

instead of his being apprenticed to a printer (as was intended), some agricultural occupation, or other pursuit requiring little exertion of the sight, should be selected. The use of a pierced diaphragm was recommended.

REMARKS. It is well known that clean incisions of the iris are seldom followed by inflammation, and an eye in which the iris has been ruptured by injury may be fortunate enough to escape: but when we consider the great violence done to the whole organ, the possibility of deep-seated effusion, and of subsequent insidious inflammation, such cases require to be closely watched. The effused blood which always veils the iris will speedily disappear under the influence of cold and of simple treatment, but strict antiphlogistic measures are to be enforced from the commencement; and if there should arise indications of inflammation, as pain deep in the eye, or about the brow, tenderness of the globe, and zonular redness of the sclerotic, mercury should be administered until the gums are rendered tender.

In the cases under consideration, the dilatation of the pupil is as great as that produced by a strong solution of atropine (which is always attended with considerable confusion of sight); but the impairment of vision is for a long time after the accident far greater than can be accounted for by any such dilatation. This is not surprising, when the character of the injury is considered. A blow sufficiently violent to cause rupture of the iris, is likely to produce concussion of the retina, and separation of that membrane might even take place; again, chronic inflammation of the retina may be excited. If concussion merely, the effects will gradually pass away, and the improvement of vision through a pin-hole aperture will be the index by which amendment can be traced. If inflammation has been excited, the injury to vision may be permanent.

So far as my experience has hitherto gone, injuries of the pupillary margin of the iris are little amenable to treatment. This will, no doubt, in a great degree depend upon the depth to which the fissure extends, and the consequent amount of laceration of the fibres which contract the pupil. If these are completely divided, the pupil will be widely expanded, and no application will cause its contraction; if only partially divided, a certain amount of contraction may be excited. The question will be anxiously asked, Is the eye likely to recover? for although after a time the organ becomes accustomed to the unnatural glare of light, the sight is under the most favourable circumstances seriously interfered with. A very cautious prognosis should be given. Time perhaps may improve the state of things; but if the laceration be extensive, it must be very doubtful whether the powers of reparation will be sufficient to bring the eye into a useful condition. The edges of the fissures are widely separated, and cannot be approximated by any means with which I am acquainted. The fissure may be likened to a cleft palate; but we are without the means which modern skill has supplied, of removing that defect by operation.

But do we possess any means of remedying the inconvenience arising from this permanent mydriasis? Unquestionably! by artificially imitating the contracted pupil, the eye may be rendered useful, unless damaged by inflammation. This is best done by means of a spectacle-frame, fitted for the affected eye with an opaque plate, either of thin steel, horn, or blackened tortoiseshell, and having in the centre, to correspond with the pupil, an aperture, either circular, or as a transverse slit. The form and exact dimensions must be a matter of experiment. Various forms and sizes should be tried, and that selected which affords the best vision.*

London, October 1855.

* Messrs. Carpenter and Westley, of 24, Regent Street, have had much experience in such cases.

ON BRIGHT'S DISEASE.

By ROBERT C. R. JORDAN, M.B., etc.

[Read before the Medical Society of Queen's College, Birmingham.]

THE intention of this paper is to bring before this Society a brief account of the symptoms, pathology, and treatment of those diseases of the kidney known under the common name of Bright's disease. In doing this, if the opinions here given differ slightly from those of authors on the subject, my hearers must remember, in judging me, that no two of these authors agree amongst themselves.

It is strange that whilst the minute anatomy of no other gland is so thoroughly understood as that of the kidney, and whilst, moreover, it has this additional advantage that its secretion can be collected and examined, there is yet more discrepancy in the various accounts of its diseases than in those of any other organ.

I said that its secretion can be collected and examined; no one doubts the utility of this as a means of diagnosis. The microscope and the test tube are to the diseases of the kidney what the stethoscope is to disease of the lung.

Bright's disease was not recognised before the early days of the physician from whom it takes its name; but the first step towards the discovery was made by Dr. Blackall, who was the first to detect the presence of albumen in the urine. Dr. Bright first saw the importance of this with regard to kidney disease, as also the importance of renal disease in producing dropsy, and, indeed, other morbid phenomena. His first case was taken in the year 1825, exactly thirty years ago. Since this time, many able men have worked at the history of these diseases, but the subject is yet far from exhausted, nor indeed has the attention given to it been as general as it ought; even in one of Dr. Graves' clinical lectures published as recently as 1848, he labours strenuously to prove that the albuminuria in Bright's disease is not a sequence of the changes in the kidney.

