

eyeballs, in the head, and down the spine; pain and tenderness occur in various muscles, chiefly those of the back, neck, and calves. The pains in the head and back are peculiar; they are deep-seated and resemble those caused by concussion. Percussion of the spine, as Dr. Bezly Thorne points out, is painful; indeed it produces a deep-seated jarring sensation. Prostration (contrary to what was described formerly) is out of all proportion to the general severity of the disease. Now, except the symptom referred to the muscles, the above description points to one pathological condition only—i.e., a damaged state of the brain and spinal cord. The muscular pains in the symmetry of their position and the variability of their intensity suggest that they are myalgias projected from the nerve centres.

2. If the attack be more severe the symptoms referred to the central nervous system directly become more pronounced and numerous, and, in addition, symptoms referred to other parts of a very characteristic and interesting nature arise, and then we have the fully-developed disease. At whatever part of the body these symptoms occur they always possess certain qualities; they are symmetrically placed, their duration and intensity from moment to moment are exceedingly variable; they manifest, if on the surface, and indicate, if deeply seated, a congestion of the part affected and a disturbance of its functional and sensory condition; in other words, the outlying symptoms point to a loss of vascular, functional, and sensory tone, and not to true inflammation. If the part affected be a surface, hæmorrhage is likely to occur, and if the condition persist for a certain time a state approaching inflammation is induced, which when it affects a mucous membrane constitutes catarrh. If the nose be involved, we get violent sneezing, with suffusion of the nasal mucous membrane, and often of the surface of the head. This condition sometimes passes off in a few minutes, or remains in a slighter degree for an indefinite time, producing the coryza, which seems to have been more common in the epidemic of 1847 than in the late one. Epistaxis would naturally often occur. If the bronchial tubes are attacked, there is a rapid development of a feeling of tightness in the chest, with the occurrence of a spasmodic cough, ending in the expectoration of a little mucus tinged, perhaps, with blood. This condition, again, usually passes off after a few minutes, but sometimes remains for a longer time, causing bronchial catarrh. When the proper tissue of the lungs is affected there is a feeling of intense fulness in the chest, with lividity of the face and struggling for breath. These symptoms usually disappear with remarkable rapidity, but sometimes continue and become so severe as to cause death. The stomach very commonly displays symptoms due to loss of tone, there is violent vomiting with loathing for food, and great pain in the epigastrium, and often a little blood is vomited. This state usually clears up in a few hours. Referred to the central vascular system, we have temporary fits of præcordial oppression or pain, the latter sometimes intense. Symptoms of a similar nature to the above may occur, referred to almost every part of the body. A third class of symptoms sometimes arise which seem to prove that the vital centres do not escape the poison of the disease. The respiratory movements are often performed with greater effort than the local conditions will explain, and sometimes cease altogether. The pulse does not rise with the temperature, and there is sometimes great depression of the vascular system, suggesting involvement of the centre controlling its function.

3. Even in the complicated cases, when actual inflammation has occurred, there seems something superadded to the local lesion. Sir Peter Eade notes that the cases of pleurisy display more pain than is usual in ordinary pleurisy, and that the difficulty of breathing, when pneumonia has been established, is greater than the local mischief will explain.

4. During the tedious convalescence from the disease nervous symptoms are very persistent, as also is a general loss of tone of the body, slight causes producing disturbance out of proportion to their magnitude. There is often, as Dr. Wilks points out, a depression of the heart's action unexplained by local conditions.

With all these considerations in mind, it seems to me that the following pathological conception naturally suggests itself. Influenza attacks primarily and chiefly the central nervous system, hence arise three groups of specific phenomena:—1. Those referred directly to the nerve centres. 2. Those referred to other parts, consisting of

loss of vascular functional and sensory tone, due to a damaged state of the tonic centres, in the central nervous system. 3. Those consisting of disturbances of the vital functions due to involvement of vital centres.

In conclusion, if the above views be correct, rest of body and mind would be specifically indicated in the treatment of influenza. Experience has amply proved this line of treatment to be the right one. The best advice was found to be, when practicable, "Thou art inclined to sleep; 'tis a good dulness, and give it way."

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NOTES OF A CASE OF PARAFFIN DRINKING.

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MRS. A. M.—, aged thirty-six, came to the Royal Infirmary at 9.55 A.M. on March 15th, 1890. She stated that she had been drinking for a fortnight, and that that morning, while still not thoroughly sober, she had intentionally drunk a good half-cupful of paraffin oil. The time could not be accurately ascertained, as her clock had stopped, but it seems to have been before 6 A.M. After about half an hour had elapsed she began to suffer pain and to vomit; she vomited twice or thrice, a mouthful or two at a time, and on the first occasion she says there was more than a tablespoonful of blood in the vomited matter. (During the previous week she had had several attacks of vomiting, due to drinking, but no hæmatemesis and no pain.) The pain increased rapidly, and became so bad that she thought she was going out of her mind.

