rickets were well marked, but not extreme. The ends of the long bones were enlarged, the ribs beaded, the fontanelle was not quite closed, and the teeth were decaying and many broken off short. The muscles were flabby, but there were no deep-seated swellings to be detected. The urine was free from albumen. The temperature was normal. The history obtained from the mother was that this was the second of three children, one of whom had just died from bronchitis. The father and mother were healthy. This child was suckled up to two years old, and fed on bread-and-butter in addition, with a little beef-tea. From the time of its being weaned, at two years old, its diet had consisted of bread-and-butter and tea, with occasionally German sausage, of which it was very fond, and a little brandy-and-water. It never took potatoes; never had vegetables of any kind or fruit. Never had any fresh meat or gravy; never any milk, except a very small quantity in the tea. Three months ago the child had scarlet fever, not very severely. Was only ill a fortnight, but remained weaker after the attack, and unable to use her legs properly. The gums soon commenced to swell and bleed, and for the last six weeks this has increased, having reached its height during the last three days. For the last few weeks also the left arm and right leg have been noticed to be tender to the touch, and the child has refused to have its boots on. It sweats profusely about the head at night, screams and jumps during sleep. The bowels have been rather confined, but the motions natural.

The case was one of scurvy supervening on rickets, the food on which the child had been kept being a sufficient cause for the development of the scorbutic state.

The treatment consisted in a diet of two pints of milk, potatoes mashed and broken up with milk, and raw meat. Three grains of citrate of iron and quinine and a drachm each of syrup and of lemon-juice were given every six hours. The gums were ordered to be well brushed over three times a day with a solution of glycerine of tannin and glycerine of carbolic acid, fifteen minims of each to the ounce.

On the 5th of May, the sixth day since admission, the gums were already decidedly less swollen, and bled only when touched; but the child was feverish, and suffering from bronchial catarrh. By the 9th the gums had contracted to their normal size, although still a little spongy and red. The œdema had disappeared, the child improved in spirits and appearance, had gained weight, and, in fact, had quite returned to the healthy state by the first week in June, when symptoms of measles appeared, and it had to be removed from the hospital owing to the quarantine wards being not yet open.

These three cases show a remarkable agreement in their symptoms and in the conditions under which the morbid state was developed. All these children were rickety, and in all the most prominent symptoms of scurvy had been superadded to those of rachitis. In all the diet had been such as is known to produce the rachitic condition with the greatest regularity and certainty—viz., one consisting almost entirely of farinaceous food without a sufficient quantity of milk, or other food containing an adequate amount of animal oil. This I believe to be the chief essential ingredient the want of which in the food gives rise to rickets, rather than the want of mineral matter. It is known that in the diet of all these children the mineral element would be deficient also. In the first case the earthy salts in the food would be chiefly contained in the bran of the oatmeal, which would pass through undigested. In the two remaining instances the bread used would be probably of the finer kind most affected by the poor. All white bread is poor in earthy salts, and in the finest and whitest known these are at the lowest.

One of the most interesting points with regard to this series is the supervention of scurvy on this pre-existing state of rickets. Rachitis is the most common of all the morbid conditions we meet with amongst the patients of the Children's Hospital; yet cases of scurvy are extremely rare. Why did these particular rickety children out of all the number alone become scorbutic? I believe the explanation lies in the fact that, curiously enough, in each of these cases one factor usually present in the diet of children was omitted in addition to those ordinarily wanting in a simple rachitic diet—viz., *potatoes*. The common antiscorbutic element in the food of infants is milk; but after they are weaned, or if brought up by hand at an early age, the children of the poor get very little milk; it is too expensive. They soon begin to feed with their parents, and potatoes and gravy are almost invariably given them. This does not prevent them becoming rickety, but it seems to keep off scurvy; potatoes,

as the late Dr. Baly proved, being an excellent antiscorbutic. The children in the present cases had no antiscorbutic. Milk was not given at all in the first case, no fresh meat, no fresh vegetable of any kind. In the other two cases a very minute quantity of milk, and that probably watered, was alone given; but no fresh meat, no fresh vegetables of any kind.

I have said that cases of scurvy are rare amongst children in large towns, and instances of the fully-developed disease undoubtedly are so. It seems to me possible, however, that the cases of ulcerative stomatitis, which are not infrequent amongst ill-nourished, neglected children, may be due to the scorbutic condition—i.e., imperfectly-developed scurvy. The foul ulceration of the gums closely resembles the condition of these parts presented by cases of scurvy where the swelling of the severest stage has subsided, and the general cachectic condition is analogous to that which exists in scorbutic disease.

ON CATHETERISM IN CASES OF STRICTURE ON PHYSIOLOGICAL PRINCIPLES.

By JOHN GAY, F.R.C.S.,

SENIOR SURGEON TO THE GREAT NORTHERN HOSPITAL, ETC.

