medical practitioners is quite out of proportion to the wants of the community, and in this case a higher grade of attainment is doubly to be desired, for an experiment on a large scale has proved satisfactorily that an increase in the grade of preliminary qualification at once diminishes the number of practitioners. In France, a few years ago, the excess in the number of medical students attracted the attention of the government, who adopted a simple and yet effectual mode of checking the growing evil. The standard of medical education was raised, and the number has now decreased to one third of that then reported, and is believed to bear at the present time a fair proportion to the demand. If the standard of medical education in this country were raised, and his proper rights secured to the medical man, your council feel assured that such steps would best usher in any further measures of medical reform which may be required. Respecting the supposed details of the measure contemplated by the government, your council forbear to offer any observations; they would only say further, that they have no wish to destroy the existing institutions if they can be made available to a fair and moderate scheme of reform. To some of these institutions the profession owes a deep debt of gratitude, for its present improved state is chiefly owing to their willingness to adopt many alterations with a view to improve its condition and elevate the character of the medical practitioner.

Your council cannot but express some regret that the claims of the benevolent fund to the support of the members of the branch are not more generally recognised; they feel assured that this can only arise from ignorance on the part of their professional brethren of the benefits which may be insured to many an unfortunate brother from the well bestowed charity of his more fortunate neighbour. A mite from each may bring comfort to many, and your council venture to hope that this excellent institution will receive more liberal encouragement, and its managers be enabled, by the liberality of the affluent, to minister to the necessities of those whose education and previous habits render them keenly alive to the ills of poverty, and who yet too often suffer under its privations.

In conclusion, your council would earnestly impress upon their successors, and the members generally, the advantages which must arise from meetings such as the present, in which a kindly spirit of co-operation in watching over the interests of the profession is induced, the grand principle of union enforced, and, while due attention is paid to the material interests of the profession, the claims of medical science are fully recognised, its progress watched, and the advantages which it offers eagerly embraced.

Mr. Nunneley moved, and Mr. Dixon seconded, the adoption of the Report, which was unanimously agreed to.

Dr. Belcombe proposed, and Mr. Teale seconded, the nomination of Leeds as the place of meeting for the next year.

Dr. Whytehead proposed as president-elect, Samuel Smith, Esq., senior surgeon to the Leeds Infirmary.

Mr. W. Hey seconded the nomination, which was carried by acclamation.

Dr. Hopper proposed, and Dr. Goldie seconded,

"That Mr. Husband be re-elected secretary and treasurer."

It was proposed by Mr. Barker, seconded by Dr. Watmough, and unanimously agreed to, that the following members do constitute, with the president and secretary, the branch council for the ensuing year:—Mr. James Allen, Dr. Belcombe, and Mr. Brown, York; Dr. Chadwick, Leeds; Mr. Dighton, Northallerton; Mr. Dodsworth, York; Dr. Earle, Ripon; Mr. Garlick, Leeds; Dr. Goldie, York; Mr. Hey and Mr. W. Hey, Leeds; Mr. R. Hey, York; Dr. Hopper, Leeds; Mr. Jackson, Market Weighton; Mr. Muscroft, Pontefract; Mr. Ness, Helmsley; Dr. Outhwaite, Bradford; Mr. Russell, York; Mr. Sandwith, Beverley; Dr. Shearman, Rotherham; Mr. Smith and Mr. Teale, Leeds; Mr. Williams, York; and Dr. Whytehead, Easingwold.

A committee was appointed to revise the rules, and report to the next annual meeting.

The members then read the following papers:—

Mr. W. Hey, on the removal of a tumor from the lower jaw.

Dr. Belcombe, on some aids to the diagnosis of certain renal diseases.

Dr. Hopper, on a case of peritonitis, with extensive tubercular deposit.

Mr. Teale, on a case of carotid aneurysm.

Mr. Dodsworth, on a case of ossified gall-bladder.

Dr. Morris, on spinal irritation.

Mr. W. Matterson, on a case of pericarditis with disease of the liver.

A vote of thanks was passed to the president.

ON THE OCCURRENCE OF PHOSPHATIC DEPOSITS IN URINE.

By Dr. GOLDING BIRD.

On an average, 6·5 grains of phosphoric acid leave the system in the urine in the course of twenty-four hours. Although the particular state of combination in which this acid exists may admit of doubt, yet it is evident that a considerable portion of it exists in urine with lime, magnesia, and ammonia. The two latter bases very probably exist in the same combination, forming a double salt—the ammonio-phosphate of magnesia, or triple phosphate, as it is termed.

