with regard to the large class which we are considering, as a rule, nothing else is required than to dilate fully the urethra. The urine will flow by the natural channel, and the fistulæ will heal of themselves, if we ensure a free passage from the bladder. There need be no meddling with the fistulæ; the less they are touched the better. Their disappearance is almost certain if we can maintain the urethra in such a condition that a No. 8, 9, or 10 catheter can pass easily into the bladder. This is a proposition which may be regarded now as fully established, and I shall therefore believe it unnecessary to adduce cases illustrative of a result to which I am daily bearing witness. Those patients who form the exceptional instances to this general rule are for the most part weak in constitution, have little reparative power, or are subjects of some chronic disease in addition to stricture of the urethra. The management of such may be conveniently considered with the next class, viz.,—

2. Those cases in which the fistulæ pass through tissues which are more or less indurated and deformed by repeated deposits of inflammatory exudation; such being often connected in some part of their course with cavities, the sacs of former abscesses secreting thin or sanious pus.

It may be almost unnecessary to observe that in such instances the primary object must be to dilate adequately the stricture and to observe the effect induced. In most even of these cases this is sufficient to enable the surrounding parts slowly to improve, and, finally, the fistulous passages to take on the healing process. The dilatation, however, having been made and maintained for some time, and little or no benefit having resulted in the condition of the fistulæ, there are two courses open, one or other of which it will be desirable to adopt: the first is, to stimulate in some measure the walls of the fistulæ themselves, and so bring about adhesion of opposing surfaces; the second, to lay them open, in order to produce recent and healthy wounds, so that they may heal up soundly from the bottom. But associated with such treatment, it is of the highest importance at the same time to attend closely to the patient's general health, seeking to maintain the secretions and excretions in a natural condition. Very much is to be done by judicious care and management of his regimen and habits, by the selection of an easily-digested and nutritious diet, and by the administration of tonic medicines and cod-liver oil.

Various agents have been employed for the accomplishment of the local measures first named. One of the most useful is the concentrated tincture of cantharides, applied on a camel's-hair brush, or on a probe armed with lint, or a fine syringe. Solutions of the sulphates of zinc or copper, and of the nitrate of silver, have been introduced by means of a syringe, sometimes with apparently good result. One of the best modes we can employ is to introduce carefully, as far as it is possible, a small and flexible silver probe, coated with nitrate of silver. The probe, thus armed, must be carried quickly up the fistulous sinus, a plain probe having been introduced immediately beforehand, as a guide to the length and direction of the passage. It often happens that the external orifice of the sinus is smaller than any other part of it. It is advisable, in such a case, to apply a little caustic potash, for the purpose of enlarging it, and so facilitating the removal of the discharge.

The cure of obstinate urinary fistula has often been attempted by introducing a catheter, and permitting it to remain in the urethra for days together, on the principle of ensuring, as it has been supposed, the passage of the urine through the instrument, and thus preserving from irritation the fistulous passages.

Little, however, is gained by these efforts, for experience shows, that however large the instrument may be, and however closely it may fit the urethra at the present moment, before twenty-four or thirty-six hours have elapsed it will lie loosely in the canal, and urine will pass by its side. It is not possible, in fact, to remove urine from the bladder, and at the same time to avoid contact with the urethra, for any lengthened period, by this means. But further, if the attempt to maintain the urethra distended, by substituting an instrument of larger size as soon as the inlying catheter is inadequate to fill it, be persevered in, it is not unlikely to result in ulceration of some part of the urethral walls, a condition which will not aid us much to produce any healing of the fistulæ associated with it. I have seen this accident produced solely in this way, and its manifestation became too obvious in the formation of a fresh fistula anterior to the scrotum, where the urethral coverings are thin, purely from an unsuccessful attempt to empty the bladder, and prevent the urine from coming into contact with the urethra by this means. The passage of urine by the side of an instrument is due, as I have had frequent opportunities

of observing, when maintaining catheters in the bladder for the treatment of narrow stricture, to an action which it is impossible to prevent in these circumstances—viz., that of capillary attraction. As soon as there is the slightest interval of space between the catheter and the walls of the urethra, urine begins to drain off, in obedience to the law referred to. This action remains in continuous exercise, and is to be distinguished altogether from that by which urine flows freely, in obedience to an expulsive effort of the bladder. In this case, it is true, the fluid takes commonly the course of the catheter; but the continuous drain which occurs by the side of the instrument from the cause named, inevitably defeats our efforts to preserve the urethra free from the presence of urine. The mode of treatment, therefore, which consists in tying in a catheter, is to be regarded as generally inadequate to the cure of fistula, and it is one which has obtained countenance chiefly from the plausibility of a theory which is certainly unsupported in practice. It will generally be better to withdraw artificially all the patient's urine, by introducing a catheter three or four times a day, if it be really necessary, than to permit the instrument to remain in the bladder, and prove a source of constant irritation.