CASES of stricture, I need hardly say, often come under the care of the surgeon, especially in hospital practice, in which, owing to the patient's neglect, a stricture barely permeable becomes almost suddenly impervious, and the surgeon is called upon to procure a passage of some kind for the urine in the teeth of every obstacle, normal and abnormal, that can waylay his efforts and render them difficult. It is to the earlier period in this (the culminating) stage of such a case that the following remarks are designed to apply.

A man, aged twenty-eight, recently presented himself at the Great Northern Hospital during my visit. He had suffered from stricture for years; had had urethral discharge in abundance, and chronic balanitis as well. Latterly his urine had dribbled away, and, before reaching the hospital, this resource had failed him. Catheterism was attempted by skilled hands, but in vain; and as early relief was necessary, an operation was advised, but refused. On examination, he was found to have a hard, firm, and painful stricture about three inches from the orifice, for which I proceeded to use a catheter on the following principles.

1. As it is, the urethra is absolutely impervious to the passage of the catheter from a combination of causes—viz., the stricture growth engorged with mucus and blood, and rendered painful by futile catheterism; and certainly spasm. It is not, however, absolutely impassable.

2. The tightest part of the stricture is that in front.

3. The unconditional use of a catheter would, in such a state of the parts, certainly intensify the difficulty by calling into play a new source of resistance, in the form of normal muscular antagonism, to its passage—a force that is ever on the alert to oppose the enforced passage of a foreign body through the urethra into the bladder.

4. This automatic force can be brought under complete control by an act of volition, and not only so, but be made to impart to the strictured canal the greatest amount of patency and passivity of which it is capable.

5. The means to this end consist in making the patient bring the sphincters or detrusors of the bladder and urethra into a state of absolute rest by voluntarily, but gradually, calling into powerful action their antagonists, the expulsors or accelerators, and using the catheter whilst the force thus elicited is kept in a state of strain.

6. This mode of palsying the detrusors has another advantage which anæsthesia does not possess, since it assists the surgeon by employing the urine as a dilator, and thus reduces the resistance of the stricture slit.

In the case before us the method thus indicated was carried out as follows. The patient was made to stand, supported by assistants, upright against a firm support, with outstretched legs—a position I always insist upon in catheterisation, if feasible,—and being prepared with a well-warmed and oiled silver catheter (No. 4, at a venture, in this case), he was called upon to make an effort to pass

his water and to gradually increase it to the extent of his power, always under the impressed conviction that he will succeed. After straining thus for a few seconds, and being required to keep up the act until he had permission to relax it, the point of the instrument was gently insinuated into the urethra, and carried on to the stricture. By careful exploration I was soon satisfied that its point and the slight force I was using were in a line with the axis of the canal, and that the entrance of the stricture had been reached. This I felt, for I had contrived to slide the instrument along the floor of the passage to the furthest point I could reach in any part of the canal, and by the sense of a slight grip of its point which was given me on making a simple move of the instrument onwards, I was sure that the passage had been gained. The patient still keeping up the strain, with a very little more force the catheter passed through with the usual, not always assuring, jerk. It could not, however, be made to enter the bladder, for its course was interrupted by another stricture at the membranous part of the urethra. This I did not attempt to pass, being satisfied that if the instrument could be retained during the night, the remainder of the passage would be easily passed in the course of the morrow, for the catheter would now indirectly act as an expulsor, and therefore keep in check any renewal of action on the part of any counteracting power. The urine passed abundantly during the succeeding night, not *through* the catheter—for it contained some clotted blood, and if it had not, I should have prevented it by the use of a close-fitting stilette,—but around it; and on my visit the next day, the instrument was passed through with the help of the tip of my forefinger. A severe rigor followed the first effort, which was subdued by a glass of hot brandy-and-water and one scruple of quinine in the course of the next twenty-four hours.

The subsequent treatment has been daily catheterisation, using a larger catheter each day, and allowing it to remain a few hours on each occasion. On the seventh day a No. 8 was easily passed. I need not refer to the watchful care which is always needed in the after-management of such cases.

I have ventured to ask permission to publish this case, trusting that the principle advocated—viz., that of falling back upon physiological resources as a help in the treatment of severe cases of stricture—might meet with whatever attention it may be thought to deserve.

I may state that I insisted on this method of treating stricture in a paper published in June 1861; and that, although it called forth but little attention at the time, and I believe less since, I have not failed to employ it in every case requiring it, with invariably the like results. I have also demonstrated it in the course of hospital and private practice, so that it is not entirely without its witnesses.¹

SOME NOTES ON

ABSCESS OF THE LIVER,

ILLUSTRATED BY CASES IN WHICH THE ABSCESS HAS BEEN SUCCESSFULLY OPENED WITH TROCAR AND CANNULA.²

BY SURGEON-MAJOR M. C. FURNELL, M.D., F.R.C.S.,
SENIOR PHYSICIAN, MADRAS GENERAL HOSPITAL.