If you add a very small quantity of ammonia to a large quantity of healthy urine, the mixture becomes turbid from a deposit of the triple phosphates, mixed, in all probability, with phosphate of lime. On placing a drop of this turbid urine under the microscope, myriads of minute prisms of the triple salt, mixed with amorphous granules of the phosphates of lime, will be seen floating in the fluid. These readily disappear on the addition of a drop of almost any acid. As these earthy salts are insoluble in water, it is evident that they must be held in solution in the urine by the free acid which generally exists; this acid is either the phosphoric or lactic, or both. If from any cause the quantity of solvent acid fall below the necessary proportion, the earthy phosphates appear in the urine, forming a deposit. Hence, when the urine is alkaline, phosphatic deposits are necessary consequences. If urine be secreted with so small a proportion of acid as barely to redden litmus paper, a deposit of triple phosphates often occurs a few hours after emission—a phenomenon depending on the influence of the mucous matter present, which, exciting a catalytic action like

a ferment, induces the decomposition of urea, and the formation of carbonate of ammonia, which, by neutralising the solvent acid, throws down the phosphates. The precipitation of the phosphates thus takes place in a manner analogous to that in which carbonate of lime is thrown down, the action being here limited to a neutralisation of a free acid; indeed, where phosphates of lime form the great bulk of a deposit, a certain portion of carbonate is generally present.

It is, however, by no means necessary for urine to be alkaline for a deposit of phosphates to exist; indeed, in the great majority of cases, urine which deposits the triple phosphate is acid at the time of emission, and often for long after. This may appear rather paradoxical, when we recollect the ready solubility of triple phosphate in a very weak acid; but admits of a ready explanation when the fact that a fluid may redden litmus, and still contain no uncombined acid, is borne in mind. Thus, a solution of hydrochlorate of ammonia will redden litmus paper, and yet it contains no free acid; and as this salt exists in the urine, it is quite possible that it may be one of the causes on which its acid reaction depends, where deposits of phosphates exist. It has been rendered very probable, by the interesting experiments of Dr. Rees, that this very salt may in some instances be really the solvent of the earthy phosphates, as they are to a certain extent soluble in solutions of sal-ammonia. These solutions possess the very remarkable property, first pointed out by the excellent chemist to whom I have just referred, of becoming opaque by ebullition, from a deposition of a portion of the earthy salt. The very same phenomenon often occurs in urine which contains an excess of phosphates. Indeed, it is not unfrequent to meet with urine which does not contain any visible deposit, and yet on the application of heat appears to coagulate, not from the presence of albumen, but from the deposition of earthy phosphates. The addition of a drop of nitric acid immediately dissolves this deposit, and distinguishes it from albumen. A different explanation to this phenomenon has been offered by Dr. Hargrave Brett, and which undoubtedly is perfectly true in many cases, although the hypothesis of Dr. Rees is applicable to the greater number. Dr. Brett's explanation is founded on the solubility of phosphates in water impregnated with carbonic acid. It has been long known that carbonic acid frequently exists in a free state in the urine, and in a large number of specimens examined by Dr. Brett and myself we succeeded in readily isolating it.

Whenever the triple phosphate occurs in the urine as a deposit, it is always found to be composed of crystals, which are generally sharply defined, and extremely regular. You must, however, bear in mind that these crystals may exist in large quantities, and yet escape detection in consequence of their extreme transparency. In cases of this kind the deposit which forms by repose generally presents the appearance of a mere mucous cloud, and it is only distinguished from it by the addition of an acid, which immediately dissolves it. On decanting such urine and placing the lower turbid portion in a watch-glass, the crystals may be detected by moving the latter near a lighted candle, when a series of glittering points will become

visible from the reflection of the light from the facets of the minute prisms of triple salt. On placing the watch-glass under a microscope the crystals may be readily recognised. The depositions of the phosphates may become accelerated by warming the urine in the manner I explained to you when speaking of the oxalate of lime. The exact resemblance presented by the deposits of phosphates to mucous clouds is so very close that the most practised eye can scarcely distinguish between them; indeed, scarcely a week passes but I find myself completely at fault on attempting to distinguish between them by bare inspection. When phosphate of lime exists mixed with a triple salt, the deposit often remains for a long time diffused through the urine, so as to resemble rope-like masses of purulent mucus. Not only do deposits of phosphates resemble mucus and pus in physical appearances, but they frequently coexist. Indeed, it is very frequent to find fine prisms of triple phosphate entangled in the meshes of the mucous cloud which forms by repose in all urine. When the triple phosphate coexists with mucus or pus, the microscope will readily detect its presence.