Free incisions through the fistulæ, down to their origin in the urethra, or nearly so, have been sometimes found successful in inducing a new and healthy process of granulation from the bottom of the wound, and thus in ultimately producing complete closure of the unnatural passages,—provided always, however, that there is no obstruction to the free egress of urine by the urethra, otherwise no such measure can be of any service. In some cases in which external division of the stricture on a grooved staff is indicated, this operation may be performed in such a manner as to include the fistulous opening in the incision, in which case a successful result may generally be reckoned on. Whether or no, a simple incision carried through the fistulous track may sometimes aid in ensuring the free discharge of matters hitherto more or less confined within irregular cavities, and so presenting an insuperable obstacle to reparative action in the tissues.

For considerably more than a century, it has been occasionally the practice amongst surgeons, especially in France, to make an artificial opening in the perinæum upon a grooved staff, in order to give issue to the urine, for various purposes in connexion with diseased bladder and urethra. In this manner the irritating fluid being withdrawn by a short route, the parts anterior to it were relieved from its injurious influence, and were observed to acquire a healthier condition. This operation, which became familiarly known as the *Boutonnière*, was practised by Colot, Ledran, Chopart, Dionis, Lafaye, and J. L. Petit, in various circumstances. Much more recently the puncture of the bladder by the rectum has been practised with a similar result, more especially where an unusually narrow or irritable stricture has existed with numerous fistulæ. The principle upon which these methods of proceeding have been serviceable, is that of removing all sources of irritation, but particularly the constant passing of acrid urine from both the natural and unnatural channels which had hitherto given exit to it. The precise mode in which it should be made applicable must be determined according to the individual requirements of each particular case. The instances, however, in which such measures are necessary, must be looked upon as of rare occurrence.

The subject of providing for the withdrawal of the urine from the bladder without contact with the urethra will be again considered in connexion with the next class of cases, in which the achievement of that desideratum is an almost necessary element to the success of those operative measures which are usually understood to be comprehended under the term *Urethroplasty*.

Wimpole-street, April, 1856.

ON ANTIMONIAL POISONING.

By B. W. RICHARDSON, M.D.

At the present moment, when the various questions connected with the effects of antimony on the body are being seriously discussed by the profession, it may not be out of place for me to lay before the readers of THE LANCET the following cases in which all the symptoms of antimonial poisoning were strikingly exhibited:—

Some years ago, in a country practice, I was called to see a

delicate, strumous man, suffering from pneumonia, (in the first stage,) and accompanied with pleuritis on the right side. The stethoscopic indications of these local mischiefs were well marked; there was intense pain in the chest, great difficulty in inspiration, and the general symptoms of inflammatory fever. I thought it advisable to bleed, tied up an arm, and opened a vein. The veins, however, being small, and the circulation, though quick, feeble, I could not extract more than two ounces of blood, which afforded no relief. On returning home I prescribed a pill of calomel and opium, and a mixture containing a free dose of tartar emetic—viz., one-third of a grain, which was to be taken every four hours. About six hours later a messenger came hastily to beg me to go to the patient, as he was thought to be dying from the effects of the first dose of the mixture. I started immediately; but having to ride full four miles to the man's house, I did not see him until three hours after the dose had been taken. The history of the attendants was, that about half an hour after the dose had been administered the patient suddenly became restless, cold, and faint; that he then vomited, and soon afterwards was violently purged, and that these symptoms had continued without cessation. I found symptoms myself just such as described. For the time the pain in the chest was gone, and the breathing was free, but the vomiting, the purging, and the prostration were extreme. There was little pulse; the surface was cold; the legs were cramped. The case was strictly analogous with one of Asiatic cholera, but the cause, plainly enough, was an overdose of tartar emetic. I administered a full opiate, and threw in brandy freely, waited three or four hours, and left the patient, to my great relief, with full signs of reaction. He ultimately recovered.

On reaching home again, and on making inquiry, it turned out that the dispenser of the mixture had, in a careless hurry, dropped the antimony into the bottle after filling with water. The substance was thus not freely dissolved, and some of it possibly adhered to the neck of the bottle, rendering it probable that the greater part of that which was prescribed for nine doses—viz., three grains—was taken at once.

Here, then, was a case in which a dose of tartar emetic, not usually considered as poisonous, produced nearly fatal symptoms. A few such cases of poisoning have been collected by Dr. Christison; but, in all, the dose taken was much greater, though the symptoms were not more severe, except in one instance, where forty grains caused death. Moreover, the case I have related was one in which acute inflammatory symptoms were present, and in which antimony in free doses is, as a general rule, well tolerated. Laennec sometimes gave from two to three grains for a dose in similar cases, without any mischievous results.

