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 palプnum 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. A matter of this kind may be seen in the cases that in most cases the dreaded symptom seems to be preceded by hemorrhage or other sources of drainage of the red particles, and is, when it takes place, itself a drainage of the albumen, so an extra removal of albumen affords the readiest method of ridding these evils, and the following deductions may therefore be advanced with safety.

2. If the renal disorganisation be carefully examined, 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 proceed, accompany, or supervene upon the albumínuria.

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

The patient had no signs of albuminuria. The cases of absolute and complete disorganisation or disglading 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. Hints, M.D., Lecturer on Botanical Science at the Birmingham Midland Institute.

11.—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 29th, the to-and-fro sound had become very distinct; lessened and louder. The countenance was anxious, and expressed distress. From the first, the case was treated by leeching over the region of the heart; also by calomel and alcohol; also by a blister, which was dressed with very much diluted mercurial ointment.

April 29th. The friction-sound became less rough; the growl, as it were, was no longer heard from the mother. 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 unobstructed 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 a stupor, and was not hungry. She could not drink or eat, 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 membranes 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.

B. Gother's chlor. 5iss; tinct. opii 1/2; aqua 1xv. M.

Capsi calceolaria medio secondi qu世家 hora.

She was also ordered to take the carbonate of iron in six-grain doses thrice daily; and to have free nourishment. The tongue was much ulcerated, and there was an hour at once. The movements were much less severe. The skin was quite cool. She had more command of speech.

May 4th. 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, to change the carbonate of iron for tincture of the sesquisulphure. The friction-sound still continued; no distinct murmur appeared, and the countenance was still calm and composed. 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, and the symptom of jactitation 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, and that consequent action of lymph tracks, 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 without any active 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 and friction-sound, when the friction-sound ceases, it only be because the two surfaces become ginned together. I believe this view to be un-substantiated; 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 symptoms 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 supervision 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 exudation may be regarded as having ceased. For it is manifest that a new and festly 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 termed not entirely removed. This, however, is a mere conjecture. 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 that 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 "distress" or "care-worn" state of the patient. But the fact of the moment is, that at the expiration of 100 days, the nerve power are nearly prostrated. In the alimentary canal are present stimulating and irritative secretions and other morbid matters, which often alone will give rise to spasm, as we see in cholera, in this, 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 associated, we shall find these to be two—first, cerebral or centric, and peripheral. Amongst the most prominent of these causes are sudden shock or fright, blows on the head.
of the first class, and gastric irritation from irritating matters and worms, and painful menstruation on the other.

For spinal irritation; therefore, a term which should probably be expunged altogether from medical etiology, we may, I think, substitute peripheral irritation of one kind or other—a really intelligible and mean/ing term—in some if not many of the cases sought to be explained by the former.

Then we have paralysis agitans, in some persons with semi-worn-out cerebral power, evidently one phase of the choreal or clonic spasms of the muscles.

From a careful consideration of this subject, I find it difficult to conclude that any more direct relation exists between chORIES and carditis than the one now explained; and I do not think that it at all justifies the theory, even if it is possible to think of anything in the way of explanation as to that mysterious connection between the cardiae and other ganglia of the sympathetic and the cerebral and true spinal system, nor of the modus operandi of the influence which an inflamed heart would exercise through this relation upon the brain and nervous system.

CASES ILLUSTRATIVE OF THE INFLUENCE OF BELLADONNA.

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In two papers—one contained in the British Medical Journal for July 28, and the other in the Lancet for the Ist August—two cases were related of the physiological influence of belladonna. The conclusions to which I have there come are, that this drug is an excitant of the sympathetic nervous system, and a depressant (mainly by local action) of the cerebro-spinal system.

In the following paper, I propose to exhibit some results of the practical application of this theory, and to point out the farther indications for practice thereby afforded. And I will begin with cases where the action of this drug upon the sympathetic system appears to be the rationale of its curative influence.

CASE 1. Enuresis. July 1859. George M., aged 14, had long suffered from nocturnal incontinence of urine. There was nothing particular about the general appearance of the patient, or that of his urine. I ordered small doses of tincture of hæmatriodes, which relieved him temporarily; but immediate relapse followed its discontinuance. I now prescribed one-third of a grain of extract of belladonna twice a day, in cinnamon-water. In three days his complaint left him; a slight relapse, about a week subsequent, was immediately removed by a few more doses of the medicine; and he has since been entirely free of his ailment.

