portion. Acute inflammatory action, as has been already observed, seldom attacks glands in this altered condition, but a slow, tardy scrofulous suppuration, or even tuberculous deposition, not unfrequently leads to destruction. This I have occasionally verified by *post mortem* examination; and I have but little doubt that many so-called scrofulous or tuberculous glands consist, in reality, of certain degenerations of true hypertrophied ganglia.

[To be continued.]

ON ALBUMINURIA, AND ITS FERRO-ALBUMINOUS TREATMENT.

By DAVID NELSON, M.D. Edin., formerly Physician to the Queen's Hospital, and Professor of Clinical Medicine, Queen's College, Birmingham.

[Concluded from page 685.]

CASE III. *Albuminuria, receiving great Relief, but ending in Death from Cold.* Miss J. P., aged 22, was brought to me on March 6th, 1856, having been under the treatment of an irregular practitioner, as for amenorrhœa. She had been ill for about eighteen months, during which period no menses had appeared, and she had been gradually getting worse and worse. When I first saw her, she was deadly pale, and swollen under the eyes, had no appetite, was very drowsy, and troubled with diarrhœa and pain in the loins. Her stools were pale; her urine scanty and frequent; her legs and thighs greatly swollen, being fourteen inches and upwards round the ankle; and her feet so enlarged that her boots and shoes had ceased to be of use, and she wore carpet slippers. The urine was almost one solid mass of albumen; the skin was parched and scaly; and she was frequently afflicted with vomiting. She also had a distaste of animal food, including eggs. To meet urgent symptoms, she first had alterative doses of hydrargyrum cum cretâ and Dover's powder, night and morning; and chalk, calumba, taraxacum, and hydrocyanic acid, twice or thrice a day. These had the effect of altering the hepatic secretions, and staying the sickness and purging; and she then began with the more special remedies. A belladonna and opium plaster was ordered over her loins. She took a diuretic mixture, had a chop for dinner, eggs morning and evening; and, as the sulphates of quinine and iron seemed too potent for her stomach, she took ten grains of the carbonate and phosphate of iron united thrice a day with food. By the 27th of March, all dropsy had disappeared, except in her feet; and she felt lighter and stronger. She did not get up more than once in the night-time, and the albumen did not exceed three-fourths of the urine excreted. On April 3rd, as the food with the powders felt heavy on the stomach, she had liquor pepticus. By the 12th, though she felt easy, she stated that she was tired of the powders, though they were tasteless; and, as the stomach and bowels were in good condition, she had two grains of sulphate of quinine and two of sulphate of iron, in pill, thrice a day; and proceeded with the diet as before. On April 28th, she menstruated for the first time for nearly twenty months, felt quite comfortable, had a colour in her cheeks, and no swellings; while the urine was about one-third albumen. On May 1st, all the favourable symptoms continued; she had a little cough, but that disappeared under a soothing expectorant; and, as she felt nothing to complain of, and seemed to consider the return of menstruation as a cure effected, she ceased attending.

I did not see her again for nearly six months, when I was consulted on October 23rd, for an attack of bronchitis. At that time, there had been no return of anasarca; the colour was good; and, though very slender after the removal of the dropsical swellings, she had felt so strong as to be quite able to attend to her father's business of an innkeeper, getting up early in the morning, and sitting up late at night, without distress. The father and aunt stated that they had difficulty in persuading her to take meat and eggs, etc., as ordered; and that she only took the tonics by fits and starts, neglecting them entirely, if not looked after. However, she got better of the cough, and was to go on with the treatment advised, which she promised to do.

