RETROSPECTIVE ADDRESS

OF THE

PATHOLOGICAL SOCIETY OF READING.*

By R. C. SHETTLÉ, M.D.,

Physician to the Royal Berkshire Hospital, etc.

GENTLEMEN,—When at the last meeting of the Pathological Society of Reading you did me the honour of electing me to give the annual retrospective address, I felt I could not do otherwise than accept the office; but in doing so I requested, and again ask, your kind indulgence for my shortcomings, which I foresaw would be many; the more especially as, from the little time I have been connected with the Society, I have had but a small amount of experience as to the nature of such addresses. I take it, however, that it is required of me to embody in one paper—which is limited in the time of its delivery to one hour—the whole of the valuable matter that has been discussed and the chief points of interest in cases that have been recorded; and to give a brief but concise account of the papers that have been read during the past year. I am further requested to append some remarks on the action of chloral on the blood, and to enter minutely into the pathology of tetanus. It will be seen at once that it would be perfectly useless to endeavour to embrace and do justice to all these matters, even in a much greater amount of time than could be allotted to this address. I will, however, at once proceed to the work; and, with the exception of the pathology of tetanus, which must be reserved for another time, carry you through the subjects as far as time and your patience will permit.

The first meeting for the Session 1869-70 took place on October 20th; and I find it recorded that Dr. Woodhouse was elected Medical President, and Mr. May, sen., re-elected Surgical President, for the year. It is unnecessary for me to remark that the election of these gentlemen to such important offices reflected as much honour upon the Society as upon them.

After a few other preliminary matters of business had been concluded, Mr. Walford called attention to a case of Emphysema that had been under his care. For some days prior to death, the patient had suffered from constant cough and horribly foetid breath. After death, caries of the cricoid cartilage, and consequent abscess, were found to exist; fibrinous deposits also occurred in the ventricle and pulmonary artery; and Mr. Walford pointed out that these deposits often follow subinflammatory affections of the lungs, such as would be induced by a narrowing of the air-passages.

A Hypertrophied Heart was also exhibited by the same gentleman. The specimen was taken from a man who had died aged 75. For a long time previous to death he had been breathless, and towards the last was generally asleep; but, when roused, always woke up in a breathless state. The chief feature of interest in the case was a large clot in the left ventricle, where, it was supposed, it had existed for some time.

Mr. Maurice exhibited a Tumour which he had removed from the Vulva. It had been growing about a year. It was believed to be fibroid.

Mr. Vines read an important paper on Scarlatina; but I regret to say that this paper is not forthcoming with the others given me by the Secretary, and I am therefore unable to draw attention to the particular points referred to by Mr. Vines. I hope, however, that it will soon be sent to be preserved amongst the archives of the Society.

At the meeting of November 17th, Mr. Moxhay presented a little girl who had been the subject of remarkable Deformities of the Ears and Face. In a paper which Mr. Moxhay read on the case, I find it stated that, in addition to the proper complement of two perfect ears, there were on the right side three rudimentary auricles—one rather a perfect specimen, being divided into helix, antihelix, tragus, and anti-tragus, and a depression from the meatus. Its direction was downwards and forwards; the depression marking the meatus being upwards close to the natural ear, and the top of the helix downwards. On the left side there were two of these abnormal growths—one representing a fleshy lump, with cartilage in and beneath its substance, just below and in front of the proper ear; the second being a mere projecting tubercle,

but exhibiting, when removed, a cartilaginous meatus dipping deep. All these growths had been removed by Mr. Moxhay when the child was exhibited; but photographs of her appearance before the operation were shown. A congenital deficiency of the right ramus of the lower jaw also existed, which gave a singularly strange expression to the face, resembling somewhat the drawing down of the chin by the contraction of the cicatrices of burns. The author of the paper stated that a curious reason was given by the mother of the child for these abnormalities. It seems that the woman was suddenly frightened by a boy who was the subject of contractions in the neck, which drew down his chin and lips in a manner very similar to the deformities described above. Upon receiving the fright, the poor woman immediately put up her hands to her ears.

