in his bladder, and tells you that he has been accustomed to pass gravel for years, beware of him; in spite of his apparent good health, he will be unusually liable to severe rigors and urinary fever.

Next, saccharine diabetes is occasionally associated with stone. I have met with two such cases, and never had any more troublesome: there was in both very great irritability of the bladder and of the system generally; and if you should meet with the same complication, the case will probably require all the care and patience you can muster.

Lastly, there is that dilated condition of the kidney and the ureters which is due to long standing obstruction in the passages. This has been sometimes called "surgical kidney," a most inappropriate and unphilosophical term, and one which I never use. So far from being really a "surgical" kidney, it is one which denotes the want of surgical treatment; one which never would have existed had surgical aid been afforded at the outset of the malady. This condition is most frequently met with in cases of old stricture, also in cases of enlarged prostate, large calculus, long continued atony of the bladder, etc. Owing, then, to the presence of some obstruction to the escape of urine from the bladder, that organ becomes dilated and hypertrophied, the pressure tells backwards on the ureters, these and the pelves of the kidneys become dilated, the secreting substance itself is compressed against the capsule, and, finally, the whole organ may be distended into a sort of cyst. I have seen the ureters as large as the small intestine, and contain, with the pelves of the kidneys, thirty fluid ounces of water. A calculus by itself never produces this effect unless it be large, and not necessarily even then; it depends on the amount of obstruction. And now comes an important fact, viz., that all this may occur without any distinct symptoms; you may suspect that this state of things is present, but you cannot make absolutely sure. The patient probably has some cystitis, and consequently pus in his urine, but there is no more albumen present than the pus would account for; there are no casts; the urine may be of fair specific gravity, and there will even be no deficiency of urea; if there be, the patient will at once show symptoms. The fact is, that we are liberally provided with secreting and excreting organs. A man may live very comfortably, even though a considerable proportion of both lungs be blocked up with tubercle; two half lungs are sufficient under ordinary circumstances; but if he get a little bronchitis—an amount which a healthy man would scarcely feel—it carries him off; he has just enough breathing space to sustain life, but no margin to spare. Just so a man may live with two half kidneys; he gets along quite well under ordinary circumstances; there is just enough of the organs left to meet the wants of the system, but any small derangement upsets the balance, and serious symptoms appear at once.

A high authority abroad has stated that this state of the kidneys can be diagnosed by means of palpation, but I cannot confirm his assertion. It would be exceedingly difficult to detect with certainty a soft, movable, and collapsible tube like the ureter even in a thin person; but generally these patients are past middle life, and stout also from confinement; the parts are not sensitive, unless suppurating or a renal calculus be present. You may often be able to make a shrewd guess; but even a strong suspicion is not a sufficient ground for refusing to relieve a suffering patient.

In the next place, to what extent does the presence of renal disease affect the prognosis of lithotripsy? Omitting slight cases, I have operated on three patients who were suffering from *advanced* chronic Bright's disease. The first was some years ago. A very pale, weak, and puffy-looking man, with a large phosphatic stone, came to me to be operated on, but I refused; he, however, begged so hard that I would do something for him, and was in so much pain and distress, that at last I took him in. Even then I kept him three weeks under observation before I did anything, which is not my usual custom. I then crushed the stone very carefully in eight sittings, allowing a good interval between them. The man was in the hospital three months—three times as long as most of my patients—but he went out freed from his trouble, and died of the kidney-disease nine months afterwards without any recurrence of the calculus.

Some time afterwards, I operated on a second and similar case. He had some rigors, but went out at the end of ten weeks cured of his stone; he came to show himself three months afterwards, when he had still a large amount of albumen in his urine, but no recurrence of the stone. Emboldened, perhaps, by success, I attempted a third and worse case shortly afterwards. This patient went on well for a time, but after the fifth sitting uræmic symptoms supervened, and he died.

I cannot tell how many cases of mechanical dilatation of the kidney I may have operated on with success; for, as I said, I know no means of ascertaining with certainty during life the existence of the disease; but I have little doubt that there has been more or less distension of the ureters, etc., in a considerable number of the more severe cases. I may instance particularly three cases of stone complicated by very tight and

old standing stricture. My plan under such circumstances is to tie in catheters for a week, or until I can introduce a small lithotrite; after each crushing I replace the catheters, and continue them until the stone is removed. I have not the smallest doubt, judging from the history and state of these patients, that all had some, perhaps a considerable, amount of disease; yet in each case the result was successful.