I did not see her again for other eight entire months, during which period it was reported that she felt quite well during the greater part of the time, menstruating regularly until one or two months before, having no dropsy nor pain. For some time back, however, she had much neglected the remedies, her father and aunt stating that the patient seemed to think it foolish to be always taking pills and powders; that she had got

tired of eggs, and disliked meat; and, besides, thought she had nothing to complain of. Her face, however, had become paler; and the last menstrual flux had been scantier and less coloured than usual. When I was called to her, on Tuesday, June 23rd, 1857, I learned that she had gone out with a picnic party on the preceding Saturday, wearing thin muslin; had sat upon the damp grass, and felt cold and shivering when she got home at night, but took something warm, and went to bed. Next day (Sunday), she still felt poorly, and had a slight dry cough; but thought it would go off by keeping in bed. On Monday, she felt worse, and towards evening suffered greatly from dyspnoea and general oppression; and swelling also had recommenced. Next day, when I saw her, I found the legs and face again swelled; the cough severe; the pulmonary congestion extreme; the expectorated matters tough, ropy, and glutinous; and the urine scanty and excessively albuminous. Her faculties, however, were clear. An aperient and a stimulant expectorant and diuretic mixture, were prescribed; the latter consisting of ipecacuanha, ammonia, tincture of cardamoms, and nitrous ether, with hyoseyanus. On the following day (24th), she continued oppressed and feeble, and was more swollen. The remedies employed did not appear to act. Blisters were ordered to the chest, and also behind the ears, as cerebral symptoms seemed threatening. On the Thursday (25th), the blisters were found not to have acted; she seemed drowsy, stupid, and sinking; the tongue was parched and dark; and the skin dry, but exhaling a urinous odour. The face was puffed, so as almost to close the eyes; and the extremities were immensely distended. No urine passed, nor did there seem to be any in the bladder. Nothing was now ordered, beyond a little wine and water, to moisten the parched tongue. On Friday, the 26th, she was quite comatose, with dilated pupils; and died in the course of the evening, the breathing becoming slower and slower, and the mucus at length filling the trachea.

In this case, which was an extreme one to begin with, there was ground, in the course of the treatment, for hoping that the efforts would have proved more successful than they ultimately were. The rampant symptoms were subdued in no long time, and the patient became so well in her own opinion after two months, that she ceased to do anything beyond taking the tonic medicine irregularly. For six months nearly, she felt perfectly easy; and then was only troubled with a cough, which vanished under simple treatment. Then, again, for other eight months, fourteen in all, she did not herself feel any necessity for medical advice; and then the attack was brought on suddenly by accidental exposure to cold and damp, after a previous partial failure of health for a month or so. It appears to my mind pretty clear that the picnic exposure in the light dress had suppressed the cutaneous discharges; that, these being thrown upon the other eliminatory organs, the kidneys and liver had failed in ability to excrete; and that the whole retained excretions, poisoning the mass of the blood, had produced congestion of the lungs and torpor of the brain; and hence the mode of her death. In healthy persons, if one or more excreting organs fail in their functions, there are others with an overplus of capacity and energy, ready to take up the duties; and, by dint of a little brisk reaction and morbid commotion, the end is effected, and life preserved; but where vital organs of depuration are unequal to such a task, as in this instance, death is inevitable.

We should not perhaps be justified in drawing hopeful conclusions from the facts of the above case, were there no others of happier issue to be adduced; but, considering that of Emma Harris, reported amongst the older cases of 1852, who still survives, and those others which are to be presently reported, we are fairly entitled to conclude that, had not this unfortunate young woman so fondly considered herself perfectly cured, so much neglected a perseverance in the remedies and the diet, and so imprudently exposed herself in a manner perfectly out of accordance with all sound advice, she might still have lived, humanly speaking, and been able to live for a period such as we are not able to determine.