Numerous other cases of a like nature were referred to, in support of the opinion that a mental impression made on the nervous system of the mother is capable of giving rise to certain abnormal growths or deficiencies in the offspring she is then carrying. As a subject of physiological research, it appears to me that we cannot over-estimate the importance of these facts; and I think we ought to be much obliged to those gentlemen who will take cognisance of such cases when they occur in their practice, and the trouble of bringing them under the notice of the Society.

The next paper was read by Mr. Harrison, and was entitled Remarks on the Administration of Chloroform in Labour. From the large amount of practical information which Mr. Harrison has acquired in such cases, we must attach much weight to his opinion, which may be summarised thus: "That, whilst fully concurring in the benefits to be derived from the administration of chloroform in cases of retained placenta, for cross-births, and in exceptional painful cases, etc., there exist decided objections to its administration in cases of ordinary labour." A practical and somewhat long discussion followed the reading of this paper, in which many members took part.

Mr. George May, jun., read a paper on a case of Concealed Hæmorrhage in Labour. The subject of the attack was thirty-eight years of age, and had just passed the eighth month of her first pregnancy. The symptoms appear to have been characteristic of the case, and the diagnosis was accurately made. The treatment consisted in giving an opiate at first, and waiting for other symptoms to manifest themselves; and when such were sufficiently developed, the membranes were ruptured and ergot was given. The child was soon expelled, followed directly by a large dark firm clot. The uterus contracted well. There was no further loss of blood, and the patient made a rapid recovery.

A discussion followed upon the propriety of waiting, as the author of the paper did, for symptoms of an urgent character, or inducing labour as soon as the patient had recovered from the first shock occasioned by the loss of blood. Authorities appear divided as to the best mode of treatment in such cases; but inasmuch as in this case a most satisfactory recovery took place, we are bound, I think, to give Mr. May credit for acting with all the patience, skill, and judgment, that so formidable a case required.

On December 15th, Mr. May, jun., exhibited a small Tumour, supposed to be Neuroma, which he had removed three weeks before from the peroneal nerve. The patient had suffered from it for a long time as a tender swelling, but not painful except when touched, when the pain was excessive.

Dr. Woodhouse presented a specimen of a curious form of Kidney-Disease, which had been removed from the body of an old man who had suffered from excessive anasarca, and had subsequently died exhausted. The kidney was found to be full of small cavities.

Mr. Walford presented a specimen of true Aneurism of the Left Ventricle of the Heart. A large concretion (clot) in the softening stage was found in the cavity. This case is one of much interest, and is reported on fully by Dr. Peacock in the *Medical Times and Gazette* for February 12th, 1870.

Mr. George May related the particulars of a case of *Post Partum* Hæmorrhage, peculiarly interesting from having commenced so late as the twelfth day after delivery. The hæmorrhage was arrested for one day by injection of the solution of perchloride of iron, in the proportion of one to eight; it then returned, and was finally stopped by the administration of ergot and gallic acid by the mouth, and injection of turpentine and gruel into the bowels.

On February 16th, Mr. Maurice showed some Portions of Cloth which he had removed from beneath the skin, near the navel, of a policeman. It appeared that the policeman slipped from a rick, and had fallen on the handle of a prong, which had penetrated the skin about the pubes, and then passed upwards to the navel, carrying with it the portions of the garment exhibited. The man made a good recovery.

I find, gentlemen, that I had the honour of reading the next paper,

* Read at Reading, on July 20th, 1870.

which had reference to the treatment of Scarlet Fever and some of its sequelæ by means of Nitrate of Silver, Nitrate of Potash, and Nitric Acid. It was an attempt to show that scarlet fever, being a disease of the blood especially, is best treated by such remedies as will stimulate the nervous system, and especially assist the kidneys and skin as the great emunctories in eliminating the morbid matter. Purgative medicines, such as the compound jalap-powder, in the treatment of scarlatinal dropsy, were believed to be decidedly injurious.