Surgeons have said that, if a patient with stone in the bladder have also chronic disease of the kidneys, the best plan is to cut him; to have one operation and have done with it, and not to go on teasing the man with instruments for several weeks. I can only say that lithotomy would certainly have killed any one of the three pale, feeble, bloodless patients I first mentioned; indeed no one of the six could have been cut—no surgeon would have thought of it. It is just fifty years since lithotripsy was first introduced, and up to thirty years ago, or less, this dictum was true, but it is not so now. The statistics of lithotomy were never better than they were fifty years ago; indeed they are now scarcely as good, for since then many of the most favourable cases have been treated by crushing. The statistics of the lithotripsy, on the other hand, have improved, and are improving every year. Lithotomy, then, has stood still; lithotripsy has been greatly improved, and the axiom is consequently now reversed. There is no doubt with our present experience that, if only the stone is sufficiently friable, lithotripsy, *if skilfully performed*, is the best operation in such cases: the shock, loss of blood, etc., of lithotomy make considerable demands on the strength of the patient. The lithotripsy must, I repeat, be very carefully done; of the two operations, that of crushing is certainly the one in which previous practice on the part of the operator makes the greater difference in the chance of curing the patient. Therefore, I say to you, inasmuch as you may be well able to do a good bold operation of lithotomy at the outset of your career if you have surgical talent at all, do so with any doubtful case, or if the stone be at all large, until you have had a little experience with two or three cases of small stones by lithotripsy. Whatever you do by that means, let your early attempts be always made on small calculi only.

In conclusion, I may repeat the advice which I am constantly giving you. Always find the stone, if possible, when small; the symptoms produced by a stone, say of the size of a nut, are clear enough. There is no question, then, about the advisability of cutting or crushing, or about the presence or absence of kidney-disease; crush the stone at once, and the cure of the patient is almost certain.

THE ORIFICES OF THE UNIMPREGNATED UTERUS, AND THEIR SURGICAL TREATMENT.

By J. MATTHEWS DUNCAN, M.D.,

Physician to the Royal Maternity Hospital, and Lecturer on Midwifery in the School of Medicine, Edinburgh.

IN the JOURNAL for November 9th, and for November 16th, 1872, I published a paper on the Mechanical Dilatation of the Cervix Uteri. This paper had on every side important practical bearings; but it was intended to be in the main a scientific, as ordinarily distinguished from a practical, paper. This distinction of scientific from practical is unfortunately still too true and too evident, to require any justification or explanation. It is the grand object of gynaecologists to unite practice and science; and every sure step in this direction is essential and everlasting progress not only for science, but also for humanity.

To the criticisms on this paper, I made a brief response in the number of the JOURNAL for January 25th, 1873. Since that date, farther criticisms have appeared in the same journal from Dr. Heywood Smith and Dr. J. H. Bennet. Whilst I wish to express my indebtedness to these gentlemen for their valued and courteous remarks, I feel called upon to make some entirely new statements on the subject under consideration. The remarks of Dr. Henry Bennet are, with few but important scientific exceptions, so just, and do so appropriately condemn much of the prevalent gynaecological practice of the day, that I am glad to have an opportunity of expressing my approval of them; and also to explain, however imperfectly, my own views as a practitioner in diseases in which the size of the canal of the cervix uteri is directly or indirectly implicated. This paper is not, like my former one, scientific—it is more of a practical character; and much of what I have to say conveys not facts, but views or impressions, which I meantime firmly believe. A daily and generally a laboriously gained experience in gynaecology of above a quarter of a century finds me very doubtful of the true character of many of my own and others' supposed facts; and I can, in most practical matters, be sure only of honest zeal in the pursuit of truth.

The State of the Orifices of the Uterus.—The orifices of the uterus I have never found closed, except in an occasional rare case of complete atresia of the internal os of the cervix. Using the word stricture in the ordinary surgical sense, I can say that I have never seen or heard of an acquired stricture of the orifices of the uterus or of the canal of the cervix. I have often heard of stricture of the womb; but the term has then been applied in a loose and improper way to instruct or to amuse patients.