CASE IV. *Albuminuria of a severe Character, terminating in apparent Recovery.* Master P., a little boy, about five years old, was brought to me on March 19th, 1858. He had been ailing for a considerable time, had lost appetite and spirit, was drowsy, stupid, and feverish; and when he complained of pain, it was in his head or his back. He had been treated for worms, weakness, and so on; and had been sent into the country for fresh air, but with no good effects. The nature of the disease had been quite unsuspected. They saw he was pale, but considered him stout. After exhausting the *Materia Medica*, so to speak, the last determination arrived at was to

stop all medicine; but, under that do-nothing system, he still continued to get worse. On the visit, his face was observed to be pale, puffy, and pasty; the eyes being swollen underneath, and the eyes in great measure hidden. He had an anxious expression, and suffocative cough. His bowels were costive; his urine scanty, but frequent; and the legs anasarcaous, dimpling deeply under pressure. He had had no preceding scarlatina. The first remedies prescribed were aperients and expectorants; and it was about a week before the bowels were rectified and the cough subdued. Meanwhile, the urine was found to contain 75 per cent. of albumen; that is to say, on being allowed to stand and settle after coagulation, the albumen occupied three-fourths of the entire fluid. On the 25th, the little fellow was seized with convulsions, alternating with stupor. It was then stated that he had passed no urine for nearly twenty-four hours; but when Mr. Yates, of Bath Row, who was now associated with me, introduced the catheter, none was found in the bladder. In this emergency, purgatives were exhibited by the mouth, and a brisk injection administered; while blisters were applied behind the ears; under which agency he rallied, and passed both feces and urine, the former being hard, lumpy, and variegated, partly dark, and partly white. As the kidneys seemed difficult to be excited, and as the liver was sluggish, he now took alternative doses of the grey mercurial powder at night, and a brisk aperient of jalap in the morning. These rectified the hepatic secretion, and produced a quantity of watery discharge from the bowels; while, to act mildly on the kidneys, he was allowed a solution of supertartrate of potassa as a common drink. At the same time, he was dieted on meat and eggs; and had quinine and carbonate of iron with each meal, in wine thickened with isinglass, and sugared. Of the drink, however, he took so much, being thirsty, that the anasarca greatly increased, and he again seemed to have a tendency to coma. To such extent did the swelling now attain, that the scrotum became nearly as large as his head, the penis being completely buried, and the little quantities of urine that dribbled off excoriating the surrounding surfaces. The abdomen was also swelled to a high degree. This state being so distressing, and the kidneys being sluggish, we judged it advisable to tap the scrotal cavity; and, accordingly, on the 6th of April, Mr. Yates introduced the trocar. At first, the serum flowed freely; but the fluid at the end appearing to thicken, it came away more slowly. However, the drain remaining open, a very large quantity of fluid was carried off in the course of a few days; so that abdomen, scrotum, and legs, assumed much more of the natural appearance. After this, the diuretics acted better; and he went on with the purgatives, the albumen, the quinine, and the steel, as before; the supertartrate of potassa being omitted, and small quantities of aromatic sulphuric acid, with syrup of oranges, being given to allay the urgent thirst. If it did that, and helped to dissolve the carbonate of iron in the stomach, so much the better. By the 24th of April, the purgatives (given every other morning) seemed to have induced a tendency to diarrhoea. They were therefore stopped, and an astringent administered; while the diuretics and special remedies were continued. By the 1st of May, his appetite was good, his bowels regular, and stools natural. He slept comfortably, without being moved by bladder more than once in the night. His colour was better; there was comparatively little anasarca; and his tongue was clean and moist. He had no pain, was lively and playful, and less dependent on his nurse.

In this manner, he steadily improved, until about the middle of May, when, from some error in diet, arising from the visit of a grandmother, who indulged him, in mistaken kindness, with many unwholesome dainties, and late going to bed; he had fresh threatenings of convulsion, with disordered stomach and bowels, and some increase of anasarca. A short course of purging was then resumed, and afterwards he returned to the diuretics, the quinine, steel, albumen, and peptic liquor having been continued throughout. At the end of May he was playing about, had a good colour and appetite, slept soundly, and complained of nothing whatever. There was only a little oedema of the feet and ankle at night when he had been sitting up long. The albumen, at this period, was not more than one-sixth. He improved in the same satisfactory manner all through the next month of June, the albumen becoming reduced to about a twelfth and sometimes a sixteenth. He now went out, and, from the change in his colour and his activity in running about, excited the astonishment of those neighbours who were wont to observe his heavy pale appearance as he was carried about; the convulsions and the coma having also damped all hope of recovery. Towards the end of June, he