At the meeting of March 16th, a specimen of Cancer of the Penis in the Horse was exhibited by Mr. Howell, a veterinary surgeon of this town. Mr. Howell was introduced to the Society by Mr. Moxhay, and showed that the diseased portion consisted of the greater part of the penis, with a large pedunculated tumour of cancerous nature adhering to the glans. It had been removed by the actual cautery. A smaller specimen was shown at the same time, which had been removed three years since by the knife. A stone, nearly of the size of a cricket-ball, taken from the stomach of a pony, was also shown by Mr. Howell at the same time.

A remarkable case of Excision of the Ankle-joint next calls our attention. The subject of this operation was a boy ten years of age, who had been admitted into the Royal Berks Hospital with a compound fracture of the ankle-joint: both epiphyses were detached, and the upper portion of the tibia, stripped of periosteum, protruded at the wound. Mr. Moxhay, the surgeon for the week, removed the detached portions, and then sawed off an inch and a half of the detrued tibia. The boy made a very good recovery, and was subsequently exhibited at a meeting of the Society; there was then only a shortening of one inch. It was altogether an excellent specimen of the conservative surgery of the present day; and, indeed, a very short time since all such cases would have been met by immediate amputation.

A protracted and interesting discussion on the Causes of Typhoid Fever and its treatment subsequently occupied the attention of the Society for the remainder of the evening. The opinion appeared to prevail pretty generally that the virus producing it was not confined to the water drunk by the individual; but that it might, and frequently did, originate the malady when it was disseminated through the atmosphere alone. Excessive cold, it was believed, would thus give rise to it, from the blocking up of water-closet drains, and a defective supply of water. Great and sudden changes of temperature were also supposed to predispose individuals to an attack, as such changes depressed the system. With regard to treatment, the stimulating plan with ammonia, port-wine, and brandy, and the unstimulating with belladonna and beef-tea, had each its representatives. In cases of fever, in which hæmorrhage from the bowels occurred, oil of turpentine was mentioned as a valuable remedy, either used externally with fomentations, or given internally with mucilage. Mr. Harrinson appeared to have found much benefit result from the application of a bandage to the abdomen in those cases where there was much tendency to tympanitis.

On the evening of April 13th, Dr. Wells read a paper on an interesting case of Heart-disease, which was accompanied by an unusual development of the aortic valves. The subject of it had suffered from shortness of breath and cough for several winters; but had been pretty well up to a month before Christmas, when he became very much worse, the breath being very short and the cough exceedingly troublesome, and some pain felt in the lower part of the chest. About six weeks afterwards, the legs began to swell, and then the body became cedematous generally. Next, the pulse became rapid (116) and feeble, and he could no longer lie down on account of his breath. The complexion was dark, and towards the last ascites became evident also. The heart-sounds were weak, but no distinct abnormal bruit was audible, and the action was laboured. Some dullness on percussion existed over the lower portion of the right lung; otherwise the lungs were fairly resonant, but there was considerable wheezing audible all over both lungs. The sputum was copious, and of a ropy mucous character; urine free from albumen; specific gravity 1025; the œdema was relieved several times by incision in the ankles and scrotum. On the morning of April 3rd, he was seized with sudden faintness, and the pulse became imperceptible and the breathing more laboured. He rallied a little under the administration of stimulants, but died about three hours after the above symptoms shewed themselves. A *post mortem* examination was made thirty hours after death. Decomposition was commencing; rigor mortis was well marked. There was anasarca of the legs and scrotum. The serous cavities contained a considerable amount of fluid. The right lung presented many firm adhesions, and much œdema; it was greatly congested, especially the lower lobe. In the left lung there was much general emphysema at the apex, and also on the surface of the lower lobe. There were numerous bullæ, varying in size, some very considerable, apparently formed by the visceral layer of the pleura being elevated by the rupture of some superficial air-cells.

