for myself and in teaching to others something of his wisdom, his goodness, and his power."

From the time of Galen to the thirteenth century, we encounter no names of authority. They were all mere commentators bowing down servilely to the authority of Hippocrates and Galen, the then only two pillars of the medical edifice. Cælius Aurelianus, Antyllus, Heliodorus, Pliny the Elder, Aretæus, Paulus Ægineta, Alexander of Tralles, Aëtius, and Oribasius (he who found the Delphian oracle mute) were writers of note but of little originality.

[To be continued.]

ATROPIA AS A REMEDY FOR OPIUM-POISONING.*

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THE manifest antagonism of morphia and atropia in some respects has naturally given rise to the hope that they would prove antidotal. In the only case in which I have tried morphia as a remedy for poisoning by atropia, the morphia seemed antidotal. The following case may help towards an answer to the question whether atropia is of use as a remedy for poisoning by laudanum.

On December 2nd, 1874, a man and his four children were admitted into Addenbrooke's Hospital with symptoms of poisoning by laudanum, which had been given by the father to the children and himself. Some of them had been made to vomit when first discovered. Four of the five recovered, and their cases are no more interesting than other ordinary cases of opium-poisoning. The one who died was three years and a half old. He was admitted to the hospital at 1.30 P.M. The time at which he swallowed the laudanum is uncertain; it was probably about 11 A.M., or between that and 11.30 A.M. On his admission, he had a drowsy look, almost that of stupor. His pupils were very small. He was made to swallow large quantities of warm water; his fauces were tickled and vomiting was excited. The vomit had a faint, but quite distinguishable, odour of laudanum. He was then made to swallow large quantities of strong coffee, and much of this also was vomited.

After this, endeavours were made to keep him awake by compelling him to walk about, and by shaking and occasionally slapping him. Notwithstanding, the drowsiness was manifestly increasing. Therefore, at 2 P.M., 1-100th of a grain of sulphate of atropia in solution was injected under the skin at the epigastrium; and, as no benefit or any effect was apparent after ten minutes, 1-200th of a grain was similarly injected; thus making 3-200ths of a grain injected. After this, the influence of the atropia on the iris was gradually and plainly manifested. The pupils, which had been contracted to a pin's point before the administration of the atropia, gradually became largely dilated, and the dilatation after a time became so extreme that scarcely any iris could be seen. Nevertheless, the stupor went on increasing, and reached its highest degree while the pupils were largest.

About 3 P.M., he could be roused only for a few seconds at a time by the incessant and energetic employment of the various ordinary means. While he was in this heavy stupor, his arms were several times extended in tonic spasms, and his eyes now and then squinted divergently. About 3.30 P.M., his pupils being at this time dilated to an extraordinary degree, the stupor had deepened into coma. The respiratory efforts nearly ceased. Artificial respiration was then employed on Silvester's method, and the circulation was assisted by gentle friction of the feet and legs. At 4 P.M., the appearance of the child was almost death-like; his cheeks and lips were livid, his extremities becoming cold.

The artificial respiration was, however, persevered in incessantly. The pupils gradually recovered from their extreme dilatation, and, at 6 P.M., had regained an ordinary size. A little rattling was audible in the trachea. Under the idea that this might possibly have been due to some coffee that had been put into his mouth and not swallowed, he was held up by his feet for a few moments with his head hanging downwards. The tracheal *râle* was not removed by this operation, but he seemed a little roused by it. Soon after this, a slight improvement was noticed, the face assuming a less death-like appearance. The artificial respiration, which had been kept up incessantly for two hours and a half, was now intermitted occasionally for half a minute at a time. The holding him up by the feet, which had seemed of benefit by rousing him, was repeated about every quarter of an hour. On each occasion that this was done, there appeared a marked temporary improvement, and, on its third repetition, he opened his eyes and

looked about for a few seconds, though the tracheal *râle* did not cease. By the artificial respiration and the occasional inversion of the body, the improvement was maintained, and in the evening he began to be able to take beef-tea and milk, and afterwards, with the beef-tea and milk, small quantities of brandy were given, and he took about a drachm of it every two hours. Still more marked improvement followed this treatment. From about 3 A.M. till between 5 and 6, it was found safe to discontinue the artificial respiration for ten to fifteen minutes at a time and allow him to sleep. But, between 5 and 6 A.M., it was found more difficult to rouse him, and artificial respiration had again to be kept up continuously, except at the moment when nourishment was given. At 8 A.M., and on several occasions between this hour and 11, he seemed to be sinking, but rallied again under friction of the body and the energetic practice of the artificial respiration.