But though no pathologist who has ever studied the appearances of the kidney and the state of disease which had preceded them could now doubt this, yet there is an error, which must be avoided, of the opposite character. Albuminuria and Bright's disease are not synonyms, and albumen in the urine is far from being a pathognomonic symptom of the disease in question. Albumen may be produced by pus, from either the kidney, ureter, bladder, urethra or vagina; by blood, from either of the same localities, even, as stated by Christison, by particular kinds of food, in some people. That these last cases are very rare, is proved by that of the Edinburgh student, quoted by Christison, being always the one referred to. This rare effect of malassimilation should lead us to look on the case with suspicion, as likely to end badly. My friend Dr. Wade, in a conversation with me on this subject a short time ago, informed me that Bernard was wont to demonstrate to his class the fact that the albumen of eggs, injected into the veins of dogs, was got rid of by the kidneys, in the form of albumen, coagulable by heat.

Spermatorrhœa has again been given as a cause of albuminuria. Though a modified form of albumen, or a compound allied to it, exists in the seminal secretion, yet it is not coagulated by heat. But it is possible that the diseased secretion may be slightly modified, and that this may then be the case. Albumen may also occur in the urine from congestion, and yet the kidney not be primarily in fault. Thus, in cardiac affections, albuminuria may arise from the mechanical congestion of the organ. It requires, therefore, other evidence besides the presence of albumen in the urine to decide on the existence of renal disease.

Near the close of the disease, the albumen often gets much less in quantity. The cause of this is easily found in the appearance of the kidney at that stage of the illness. The albumen is rather, by its quantity, a measure of the amount of congestion than of the progress of the disease. Indeed, the albumen rather lessens than increases as the

disease goes on. Yet, as a patient generally comes under medical care for temporary increase of congestion, and augmentation of the symptoms from it, the diminution of the albumen may, in almost every case, be taken as a fair measure of the amount of relief afforded to him.

A few words may be said on the mode of testing for albumen: heat and nitric acid should both be used. Nitric acid alone may throw down a precipitate of lithic acid. Heat alone may throw down a precipitate of the phosphates. The both combined prevent these fallacies. A precipitate of albumen is often dissolved again if the amount of nitric acid added be small. In minute quantities, nitric acid forms a soluble compound with albumen, but adding more nitric acid again produces the precipitate.

The alkalis prevent the coagulation of albumen, and alkaline albuminous urine will not coagulate by heat alone.

It is said, that where copaiba is taken a precipitate is given by nitric acid, though no albumen be present, the turbidity arising from the presence of minute oil vesicles in the urine. Of this I know nothing from practice; but copaiba, like turpentine, irritates the kidneys, and may cause albuminuria.

The difference in the appearance of the precipitated albumen in different cases was noticed by Dr. Bright in his few first examples of the disease, and is probably known practically to all; in some, the albumen is white, dense, and opaque; in others, resembling isinglass, and almost transparent; in other cases it has a slight pinkish or a yellow tinge. These changes are occasioned by the density of the urine, from which the precipitate takes place, from the nature of the precipitant, from the quantity of albumen met with, and from other bodies also present in the urine, perhaps also from modifications of the albumen; nothing is known of the stage of the disease by these differences in appearance. The microscope sometimes detects albumen by the presence of its concomitants, when the chemical tests alone fail. Simon mentions that blood corpuscles can be seen where the quantity of albumen is too minute to be found by chemical reagents, and cases are not rare where casts of tubes are found in the urine, and yet no albumen is present.

It would be out of place here to enter upon the minute anatomy of the kidneys, yet it may be as well to call up some of the more striking parts of it to our mind.

The weight of the healthy kidney is from four and a-half to five ounces. On section it presents a cortical and medullary portion, the latter in the form of pyramids, on the surface of which the tubes open into the dilated extremity of the ureter.

These uriniferous tubes, very convoluted in the cortical portion, are straighter in the pyramids, and united by a firm fibrous network.

The Malpighian tufts, into which the arteries break up, are only found in the cortical portion of the kidney, and are there enclosed in flask-like dilatations of the uriniferous tubes. The vessels run in the fibrous matrix of the kidney, and entering the dilated portion of the tubes, there break up into capillaries; these emerge as a venous trunk in the same place at which the artery entered. This vein again breaks up into a plexus on the walls of the tubule.

The fibrous matrix of the kidney lies between the tubules, and is continuous with the investing capsule. In health it is not very marked; its existence was first pointed out by Goodsir, and since this by many observers, amongst whom are Frerichs, Dr. Johnson, and Dr. Gardiner. Others have regarded it as only a product of disease.

There seems to me much resemblance between the diseases of the liver and the kidney. The first and commonest forms of Bright's disease bear a strong analogy to cirrhosis of the liver, and may almost, according to my view of this disease, be said to be inflammation of the matrix of the kidney, this matrix being to the kidney what Glisson's capsule is to the liver. This form of disease is the albuminous nephritis of Rayer, and the desquamative nephritis of Dr. Johnson.

