor of two days' duration.

In two cases which came under my examination since writing the above, the patients sank under a low form of peritonitis, which came on a few days before death. Those instances show the tendency to inflammation of the serous membranes, which the disease always produces, and which has been attributed to the acrimonious principles of the urine being no longer eliminated from the kidneys, and consequently communicating to the blood the property of irritating the more sensitive structures through which it is circulated.

Death took place in Catherine Reilly and Miss E., both scrofulous cases, from general debility; in James Kenny from bronchitis; and in Catherine Kavenagh from pneumonia, with broken down structure of the lung.

Thus it appears, both from the causes as related in the history of the individual cases, and from the average number of the accompanying affections, that this disease is connected more especially with suppressed perspiration, than with any other known

agency; but that it may also be produced by excitement of the kidneys from spirituous liquors.

Subsequent observations have convinced me that it is produced *in the most decided manner by a combination of both*, as when an habitual drinker is exposed to a long continued application of cold.

We now proceed to the consideration of the treatment.

A kind of dropsy was observed by Frank (de hom. curand. morb. 8. 153), characterised by no deficiency nor depth of colour in the urine, and with a tendency to diarrhœa, which he found to be more than ordinarily difficult to cure. In this we recognise the peculiar disease before us, and, at the same time, its obstinacy to the old method of treatment. My attention was first directed to the peculiarity of the treatment required in this disease, by observing that certain diuretics, when their use was long continued, not only failed in producing increase of the urine, but were followed by a marked diminution, almost amounting to a suppression of

that secretion. Having obtained possession of this fact, I separated the histories of the cases in which it occurred, and found them all to agree in presenting coagulable urine. Some few dropsical cases, without coagulable urine, in which diuretics did not take effect, certainly occurred; but these were connected either with impeded circulation, or extensive visceral affections. In such *all* the secretions were impeded, and therefore they did not disturb the truth of the general proposition.

When I attentively considered the cases of dropsy with coagulable urine, published by Dr. Gregory, I very unexpectedly found them to coincide with my observations. On examination of them, as recorded in the *Edinburgh Medical and Surgical Journal*, it will be found that the most remarkable diminutions of the secretion of urine occurred after the administration of squills and cream of tartar; while in other cases, in which the treatment was principally confined to bleeding and purgatives, the greater proportion of success was obtained. And without meaning, in the slightest degree, to detract from the merit of the several physicians who treated these cases, the necessity of bringing forward the

truth relating to the subject now before us, compels me to state the fact, that of their patients, amounting to eighty, forty-five died, being above one-half; while amongst the thirty-six cases which I have treated conformably to the views which I have endeavoured to explain, there were only nine deaths, being one-fourth.

When a patient was placed under my care, with general œdema, coagulable urine, and dry skin, I directed him to be kept in bed, in order to maintain warmth of the surface, which is usually disposed to be cold. It has happened frequently that, by external heat alone, an improvement both in the quantity and quality of the urine, and a material subsidence of the œdema, have taken place. The first medicine ordered was usually a purgative; and in the choice of this, in order to avoid ambiguity as to its mode of action, I abstained from the use of all those articles which are reputed diuretic; such as compound of jalap, or supertartrate of potash; and I generally employed the senna mixture. I then commenced a diaphoretic course, by administering foot baths, hip baths, or general baths; the last either of water or of vapour, accord-

ing as they appeared to agree best with the individual case, at night at the hour of going to bed[1]. The patient also took at night eight grains of Pulv. Jacob. ver. 4. of Pulv. Ipecac. c. Opio, and 10 grains of Confect. Aromat.

The usual drink was barley water. In case, however, of tendency to stupor, or headach, the Dover's powder was omitted, or given in smaller doses. In one case, in which no perspiration was produced by the above and other means, it followed the use of the following mixture: ℞. Aq. Acet. Ammon. ℥iv. Sulphur. Subl. ℥j. Vini Ipec. ʒj. Ext. Opii aq. gr. ij. Aquæ Fœnic. dulc. Syrup. Sacch. empyreumat[2]. utriusque ℥ij., one ounce to be taken every hour.

[1] I have seen that some practitioners prefer the employment of warm baths in the morning. But surely the less liability to cold, the greater tendency to perspire in every individual at night and during sleep, render the hour of going to bed the most expedient.