ABSCESS of the liver is a disease so full of interest to medical men in India that any notes of cases which tend to throw light on its treatment may well find a place in the pages of THE LANCET, which in its past volumes is singularly rich in hepatic literature.

I propose in the following notes to add additional testimony to the fact that puncturing the liver is a comparatively safe proceeding, and to suggest a new and simple modification of an old plan, in place of the aspirator, whereby the danger of opening an abscess is, it seems to me, considerably diminished.

I can well remember the first time, now many years ago, I

found myself present at a post-mortem on a soldier who had died of an abscess of the liver unopened, and being struck with the comparative superficialness of the collection of pus, and how easy it would have been by a small puncture to have let it out, and thus, if not to have saved life, at any rate much mitigated the poor man's sufferings. I remember propounding at the time the query to my senior officer, the surgeon in charge, "Why could we not have put a lancet into this abscess and let the matter out?" and being answered in the following conclusive manner:—"Well, if we had, the man was sure to have died after it, and then they would have said in the regiment we killed him by the operation." This was in 1855, and I had not at that time seen Dr. Waring's admirable little book on "Abscess of the Liver," which was only published that year. Opinion has undergone much change since then on the subject of puncturing livers, but there still remains, despite the opinion of such men as Frerichs, Murchison, Waring, Ranald Martin, Cameron, Murray, and, latterly, Surgeon-Major Condon, many who look upon puncturing the liver as an operation only to be undertaken as a last and desperate resource, almost necessarily fatal. In systematic books on medicine opinions are divided, but lean rather to non-opening of abscesses. Thus, in Aitken we read:—"It is a question whether or not an artificial opening ought to be made"; and the method of two French doctors—namely, to cut down over the abscess, merely dividing the muscle and aponeurosis, dressing the wound with charpie or scraped lint, and waiting until the abscess bursts—is given as advisable. The late Surgeon-Major Lowe, of the Madras Medical Service, is also quoted as a strong opponent of opening abscesses, and his views in opposition to such practice, taken from the *Madras Quarterly Journal* of April, 1863, are given *in extenso*. Still, the article, although in the main against puncturing, has the following very candid and sensible remark:—"But we must still look to physicians of large Indian experience for information on this important subject."

Dr. Budd, in his admirable work, is clearly against opening an abscess of the liver, and thinks it best "when an abscess of the liver projects at the side, to allow it to open itself."

In the following histories it will, I think, be seen by Cases 1 and 2 that, even when none but the most ordinary precautions which any careful surgeon would take in opening an abscess in such an important region are adopted, the great bugbear—"entrance of air"—does not, as asserted by Surgeon-Major Lowe, and so feared by Dr. Budd, "invariably" take place; and the remaining cases show that if antiseptic precautions are taken, and, above all, any attempt at squeezing the abscess avoided, the simple incision by scalpel, followed by puncture with a trocar, is preferable to the forcible extraction of pus by an aspirator; and that keeping the wound open by a piece of carbolised lint is immeasurably superior to allowing the cannula to remain in, as recommended by Dr. Murchison, and so frequently practised by the older surgeons.

CASE 1 (abridged from full report given in the *Madras Journal of Medical Science*, 1861).—J. B.—, a volunteer from H.M.'s 43 L.I. to the A Troop, Madras Horse Artillery. He suffered from symptoms of chronic hepatitis from Oct. 24th, 1859, until Nov. 25th, when he was discharged convalescent, and on the 29th sent to duty. His duty was of a somewhat fatiguing nature. He was, as stated above, a volunteer from an infantry regiment, at a time when we had lost numbers of our gunners, who elected to go home at the amalgamation of the old Company's with the Queen's troops; and the process of conversion from a foot soldier to a horse artillery-man was a somewhat rough one, entailing a good deal of riding in the school, and jolting on the limber of a gun. No wonder that we find him returning. I copy the rest of the case as it stands.

"Dec. 10th.—This man was readmitted about the 6th with all the symptoms of acute hepatitis. I was away on leave at the time. I find him to-day, on my return, pale, anxious-looking; a hot skin; pulse 92, small in volume; bowels moved, once scantily, in twenty-four hours; the hepatic region much swollen, especially in one part about two inches below the ensiform cartilage, and somewhat to the right of the median line. His gums are sore from mercury. [Let me, *en passant*, call your particular attention

¹ Since the foregoing was penned, my friend Dr. Neale, the able editor of the "Medical Digest," has called my attention to the fact, hitherto new to me, that Mr. Le Gros Clark enunciated the same views in a lecture delivered by him in June, 1860.

² These notes are founded on a Clinical Lecture delivered in the Madras Medical College, which will explain the somewhat conversational tone of the paper.