This inflammatory disease exists under two marked forms—the *acute* and *chronic*. The former showing a tendency to lapse into the second, if maltreated or neglected.

Acute albuminous nephritis is a synonym of acute renal dropsy, and is no doubt a rare disease, unless as a sequence of other maladies. In its most aggravated form, and one in which of course there is neither dropsy nor albuminuria, I mean ischuria renalis, it is very rare indeed. Here we have the secretion of the kidney entirely suppressed, coma and death generally taking place within forty-eight hours. But in the less aggravated and more usual form of disease, the history of the case, as I have often seen it in the London hospitals, is much as follows. An Irish labourer, probably of previous intemperate habits, comes down to work in Kent for the corn harvest. The nights of autumn are then beginning to get a little cold. He labours hard during the day time, and probably drinks hard also, and at night lies down under a hedge, or in some shed exposed to the night air. The next morning he feels too ill to work, he has pain in the loins and back, and feels stiff, feverish, and hot; the pulse is quick, full, and throbbing, the skin very dry; there is puffiness about the eyes, only because there the areolar tissue being looser it is more easily seen, for the effusion will soon increase, and the dropsy become general. The urine is very scanty; about half an ounce, or an ounce, of highly albuminous and smoky urine may be all that is passed in the twenty-four hours. It contains blood-corpuscles, with abundance of epithelial cells, and casts of the uriniferous tubules containing epithelia. In fact, it shows an abundant shedding of epithelial elements, and these, rather depraved and altered from the normal form. The specific gravity of the urine may be the same, or even higher than in health; but if allowance be made for the albumen present, the quantity of solids excreted, even when considered independently of the quantity passed, will generally be found to be below the healthy standard.

There are other concomitant symptoms besides those noticed above; there is almost always a tendency to vomit and great feeling of sickness; as the oedema increases there will also be more or less of dyspnoea, generally only mechanical, from infiltration of the pulmonary areolar tissue, sometimes from pleurisy, which is apt to occur; indeed, the tendency to inflammation of the serous membranes is very striking, both in this and in the advanced stages of chronic renal disease. Besides this, there is always more or less of confusion in the manner of the patient, and this may vary from slight, and scarcely noticeable heaviness, to complete coma.

Now, the treatment of such a case as this is obvious on a just view of its pathology. Could you see the kidney, it would be of a dark chocolate colour, large, and engorged with blood. It is this state of congestion which prevents its secretion, and on this your treatment must be based. Relieve the engorged condition of the kidney, and your patient will become better, and pass urine more freely. If the patient be very strong and robust, venesection may even be necessary, but cupping over the loins is generally a far more efficacious means of drawing blood. It is not difficult to get twelve or even fourteen ounces of blood from both loins in this way. Besides the general or local abstraction of blood, the congestion may be relieved by derivative means. Hydragogue purgatives afford one of the best of these, as at the same time helping to remove the effused fluid. Perhaps, indeed, nature, as is sometimes the case, has set up this mode of cure, and diarrhoea is present. If not, give the compound jalap powder, so as to produce full purging, or even elaterium, if the case be urgent, but usually the compound jalap powder can be longer continued, and is, therefore, the best. You must also determine actively to the skin, and the quickest mode of doing this is by the hot air bath. This mode of treatment is just as easy in private practice as in hospitals, and is too much neglected; a frame of basket-work is placed over the patient, of course allowing his head to be free, this being covered with oil cloth, the air inside is heated by means of a spirit lamp; the apparatus, therefore, is very

simple, and easily applied. After this, the action of the skin may be kept up by diaphoretics. The best prescription here is ipecacuanha wine, with nitrate of potash and camphor mixture, to be taken every four or six hours. Opium, even in the form of Dover's powder, seems to me objectionable, and diuretics are, I think, totally inadmissible. The real way to procure the reestablishment of the secretion of the kidney is to relieve the congestion.

The urgent symptoms may be, perhaps, rapidly removed by these means, yet the convalescence is almost always long, and it is of the utmost importance to attend to your patient most strictly; in no diseases is the after treatment so important as in those of the kidney. The diet must be of the mildest and least stimulating kind, and everything in the shape of alcoholic stimulus most carefully avoided; indeed, the patient should be kept on slops only; meat even should not be given for a long time. The recumbent position should be strictly insisted on. The action of the skin must be kept free by diaphoretics, and the bowels kept rather relaxed. Any deviation from these rules is sure to be followed by increase in the albumen passed with the urine. It is the safest plan to keep him in bed for some days after this has entirely disappeared, and even then only transfer him as an invalid to the sofa, or if poor, do not allow him to get up so quickly. In this way the disease will be cured, else the foundation will be laid for the slower, but more surely fatal form of chronic disease.