[2] The peculiar properties of treacle are better known to the common people than among the faculty. It is a popular remedy for cold, and when taken in quantity is a powerful diaphoretic, as I have often experienced. I know a healthy individual who cannot take more than a few table spoonsful of it, without undergoing a profuse perspiration.

When the vapour bath was not attended by perspiration, from want of reaction on the part of the patient, he was directed to take, while in it, two drachms of the Tinct. Guaiaci Ammoniat; when, however, (as sometimes happened,) both vapour and water baths produced coldness of the extremities, they were discontinued. It is to be observed that the drops of moisture which are condensed on the surface of the patient's body, while in the vapour bath, are often mistaken for perspiration. The occurrence of the latter can only be determined by ascertaining if the skin becomes moist after the patient has returned to the bed, which should, in every case, be warmed for his reception.

When there was a continued tendency to coldness of the surface, unaccompanied by feeble action of the heart, the diaphoretic preferred was Tinct. Guaiaci Ammoniat. ʒij. Sulphuris Loti ʒj. Mist. Camph. ℥j. Sp. Piment. ʒss., or the following: ℞. Carbon. Ammon. ʒss. Mist. Camph. ℥vj., an ounce to be taken every two hours. In connexion with these remedies, administered in the evening with a view to procure a perspiration during the hours of

sleep, warm applications were kept up during the day, and frequently a succession of bags of hot salt was maintained, when the heat of the extremities could not be otherwise preserved. When perspiration was restored in one part of the body, as in the trunk, but not in the limbs, the latter were rubbed several times during the day with an infusion of two drachms of bruised mustard seeds in distilled vinegar, with Naphtha[1], or some other suitable stimulating embrocation.

Having never failed in removing this kind of general dropsy *whenever the entire surface of the body was restored to a perspiring state*, it is not surprising that I should bestow the utmost attention on this part of the treatment. In a great number of cases, and especially those connected with bronchitis, the patient took three times daily, an ounce of the following mixture: ℞. Balsami Copaiba

[1] This liquid, (also known as pyroxylic spirit,) which is sold at the druggists, is highly volatile, and has a peculiar penetrating odour, to which the patient generally becomes reconciled. Its vapour has appeared to me to be advantageous in the cases of chronic bronchitis, with which this disease is so generally combined—the odour may be modified by the addition of Camphor ʒj. to the ounce.

ʒj. Misc. Gum Arab. ℥iijss. Sacch. g. s. ft. Emulsio. Adde Aquæ Cinnamomi Mist. Camph. utriusque ℥ij.—The use of this was first suggested by the appearance of the mucus in the urine, which in almost every case denoted irritation in the urinary passages; and in chronic bronchitis, with scanty and opake secretion, there is no more valuable remedy. Copaiba has been set down in the Manual of Materia Medica as a diuretic; but I never recognised this effect from it, except through its agency in diminishing irritation in the urinary passages. When given to patients who were kept under the influence of external heat, it always acted as a diaphoretic, and was peculiarly valuable in answering the indications usually co-existing in those cases.

Next in importance to the restoration of the function of the skin, and indeed in most cases expedient, as contributing to that great object, was blood-letting. It will be recollected that in Dr. Blackhall's work, and in the papers by Dr. Wells, and by Dr. Crampton, before the disease had been as yet traced to the kidneys, there was a

considerable body of evidence to prove the advantage of bleeding in cases of dropsy with coagulable urine. The circumstances which appeared to me to afford the strongest indications for general blood-letting were, 1st, the peculiar full and undulating pulse, which resembles that so commonly occurring in nephritis; 2dly, the co-existence of inflammation of other parts; 3dly, pain or weight in the region of the kidneys; 4thly, the appearance of blood in the urine. The blood drawn was not usually buffed; but the serum, in almost every case, was turbid, and especially, but not exclusively so, when the bleeding was performed within a few hours after a meal. In some cases cupping, or leeching, over the loins was resorted to, when there were some of the indications now mentioned; but when general blood-letting was forbidden by general debility, or other circumstances. Counter irritation over the region of the kidneys, is a practice which requires some caution in a disease attended with such languor of the capillary circulation, and in which there may often be danger of the formation of intractable ulcers. Yet the appli-

cation of moderate-sized blisters to the loins is a very suitable irritant, and calculated to promote the action of the diaphoretic medicines. The best mode of applying these is by lint steeped in tincture of cantharides, and covered with oiled silk. This has the advantage of superior cleanliness, of quicker action, and of not tearing the cuticle. Those vesications may be dressed with iodine ointment[1], or be healed rapidly by means of simple

[1] M. Coster has reported cases of dropsy successfully treated by the following preparations of iodine, viz. Hydriodate of Potash six grains, Iodine three grains, dissolved in one ounce of water, given in the dose of six drops, gradually increased to fifteen, in sugar and water; and by dressing vesications formed on the thighs with an ointment of half a drachm of Hydriodate of Potash, Iodine fifteen grains, and lard one ounce; also employing it in frictions to the soles of the feet and axillæ.