On admission, her hands and tongue were very tremulous; the tongue was distinctly red and glazed-looking at the tip and edges, and the dorsum covered with a thick white fur. The right pupil was somewhat dilated, the left normal; both reacted rather sluggishly to light. She complained of pain in the pit of her stomach. Temperature 98.6° F.; pulse 120. One-tenth of a grain of apomorphine was given hypodermically, and six minutes later she vomited about six ounces of matter, which emitted a strong odour of paraffin. It consisted almost entirely of yellow mucus floating in a golden-yellow fluid. She then drank a large cupful of water, and thereafter the dose of apomorphine was repeated; two minutes later she vomited material similar to the last, but diluted with the water just swallowed. There was no blood on either occasion. About midday she passed a scanty stool, consisting almost entirely of red blood. Her menstrual period had ceased normally almost a week before, but there occurred a slight return of the flow that day. At 1 o'clock she was ordered a simple warm water enema (a pint and a half), to be repeated after an hour's time. On each occasion the enema brought away a stool having an intense odour of paraffin, but containing no blood. She passed twelve ounces of urine, which also had a very marked odour of paraffin; by allowing the urine to stand, the paraffin was rendered visible, floating as a thick scum on the surface.

At 7 o'clock she complained of abdominal pain. Another warm-water enema was given, and brought away a stool without any blood; the odour of paraffin was present to a less degree than before. Shortly after this she passed forty ounces of turbid urine, lighter in colour, but with a marked odour of paraffin. The temperature at 4 P.M. had been 100.2°, but at 8 P.M. it was a degree lower. Mr. Charles Arthur, the dispenser to the Royal Infirmary, kindly undertook to distil ten ounces of the first sample of the urine, and ten ounces of the second. As the result of distillation and redistillation about 6 c.c. of pure paraffin were collected; and Mr. Arthur estimated that at least an equal quantity was lost in the process, owing to the want of sufficiently delicate apparatus. The two samples were kept separate during the first distillation, and it was found that the first contained about twice as much paraffin as the second; thus a total of at least 25 c.c. of paraffin must have been excreted by the kidneys.

At 9 o'clock the patient was found lying with her knees drawn up, complaining of severe burning pain, chiefly at the epigastrium. There was marked tenderness on pressure over that region, and over the left lumbar region; she said her abdomen was swollen, but it was not at all notice-

ably so. She was still vomiting occasionally, but no odour of paraffin could be detected in the small amount of mucus which was brought up. She could extend her legs, but said that she had less pain when they were drawn up. The exacerbations of pain produced a marked increase in the tremors of her hands. On taking the bedclothes off her abdomen to examine it, there was a distinct though not strong odour of paraffin from the skin. Her breath emitted a strong odour of paraffin. At a quarter past ten the abdominal tenderness was more general and more marked, so fomentations were ordered every two hours, and she was fed with warm milk given frequently in quantities of an ounce at a time. She had just been vomiting.

At 3 A.M. on the 16th the abdominal tenderness was less, though she was still lying with her knees drawn up to diminish the pain. The odour of paraffin from the breath was not so strong. She had not slept at all, and occasionally imagined she saw cats in the room. She said, however, that she had not slept the previous night either. She was still vomiting now and then, so fifteen grains of subnitrate of bismuth were given, which checked the vomiting for a time. At 5 A.M. she passed eight ounces of urine with a trace of paraffin odour, and a slight "greasiness" on the surface after standing. When she was seen at 11 o'clock the pain and tenderness in her abdomen were much less in degree, and had changed in character. The pain had become griping, and was situated near the umbilicus. The tenderness was in the right iliac fossa and lumbar region. She had not vomited since 8 A.M., and did not vomit again. Her breath, but not her skin, still had the odour of paraffin. Temperature 99.8°; pulse 110. About half an hour later she passed three ounces of dark-red urine, containing both blood and albumen copiously. In the afternoon the pain was much easier. She passed three ounces of dark-crimson urine, which gave a marked reaction with tincture of guaiacum, and contained half a grain of albumen and twelve grains and three-quarters of urea per ounce. At 11 o'clock that night she was sleeping quietly; her breath still emitted the odour of paraffin. By midnight her temperature was normal, and it did not rise much above normal again.

Half an hour after midnight (March 17th) she passed six ounces of ruddy, amber-coloured urine, which gave a slight reaction with guaiacum, and contained a trace of albumen and seventeen grains of urea per ounce. Shortly after midday she passed ten ounces of urine similar in colour to the last. Guaiacum showed a trace of blood, but there was no albumen; the urea was eighteen grains per ounce. Later samples showed neither blood nor albumen. The total urine passed on the 17th was twenty-eight ounces. In the afternoon the paraffin odour had gone from the breath, and there was only very slight tenderness in the abdomen, hypogastric in position. The tremors in the hands had almost gone.