Occasionally, where a small excess of the triple phosphate is present, it is found on the surface of the urine, forming a delicate iridescent scum or pellicle, reflecting colored bands of light, like a thin layer of oil, or the surface of a soap-bubble.

When a considerable quantity of ammonia is added to urine, a deposit occurs from setting free a triple phosphate of magnesia, which differs from that to which I have just been alluding, in containing half an equivalent more of ammonia; it is, in fact, a *sesqui-basic*, or, as it is commonly termed, a bibasic triple phosphate of magnesia and ammonia. This is evidently formed by the ammonia playing a double part; it not only neutralises the solvent acid, but combines with the normal phosphate to form a basic salt. This can be readily distinguished from the neutral salt by its crystalline form, as it always presents the form of stellæ, generally six-rayed, often elegantly pinnated, in some cases presenting the appearance of foliaceous crystals resembling fern leaves; this variety, however, being almost always the result of decomposition, when the urine has been kept a long time.

This basic phosphate invariably, and I believe necessarily, exists with alkaline urine; it very rarely occurs in recent urine, and, so far as I have had occasion to observe, is always a secondary product.

A. Prisms of Neutral Triple Phosphates. These are always exceedingly well defined, the angles and edges of the crystals being remarkably sharp and perfect. The triangular prism is the form most frequently met with, but it presents every variety in its termination. These are sometimes merely truncated, often bevelled off, and not unfrequently the terminal edges are replaced by facets.

I scarcely know a more beautiful microscopic object than is afforded by a well-marked deposit of this salt. You will frequently be struck with the very different degrees of transparency presented by these crystals; sometimes they are so transparent as to resemble prisms of glass or crystal; at others, presenting an enamel-like opacity, so that they can only be viewed as opaque objects. When preserved in balsam, they depolarise light very beautifully where the axes of the

tourmalines or calc-spars are crossed in the polarising microscope.

B. Simple Stellæ of the Neutral Salt.—These are in fact minute calculous concretions, and are generally composed of minute prisms cohering at one end, so as to represent simple stellæ. Not unfrequently they adhere so closely and so crowded as to resemble rosettes. I have repeatedly seen small prisms crystallised as one of the fine transparent hairs which are of frequent occurrence in urine. Indeed, if for the word *rhomboids* you substitute *prisms*, the account I have given you in a former lecture of the varieties of the compound crystals of uric acid will apply to the phosphatic magnesian salt, bearing in mind that the latter is invariably colorless, never presenting the yellow or orange hue of uric acid.

C. Penniform Crystals of Neutral Salt.—This very elegant variety of the neutral magnesia phosphate has only lately fallen under my notice, and has not hitherto been described. It presents the appearance of striated feather-like crystals, two being generally connected so as to cause them to resemble a pair of wings. I cannot give any satisfactory explanation of the causes of this curious and elegant variety, or whether they differ in any way chemically from the prismatic form. The few specimens I have met with occurred in acid urine.

D. Stella and Foliateous Crystals of Basic Salt.—This variety, as I have already told you, cannot generally be regarded in any other light than as a secondary product taking place out of the body. When rapidly formed, we generally find this salt in the form of six-rayed stars, each ray being serrated, or irregularly crenate, often runcinate, like the leaf of the taraxacum. This, however, presents several subordinate varieties, depending, in all probability, upon accidental circumstances. When this salt is more slowly formed, as on the surface of the urine of pregnancy, it presents large and broad foliateous laminæ, often so thin and transparent as to escape notice altogether, especially if viewed in too strong a light. I have, indeed, often overlooked them until I illuminated the specimen under the microscope with polarised light, when they started into view elegantly tinted with colors in which pink and green are the most prominent.