He has also made some curious experiments to prove the passage of the iodine through the different parts composing the animal structure. He injected a solution of starch into the bladder of a dog, and a solution of iodine into the rectum of the same animal. The urine in the former in a short time acquired a blue colour. He also injected the iodine solution into the rectum, leaving the bladder empty, in this case a blue colour was produced when the dog passed his urine into a vessel containing starch. (Journ. de Phar. Nov. 1834). I am obliged to state that I have not as yet been able to detect iodine in the urine of those who have been taking it, although I have not been unmindful of Dr. Clendenning's suggestion.

dressing, and thus a rapid succession of irritants be maintained.

With regard to purgatives: in many cases they were withheld, in consequence of the tendency to diarrhœa, which is so commonly observed in this disease. When purging, however, by the aid of medicine was required, those most frequently employed were the senna mixture, castor-oil, or rhubarb and magnesia. It is probable that in some of my cases other purgatives, such as gamboge, jalap, or crystals of tartar, might have been administered with considerable advantage; but I refrained from them for the reason before stated. In the management of those cases, purgatives should never be allowed to interfere with the administration of diaphoretics. They should, therefore, be given early in the morning, in order that their operations may be terminated before the patient is placed under the effect of the diaphoretics in the evening.

Calomel was administered in large doses, when affections of the head came on. These, however valuable in rescuing the patient from a state of

approaching coma, were yet followed by no benefit to the secretions of the skin, or of the kidneys; and I am induced to coincide with Dr. Bright in the opinion that mercury produces no beneficial result in this disease. It has also appeared to me to cause salivation in those cases with an unusual rapidity; an observation first made by Dr. Bright.

In two cases the general œdema was removed under the use of iodine (a grain and a half with three grains of hydriotate of potash dissolved in a pint of water, given in the day-time). As, however, both those patients were kept in bed, and by means of external heat a restoration of perspiration had been effected, they cannot be adduced as evidence in favor of the action of iodine in the disease. The object which I had in view in using it was to ascertain how far it would act in causing absorption of the morbid structure developed in the kidney. During the time of the residence of those patients in the hospital, the coagulability of the urine diminished very much, but did not disappear altogether; its colour and transparency were, however, completely restored. Had they been content to

have remained longer under the treatment, it is probable that a total absence of albumen in the urine might have been witnessed. In the majority of the other patients, dismissal from the hospital took place when the same degree of improvement had occurred in the urine, but before a total disappearance of albumen had been obtained; and as soon as the œdema was removed, the patients generally thought themselves cured, and became anxious to leave the hospital as soon as possible.

Individuals who have been thus relieved from dropsy by a restoration of the functions of the skin, are liable to relapses if exposed to cold, so as to produce a return of the cutaneous obstruction. Hence they ought to wear flannel next the skin, and to make a timely use of baths and frictions, in case of dryness of the surface recurring. For those in affluent circumstances a residence in a warm climate cannot be too strongly recommended. If the muscular forces permit, exercise should be used till the effects of it are perceived on the skin; and, as œdema of the legs may recur, in consequence of the previous distension and subsequent relaxation of the cellular

texture, it is expedient to wear bandages on the legs, until the ordinary vigour of health has for some time been established.

The diseases which were complicated with this affection have already been enumerated. The peculiar treatment which those complications required I shall now endeavour briefly to describe.