By 11 A.M., a decided improvement seemed established. Artificial respiration was discontinued, and he was allowed to sleep for half an hour at a time, when he was aroused to take nourishment and rid himself of the mucus, which still tended to accumulate in his trachea. A few mucous *râles* were at this time heard at the bases of the lungs. When roused, he was now able to answer "Yes" or "No" to questions, and twice he said he was "tired". He was now allowed to sleep undisturbed for an hour at a time.

He continued breathing quietly until about 1 P.M., when he awoke with his face very livid, and seemed in peril of instant suffocation. But he coughed vigorously, freed his trachea of a quantity of mucus, and then again breathed quietly. After this alarm, he was not allowed to sleep longer than half an hour at a time. But there seemed to be an increasing tendency to the accumulation of mucus, and the dyspnoea at times was urgent.

At 3.20 P.M., after a short sleep, he had again a violent struggle to get his breath, and this time the struggles were in vain. His face became very dusky. Artificial respiration was again employed; but, in spite of all efforts, he died in a few minutes. On *post mortem* examination, the lungs were found congested, but nothing else worthy of note.

The points of interest in the case are—1. The extraordinary extension of life by the diligent employment of artificial respiration after the condition of the patient had become apparently hopeless. The period from the taking of the poison was probably twenty-eight hours; that from the commencement of the treatment certainly twenty-six; that from the commencement of artificial respiration twenty-four hours. 2. The rousing of the child when he was held with his head downwards; the power of this in rousing him was well marked after all the ordinary means had ceased to have any effect. 3. The failure of the atropia to relieve the stupor, though manifesting its full influence on the iris. This was so plain that, even from the single case, we should be justified in inferring that (in a child at least, if not in all cases) atropia is useless as a remedy against opium-poisoning after the stupor has reached the degree at which the patient is incapable of standing. It seems to me more than probable that the expectations of atropia being a remedy against opium-poisoning will be wholly disappointed. But, if I try it again, I shall try it before the stupor has become well marked.

DOUBLE THROMBOSIS OF THE MIDDLE CEREBRAL ARTERIES, WITH AORTIC DISEASE, IN A CASE OF SYPHILIS.

By the late S. MARTYN, M.D., F.R.C.P.,

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G. S., AGED 32, a printer, was admitted into the Bristol General Hospital on October 15th, 1875, under the care of Dr. Martyn, when the following notes were made by Dr. Imlay, the physician's assistant.

He had been ailing for ten days, and in bed one week. Five days ago, *i.e.*, after feeling poorly enough to lie in bed for two days, he appeared pretty well at night; but, next morning, was found by his friends in his present condition. For four days, therefore, his state had been this. He was hemiplegic on the right side, and there was entire loss of the power of speaking, while he understood well, and replied by signs. No cause was assigned, and there was no history of rheumatism. [Recently, however, he had been very irritable and nervous, and complained of weak memory and dimness of sight.]* The general state at present was one of much prostration. He was pale and damp, lying helplessly on his back. The temperature was

* Abstract of communication made to Cambridge and Huntingdon Branch.

* Information from his employer, obtained afterwards.

98.8 deg. on the left side, and 99.2 deg. on the right or paralysed side. Facial paralysis was well marked, and, like the rest, on the right side; the mouth being drawn over to the left. He could not push out his tongue; loss of speech was complete; he could not inflate the cheek. Paralysis of the right arm and leg was complete, without rigidity, and in the leg there was loss of sensation also, and the foot was cold. The pulse was 100, full and hard, so that it could almost be rolled under the finger. Respirations 20. The tongue was dry and covered with dark brown fur. He had great difficulty in swallowing even a little milk from a spoon. The urine was passed involuntarily, but he could give warning. There was a syphilitic sore on the glans and several extensive cicatrices.

He was ordered iodide of potassium—five grains every four hours; the hair to be removed; the mouth to be mopped out with chlorinated soda; and to have castor-oil and enemata. The diet was ordered to consist of milk and beef-tea every two hours by spoon.

October 19th. There was no change. Constipation being severe, he was ordered an aloetic draught every morning, castor-oil, and enemata.

October 23rd. The back of the neck was blistered.

October 28th. The dose of iodide of potassium was doubled, and eggs were added to the diet.

October 30th. The blister was repeated.

November 2nd. The paralysis of the right face and arm was decidedly less and the tongue cleaner.