Such is the course of the idiopathic form of acute albuminous nephritis: it is more common, however, to find it as a sequence of other diseases; and of these scarlet fever is by far the most frequent, though, amongst others which may produce it, typhus, measles, acute rheumatism, and cholera, may be enumerated.

Suppose a patient recovering from scarlet fever, probably a mild attack. Desquamation of the skin is taking place. He exposes himself to cold, and after this shivering comes on; the urine becomes scanty, smoky, albuminous; and he has all the symptoms of acute dropsy. The difference between this case and the last solely consists in this, that the patient is already weakened by having been the subject of acute disease, and the treatment has to be modified accordingly. The patient will as a general rule not even bear the cupping advised in the former case. In no case that has fallen under my notice have the symptoms been as acute as in the idiopathic forms of the disease. The diminution of urine rarely amounts to anything at all resembling suppression; it seems also to attack weak and debilitated subjects in preference to others: the best treatment is therefore derivatives. Hydragogue purgatives should be given, and the hot air-bath and sudorifics resorted to. With light milk diet, and perfect rest in bed, the recovery will almost in every case be certain and complete: it is a disease rarely fatal, and rarely, unless neglected or complicated with unfavourable external circumstances not under control (as a poor ill ventilated room in a crowded city), giving origin to the chronic disease.

In one of the worst cases which I have ever seen of this disease, the danger was caused by a copious secretion of lithic acid, which, irritating still more an already irritated kidney, much increased the quantity of albumen, which before was diminishing. Epilepsy and coma supervened, but the patient eventually recovered. The longest cases of convalescence which have fallen under my notice have been those where the disease has been treated by leeches or cupping. In the general number of cases occurring in ill-fated scrofulous children, this treatment is certainly unnecessary and injurious, but yet in a robust country patient I can fancy that it may be absolutely necessary. Should the patient die in this stage of disease, the kidney will have much the appearance represented in Bright's fifth plate. It will be large, highly vascular, and softer in consistency than usual; and the capsule will be stripped off more easily. On examination under the microscope, free epithelia will be found abundantly in the uriniferous tubes.

The most common termination of this acute disease,

under proper treatment, is, I believe, complete recovery: it may, however, end fatally, generally from coma, or perhaps chest or heart complications; in very rare cases, it may proceed on to a suppurative stage. Such an example has never fallen under my own notice, but several are on record. Pus-corpuscles are seen in the casts of the tubes; a fatal termination must in such cases be looked for almost of course. It sometimes, as before said, lapses into the chronic form of the disease, though this latter is generally more insidious in its origin, and can rarely be referred to any acute attack.

[To be continued.]

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Association Medical Journal.

FRIDAY, OCTOBER 19TH, 1855.

THE ASSOCIATION AND ITS FUTURE.

FROM the admissions of those members of the Association who have most actively urged changes in its laws, it is now clear, that if, by any precipitancy, it is once destroyed, it will be next to impossible to raise a new one upon its ruins. At the meeting of the Metropolitan Counties Branch last week, Dr. Lankester well and wisely said, "I do feel that insuperable difficulties will arise to those who wish to act independently of the old Provincial Association. We have not the groundwork to go upon out of the Association that we have within it." Mr. Ancell, in the like spirit, spoke of the hopelessness of attempting to build a new institution such as would bear fruit to the present generation. "I see", said he, "with Dr. Lankester that immense difficulties are in the way of raising a new institution to fulfil it in a short space of time, so that we ourselves might derive advantage therefrom." These frank admissions from two of the members of the deputation present at the York meeting are of vast importance, as it can be no longer doubted that any course which may be taken adverse to a reconciliation of past differences *must tend in a wrong direction*. As long as there appeared to be a doubt as to whether it was possible to build the Association afresh, leaving out old subjects of difference, of course many members were entitled to hold that such an experiment might be tried; but, in the face of the "insuperable difficulties" spoken of by Dr. Lankester, we should hope that that opinion would henceforth be banished from their minds. We must modify and amplify upon the old foundations, the solidity of which has been tested by the lapse of twenty-three years, or we must cease to exist as an Association. This truth we wish strongly to impress upon the minds of that "large number of members" whom Mr. Ancell states, intend, on "certain conditions", to retire from the Association. What these conditions are we know not: probably they have reference to the spirit in which the Executive Council will receive the suggestions of the Metropolitan Branch Association. If we are right, it may not be amiss to remind them, that the Council has already, of its own accord, stepped forward to remove from the path of the Association its chief stumbling-block. Mr. Ancell says, "The name symbolises the spirit and constitution of the Association; hence we take our stand about the name."