When combined with bronchitis, the use of Copaiba, as already mentioned, appeared of the most decided advantage. In dry bronchitis the following mixture usually caused free expectoration:— ℞. Gum. Ammon. Gum. Arab. Sacchar. alb. singul. ʒij. Bals. Copaib. ʒ ss. Aquæ Cinnamomi, ℥ iv. A tea-spoonful to be taken every hour and half. In some instances in which the Copaiba produced nausea, it was superseded by the tincture of cubebs, a medicine which, although totally differing from it in botanical and chemical relations, yet agrees with it in medical as well as sensible qualities. When expectoration continued to be copious for a long time, without any benefit resulting therefrom, and the principal distress arose from its quantity impeding respiration, then, in conjunction with

the diaphoretic course, the administration of acetate of lead, one grain, and watery extract of opium, quarter of a grain, four times daily, caused a diminution of expectoration, and, at the same time, diminution of irritation in the air passages. The application of leeches externally to the larynx, the number varying from two to eight, is a most important part of the treatment of bronchitis. The good effects of it are not confined to the larynx, but are apparent also in the unloading of the mucous membrane of the bronchial tubes throughout their entire extent, causing a more immediate cessation of cough, and relief of dyspnœa, than any remedial measure which I have had an opportunity of employing. In addition, blisters should be applied to the upper part of the sternum, and under the axillæ. I have generally used also, in these cases, frictions to the back, and sides of the chest, with the stimulating embrocations already mentioned applied several times daily. Under the use of these and other similar applications, I have frequently had the satisfaction of believing not only that the bronchitis was at an end, but that portions of emphy-

sematous lung were restored to a healthy state. If asked for the evidence of this latter fact, I answer, that regions of the thorax, which had an unnaturally clear sound on percussion, and yet no audible respiration, or which presented the dry crepitus, and clear sound of emphysema, were, when subjected to this treatment, found gradually to resume the respiratory murmur of health, while the peculiar dyspnœa, characterized by longer expirations than inspirations, was at the same time removed, or notably diminished [1].

When irritations of the stomach or bowels occurred, they were met by nearly the same treatment as if the disease now before us was not present. Leeches placed over the affected organ, with warm applications externally, and a diet consisting of rice, or arrow-root, frequently removed them in a few days. A tendency to dysentery, which is one of the most

[1] It will be recollected how traumatic emphysema of the cellular texture under the skin is often absorbed with facility; and there is no reason why emphysema of the lung, caused by rupture of the air vesicles from violent coughing, may not, in like manner, be absorbed, when once the coughing has been stopped. And yet emphysema has been considered as incurable, and no treatment beyond palliatives is usually applied to it.

frequent forms of this complication, and which commences by tenesmus and general excitement, was most speedily removed by an enema of four grains of nitrate of silver, dissolved in eight ounces of distilled water, followed in three hours afterwards by the starch enema, with tincture of opium. The first is retained only a few minutes, but the last generally remains several hours, and the irritation is then at an end. Although the efficacy of these measures, no doubt, depends much on the promptitude with which they are applied, yet they have been found not to fail even in long protracted cases of chronic dysentery, when aided by other appropriate treatment.

When combined with pericarditis, the internal use of tartar emetic, in addition to topical and general blood-letting, produced a great increase of urine, with amendment of all the symptoms; while a decrease occurred on two several occasions, in which it was for a time superseded by squills. In valvular disease of the heart, and, especially, imperfect closure of the aortic valves, the patient, in addition to the diaphoretic treatment, took a

mixture of a small quantity of tincture of digitalis, with carbonate of ammonia, camphor, and Hoffman's liquor. This combination was intended to act as a sedative to the heart, and, at the same time, as a stimulant to the circulation through the capillaries. Whether it acted in this way or not, may be questioned; but it was certainly followed by warmth of the extremities, diminution of the violent action of the heart, a sense of general relief, and a capability of sleeping with comfort at night.

The measure, however, which appears to me of the highest importance in diseased aortic valves, is the establishment of a large issue over the region of the heart. On some future occasion I shall bring forward some faithfully reported cases, which prove that organic disease of the valves is capable of great amendment, if not of complete cure, by this and other counter irritants, aided by the administration of suitable internal remedies.