The right cavities of the heart were much dilated. There was a little thickening of the tricuspid valve. The aortic valves were abnormal, consisting of only two semilunar folds; one was a large irregular growth, and a little deposit at the base of the other. There was also some slight atheroma of the mitral valves.

A specimen of Cancer of the Omentum, remarkable for the density with which the cancerous growth studded it, was exhibited by myself. A cancerous tumour existed also in the under surface of the liver, which probably, by its pressure on the duct of the gall-bladder, had given rise to the excessive jaundice from which the patient suffered. The immediate cause of death was exhaustion from slight attacks of hæmorrhage in the bowels. The hardened nodules of the cancerous growth in the omentum could be easily felt through the thinned abdominal parietes before death.

I have next to call your attention to an interesting and rare case of Intussusception communicated on the same evening to the Society by Mr. Harrinson. The case, as you will perceive, was rare as to its mode of formation, and from its occurring in an adult. The subject, Mary Homewood, aged 43, married, with four children, had been in good health up to January 7th, 1870, on which day, whilst engaged in household duties, she was suddenly seized with very violent pains in the abdomen. The bowels had not been relieved for three days. Aperients were given, but no action of the bowels took place until the 13th. Stercoraceous vomiting commenced on the 11th. This case appears to have been under the management of a surgeon in London until January 21st, for I find it stated that on this day the patient was first seen by Mr. Harrinson. The symptoms at this date were those of well-marked peritonitis, great pain, tympanitis, and vomiting, which continued throughout the case. The treatment consisted of the administration of opium. The bowels acted about every third day until within a week of death, and the patient survived with but little variation until March 21st, when death took place by asthenic syncope. At the *post mortem* examination, made twelve hours after death, the intussusception was readily found; it commenced at a point of the ileum two feet above the ileo-cæcal valve. The volvulus was eight inches long: it terminated below in an irregular globular expansion, and was connected with the upper part of the invaginated portion by a narrow neck; it was covered by a superficial layer of mucous and submucous tissue; and immediately about the expanded part was found the slit-like opening of the canal of the volvulus. The intestine below, softened and extremely lacerated, was adherent to the pelvic walls and broad ligament. No perforation existed, but the small intestine above was distended with fecal fluid.

Two boys, who had been operated upon by Mr. Maurice for Excision of the heads of the Femora, were exhibited on the same evening. Sufficient time had not elapsed since the operation for perfect recovery to have taken place, but they were both doing remarkably well, and the operator was congratulated by Mr. Moxhay on his results.

A paper on a case of Tetanus treated by Hydrate of Chloral, which had terminated fatally by Hæmorrhage, was next read by Mr. Moxhay. The poor fellow, the subject of the attack, was an unhealthy man, twenty-five years of age. One of his hands had been lacerated and the arm bruised and burnt, by the limb having been drawn through the hot rollers of a paper-machine on January 15th. The local applications consisted of poultices, and the bowels were cleared out with calomel and colocynth. He went on well until the 26th, when well marked trismus set in; he was then treated with the extract of Calabar bean and the other remedies for the complaint, but the malady continued to increase. Hydrate of chloral was then given, the first dose, half-a-drachm, being administered at 3.40 A.M., January 28; and although the spasms arching his back were very severe, he fell asleep, and continued to sleep until 6.45. He was then visited by Mr. Royds, and slightly roused, when a slight spasm returned, but he speedily relapsed into a quiet sleep, in which he remained until eight o'clock. At 10.15 the spasms returned, but less violently, until nearly 11 o'clock, when, as they were again severe, another half-drachm dose of the chloral was given, after which he again slept until 2.30. From this time until 2.30 A.M. Jan. 31st, the doses of chloral were given at intervals, with the unvarying result of abating the spasm and producing sleep. At this time, he was sweating much, and the spasms were coming on every minute. Another dose of two scruples was given in two ounces of water: this dose was followed by a distressing cough, and the pulse was much quickened, being now 168. The respiration was abdominal, and 70. Sleep was again produced, and he spent a pretty comfortable day, but at 6 P.M. Mr. Royds was called to him and found him pale and pinched, in fact, death-like in appearance. The pulse was very rapid and feeble, hands cold, and the respiration much hurried at times; he said he felt faint, and took, with some difficulty, wine and milk. A beef-tea injection, with three ounces of brandy, was administered; but he did not rally, and died at 7.45 P.M. After death, some blood was noticed about the arm, and, on closer ex-