A stout, active, well-built man asked me to prescribe for him for a cold, requesting me at the same time to be cautious if I intended to order him an antimonial, as he always suffered severely from the effects of that substance. I thought a diaphoretic was required, and ordered fifteen minims of antimony wine to be taken at bed-time. There was no mistake in the dose here, for I saw it dispensed, and knew the wine to be of proper strength. The dose was taken, and from its results I lost caste with that patient for a long time. I admit the symptoms were very severe, and such as no medical practitioner would have expected from so minute a dose. The nausea was incessant for many hours, and the prostration so great as to render the patient unable to leave his room for three or four days. There was no purging, but there was abdominal pain and griping, faintness, and general exhaustion.

I instance these cases simply to show that to produce symptoms exceedingly dangerous, it is not always necessary that the dose of antimony administered should be absolutely poisonous—in the common acceptation of the term, a poisonous dose; indeed, I think that a moderate dose, say one-sixth of a grain, repeated many times, may in some cases induce ultimately more serious depression than a large dose administered at once, since in the latter case the emetic effect causes the expulsion of the poison at one vomit, and leaves the system free from after effects.

In regard to the action of antimony on the bowels, when given in small and repeated doses, it has always appeared to me that this effect, when it appears, is generally owing to the absence of the diaphoresis set up usually by this medicine. At all events, I think I have seen purgation follow, in patients under antimony, when the function of the skin has been checked by any accidental cause.

The question of the elimination of antimony from the body, which has been so opportunely and powerfully opened for discussion in the pages of THE LANCET, is one demanding a pro-

longed and rigid inquiry. With every respect for Dr. Taylor as our leading medical jurist, I think that most practitioners will hesitate in regard to his opinion as to the periods of time in which this substance is eliminated. As yet we have on this point nothing but analogy for a guide, and analogy is a dangerous umpire in scientific difficulties. Still, antimony, as a fixed substance, cannot differ very much from mercury or iodine, both of which quit the body very slowly.

Certainly, to answer the question about the elimination of antimony at this moment, and in a definite manner, is impossible. Consider the difficulties of the subject. In the first place, who knows anything about the manner in which antimony is excreted, further than the bare fact that it is thrown off in the urine? The inference is fair that it is excreted also by the skin and the bowels, but what amount of proof is there that such is the fact? The inference is also fair, that in a patient whose assimilative and excretory powers are reduced, the elimination is much slower than in a case where the reverse obtains; but even this is *sub judice*.

Another great question is—Does the presence of antimony, in some form or other, on the surface of the intestinal canal—i. e., mixed with the mucous secretion of that surface—give direct and conclusive evidence that the drug has recently arrived there by the mechanical act of having been recently swallowed? In the absence of experiment proving this position, it is open to grave doubts. We know that antimony injected into a vein, or even placed under the skin by inoculation, will give rise to purging and vomiting. In such an experiment, is antimony present in the excreted matters? If it is, then, in the same case, antimony might even be found in the stomach, though it had not been introduced into it at all by the mouth; and further, if such should prove to be the fact, it becomes a second point of inquiry, whether antimony may not be taken in by the stomach, go the round of the circulation, and be again thrown into the alimentary canal, for the purpose of being excreted?

I place these queries (some of which I am at the present time endeavouring to solve by experiment) before the profession, not from any special regard to the Rugeley case, but because they open a field of physiological research which ought no longer to remain unexplored. They affect every practitioner and every patient. Here, in this tartar emetic, is a drug which possibly, in London alone, is prescribed to some five or ten thousand persons per week—I had almost said per day—and yet we who prescribe it so freely do not know how or when it is disposed of afterwards.

Hinde-street, Manchester-square, 1856.

A Mirror OF THE PRACTICE OF MEDICINE AND SURGERY IN THE HOSPITALS OF LONDON.

Nulla est alia pro certo noscendi via, nisi quam plurimas et morborum et dissectionum historias, tam aliorum proprias, collectas habere et inter se comparare.—MORGAGNI. *De Sed. et Caus. Morb.* lib. 14. Proœmium.

ST. THOMAS'S HOSPITAL.

CHRONIC INTESTINAL OBSTRUCTION, PRECEDED BY DIARRHŒA AND DYSENTERY FOR SOME MONTHS; AMUSSAT'S OPERATION FOR ARTIFICIAL ANUS IN THE LUMBAR REGION; THE BOWEL MUCH DISTENDED WITH FLATUS; RECOVERY.

(Under the care of Mr. SOLLY.)

AMONGST the cases which present themselves to the notice of the surgeon, obstinate constipation holds a very prominent place; and the causes producing this condition are so various and so numerous, that it is often a very difficult matter indeed to arrive at a positive conclusion as to the true seat of the obstruction. The diagnosis, therefore, as to the exact cause, is of great importance, as involving the question of an operation to produce relief; and as all operations in connexion with the cavity of the abdomen are extremely hazardous, the prognosis becomes more or less serious when it is necessary to have recourse to them. A very important point to bear in mind, and