whether the case under consideration was one of calculous or of scrofulous pyelitis.

In favour of calculous pyelitis (under which we include irritation produced by the presence of a foreign body in the pelvis or infundibula of the kidney, such as calculi, gravel, cancer, hydatids, or blood-clots), we have:

1. The occurrence of severe hæmaturia at the commencement of the disease, which continued to a less degree to its termination. Severe hæmorrhage is rare in tubercular pyelitis; but cases in which it has occurred have been recorded by Roberts and by Thomas Smith (*St. Bartholomew's Reports*, vol. viii, pp. 100-104).

2. The microscopical and other appearances of the putty-like mass were not those of *well marked* tubercle. But Chambers states that "these large masses (of tubercle), constituting the form of disease called 'scrofulous degeneration', have such a different appearance from the small, hard, shot-like tubercle, that, were they not the consequence of the same diathesis, one could hardly believe in the relation between them" (*Medical Times and Gazette*, 1852, 2nd part, page 403). Dr. McDowall relates a case of tuberculosis of the kidney in which the tubercular matter was of a "dirty white substance.....of the consistence of putty" (*Edinburgh Medical Journal*, vol. xv, p. 1093); and the drawings he gives would almost serve as representations of the kidney under consideration. Besides, a large quantity of pus-corpuses was mixed up with the tubercular elements in the pelvis; hence the deficiency in the characteristic features; and

3. No ulceration of the pelvis or ureter visible; but there were a few ulcers in the bladder.

Against this theory, and in favour of scrofulous pyelitis, there are the following facts.

1. No calculi were discovered in the urine, though small mortar-like masses were present occasionally during the last year of patient's life.

2. No calculi found in pelvis or ureter at necropsy; and no obstruction in the ureter, except such as might have been caused by the putty-like material.

3. Miliary tubercles on the peritoneum, and, it is believed, in lungs also.

4. Caseous material in the bladder, vesiculæ seminales, and vasa deferentia.

It is clear that the weight of evidence is on the side of the latter hypothesis, though, in the present case, it is possible the whole truth may be in neither theory, but in a combination of both. Thus a calculus formed in the pelvis, after setting up pyelitis in a tubercular constitution, may have been broken down, by the continued passage of acid urine over it, into the particles which were found in the urine in December 1873; and the miliary tubercle on the peritoneum and in the lungs, etc., may have been caused by absorption from the caseous matter in the kidney, the result of the pyelitis. Or microscopic calculi may have existed in the *tubuli uriniferi* (Roberts, *op. cit.*, p. 549) at the beginning of the disease, and have given rise to the first attack of hæmaturia, and afterwards to the pyelitis. It should be mentioned, however, that no such calculi were found at the necropsy. I therefore prefer naming the disease in the present case *scrofulous*, rather than *tubercular*, pyelitis, because the term *scrofula* is the more generic of the two, and includes instances in which there is no well marked tubercular manifestation (Aitken's *Medicine*, vol. ii, p. 2; 1872).

I may here appropriately give the signs by which the pyelitis in this case might have been diagnosed from cystitis.

1. Pains in the loins were amongst the earliest symptoms.

2. There was profuse hæmorrhage at the beginning of the ailment.

3. A large quantity of pus, etc., almost always appeared in the urine.

4. The urine remained acid, though alkalies were administered for some time (Roberts, *op. cit.*, p. 134). Exceptional cases, however, occur in which the urine is alkaline (Thos. Smith, *op. cit.*, pp. 100 and 102). In cystitis, the urine is eventually alkaline from ammoniacal decomposition.

5. Long vermicular clots of blood were passed in the urine.

[6. At an early period, pelvic and infundibular epithelial cells might possibly have been discovered in the urine.]