amination of the poultice and dressings, a quantity was found, probably amounting to four or six ounces, which had evidently escaped from an opening caused by sloughing into the radial subcutaneous vein, which was exposed for some distance in its course; and this was no doubt the unfortunate cause of the fatal termination of the case. The quantity of chloral given was five drachms and fifty grains. The time during which he was kept under its influence was four days, and the last dose was given nineteen hours before death. No reasonable person could doubt the efficacy of the chloral in this case in abating the spasm, and so relieving the sufferings of the poor fellow; and, if chloral could do nothing more than effect such an end in so terrible a disease, there could be no question but that it is a remedy to which we should have recourse; but it becomes a question whether by allaying spasm much is done absolutely to combat the disease. It must be remembered, however, that the individual in this case was an unhealthy subject, and consequently had not that power of resisting morbid action which a stronger man would undoubtedly possess; and it was exceedingly unfortunate that his death should have been brought about, so to speak, by hæmorrhage; but such an event was not to be anticipated.

After the reading of Mr. Moxhay's paper on this very instructive case, a discussion ensued as to whether passive hæmorrhage from the open mouth of a vessel would be favoured when an individual had been kept under the influence of chloral for some time; and also as to whether the effect of chloral on the blood would render the loss of even a small quantity more than usually hazardous. In regard to these points, it is not possible, from the short space of time that can be devoted to this address, to do more than quote some extracts from a leading article that appeared in the *BRITISH MEDICAL JOURNAL* on April 23rd, ten days after the meeting of the Pathological Society at which the discussion took place. In this paper, it is stated that Dr. Richardson pointed out that the influence of chloral on the blood, if considerable doses were repeated at short intervals, might be very detrimental. Formiate of soda is formed, and the coagulating power of the blood is much diminished. Dr. Reynolds records the case of a lady of middle age to whom doses of chloral had been given for two days, for neuralgia, with good effect. On the third day, a dose of from forty-five to fifty grains was given, and relief from pain followed. In the course of an hour, however, faintness came on, and increased to an alarming degree. Two hours after this dose, she had cold extremities; a rapid, weak, irregular, intermittent pulse; jactitations of limbs; an intolerable sense of sinking and depression at the pit of the stomach; gasping breathing; confusion of thought; etc. Dr. Richardson further says that dangerous decomposition of the blood may occur before coma is produced; and the symptoms in the case recorded by Dr. Reynolds, which symptoms strikingly resembled those named by Mr. Moxhay as occurring at the last in his case of tetanus, were such as would occur if blood were lost. I cannot possibly enter more fully into this matter now; but it is very evident, that not only is passive hæmorrhage from an open vessel favoured by the administration of chloral, but, from the tendency which exists from the continuous administration of the drug to produce decomposition of the blood, a small loss of blood would be very possibly followed by serious symptoms. Moreover, it can scarcely be a question that the tolerance of the drug is much greater in some individuals than in others; and possibly the same person at different times might bear its administration very differently.