Some cases of congenital stricture or partial closure of the external os uteri have occurred to me; but such cases are very rare. This condition and other contractions of the cervical canal do not deserve the name of stricture, because they do not obstruct the passage of uterine mucus or of healthy menstrual discharge (see the *Journal of Anatomy and Physiology*, November 1870, p. 150). Plugs of coagulated blood or of dense mucus may more or less firmly close the orifices of the uterus. The external os uteri may be, in a certain sense, closed by being adpressed by the neighbouring vaginal wall. The canal of the cervix and its internal os may be, in a certain sense, closed by swelling of the walls, or by an acute flexion, or by a growth, whether sessile or polypus-like. The external os uteri is larger and more easily dilatable than the internal os uteri. Both are, when in a state of health, at all times easily permeated by an ordinary uterine sound. Except in very rare cases of congenital or acquired contraction or stricture, both ora uteri are, in a state of disease, easily permeated by an ordinary uterine sound. The difficulties, very rarely insuperable, of passing a sound arise from missing the way, not from any obstruction. Both ora uteri may, when in a state of health, be easily and rapidly dilated to a considerable extent. By the use of bougies they may, in a few minutes and without any acute pain being excited, be dilated so as to allow a No. 9 or a No. 13, or even a higher number of the ordinary male urethral series, to pass; or, in other words, to allow a bougie a quarter of an inch in diameter to pass.

In cases of spasmodic dysmenorrhœa, the passage of a bougie, however small, through the internal os uteri causes great pain, identical with that of the spasmodic dysmenorrhœa; and not, in my opinion, identical with the tenderness elicited by the same kind of touching when the mucous membrane is inflamed, as in inflammatory or in membranous dysmenorrhœa. In such cases, the dilatation of the internal os by bougies causes great pain, like that of spasmodic dysmenorrhœa. Further, in such cases the internal os is occasionally small, sometimes transmitting an ordinary uterine probe with a little difficulty; and the dilatation of it must be by very slow degrees, if it is to be done by a gentle or slight force, without causing any split or laceration. The internal os uteri does not retract to its pristine condition after dilatation, but remains large for a long time (years), if not permanently; at least in many cases.

The Nature of Spasmodic Dysmenorrhœa.—Dysmenorrhœal pains, resembling those of the characteristic spasmodic disease, may be produced by uterine contractions overcoming or attempting to overcome an obstruction. Examples of this are seen in the expulsion of clots, or of dysmenorrhœal membrane, sometimes also, but rarely, in cases of acute flexion of the uterus; but the pains are, in all these cases, generally of comparatively short duration, and not so severe as those of an ordinary bad spasmodic dysmenorrhœa.

I have elsewhere (*Edinburgh Medical Journal*, May 1872) given abundant reason for regarding obstruction or mechanical hindrance of discharge as having nothing to do with the great mass of cases of spasmodic dysmenorrhœa; yet it is well known that the attractive simplicity of mechanical obstruction has given it at present the chief place as a cause in the minds of gynæcologists generally, who accordingly term the disease mechanical dysmenorrhœa.

The pain is spasmodic; it may occur before, during, or after the monthly flow. There is extreme sensitiveness of the internal os uteri and of the mucous membrane of the body of the uterus. It is quite possible that a condition of inflammation of the mucous membrane may exist, but it has not been demonstrated. Many attempts have been made to establish the diagnosis and treatment of chronic inflammation of the mucous membrane of the body of the uterus, but they are in the highest degree unsatisfactory and inconclusive. Although this be true of the present condition of these ingenious attempts, and although they do not throw any clear light on the theory or treatment of this kind of dysmenorrhœa, yet very much may be expected from investigations pushed in this direction.

The process of healthy menstruation has, as has been pointed out, a great resemblance to an acute catarrh—softening and thickening of mucous membrane, intense congestion, secretion of mucus, shedding of epithelial cells, and escape of blood. When conditions similar, but morbid, occur in the bladder, we often have strangury; when in the rectum, we often have tenesmus; when in the bowels, we often have

termina; when in the bronchi, we often have asthma. So it is possible that, whether passing the bounds of health or not, the same conditions in the womb may induce spasms or spasmodic dysmenorrhœa. This is the nearest approach I can make to a theory of spasmodic or so-called mechanical dysmenorrhœa.