The sequence of events in this case, it must be admitted, is rather obscure; but, in all probability, it was somewhat as follows. The patient being of the tubercular diathesis, the exposure to wet and cold acted as the exciting cause of a deposit of tubercle in the secreting substance and in the submucous tissue of the pelvis of the left kidney (tubercular pyelitis). Severe hæmaturia occurred in consequence (or, *less likely*, from the presence of minute calculi in the *tubuli uriniferi*, or from calculus of the ordinary size in the renal pelvis). The inflammation set up by the tubercle spread down the ureter; and the constant passage of urine, carrying pus and blood, excited cystitis, with subsequent tubercular deposit (Rindfleisch). The vesiculæ seminales

and vasa deferentia were next affected; but it is difficult to say whether the disease in them gave rise to the pain suffered by the patient on the left side of the bladder. There was not much pain, however, complained of when pressure was made upon them from the rectum. Then the ureter, whose calibre had been already diminished by the thickening of its mucous membrane, underwent temporary occlusion from a clot, when *pyonephrosis* was produced, which terminated in desiccation of the pus and other materials, and in the formation of a putty-like mass.

The blood which appeared in the urine at different stages of the disease came from almost all parts of the urinary mucous membrane. At an early period, as well as throughout the whole course of the disease, it was derived from the secreting substance, pelvis, and ureter of the left kidney; and it passed off nearly pure, as in the severe attack of hæmaturia, or formed the vermiform clots in the ureter, which were expelled at a later stage, or was intimately mixed up with the urine. It is possible that blood also came occasionally from the right kidney, as a consequence of congestion produced by the extra work thrown upon it by the growing degeneracy of the left kidney and the blocking up of the duct (Roberts, *op. cit.*, pp. 338 and 339). This hypothesis is supported by the fact that the putty-like mass in the left kidney showed no tinge of blood, though the subsequent flow of urine may have removed any such stain. The unmixed blood at the end of micturition no doubt came from the bladder.

The varieties of pain complained of can be readily explained. The general uneasiness across the bladder was the result of cystitis; the pain in the loins and on the left side of the bladder depended on the irritation of the left kidney by morbid materials (pus, tubercle, etc.), and sometimes on the passage of clots and portions of the putty-like mass along the ureter; and the pain in the perineum (behind the scrotum) was ascribable to the cystitis, and perhaps to the inflammation of the vesiculæ seminales and vasa deferentia.*

The frequency of micturition from the beginning of the ailment was the consequence of inflammation in some portion of the urinary mucous membrane; and the loss of power at last over the contraction of the bladder is to be attributed to the degeneration of its walls from long continued cystitis and from tubercular deposit. Tubercle was deposited in the lungs about two years before death, and on the peritoneum shortly before it.

Treatment.—I have nothing new to offer in the way of treatment. Tonics of various kinds are the most beneficial remedies; and, of other medicines, none produced more favourable changes in the urine in the present instance than bicarbonate of potash in large doses. Under its use, the blood disappeared, and the pus diminished in quantity. It is possible, however, that the benefit may have been to a certain extent more apparent than real; the alkali having acted chemically on the purulent deposit, and changed it into a viscid, glairy, mucus-like mass, so that it was less visible (Beale's *Kidney-Diseases, Urinary Deposits*, etc., p. 363; 1869). Washing out the bladder with plain water always gave relief.

In conclusion, I beg to thank Dr. W. Roberts of Manchester most cordially for his kindness in examining the kidney in this case, and for his valuable opinion upon some of the difficulties connected with the diagnosis. Sir H. Thompson and Mr. Thomas Smith of London also merit my best thanks for their useful suggestions.

A CASE OF CONTRACTION OF THE LOWER EXTREMITIES, WITH MUSCULAR WASTING AND COMMENCING ATROPHY OF THE OPTIC NERVES.

By ELIZABETH GARRETT-ANDERSON, M.D.,
Physician to the New Hospital for Women.

JANE P., aged 44, single, was admitted into the New Hospital for Women under my care on January 19th, 1875, for contraction of the legs.

The family history gave no trace of serious nervous disease. Her father was always well and strong, and died at 50, of strangulated hernia. Her mother died at 70, of apoplexy. No near relatives have had epilepsy, asthma, or paralysis.