At the meeting of May 25th, the particulars of a very interesting case of Ovarian Tumour were brought forward by Mr. Harrington, who related the particulars as follows. Mrs. C., aged 49, whose catamenia were regular up to September 1st, 1868, but latterly irregular and slight for three or four times, had been ailing, sick, and increasing in size, since the last period in September 1869. Mr. Harrington first saw her on October 15th, 1869, when she told him she fancied that she was pregnant. On January 7th, 1870, she was still increasing in size; but, on a vaginal examination, he could not make out the signs of pregnancy. The mammae were not enlarged. The abdomen was large; but the outlines of any tumour were ill defined, except that the enlargement mainly occupied the left side. As it became a question whether the enlargement was extrauterine or ovarian, Mr. Harrington sent her to Mr. Spencer Wells, who, in writing on January 7th, said:—"I feel sure that the tumour is uterine: whether fibroid enlargement or pregnancy, I cannot say, as I don't like to use the sound, on the chance of doing harm. There is a shortened state of the cervix, being suggestive of pregnancy, and rather against the theory of fibroid enlargement." After the receipt of this letter, Mr. Harrington waited until the beginning of April, when her size had enormously increased. There was ascites, and also oedema of the lower limbs, and also of the lungs. No scruple was now felt about using the sound, as the seventh month of assumed pregnancy had arrived. The instrument entered without obstruction for four inches, and moved equally freely in all directions.

On April 27th, Mr. G. May saw her, and diagnosed left ovarian disease; and on April 28th she was again sent to Mr. Spencer Wells, with the opinion that no pregnancy or uterine tumour could be discovered, but only a swelling containing mainly fluid, but at the upper parts some linear solid. Mr. Spencer Wells replied: "Whether there may or may not be an ovarian cyst to the left, where there is fluctuation, the uterus is evidently enlarged, and has a nodular growth closely attached to its posterior surface, easily felt both by vagina and rectum. Let us hope it may not be malignant. There is evidently also some ascitic fluid, which might be removed by tapping, but not very much." After this, she rapidly went down. Mr. G. May saw her, and tapping was thought to be inexpedient; and she died on May 9th. A *post mortem* examination, made twelve hours after death, revealed very great distension of the abdomen; fluctuation was perceptible. On puncturing with a trochar in the usual situation of paracentesis, a small quantity of fluid slowly trickled out. On laying open the cavity, however, a large quantity, estimated at seven quarts, escaped; and there was found, occupying the abdomen, a large tumour, partly solid, and partly cystic. The trochar had entered one of the cysts. The tumour had adhesions to the great omentum and to the intestines; these were for the most part recent and easily broken down, though at one part it was firmly adherent to the intestine. The tumour sprang from the left broad ligament, and had no other connexion with the uterus, which appeared perfectly healthy, except for a very small nodule at the left of its fundus. It was drawn up by the tumour at its left side, and its fundus tilted towards the right. The left Fallopian tube stretched upwards on the left side of the tumour. The tumour was removed by cutting through its narrow pedicle. In the great omentum was discovered a nodule of the size of a hazel-nut, milky white in colour; on cutting into it, it was found to be firm, but not hard, and a milky juice exuded from it. The tumour, after removal, weighed about seven pounds, and consisted chiefly of a solid oval mass with a thick-walled cyst in its upper part, capable of containing about one pint and a half. On cutting into the solid mass, it was found to consist chiefly of a tough cheesy-looking substance, streaky in appearance with red lines, and with numerous small cells, chiefly at the margin. On examination of a portion with the microscope, small granular cells were found, but without variety; but in the tubercles from the omentum were a variety of cells of variable size and shape. Death was clearly occasioned by peritonitis. The tumour, with the notes of the *post mortem* examination, were sent to Mr. Spencer Wells; and he wrote in reply: "I never saw an ovarian tumour like it, whereas it has all the characters of a fibroid tumour of the uterus in an advanced stage of fatty decay and softening; and I believe it must have been a fibroid outgrowth from the uterus." I have gone fully into this instructive case; for, as Mr. Spencer Wells says, "practically the exact nature is very important; for, if a softening fibroid can give rise to constitutional symptoms resembling those of cancerous cachexia, and can also, as this clearly was, be removed by operation, we undoubtedly ought to remove such a tumour, and might hope that, the cause being removed, the constitutional effect would subside." The case also, in the words of Mr. Harrington, shows the difficulties that still environ the correct diagnosis of uterine and ovarian tumours.