was taken by the nurse into the country, with directions to go on with the eggs and steel. When Mr. Yates last examined the urine, he found no trace of albumen, and there has been no relapse up till now, the 30th of June, 1860. This is one of the instances in which, I think, the favourable change can be referred with confidence to the treatment pursued. We can never know what was the precise condition of the kidneys when the diseased action was paramount, and may also never know the condition of the same organs after death. So far, morbo-anatomically and pathologically, our suppositions must be mere theory; but that the albuminuria did exist, and was treated upon definite simple principles, and disappeared, are material facts of a manifold more importance to the practical physician than all the speculations in the world.

CASE V. *Albuminuria preceded by Anæmia and Amenorrhœa, with apparent Recovery.* Miss E. R., aged 18, and residing in a healthy part of the county of Worcester, first appeared before me on the 9th of July, 1857. She had been ill for eighteen months before, and had ceased to menstruate during that time. She, like the others, was pale, puffy, and pasty in aspect, and was immensely swelled in the lower part of the body. The ankles were fifteen inches round, and the legs and thighs in proportion; the abdomen also was swollen, and even the labia greatly distended. She was drowsy and without appetite, especially disliking eggs and other animal food, and complained of headache, languor, and nausea. The urine was frequent and scanty, and of milky appearance. The mother stated that the gentleman she had lately been under had told her that her daughter was not suffering from common dropsy, but from what was called Bright's dropsy, from which he feared there was no possible recovery, but that she might try what could be done for her in Birmingham, and accordingly she was sent to me. Her urine then was fully six-eighths albumen, and she had some cough. She was first ordered the aloes and assafœtida pills at night, with a pectoral and diuretic mixture, and also the muriated iron in peptic liquor, and from four to six eggs a day, in one form or other, and as a medicine, without regard to her taste or inclination. This was insisted upon, not as a luxury, but a necessity, and she promised a rigid compliance. On July 20th the swelling had somewhat decreased, and she continued the treatment. By the 30th, the swellings were noted to be much less, and the colour somewhat improved, the albumen being reduced to about three-fourths. She was less drowsy, and the bladder was less irritable.

On August 10th she had an attack of asthmatic bronchitis, for which she took æthereal tincture of lobelia, etc., and got better. The swellings now continued to decrease, and the colour to improve steadily, so that by the 22nd of October the anasarca was almost gone, the ankle measuring eight inches, while the albumen was only one-fourth of the urine passed. She now took two grains of sulphate of quinine, and the same of sulphate of iron, in pill thrice a day, and the peptic liquor as required, the diet being as before. In November she had a menstrual flux, and again in December, when there was no anasarca, and the colour was very good, and the albumen only one-sixth. She said she felt strong, and able to walk and work as well as ever she did in her life. She was advised, however, to continue the tonic treatment and diet. On the 18th of January, 1859, she reported that she felt perfectly well, again on the 18th of March, and also on June 13th, when there was only a mere trace of albumen, menstruation going on regularly and everything else being right. She has since visited me, in 1860, within two months back, remaining of good colour, regularly menstruating, and feeling well; but she perseveres in taking the phosphate and carbonate of iron, and meat diet, etc. On each occasion she looked well, and reported herself hearty, strong, and regular in all her bodily functions. On the last occasion, there was some mucus in the urine, but scarcely a trace of albumen, if any at all. Within the last few days, being called into the neighbourhood where she lives, I heard her spoken of as being in what is called "rude health". Here, I think, we have an equal right to infer that the steady improvement that took place was due to the steady treatment pursued. The utility of the substitutive principle, which I have heretofore strongly advocated, is, I apprehend, impossible of being controverted. It possesses, above all, the distinguishing characteristic of simplicity—a simplicity almost too simple for those who delight in startling novelties and far fetched speculations. But this is obvious that, whereas the bodily frame is formed of certain elements, or of compound radicals, acting after the manner of elements in their attractions, repulsions, and combinations, and whereas such bodily frame is impaired if one or more of such elements or compound radicals be not duly sup-