The patient herself has been very delicate and "hysterical" ever since she was 14 years old; at the age of 15, she had an illness described as "brain fever". It was accompanied by severe pain in the head, high

* Professor Verneuil states that the vesiculæ seminales, when inflamed, are hard, voluminous, and painful to the touch, and that incessant painful micturition is one of the most prominent symptoms. (*Clinique: Journal de Médecine et de Chirurgie Pratiques*, pp. 16 and 17. 1874.)

fever, and delirium. Leeches and ice were applied. When consciousness returned, she could not speak. She thinks now that the difficulty lay in the articulation of words; she says she had to learn to speak again like an infant. It is, however, evident, from her own account, that there was also some aphasia, even if the loss of speech were not entirely aphasic. There was no paralysis of the tongue or of the muscles of the mouth; she was in good health; and was able to work regularly as an apprentice to the straw-bonnet trade. Her fellow apprentices gradually taught her to speak again; but for two years she had great difficulty in expressing herself, and would often use one word for another something like it either in sound or in meaning. The catamenia did not appear till she was 20; from this time, the loss was regular and apparently normal till four months ago, when it ceased suddenly. At the age of 22, she had "rheumatism" very badly in her legs. There is no history of swelling of the joints, or of heart-affection. Vapour-baths cured her. At 26, she had an attack of constant crying for nothing. She was not unhappy, but she cried incessantly for three months. From that time to the commencement of the present attack, she was often "hysterical", crying and laughing for nothing, was very nervous, and easily worried, "never good for much".

History of Illness.—Seven years ago, she began to notice that her legs were weaker than they had been. The knees would occasionally give way, and the legs felt very heavy and tired. Soon afterwards, she had some aching of the lower part of the spine, and was always glad when she could lie down. The weakness of the legs gradually got more and more marked till April 1874. She had then not lost locomotive power, but she walked with difficulty, and was very soon tired. There had never been any impairment of sensibility in the limbs. In April 1874, the knees began to contract; the contraction increased rather rapidly, and in a few weeks she was not able to walk at all. One month after the contraction began, she went to a hospital, and was there thirteen weeks. Then she went to another hospital; and here chloroform was given, and she was told that the contraction completely disappeared under its influence. While she was in the anæsthetic state, fourteen-pound weights were applied to each foot. This caused intense pain, and in two days a further attempt was made to straighten the limbs by putting them into screw-splints. This also caused very severe pain, and finally the patient discharged herself in September 1874, rather than submit to it. She thinks that the contraction was much worse after those attempts to overcome it.

State on admission.—Both the lower limbs were in a condition of spasmodic flexion; the thighs upon the pelvis, and the legs upon the thighs. The left adductors were also in a state of tonic spasm, so that, while both thighs were flexed, the left one was carried across the right, and the left knee was pressed forcibly against the lower third of the right thigh. The muscles of both thighs were apparently wasted, while to the touch they felt much harder than normal. There was no impairment or perversion of sensibility in either limb; no loss of power over the rectum or bladder; no bed-sores, though the patient had now been confined to bed for ten months. There was no exaggeration of reflex movements. In spite of the contraction the limbs were not entirely without power of movement; they seemed to have some motor power, though it was restrained by the spasm, rather than to be contracted as a result of paralysis. Examination of the spine showed some tenderness over the lower lumbar vertebra; no feeling of burning was perceived on passing a hot or a cold sponge down the spine. No sense of constriction was felt round the body. As to electro-contraction, very feeble contractions were produced by a strong faradisation current; electro-sensibility also was much diminished. After this was tested, the patient thought the contraction was decidedly worse. Chloroform to complete surgical anæsthesia made scarcely any perceptible difference to the contraction. The anæsthesia was maintained for six minutes. The urine was acid, of specific gravity 1024; no albumen. She complained of dimness of sight; she could only read No. 30 Snellen's types. Even this soon became misty. She said she had "dizziness" of the eyes. There was no strabismus. The corneæ and media were clear; the pupils equal. Dr. Broadbent, who was good enough to examine the eyes, reported that rather more than the outer half (of image) of the optic discs was unnaturally white, and the centre depressed; the inner segment was fairly vascular. The retinal arteries and veins were rather small. The condition was similar in the two eyes. In the right eye, to the outer side of the disc (distant about three diameters of the disc), and a little below the level of the disc, was an irregular patch, in which the choroid and retina were atrophied and white sclerotic showed through. There was slight inequality of the labial muscles; on showing the teeth, the levator anguli oris on the left side acted less vigorously than on the right; the tongue was protruded in the median line and was well nourished; there was no fault of articulation; the palate muscles acted well and equally. There was no sense of weakness nor any contraction of the arms.