November 6th. He moved the right arm and hand with ease. He swallowed better. He was quite clear mentally, but very emotional, and cried at any expression of sympathy. The bowels were never moved without castor-oil, but not involuntarily. Bromide of potassium was added to his mixture.

November 13th. He became towards the evening suddenly worse, covered with profuse perspiration and very weak. Temperature 103.4 deg. He was ordered sinapisms, etc.

November 14th. He could not now move the *left* arm and leg, but was still conscious. Temperature 103 deg. Stimulating enemata were ordered and evaporating lotions; but he sank steadily during the two following days, and, on November 17th, died in the night.

Necropsy, November 18th, 1875.—On removing the skull-cap, a nodule of bone like a limpet-shell was found on the falx cerebri. In the circle of Willis, several spots of delicate and translucent atheroma were observed. Both middle cerebral arteries, at corresponding points, were opaque, enlarged, and blocked by thrombi. Both corpora striata presented spots of pinkish yellow creamy softening, each as large as a hazel-nut. Upon the upper surface of the cerebellum, there was a little lymph. The heart and its valves were healthy. The aorta presented many smooth, soft, and pink patches of "atheroma". The liver was fatty and adherent to a large and softened spleen.

REMARKS.—We may summarise the history of this fatal illness as follows. A young man of good health, robust frame, and excellent abilities, having been at the head of his department in a large firm, is, after a brief period of weak and irritable nervousness, with some loss of memory and dimness of sight, suddenly attacked with right hemiplegia of the face and limbs, the tongue being immovable and deglutition difficult. After a few weeks of considerable amendment, he is suddenly paralysed on the other side and dies. The lesion proves to be atheroma of the aorta, "nummular" in character, together with arteritis at the base, so marked in the middle cerebrals as to have resulted in narrowing, formation of thrombi, and consequent softening of both corpora striata in nearly equal degrees, producing necessarily a fatal result.

Much interest attached to the diagnosis and prognosis in this case. The sudden hemiplegia pointed to lesion of the motor tract far forward, and we diagnosed the mischief as being in that situation. But what lesion? Embolism seemed excluded by the absence of heart-disease or other embolic source; while a thrombotic occlusion was not very likely to have been almost immediately repeated on the corresponding artery of the opposite side. Syphilitic softening I did suspect; but, if so, why an absolutely sudden attack? The highly emotional state of the man, with a sort of hysterical twitching, led me to venture to predict irritation of the upper lobe of the cerebellum, and in that spot we did find a layer of plastic lymph, a concurrence which I had observed in several other cases. The only previous disease known had been severe syphilis, as shown by an open sore with surrounding cicatrices, for which, it came out, he had been recently fleeced to a large extent by a secret case quack.

It is difficult to avoid the belief that the arterial disease was syphilitic. In the aorta, the spots were smooth, nummular, puffy, and pink, none of them presenting the ordinary degenerate appearance so familiar in ordinary atheroma. In the cerebral vessels, the obstructed spots

were fusiform rings of hard connective tissue, a true periplus endoarteritis.

The Netley School of Observation, as is well known, maintains strongly the causal connection between arteritis and syphilis, even to the production of aneurism. Indirectly, our case supports this view; but, if the statement that aneurism is, amongst soldiers, eleven times as fatal as amongst civilians be near the truth, it is certain that syphilis can but furnish one factor to its production. Now, several toxic states are producers of arteritis, as, for example, the gouty, rheumatic, hepatic, or renal excrementitious, alcoholic, and syphilitic; besides which, in the known preference of atheroma for the points of arterial wall most exposed to mechanical violence from the circulating current, we have another instance of *causa causans*. Given the arteritic irritation from any toxæmia, with increased blood-pressure at its exacerbations, we may readily suppose that accidental temporary overtaxing of the circulation, such as is likely to occur more in the male sex, and especially in soldiers, is the remaining factor needful for production of aneurism.

The anatomy of our occluded middle cerebrals (as seen in the microscopical preparations) is that of "arteritis". The outer coat is thick-

ened to a nodular mass consisting of an indifferent small-celled growth. The inner coat is, however, also enormously thickened, and its layers split up by a mucoid basis, in which are imbedded the small and often stellate cells. These small cells sparingly infiltrate the muscular coat also.

This whole combination is very likely to be of syphilitic character; for, were we dealing with endoarteritis chronica deformans, the greatly diseased adventitia would be surprising, while in ordinary arteritis the inner coat would scarcely be the seat of myxomatous transformation.