plied, it follows, as a matter of necessity, that when they are found wanting or deficient they ought to be supplied, if possible. It may happen, in some cases, that the very organisation itself is incapable of appropriating such pabulum after being furnished with it, but these are the exceptions, and not the rule, unless such organisation be worn out by protracted disease or old age. In the special matter of this albuminuria, as we see that in most cases the dreaded symptom seems to be preceded by hæmorrhage or other sources of drainage of the red particles, and is, when it takes place, itself a drainage of the albumen, so an extra supply of steel and albumen appears the readiest method of meeting these evils, and the following deductions may therefore be advanced with safety.

1. When the premonitory symptoms of debility and anæmia have not as yet produced actual renal disorganisation, the supplies of the deficient elements afford a fair hope of averting the threatened malady of albuminuria.

2. If the renal disorganisation be commencing, the improvement of the mass of the blood by such means may yet give the constitution the power of arresting the dire changes that may precede, accompany, or supervene upon the albuminuria.

3. Even if the disorganisation be considerably advanced, such supplies may postpone the fatal issue for an indefinite period.

The cases of absolute and complete disorganisation or disglanding are, of course, as already observed, beyond the scope of this or any other therapeutic paper, and belong exclusively to the province of morbid anatomy.

MINOR QUERIES IN MEDICAL SCIENCE.

By W. HINDS, M.D., Lecturer on Botanical Science at the Birmingham Midland Institute.

II.—CHOREA AND ACUTE PERICARDITIS: WHAT IS THE NATURE OF THEIR RELATION?

CASE III. A little girl, aged 10 or 11 years, was attacked with fever and pains in the joints, especially of the shoulders and knees, and had a most distressing pain referred to the region of the heart. The attack began by slight indisposition for about a week before I saw her, and there was also some gradually increasing cardiac pain. On April 22nd, a physical examination revealed a to-and-fro or friction-sound, with a kind of bellows-murmur apparently intermingled. There was some cough; no dulness, nor crepitation over the chest. By the 25th, the to-and-fro sound had become very distinct indeed and louder. The countenance was anxious, and expressed distress.

From the first, the case was treated by leeching over the region of the heart, and by calomel in repeated doses; also by a blister, which was dressed with very much diluted mercurial ointment.

April 28th. The friction-sound became less rough; the gums were tender from the mercury. The breathing was less short, and the pulse fuller. There was no delirium, but a little jactitation and restlessness.

May 1st. The tongue was found blistered on the right side; the friction-sound still continued; and chorea had completely supervened. The arms were constantly tossing about involuntarily. Half words were continually uttered. There was perfect consciousness, and the mind was apparently unobscured in the slightest degree. The jerking movements were so severe, that the patient was near falling out of bed sometimes. She had had no sleep for two nights; she answered questions in an abrupt and jerking manner. The skin was cool, and there was no fever. The patient sank down in the bed, and could not be kept with the head upon the pillow. She declared herself free from pain everywhere, except in the arms. The mucous membrane of the tongue was much ulcerated, probably by the mercury. She took half a grain of opium each of the last two nights without any effect. The calomel was ordered to be omitted.

R. Ætheris chlor. ʒiiss; tincturæ opii ʒxl; aquæ ʒiv. M. Capiat cochleare medium secundâ quâque horâ. She was also ordered to take the carbonate of iron in six-grain doses thrice daily; and to have free nourishment.