REMARKS.—This case seems to me to belong to the group recently described by M. Charcot, in which the tonic contraction depends upon sclerosis of the lateral columns of the spinal cord. In some respects, however, it does not agree with M. Charcot's account. In the cases he has observed, the rule has been for the upper limbs to be the first affected; for the contracted limbs to be in the position of extension; and for wasting of the muscles not to appear early in the lower limbs. In my case, the arms are at present, after ten months' contraction of the legs, quite unaffected; the legs are rigidly flexed, instead of being extended; and there is decided muscular wasting. I have also not observed the trembling of the affected limbs which M. Charcot mentions as a prominent symptom. But, though exceptional in these particulars, I think M. Charcot would accept the case as one of sclerosis of the lateral columns. The diagnosis lies between this and hysterical contraction. As bearing upon the at present unknown pathology of hysterical spasm, it is interesting to note that, so recently as in August 1874, the contraction is said to have disappeared under chloroform; and if this be correct, it might at that date fairly have been described as hysterical. M. Charcot seems to recognise that hysterical spasm may run into the permanent spasm of sclerosis, and this may have been the sequence of events here. If it be true, as maintained by M. Charcot, that tonic muscular contraction means always disease of the lateral columns, either primary or consecutive upon cerebral or upon other spinal disease, it may be that hysterical spasm depends upon some temporary impairment of nerve force or of conducting power in part of the lateral columns, by which the affected part is rendered as useless for the time being as it is permanently in sclerosis. Moreover, if it be found clinically that contractions once hysterical do frequently go on to the permanent contraction of sclerosis, there would be reason for suspecting that the pathological condition of the cord in the two conditions must be related to each other. The muscular wasting, and the loss of electro-contraction and electro-sensibility, indicate, according to M. Charcot, that the sclerosis has extended from the lateral columns to the anterior cornua of grey matter in the cord.

The case does not seem to me to admit of treatment. Electricity in any form is, I imagine, distinctly contraindicated. Tonics and counter-irritants to the spine are not likely to be of the smallest benefit. Cod-liver oil and a little bromide of potassium have been given to help nutrition and to procure sleep. With the view of testing the effect of conium on permanent spasm of this kind, large doses, *i.e.*, four and five drachms of the succus (Bell's), have been given repeatedly. As might have been anticipated, the effect was *nil*.

The propriety of performing tenotomy on the contracted tendons was considered; and, as there seemed to be no reasonable probability of its affecting the tonic muscular spasm upon which the contractions depend, the operation was not advised.

ON THE VALUE OF TAR IN BRONCHIAL CATARRH AND WINTER-COUGH.

By SYDNEY RINGER, M.D.,

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WILLIAM MURRILL, L.R.C.P.

THE frequent and popular use of this remedy, both by the profession and by the laity, in France and Belgium, led us to try its effects. Patients so susceptible to cold, that they were obliged to remain indoors the whole winter, informed us that this remedy curtailed considerably the duration and lessened the severity of their catarrhal attacks, and that, by an occasional recourse to the tar, they became less prone to catch cold, and could more freely expose themselves to the weather, without incurring an attack. It will be seen that our observations confirm these statements.

We employed tar in two-grain doses, made into a pill, every three or four hours. From October to January, inclusive, we carefully watched its effects on twenty-five patients, whose ages varied from 34 to 70, the average being 44. All these patients had suffered for several years from winter-cough, lasting the whole winter. They were out-patients, and visited the hospital weekly, or oftener. Most of them were much exposed to the weather, whilst some were so ill, that they were obliged to stop work, and, therefore, were less exposed.

These patients suffered from the symptoms common in winter-cough—paroxysmal and violent cough, the paroxysms lasting from two to ten minutes, and recurring ten to twelve times a day, and, in the night, breaking their rest. The expectoration, frothy and slightly purulent, was generally rather abundant, amounting in some cases to half-a-pint or more in the day. The breathing was very short on exertion, but