To this theory there is the objection, that it does not include and account for the sensitiveness of the mucous membrane of the body of the uterus, and the relief the disease got by dilatation of the internal os of the cervix: at the same time, it is to be observed that these two circumstances are not hostile to the theory, and may be quite reconcilable with it.

The Treatment of Spasmodic Dysmenorrhœa.—This may be divided into two parts; the general treatment, similar to that of all painful spasmodic diseases, and the special treatment of the uterus.

Of the former I need say nothing in this place, as it is well-known, extremely unsatisfactory, and has little connexion with the subject which is under discussion. Many cases of dysmenorrhœa recover under this kind of treatment; but it is difficult to apportion the due share of credit to the medicines and to time or the natural progress of the case.

A severe chronic case of dysmenorrhœa tests the powers of medical treatment; and the attainment of good results from it is at least not to be relied on. Yet there can be no doubt that diaphoretics, laxatives, narcotics, warm bathing, and hygienic treatment have a considerable range of utility.

The special treatment of the uterus by mechanical appliances is the only treatment which yields striking good results, and this so frequently in inveterate cases as to leave no doubt as to the direct connexion between the mechanical treatment and the improvement of the case.

Were catarrh of the cervix uteri a cause of spasmodic dysmenorrhœa, then, perhaps, good might arise from dilating by incision or otherwise the external os; just as good is said to arise in cases of irritable bladder from dilatation of a urethral stricture, and this even when the stricture is easily permeated by the urine. But I am of opinion that no distinct benefit arises from any kind of dilatation of the external os uteri; for this part has no relations with the disease of which I am aware. Yet it is well-known that authors of eminence, as Mackintosh, Simpson, and Sims, recommend this treatment.

Catarrh-like conditions of the mucous membrane of the body of the uterus are present in spasmodic dysmenorrhœa; this mucous membrane is preternaturally sensitive at all times in a woman suffering from chronic spasmodic dysmenorrhœa; the internal os of the cervix, the channel of exit from this cavity of the body of the uterus, is especially supersensitive; this internal os is also frequently diminished in size; it is with difficulty dilatable when compared with the same part in a healthy uterus; sometimes it is extremely difficult of dilatation. These circumstances, and the analogy of urethral stricture above-mentioned, prepare us for believing that some action on the internal os uteri might ameliorate or cure a spasmodic dysmenorrhœa. The action resorted to is dilatation. This is the mechanical treatment which yields striking good results frequently in inveterate cases,—in the worst cases.

In further giving my views on this mechanical treatment, I wish to be understood as expressing only my present opinions and with great reserve. Were it not for the misunderstanding of my views which I have found to exist by reading recent criticisms on my paper on Mechanical Dilatation of the Cervix Uteri, I would not have been induced to express again so early my opinions on this important practical matter.

The means generally resorted to for dilatation of the cervix are short metallic bougies allowed to remain, tangle-tents, and cutting instruments of which Simpson's and Greenhalgh's are well-known examples.* All of these means I have used, and I have had very extensive and long-continued opportunities of becoming acquainted with some of the results of their use in the practice of others. It is these means which have afforded the striking good results of which I have just spoken. But the striking good results, so far as the dysmenorrhœa was concerned, were equalled, if not surpassed, by other striking bad results, hæmorrhage, metritis, ovaritis, perimetritis, parametritis, with all their numerous attendant evils and dangers. This kind of dilatation is frequently resorted to by some to remove sterility; and so frequent have these bad results been, so far as I can judge, that, whatever may have been the results as to sterility in some individual cases, I am satisfied that, on the whole, they have caused more sterility than they have cured. The result of all this has been that many practitioners, including myself, have been gradually giving up the use of the remedy by dilatation. The evils and dangers of it, as hitherto practised, are too great, and fully counterbalance the good.