Anatomists, as at the Pathological Society's discussion, ask for "peculiarities which should enable us to say what is (microscopically) and what has been syphilitic". For the present, we have no new morphological element to show, but we have a mode of growth which is very unique: we see a very local phenomenon, much production of cells in connective tissue, increase all round, sudden limitation of size, and rapid metamorphosis by cell-growth without corresponding vascularisation, so that a fatty or granular pulp occupies the centre of a fibro-myxomatous shell. These are some of the marks which combined go for a good deal to stamp a syphiloma, the last

named even excluding tubercle. The *clinique* of cases like the present is rendered difficult from the frequency with which gout, alcoholism, and syphilis are likely to be found in the same individual.

In conclusion, I would venture to suggest that mucoid infiltration of a thickened inner coat affords an explanation of the rapid improvement often seen in cases of occlusion. Just as external gummata disappear when painted with iodine, so, by absorption of the semifluid mucoid structure in the artery, it may unexpectedly again become patent to the blood-current.

CASES OF ASTHMA NERVOSUM, SUCCESSFULLY AND PERMANENTLY CURED WITH ARSENIC-INHALATIONS AND GALVANISATION OF THE PNEUMOGASTRIC NERVES.*

By ADOLPHE WAHLTUCH, M.D., L.R.C.P.Lond.,
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WITHIN the last six years, seven cases of nervous asthma have come under my observation, and I believe them to be of sufficient interest to be recorded as illustrations of an obstinate and distressing disorder of a true nervous nature having been speedily relieved and permanently arrested by electricity and arsenic-inhalations.

CASE I.—W. M. of Prestwich, near Manchester, consulted me on October 26th, 1871. His age he stated to be twenty-three; he has enjoyed a liberal education and good living, his parents being wealthy merchants in the city. At fourteen, he had pneumonia, and since that time, now nine years, he was subject to frequent attacks of asthma. Lately, he had them every night. They generally came on him suddenly in the evening before bedtime, and lasted through the greater part of the night. The attacks commenced with a sudden feeling of suffocation, want of air, and great anxiety; and ended with coughing and sneezing, and with more or less of thick mucous discharge coming out through the mouth and nose. In daytime and in the interval between the attacks, he felt quite well, and his breathing was free and easy. He had tried various drugs, chiefly narcotics and antispasmodics, but without any good effect. He had frequently changed his residence; travelled and spent some time in France, Germany, Portugal, Italy, Switzerland; but nowhere felt benefited. At Heidelberg, he experienced some relief from the use of compressed air in the pneumatic chamber, and also felt better during a twelvemonths' stay at Lisbon. Whenever he returned home, the attacks came on in a more aggravated form.

My plan of treatment was the following. At first, I ordered a large dose of muriate of quinine (ten grains) to be taken every evening before the expected attack, which periodically reappeared at the same hour before bedtime. The result was a later outbreak of the attack, which awoke him after a few hours of sound sleep. I then ordered spray-inhalations of arsenic twice a day, and in gradually increasing doses, changing now and then the preparations. The following were used in succession: Arseniate of soda (one-sixth to one-half grain); arseniate of potash (Fowler's solution, half a drachm to a drachm); arseniate of ammonia (one-quarter to one-half grain). To the inhalation, I at first added tincture of datura tatula, but soon had to leave it out, as it produced symptoms of narcotic poisoning. The arsenic-inhalations were administered during the first two months twice a day; the third month, once a day; the fourth month, three times a week; the fifth month, twice a week; and after the fifth month, the inhalations were entirely discontinued. Considering my patient's disease to be of a nervous character, and believing the pneumogastric nerve to be the chief actor, I decided from the first to try also the effects of galvanisation. I selected the continuous current derived from Althaus's battery, with fifty small Smee's cells, of which I used at first five, and gradually and carefully increased to thirty cells. A wet sponge, dipped in tepid salt-water, and connected with either of the electrodes, was applied to the skin of the neck; that connected with the positive pole I put to the submaxillary fossa, along the inner edge of the sterno-cleido-mastoid muscle; and the other sponge, connected with the negative pole, I placed close to the trachea and near the sterno-clavicular articulation. I galvanised each nervus vagus separately from two to five minutes. Galvanisation was applied daily for six months.