On March 18th her bowels were moved, but there was no blood in the stool. That evening she needed a drachm of bromidia to procure sleep. During the day she passed only thirteen ounces of urine, containing almost twelve grains of urea per ounce. The next day the urine was practically normal again, both in quantity and quality. She was discharged on March 22nd. She had no feeling of illness, and was eating and sleeping well, her only remaining symptom being slight tremors.

Remarks.—Though paraffin drinking is not unusual, I have not been able to find records of many cases, and only one of them was suicidal, occurring during an attack of puerperal mania. The cases of which I have seen records show practically no symptoms beyond those due to more or less severe gastric irritation, except that in one the breath is said to have had the paraffin odour slightly next morning. The explanation seems to be that though in all the cases much larger doses were taken, emetics were given within an hour and a quarter at the longest, and thus probably less was absorbed. The chief interest in this case is in the excretion of the paraffin. A considerable amount of it was returned in the vomited matters; how much one cannot tell, as the patient had vomited before admission; some also passed off (either directly or by absorption and re-excretion) by the bowel. The rest was apparently absorbed into the blood unchanged, and must have been chiefly eliminated by the kidneys, but also by the lungs, the skin, and even apparently by the uterine mucous membrane, for the catamenia reappeared. The blood could not have been cleared of paraffin for over forty hours, the odour being still perceptible in the breath at

the end of that time. The excretion by the kidneys caused a derangement, which lasted but a short time, and whose most curious feature was its delayed onset, the excretion of paraffin having practically ceased before the blood and albumen appeared. The abdominal pain and tenderness were more marked in this case than in any of the others I have seen recorded, persisting for two days and a half; their position and character suggested a gastric origin at first, and an intestinal one later on.

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NOTES ON

TWO CASES OF ATROPINE POISONING.¹

By S. MATTHEWS OWENS,

HON. OPHTHALMIC SURGEON TO THE IPSWICH, BRISBANE CHILDREN'S, TOOWOOMBA HOSPITALS, QUEENSLAND.

ON February 26th of this year a lad aged twelve, who though healthy was of slightly nervous temperament, was sent to me by Dr. Phillips of Warwick, as he was suffering from defective vision, and the use of the eyes for study caused headache. It was easily recognised that hypermetropic astigmatism was the cause of all his trouble, and, in order to estimate accurately his error of refraction and thoroughly paralyse his accommodation, I ordered two or three drops of two grains to the one-ounce solution of atropine to be instilled into the eyes three times within an hour on the Thursday morning, and again three times during that day, three times during Friday, and once on Saturday morning, on which day he was to visit me for correction. This would make ten instillations, spread over two days. When he was brought to my rooms on Saturday, he had all the symptoms of atropine poisoning, staggering and unsteady gait, dryness of throat and tongue, picking at imaginary objects in the air, talking, or rather muttering, incoherently; smiling, and occasionally laughing outright to himself. I was able to rouse him to attention for a few minutes, so that he would answer questions and do what I told him; but he soon relapsed. The face was slightly flushed, but there was no rash; pulse small and rapid. Pupils were only moderately dilated, and responded but slightly to light. The mother assured me that she had most carefully used the drops as directed, but as the lad had seemed strange the previous afternoon she stopped using them, so that they had only been put into the eyes eight times in all. I ordered him at once to be taken home and kept as quiet as possible. Milk diet and small doses of Dover's powder were the treatment, but throughout the day he continued to get worse, and in the evening tetanic spasms came on with delirium; in fact, he became so bad that, as I was absent from town, another medical man was called in. He at once recognised what had happened and quieted their fears, and in a few days the little patient got all right, but it was a week or two before he became well enough for me to correct his astigmatism.

The second case was that of a remarkably healthy old gentleman, named J. K—, aged seventy-three, who consulted me on March 5th preparatory to an operation for cataract. Being wishful to see if the cataract was mature up to the periphery, I instilled three times, in about twenty minutes, two or three drops each time of a 2-gr. to the ounce solution. The pupil dilated readily, and after finishing the examination I noticed that he spoke thickly, and did not answer questions readily. He got up to walk and fell back into the chair and soon became almost unconscious. Paralysis was so complete that he was quite helpless, and had to be carried to the cab, his face becoming suffused, and the body covered with an erythematous rash; pulse so rapid that I could scarcely count it. I ordered the same treatment, and in a few days he recovered, but had no tetanic spasms whatever.

Remarks.—These two cases are worth noticing, first, for the small quantity of the drug that in each case produced such severe effects; secondly, the different toxic symptoms produced; for in the old man's case paralysis came on rapidly and was complete, whereas in the younger patient the paralysis was less marked, the tetanic symptoms being most prominent, coming on eighteen hours after. The last instillation thus well

¹ Read before the Brisbane Medical Society, April 8th, 1890.