It was under these circumstances that I proceeded to investigate the

* Rigby's instrument I have used, but it is clumsy and unsuitable. I have never used Priestley's dilator, and regard it also as not well adapted for the object in view.

subject farther, and, among other things, resolved to try for the internal os uteri the treatment used for dilating the male urethra—the daily passing of ordinary male urethral bougies slightly modified, which are not allowed to remain, and whose size is day by day increased. This treatment I described in the *Edinburgh Medical Journal* for May, 1872. I have found that the striking good results already mentioned are, at least often, attained; and this, without the occurrence of the striking bad results. I am aware of only one case in which any evil result followed this method of gradual dilatation. In it there was a slight temporary attack of adhesive perimetritis; and I believe that this was the result, not of the treatment as I would now conduct it, but of the use of more forcible dilatation than was necessary.

Future investigations may enable us to discover some class of cases in which the older modes of dilatation are to be preferred. They may also change our views as to the utility of both older and newer.

I resort to dilatation in a virgin rarely, and with extreme reluctance, and only in very severe cases.

TWO CASES OF SACCHARINE DIABETES TREATED WITH LACTIC ACID.*

By JOHN W. OGLE, M.D., F.R.C.P.,

Physician to St. George's Hospital.

THE following two cases of diabetes out of several† in which lactic acid alone, as a remedy, was administered in accordance with the suggestion of Cantani, were selected as presenting very favourable conditions for its employment. Both the cases were uncomplicated. The patients—one a male, the other a female—were at about the same period of life, and both came under medical care on the same day. The cases were especially watched, with a view of detecting indications of some lesion of the nervous system as a cause of the diabetic state, and of observing not only the supposed curative effects of the lactic acid, but also its alleged action in producing “rheumatic” symptoms. In both cases meat, with non-starchy food, gluten-bread, etc., were given for several days prior to the administration of the acid; and in both cases the lactic acid was increased until four drachms were taken in the day, and this was persisted in for several weeks. It will be seen that in one instance (Case II) a decided diminution of the amount of urine, without increase of its specific gravity, followed the use of the remedy. In both cases, flesh and strength were lost. In describing the cases, I have given in a tabular form a general view of the amount of the urine passed, of its specific gravity, also of the weight of the patient from time to time, and, on several occasions, of the temperature of the body.

CASE I.—Alfred S., aged 20, a healthy looking man, with florid complexion, but slender in frame, was admitted into St. George's hospital on March 20th, 1872. He stated that as long as he could remember he had had a large appetite, and been troubled with thirst. About eighteen months before admission, he had become very exhausted and unable to work; of late he had gained flesh. He had never had any blow or injury, and never fallen into venereal excesses, direct or indirect. He was not aware that any of his family had suffered from his form of illness.

On admission, the skin was dry, the breath had a very sweet and ethereal odour, and the mucous membrane of the tongue and mouth generally was dry and “clammy”. The urine was free from albumen, but contained much sugar, and its specific gravity was 1034. His weight was 8st. 5lb. (in his boots). The quantity and specific gravity of the urine were daily registered, and also the weight from time to time, as will be seen in the table appended. There was no affection of the movements of any of the muscles of the body, or interference with general sensibility or special senses; and the uvula, tongue, and palate, presented nothing unnatural. The eyes were hypermetropic to seven inches. The patient was put on mutton-chop, with gluten-bread, greens, and milk; subsequently beefsteak. No fermented fluid was given. For some days after admission, no medicines were administered; and on the 25th, it was reported that the patient was a little stronger, and that he had no thirst, but complained of a sweet taste in the mouth.

On the 1st April, he began to take lactic acid in twenty-grain doses three times a day, and this was increased gradually; on the 5th, to forty grains; on the 8th, to fifty-five grains; on the 10th, to sixty grains, three times a day. On the 15th, he began to take two-drachm doses in the day in water as a drink; and on the 20th, three drachms. On the 6th, he commenced taking half an ounce in the course of the

day; about this time he began to suffer from constipation, his general health remaining the same. Calomel, senna, and castor-oil, with oil and turpentine injections, were adopted, and cold douching of the abdomen was ordered. Sometimes the bowels were not open for several days continuously. At one time only was the lactic acid discontinued, and that was for a week, when the bowels were so constipated. It was resumed May 21st, and continued until June 10th—i.e., twenty days—when opium in half-grain doses was given every six hours. No improvement appeared to result from the opium; and the patient left the hospital subsequently.

The following table shows the daily amount and specific gravity of the urine.