General œdema, with coagulable urine, and obstructed perspiration, is not unfrequently accompanied by effusion of serum into the peritoneal cavity. This, when not considerable, or of long

standing, disappears along with the general swellings. When, however, ascites has formed either in consequence of chronic peritonitis, or induration of the liver, then, although the general swellings have been removed, we have still to deal with a refractory, and often intractable complaint. In addition to the means which are usually adopted, viz. courses of mercury and purgatives, I am enabled, from experience, to suggest some other measures, to the employment of which I must attribute the fact, that within the last four years I can recollect only one case in which tapping was performed in my hospital wards, while previously it was a frequent operation. These are the repeated application of leeches to the rectum[1], so as to unload the vessels of the vena portæ. The applications of various stimulants to the abdomen, as 1st, an ointment composed of equal parts of iodine, mercurial, and cantharides oint-

[1] In the *Dublin Medical Journal* I have described a convenient mode of introducing leeches into the rectum, by securing them with silk threads attached to the grooves of an instrument prepared for the purpose.

ments. 2dly, A paste formed of Spanish soap, spread upon linen, and sprinkled over with muriate of ammonia immediately before being applied; which, by the chemical decomposition that ensues, and the consequent gradual extrication of ammonia, produces heat and redness; 3dly, Sinapisms, suffered to remain till the pain becomes urgent. These have the advantage of healing with great rapidity. 4thly, Frictions of six or more drops of croton oil. These are, however, rather uncertain; in some individuals producing no effect, and in others followed by erysipelas, extending beyond the seat of the application. 5thly, A mixture composed of one part of tincture of digitalis, and two of aquæ muriat calcis; a teaspoonful to be rubbed on the abdomen, morning and evening. This compound appears to excite the absorbents, and increases the discharge from the kidneys, but does not produce any sensible redness of the skin. The application of these counter irritants and excitants of the absorbents may be continued, when the administration of mercury and of drastic purgatives has become no longer advantageous, or indeed safe.

It is certain that by these latter remedies the distension of the abdomen may frequently be diminished to a certain extent; but beyond this it is extremely difficult to proceed. Whenever the peritoneum has engaged in the process of morbid secretion, and the cavity of the abdomen has remained distended a certain length of time, it obstinately perseveres in retaining a certain quantity of fluid. The urgent and continuous use of the powerful remedies now mentioned, in such cases, is then not only abortive, but, sooner or later, causes irritation and ulceration of the bowels; and the patient sinks in consequence. It is therefore preferable, in those refractory cases, when the swelling no longer diminishes under the employment of internal medicines, to abstain altogether from their use for a time, and to rely on the application of counter irritants and bandages, together with regulated courses of diet, and changes of air, until the patient's vital forces are recruited, so as to enable us to make fresh efforts to dislodge the fluid.

When noises resembling the ringing of bells in

the ears, wakefulness, delirium, stupor, or headach, come on, then, if there is increased heat of the head, blood must be taken either from the temporal artery, or by means of leeches applied to the temples, or behind the ears. Calomel must be freely given, and followed by brisk purgatives. If those symptoms continue, it will be necessary to apply sinapisms to the nape of the neck, and to persevere in the use of mercurials. These symptoms, which are always of formidable import in dropsies, and peculiarly so, because usually neglected, and erroneously supposed to belong to the disease merely as symptoms, may, under this treatment, be very generally averted; and it would be acknowledged, from an examination of the fatal cases recorded in my table, that, though the patients died immediately from the affection of the brain or its membranes, yet in most, if not all of them, peculiar circumstances existed, which had the effect of disarming the remedies now mentioned of their usual powers, and which, in those particular instances, rendered the disease necessarily mortal.

In conclusion: the observations which I have

been enabled to make on dropsy with coagulated urine have appeared to me to prove,

1st. That it is always connected with disease of the kidney, which, when sufficiently advanced, is marked by the deposition of a greyish structure, impermeable to injections, within the substance of that organ.

2d. That the suppression of perspiration is the most general cause of this disease; and the long-continued excitement of the organ by spirituous liquors, or diuretics, the next in order of frequency and importance.

3d. That the most successful treatment consists in the restoration of the functions of the skin; which being accomplished, the disease, if free from complications, never fails to be removed.

4th. That bleeding and purgatives are also suitable remedies; while diuretics are either injurious, or, if removing the swellings for a time, tend ultimately to cause a return of the disease, under a more aggravated and intractable form.

The constancy with which either this disease or diabetes is preceded by a continuous repression of

perspiration, renders it expedient that this state of the skin should be considered as a peculiar disease; for which purpose it may be called *Anidrosis*. The use of forming this designation, is, to direct the attention of practitioners to a morbid state, which escapes observation because not signalised by pain, but which is not only a disease in itself, but leads to many other and fatal diseases.

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THE END.

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