There are no definite microscopic characters by which phosphate of lime can be recognised in deposits; it always appears as a mere amorphous cloud, made up of extremely minute particles, sometimes presenting a globular arrangement. In this form they are frequently found adhering to prisms of the triple salt, and their nature can be readily made out by the addition of a drop of very dilute hydrochloric acid, in which both phosphates readily dissolve, and by this property are at once distinguished from all organic globules, which are insoluble in that menstruum. These deposits are so readily recognisable with the assistance of the microscope, that it can scarcely be deemed necessary to have recourse to their chemical characters, which are often made out with extreme difficulty, from the small quantity of deposit we have in most cases to operate on. If any doubt should, however, remain regarding the nature of any deposit of this class, it may be sufficient to recollect that of all the deposits possessing a true crystalline form which have yet been

examined, the triple phosphate is the only one which is soluble in acetic acid, and of all amorphous deposits, the phosphate of lime is the only one which does not disappear on the addition of liquor potassæ.

The urine, in cases where an excess of phosphates of either kind exists, differs in its physical character very materially. Certainly no general rule can be assigned for the color, density, or quantity of the urine secreted in these cases, taking them in a mass; although I think there are certain facts connected with the presence of the phosphatic deposits which serve to connect the color and quantity of the urine with the pathological conditions producing, or at least coexisting with them.

As a general rule, where copious phosphatic deposits, whether magnesian, calcareous, or both, exist for a considerable time, the urine is pale, often whey-like, and of low specific gravity. This is especially the case where organic lesion of the kidneys exists. On the other hand, when the deposits are of occasional occurrence, often disappearing and recurring in the course of a few days, the urine generally presents a deep amber color, and is not only of high specific gravity, but often contains an excess of urea, and presents an iridescent pellicle on its surface by repose. This is especially the character of the phosphatic urine secreted under the influence of some forms of irritative dyspepsia, and where the phosphates themselves may be traced to mal-assimilation. Again, phosphatic urine may be met with varying from a pale whey-like hue to deep brown or greenish brown, exceedingly fetid, generally but not constantly alkaline, and loaded with dense ropy mucus, often tinged with blood, and in which large crystals of the triple phosphate and amorphous masses of phosphate of lime are entangled. This variety is almost always met with either under the irritation of a calculus, or where disease of the mucous membrane of the bladder exists.

It was long ago remarked by Berzelius, that phosphatic deposits were often present in the urine passed in one part of the day, and absent in other specimens. I carefully watched a series of cases where the triple phosphate existed in the urine, with a view to determine the accuracy of this statement, and am convinced that the following may be assumed as a safe induction from these observations:—*That where the presence of deposits of phosphates is independent of the irritation of a calculus, or of organic disease, it is most abundant in the urine passed in the evening (urine of digestion), and absent or replaced by uric acid, or urates, in the morning urine (urine of the blood), the urine being always of tolerably natural color, never below, and often above the mean density. Where the presence of phosphatic salt depends on the irritation of a calculus, or of organic mischief in the urinary passages, the urine is pale and whey-like, of a density below the average, often considerably so, and the earthy deposit is nearly equally abundant in the night and morning urine.*

One general law certainly appears to govern the pathological development of the phosphatic deposits; I allude to a constantly depressed state of nervous energy, often general, rarely more local, in its seat. Of the former, the result of wear and tear of body and mind in old people, and of the latter the effects

of local injury to the spine, will serve as examples. It is true that, in the majority of cases in which phosphates are deposited, there may be much irritability present; you may find an irritable pulse, a tongue white on the surface and red at the tip and edges, with a dry, and perhaps occasionally hot, skin. Still it is irritability with depression—a kind of erythism of the nervous system, if I may venture to use such a term.

Triple Phosphates (neutral).—Where the deposit consists of this salt, you will generally succeed in tracing its connection to some cause which has rendered the system morbidly irritable, at the same time that its tone or strength has been depressed. The simplest example of this kind that has occurred under my notice is in the case of individuals who have periodical duties to perform requiring extreme mental tension and bodily exertion. It has occurred to me more than once to notice this state of things in clergymen, especially in those who, from the nature of their secular engagements, have been accustomed to lead sedentary lives during the week, and to perform full duty on Sundays.

It is not an uncommon thing to find an iridescent film formed of a thin layer, or pellicle, of crystals of triple phosphate, floating on the surface of urine passed by persons laboring under some form of irritative dyspepsia. This often presents the same brilliant colors as a soap-bubble, or thin layer of oil on water. It is clearly the result of imperfect assimilation, and, in all probability, is to be regarded as an attempt at getting rid from the system of an excess of the earthy phosphates which had been absorbed from the ingesta. In this form I have never seen a decided gravel or deposit produced, and I am inclined to consider that it is rather to be regarded as an index, and a valuable one, of the state of the assimilative functions, than as holding out any fear of the ulterior deposit of calculous matter.