Urine.		Urine.	Urine.		Urine.
Quantity.		Sp. gr.	Quantity.		Sp. gr.
March 22.....	128 ounces	1034	April 8.....	163 ounces.	1036
“ 23.....	128 “	1034	“ 9.....	196 “	1036
“ 24.....	144 “	1036	“ 11.....	106 “	1032
“ 25.....	136 “	1036	“ 22.....	150 “	1034
“ 26.....	144 “	1036	“ 23.....	130 “	1032
“ 27.....	156 “	1034	“ 24.....	100 “	1037
“ 28.....	148 “	1036	“ 25.....	134 “	1036
“ 29.....	96 “	1036	“ 26.....	120 “	1036
“ 30.....	140 “	1034	“ 27.....	106 “	1040
“ 31.....	144 “	1034	“ 28.....	118 “	1039
April 1.....	132 “	1034	“ 29.....	112 “	1039
“ 2.....	144 “	1034	“ 30.....	96 “	1040
“ 3.....	148 “	1034	May 1.....	96 “	1038
“ 4.....	144 “	1034	“ 2.....	106 “	1038
“ 5.....	144 “	1034	“ 3.....	92 “	1040

		Weight.				Weight.	
		St.	lb.			St.	lb.
March 22	..	8	5	April 22	..	7	13
“ 24	..	8	2	“ 26	..	7	10
April 11	..	7	5½	May 9	..	7	8

		Temperature.				Temperature.	
		A.M.	P.M.			A.M.	P.M.
April 10	..	—	102.3	April 14	..	99	100
“ 11	..	98.2	104	“ 15	..	99	98.4
“ 12	..	102	100.6	“ 16	..	97.4	98.4
“ 13	..	98	93				

REMARKS.—In this case, which was under care for seven weeks, no marked diminution of urine and no change in the specific gravity was noticed; but after the long use of the lactic acid, and possibly in consequence of it, great constipation came on, requiring active aperients. The weight fell from 8st. 5lbs. to 7st. 7lbs. The temperature was chiefly above the normal; on one occasion only being below, and then it was 97.4 deg. Fahr.; on one occasion it reached 102.8 deg. Fahr. No pain and no excess of perspiration existed during treatment.

CASE II.—Ellen D., aged 28, a lady's maid, was admitted into St. George's Hospital on March 20th, 1872. She had always enjoyed good health until about nine months previously to admission, when she began to complain of thirst, and to void much urine. At first she did not lose much flesh, but when the thirst became more intense she grew considerably thinner. She had been treated with quinine, opium, and bark (as she stated) in another hospital; and during the three months before admission she had lost much strength.

On admission, the patient was somewhat emaciated, and weighed 7st. 3lbs. The skin was dry, She had a reddish complexion, and had congenital coloboma of the iris of one eye, with corresponding gap in the choroid, as determined by the ophthalmoscope. The urine was acid, of the specific gravity of 1032, and contained a large amount of sugar. The odour of the breath was noticeably sweet. The tongue was clean, but reddened; the palate and uvula presented nothing remarkable; and the special senses and the muscular power and general sensibility were unaffected. The patient had never sustained any blow or injury. The pulse was regular, but rather quickened. No cough existed; but the respiratory murmur at the apices of both lungs was harsh.

On the day after admission, it was found that the amount of urine passed in twenty-four hours was 153 ounces, and that it was acid and free from albumen. She was then placed on a diet of mutton-chops, greens, milk, and eggs; and, later on, gluten-bread. She continued in much the same state generally; the bowels apt to be rather confined, the thirst very great, and the tongue red but clean. No medicine was given until April 1st, when lactic acid was administered in twenty-grain doses three times a day. The urine was almost daily measured as to quantity, its specific gravity was taken, and the patient was weighed from time to time, as will be seen in the table appended. On the 5th, the lactic acid was increased to forty grains; on the 8th, to sixty grains; on the 10th, the report was that thirst was much less and the strength greater; on the 12th, the acid was increased to seventy grains, thrice a day; on the 19th, she took three drachms daily in water; and on the 26th, the report was that she had gained strength decidedly.

* Read before the Medical Section at the Annual Meeting of the British Medical Association in Birmingham, August 1872.

† Some of which have already been noticed in the medical journals.