Remarks. Incontinence of urine may obviously result from two immediate causes:—1. From overactivity of the longitudinal fibres of the muscular coat of the bladder (detrusor urinæ). This is usually excited by some irritating quality of the urine, and is best removed by alkaline medicines and opiate suppositories. 2. From weakness or paralysis of its sphincter. This second and far more common cause of enuresis, usually met with in delicate children, requires for its cure some agent capable of toning the sphincter muscle, either immediately, or through the medium of its nerves. Such an agent we have, according to my views, in belladonna; and, accordingly, the accounts of the influence of this drug over the disease from all parts of Great Britain and the Continent are highly encouraging. It rarely fails to overcome it, and in its use is subject to none of the evils occasionally produced by cantharides.

In prescribing this drug for children, the discovery of Dr. F. Hunter, that "the effects produced by the nutriturately slight effects on young subjects must be borne in mind; and that which would seem to be large doses must be unhesitatingly used."

CASE II. Milk-Abscess. July 1860. Emily H., aged 21, nine weeks after confinement caught cold. When I saw her, I found at the upper part of the left breast a hard swelling elevated above the surface, of about the size of a hen's egg; it was very painful, red, hot, and tender to the touch. There was discoloration of the skin, right side, constipation, headache, high fever; and, in the course of the preceding night, there had been some delirium. The fever had somewhat abated since vomiting a quantity of pure bile early in the morning. These symptoms, concomitant of the disease, had been no increase of swelling. Next day, the redness and heat had gone, some tenderness only remaining. The swelling remained stationary and slightly tender for a few days, then gradually disappeared, which probably happened during the mother's illness, and the general fever was sufficient to diminish the secretion of milk; but, as soon as she became convalescent, the flux of milk in both breasts returned as speedily as before.

Remarks. The localised inflammation of the breast to which (from its great tendency to suppuration) this term "milk-affects" commonly applied, has not been frequently treated by belladonna. This drug has been used to produce galactifuge properties; and accordingly, being applied in the form of extract or ointment around the nipple in these cases, is speedily checks the secretion of milk, and with it the inflammation. (British Medical Journal, Feb. 6, May 29, June 12, 1858, etc.)

The galactifuge properties of belladonna are easily explained upon the theory of its action which I have advanced. Cl. Bernard has found that there are two ways of diminishing the secretory power of a gland—1. Galvanising the sympathetic nerves which supply its blood-vessels; 2. Dividing the cerebral nerves which supply the gland. According to my view of this, both excite the sympathetic (as by galvanism), and depress the cerebro-spinal influence (as by section) of the parts which it affects. The result of its application to the nipple shows it to resemble in its effects the former of these, unlike its secretory power and the supply of the material on which that power is exercised. And this galactifuge property of the drug will be found invaluable in cases of still-birth, premature working, and others, where the check of secretion is loudly called for.

But it will be noticed that, in the case I have recorded, there was no check of the secretion of milk. Not to speak of the superior practical advantages of a plan of treatment which avoids this unpleasant concomitant, it is obvious that the rationale of the cure must be a different one. It seems to me to resolve itself into the simple action of belladonna in exciting the vasomotor nerves, and thereby contraction of the capillaries. The essence of the inflammatory condition, to my thinking, is a morbiddilated state of these vessels. The exudation from them, on which Professor Hughes Bennett and his school lay so much stress, is surely a consequence only of their preternatural dilatation and fulness. A substance which will contract them will save them the necessity of relieving themselves by exudation at all, and, even when this has taken place, will most surely promote its absorption. And this was the view of John Hunter. "If," he wrote in 1794, "we could discover an agent which would cause the contraction of the extreme vessels, we should have in this the true remedy for inflammation."

In this view of the case, the effects produced by the local application of belladonna, opens to appear a wide field for the treatment of inflammation in general. The three indications which inflammation gives us for treatment are—1. To counteract the effects of the inflamed plasma by means of locally applied heat; 2. To diminish the secreturious properties of the blood; 3. To reduce the hyperemia of the part affected. The old mode of effecting the first two objects—in other words, of relieving their inflammatory fever—was to bleed, and to give mercury; which may fairly be described as robbing a patient of a portion of his life, and poisoning the remainder. A more enlightened practice fulfils the former indication by antimonials, and the other substances which have this physiological effect upon the heart; and the latter by low diet, diuretics, and salines. The third indication—the reduction of the hyperemia of the part—has been largely met by local bloodletting; but these measures only applicable in their fulness to external inflammations, and even there are open to much improvement. Local bleeding, however efficacious, wastes blood, and leaves the capillaries weakened. The more powerful was the bleeding, the more continuously applied, to be of avail. We should gain immensely, could we find a remedy capable of acting, locally or through the general system, upon the nerves of the part, which could, in a manner equally effective, and which could have been no contrivance for which Nature is striving, and thus the hyperemia of the part reduced without the loss of a drop of blood, or the inconveniences inseparable from leeches, cupping, and the continuance of the concomitant gastro-enteritis. *

* I find nitre, which combines both these actions, an admirable general remedy for the mild fevers and inflammations of childhood.