I have not unfrequently met with deposits of the triple phosphates in very old people, in whom the state of decrepitude depending on senility had either become extreme, or been aggravated by low living and a want of the ordinary comforts of life. In several cases of this kind occurring in octogenarian dependents on parochial relief, I have found the urine very pale, of low specific gravity, subacid or neutral, and extremely fetid. The fætor, which was like that of stale fish, did not appear to depend upon the presence of free ammonia, but in all probability was a result of some slow decomposition of the organic constituents of the urine, a decay depending on the depressed vital energy of the bladder.

I have before alluded to the fact that a deposition of the triple phosphate is often observed to occur in cases where a blow had been received on the lumbar region, or where some strain has been experienced in that region—a fact first observed by Dr. Prout. This effect of injury to the loins is frequently met with as a temporary result of even slight blows or strains, and disappearing in a few days. I once saw a copious deposition of triple phosphates occur in the urine of a young gentleman who exerted himself rather more than his strength could bear in a riding-school. In fact, whatever chemical explanation may be given to the presence of an excess of phosphates in the urine,

it is indisputable that in the very great majority of cases there is ample evidence of the existence of some cause producing, to say the least, a depressed but irritable state of the nervous energies in the neighbourhood of the injury. The symptoms observed in these cases are nearly all explicable on this state of the nervous system.

The most prominent symptoms observed in these cases are, great irritability of temper, extreme restlessness, mal-performance of the digestive functions, with such imperfect assimilation of the ingesta, that a certain and often extreme amount of emaciation is a constant attendant. The appetite is uncertain, occasionally being voracious. Fatigue is induced by the slightest exertion; there is a remarkable inaptitude to any mental or bodily exercise, and the patient is often, from the exhaustion thus produced, unfitted for his ordinary duties. In acute cases these symptoms become aggravated by an excessive elimination of urea, which aids considerably in depressing the patient's strength.

Regarding the treatment of these cases, whilst we must allow that in many cases the administration of acids will cause the deposit of phosphates to disappear, yet it must be admitted that we are thus treating but a symptom, although an important one, of a serious malady. It is, perhaps, wise to administer acids, especially the hydrochloric or phosphoric, and thus endeavour to render the urine sufficiently acid to prevent the crystals of the phosphate concreting into a calculus; but, at the same time, we must direct our treatment to the digestive organs, and endeavour to allay the morbidly irritable state of the nervous system. You will often find that it is no easy matter to render the urine acid in this manner; I have in several cases administered the mineral acids regularly, and in as large a dose as the patient could bear, without increasing the action of the urine on litmus paper, whilst in others the urine has appeared to be readily affected. This capricious effect observed in the use of acids renders their administration much less to be depended upon than when alkalies are given in cases where too much acid is secreted in the urine. The best mode of treating these cases is to regulate the bowels by tonic aperients, and allay the morbid irritability present by the use of sedatives. For this purpose, the mist. gentianæ compos. may be made the vehicle for the administration of dilute hydrochloric acid in doses of fifteen or twenty minims, with half a drachm of the tincture of henbane thrice a-day. In protracted and severe cases, the use of opium in graduated doses has, in the hands of Dr. Prout, been of great service. In one very severe case, which occurred to myself, I thought I found much relief in the administration of iron in the form of the acetate thrice a-day, with a sedative at night. The preparations of zinc and silver also hold out great probability of being of service, from their well-known power in allaying morbid irritability of the digestive organs, and perhaps of the organic system of nerves generally.

With regard to the *pathological* indications afforded by the deposits of phosphate of lime, they are analogous to those already pointed out to you as peculiar to the triple salt. Intimately related as these salts are chemically, their pathological indications might be expected to be analogous; and such, indeed, is

the case, if we except the not unfrequent excessive secretion of phosphate of lime as the result of disease of the mucous surface of the bladder. It is not uncommon to find both phosphates mixed in a deposit, which is thus readily fusible in the blow-pipe flame, unless too great an excess of either ingredient be present. These mixed deposits are not unfrequent in gouty people, and in such cases I have seen deposits of crystalline and amorphous phosphates alternate in the urine passed in the evening, whilst the morning secretion was loaded with urate of ammonia. So far as I have had an opportunity of watching the progress of cases where phosphate of lime is deposited (and they are by no means of frequent occurrence), I have generally fancied that they present more marked evidence of exhaustion, and of the previous existence of some drain on the nervous system, than where the triple salt alone existed.