The attacks at first changed the hour; instead of 7 P.M., they awoke him every day at 4 A.M., but were of a milder character. The attacks returned nightly from October 26th to November 3rd; then again, November 7th, 18th, 20th, 21st, and 25th; December 3rd, 15th,

and 29th; and lastly, January 17th, 1872. He continued the treatment till May, 1872, but had no more attacks since January 17th, 1872; and continues free from any asthmatic symptoms to this day, for more than five years and a half. He is actively engaged in business in Manchester, and frequently travels on the Continent; but continues to enjoy very good health in all seasons and climes. I am, therefore, justified in considering him permanently cured, and believe the chief remedial agents to have been the use of galvanism and arsenic inhalations.

CASE II.—T. W. K. of Bowdon, Cheshire, consulted me September 4th, 1872. He was engaged in the Manchester trade, and twenty-five years old. When a child, he frequently had croupous attacks. When fifteen, he had gastric fever, and subsequently pneumonia. Three years ago, he had slight pleuropneumonia, and since that time he had suffered from frequent attacks of dry nervous asthma. The attacks occurred at all times, but chiefly in the night. Crowded rooms, sea- or mountain-residence, any change of air, would bring on an attack. In the intervals, his breathing was free and easy, and he had no cough. After the attacks, he expectorated thick mucous discharge. His chest was broadly built; respiration was audible and clear all over the thorax; the percussion sound was normal; the cardiac sounds were clear; the uvula and epiglottis were large, but of a healthy appearance.

I ordered arseniate of soda inhalations, and applied daily the continuous current to both nervi vagi, in a similar manner to that described in the first case. The treatment continued during a month, he having had only one mild attack in the beginning. I saw him lately, and he told me that he had no attacks during nearly five years since I attended him.

CASE III.—T. St., a tailor, aged 38, consulted me in March 1874. He had had much mental trouble lately. For a month he had suffered from frequent attacks of sudden oppression in his chest, with shortness of breath, and a feeling of anxiety and distress, and ending with profuse perspiration. The duration of the attack was a quarter of an hour. Sleep was restless, digestion good, no cough. The application of galvanism to both nervi vagi alternately during five minutes, and a few inhalations of conium-spray, arrested the attacks, and after a month's treatment he felt quite well. I saw him again two years afterwards, and he reported himself free of any attack.

CASE IV.—On March 5th, 1876, early in the morning, I was suddenly called to attend Miss M. H., a teacher of music, aged 23. She had been subject for twelve years to frequent attacks of nervous asthma. Her father and younger sister in Germany are likewise subject to asthmatic attacks. She came over to England twelve months ago, expecting to derive benefit from the change of climate, but found herself to be as frequently attacked here as she used to be at home. I saw her just recovering from a severe morning attack, with short and quick respiration, all the cervical muscles in a contracted state, the face bluish, with sibilant *râles* all over the chest; she coughed and sneezed violently, expectorated thick mucous discharge, vomited and perspired profusely. She then felt exhausted and went to sleep, to awake in half an hour with free and easy breathing, and with no *râles* anywhere in the thorax.

I ordered spray-inhalations of marine salt with arsenic, and applied the continuous current to each pneumogastric nerve, from March 6th to August 19th, 1876; first month, every morning; second month, every other day; then only twice a week. During the treatment, she had an attack in April, another in July, and lastly three attacks, one daily, from 2nd to 5th of August, when she had catamenia. During the last twelve months, she has had no attack, and is now enjoying very good health.

CASE V.—Miss E. H. of Bowdon, Cheshire, aged 42, has been under my observation since June 1876. She suffered for eight years from severe attacks of nervous asthma, and is also subject to bronchial catarrh. She used to have frequently abscesses in the lower part of her back, but had none since August 1875. Has had ulcerated tonsils eighteen months ago. The asthmatic attacks came suddenly in her sleep, generally between 2.30 and 6 A.M.; but any exertion or a rich supper would bring them on. She has frequently pains in the back of her head and neck. Menses regular. Appetite moderate. Bowels sluggish. I saw her both during the attack and also in the intervals. Dry whistling *râles* could be heard everywhere during an attack; but in the interval, although the breathing was free and easy, moist *râles* were audible in the scapular region of the thorax. The attacks resembled those described in my other cases.

The treatment consisted in galvanisation of the nervi vagi, and in spray-inhalations, chiefly of arsenic, and also of various additions at different times, such as chloride of ammonium, tincture of datura tatula, ozonised sea-salt, salicylic acid, and cherry laurel-water. She had attacks June 30th, July 11th and 13th, September 15th, December 4th, 1876, and the last time, January 17th, 1877. She also had two attacks of acute bronchial catarrh in September 1876 and February 1877,

* Read before the Medical Section at the Annual Meeting of the British Medical Association in Manchester, August 1877.