May 4th. She was much better; had slept many times, an hour at once. The movements were much less severe. The skin was quite cool. She had more command of speech.

May 7th. No further improvement had taken place. There was insomnia, even though she took last night a grain of powdered opium. Her general aspect was about as before. She was ordered to have one-sixth of a grain of morphia and two grains of extract of hyoscyamus at bed-time, and to change the carbonate of iron for tincture of the sesquichloride. The friction-sounds were still evident.

May 14th. She had slept well the last night or two for the first time since the attack. The choreal movements were gone; there was not the least trace left. She was dressed, and able to sit up. There still remained the friction-sound, though not so distinct.

May 21st. The patient appeared well, except some general weakness. At the same time, the friction-sound, to some extent present at the last examination, had entirely ceased. There was a very soft bellows-murmur only with the first sound.

REMARKS. The last statement shows that active or calomel treatment omitted fourteen days before, must not necessarily be pursued because the to-and-fro sound exists—the treatment being regulated by the whole circumstances. It is evident that the inflammation of the pericardium from which the exudation of lymph proceeds, requires special treatment only so long as it lasts, and that the exuded lymph which makes the two surfaces rub together, so as to produce audible sounds, will or can only gradually disappear, and will do so with even a tonic treatment. I am aware that this contains an assumption at variance with the views of some high authorities in medicine.

The view here alluded to is, that the lymph on the surface of the heart and pericardium never does clear away; and that when the friction-sound ceases, it can only be because the two surfaces become glued together. I believe this view to be unsubstantiated; but reserve this special point for a future paper, when I shall give other cases in illustration. To discuss it now, would be wandering from my present object—which is to inquire into the relation which the disease under notice holds to chorea.

The connexion of chorea with acute rheumatism was probably first specially noticed and commented on by Dr. Bright, in the *Medico-Chirurgical Transactions*. It has been also mentioned by Dr. Copland; and Dr. Watson says:—"I certainly have seen jactitations like those of chorea in a few instances of rheumatic carditis." Dr. Watson, however, does "not perceive any obvious or direct connexion between the cardiac disorder and the nervous disorder"; but he conjectures some relation to the fibrous structures supposed to be implicated in both, or else some morbid condition of the membranes of the spinal canal.

It is scarcely, I think, desirable to adopt either of these views of that relation. The history of the case given above, shows the supervention of clonic spasm to have occurred exactly at that point at which the nervous system became exhausted, and its complete disappearance at the exact point when the exhaustion may be regarded as removed; and that there is manifestly a more direct or intimate connexion here than simply with the disease itself, for the cardiac affection not only began a considerable time before clonic spasms began, but must be regarded as not entirely removed even after their subsidence. Remotely, however, no doubt, there is ground for an indirect connexion. Nervous symptoms unquestionably do often occur in even chronic affections of the heart.

In carditis, the nervous symptoms are shown in the "care-worn" and in the "anxious expression" of countenance, and the "distress" so generally noted. Then circulatory disturbance tends also to insomnia; and when the heart is inflamed, and its movements obstructed, an impression will of necessity be stamped upon the nervous system and brain. It may be simple distress or delirium, or clonic spasm—the two former being the most common.

The state of exhaustion being induced, and the nervous system being also in this manner excited, and that in a delicate or nervous subject, will sufficiently, I believe, account for the choreal affection. The power of the brain and of the will are nearly prostrated. In the alimentary canal are present stimulating and vitiated secretions and other morbid matters, which often alone will give rise to spasm, as we see in cholera, in tetania, and many other cases.

The doctrine of spinal irritation in even idiopathic chorea is a very questionable one. If we look to the causes of chorea, enumerated by the best authorities as unquestionably ascertained, we shall find these to be of two classes; namely, *cerebral* or *centric*, and *peripheral*. Amongst the most prominent of these causes are sudden shock or fright, blows on the head