Occasionally some curious cases are met with, in which phosphate of lime has come away in the urine for a long period without apparently doing much mischief. A very remarkable instance of this kind occurred in Guy's Hospital some years ago among the out-patients, in the person of an old man under the care of Dr. Hughes. This patient had for many years passed almost milky urine, which, by repose, deposited such an enormous quantity of phosphate of lime, that he brought to me at one time upwards of an ounce of this calcareous salt. He had been under the treatment of half the hospital physicians and surgeons in London during fourteen or fifteen years, but his urine remained unimproved. He afterwards came under my care, but I found all the remedial measures I adopted useless. At the same time I may remark, this man's health appeared so good that there was scarcely an excuse for submitting him to any course of treatment beyond the apprehension of the possible formation of calculus.

I cannot quit this part of my subject without pressing upon your notice the value derived in many of these cases from injecting the bladder with a very dilute mineral acid. I am confident that an irritable condition of the bladder, highly favorable to the secretion of earthy phosphates and excess of mucus from its mucous membrane, has been in some cases kept up by retention of phosphates in that viscus. Certainly, I have now seen many cases where viscid ropy mucus, mixed with abundance of phosphates, both magnesian and calcareous, have been secreted, and where the distress of the patient has been extremely increased by intense irritability of bladder. And in these all plans of treatment have been unavailing, until the bladder has been carefully washed out by means of warm water, and an injection, consisting of half a drachm of dilute hydrochloric acid, with a drachm of vinum opii in half a pint of warm barley-water, has been thrown in by means of a double catheter, in the manner described by Sir B. Brodie. I had a case under my care last year, in consultation with a most excellent and talented provincial physician, Dr. Baker, of Maldon, in which the irritability of bladder was so intense that there was almost constant desire to pass water, attended with horrible suffering. The urine often contained blood, and rapidly underwent decomposition; it presented a copious dense deposit of puriform mucus,

mixed with an enormous quantity of triple phosphate in very large crystals. The state of distress to which this lady was reduced by the disease rendered her life a complete burden. On examining the urine carefully, I could detect no true pus; it did not coagulate by heat, and much of the opacity presented by the mucus was owing to the presence of the triple phosphate. I suggested the use of a solvent injection analogous to the one just described. Great difficulty was experienced in the use of the catheter, in consequence of the excessive suffering it produced. Ultimately the injection was very effectually administered by Mr. May, of Maldon, and the effect was most remarkable; the irritability of bladder rapidly subsided, and, by repeating the injection, it was completely removed; and, on being called into Essex to a case in the neighbourhood some time after, I had the pleasure of seeing this lady apparently well.—*Abridged from the Medical Gazette.*

CASES
OF
TRAUMATIC TETANUS,
SUCCESSFULLY TREATED WITH TARTAR EMETIC.
By J. BROWN, Esq.

CASE I.—Ramjaun Oola, a poor villager, a man apparently about fifty years of age, and weakly constitution, was admitted into hospital on the 22nd of December, 1836, with a very slight wound over each parietal bone, inflicted, I believe, by a stick, and which originally were not above an inch in length each, and nearly healed when admitted. Some simple dressing was ordered to them.

On the morning of the 24th of December I observed that the man could speak but very indistinctly. The muscles of the neck and face were very rigid, and the lower jaw secured in close application to the upper; a heavy and anxious look about him; pulse feeble; skin natural; bowels regular. Ordered him half a grain of the tartarised antimony in solution, with thin sago every half hour; to be intermitted as occasion may require.

P.M. About one o'clock experienced a little nausea; no change. Continue medicine.

25. As yesterday; no evacuation by stool. Infusion of senna, two ounces; to continue the antimony.

26. Pretty much as yesterday. To continue his medicine, the antimony.

P.M. Evidently better this evening; muscles not so rigid.

27. Mouth still closed, otherwise as yesterday evening. To continue the medicine.

28. No further change. To continue the medicine.

29. Has experienced a good deal of nausea; bowels confined. Infusion of senna, two ounces; the antimony to be given every three hours.

30. Improving; muscles still more relaxed; able to work the lower jaw, and put out his tongue. Continue medicine.

The tartarised antimony continued for a few days longer beyond the date of last report; the man daily getting better, he was discharged on the 18th of January, 1837, quite well.

CASE II.—Jebun Sheik, a strong and stout man,