On the same evening, Mr. Harrington read a paper on a case of Twin Pregnancy, in which two pouches of fluid presented at the same time. When the os uteri was sufficiently dilated, the anterior bag was ruptured, and the first child was rapidly born; the second child followed in seven minutes, and both mother and children did well. This was followed by a paper on Medical Causation by Dr. Johnstone, for which the thanks of the meeting were accorded him. The subject is undoubtedly, as Dr. Johnstone remarked, a very important one, with regard to the treatment of disease on purely scientific principles; and I regret I cannot now more fully enter upon it, and so do justice to Dr. Johnstone's well digested paper.

Although I have trespassed long upon your time, I must beg that much consideration may be given to the case I have now to bring before your notice. It is a case of Traumatic Tetanus successfully treated by the Hydrate of Chloral, by Mr. George May, jun., and communicated to this Society at their last meeting of June 15th. Joseph Ireson, aged 13, a farm boy, was admitted into the Royal Berkshire Hospital, March 11th, 1870. Three weeks previously, his right hand was caught in a cog-wheel, and all the fingers were seriously injured. Before the accident he had been in good health, and continued well until March 9th, when he complained of sore throat, followed by startings of spasms. Whilst being carried to bed, he suffered from severe spasms, becoming perfectly rigid. He was given fifteen grains of hydrate of chloral, after taking which he was quieter and slept, but cried out with startings in his sleep. A lotion, of one grain of hydrochlorate of morphia to one ounce of water, was added to the poultices, but spasms continued to occur every ten minutes, being brought on by every attempt to swallow.

On the 13th, he was ordered Calabar bean, and powdered rhubarb, of each three grains, every hour. On the 14th, three grains of calomel and ten of rhubarb were added to the powder, the bowels being confined. On the 15th, he had a violent attack of spasm, the eyes being fixed, the face livid, and respiration almost suspended. He was restored by artificial respiration. On the 16th, a grain of Calabar bean powder was ordered every half hour. He took four doses, and then felt faint. In spite of the faintness, chloroform was given with advantage, and twenty grains of hydrate of chloral were injected into the rectum. On the 20th, another attack, almost fatal, was relieved by artificial respiration with the simultaneous administration of chloroform; hydrate of chloral being at the same time injected into the rectum. On April 2nd, ten minims of tincture of cannabis Indica were ordered to be given every four hours. On the 4th, the Indian hemp was omitted. This quantity of chloral was increased to two scruples. On the 19th, the spasms were still severe. From this time they gradually ceased, and by the 29th were scarcely perceptible. On May 15th, he was allowed to leave his bed, having been nine weeks under treatment. The objects aimed at in the treatment were perfect rest and the avoidance of every source of irritation. The food was given of such a nature as could be easily digested without mastication. The injured fingers were soothed by an anodyne poultice. The Calabar bean and Indian hemp did not appear to do good. The hydrate of chloral given by the mouth and by the rectum, although it did not always prevent spasm, yet caused sleep, and thus powerfully aided in the patient's restoration to health. The relief of the spasms of the muscles of respiration afforded by the chloroform, with artificial respiration, Mr. May says is especially worthy of note; and in that opinion I believe we shall all concur; for, had not such relief been afforded, and the respiration thus enabled to go on, it is quite certain that the patient must have died; as it was, his life was spared to treatment deserving the highest praise, and reflecting the greatest credit upon those who had the care of him.

I have thus brought my little work to a conclusion, and for all its imperfections I must again ask your kind indulgence.

ON THE SHOULDER-TIP PAIN, AND OTHER SYMPATHETIC PAINS, IN DISEASES OF THE LIVER.*

By DENNIS EMBLETON, M.D., F.R.C.P.,

Member of the General Medical Council; Lecturer on the Practice of Physic
in the College of Medicine; Physician to the Infirmary,
Newcastle-upon-Tyne; etc.

III.

If we can argue analogically from the other pneumogastric organs, we should conclude that the liver-branches of the par vagum are guided, by the blood-vessels enveloped in the capsule of Glisson, to the acini of the organ, ramifying within and around these, and that they are destined to the bile-ducts and their continuations down to the transverse fissures and to the duodenum. We know already that the gall-bladder and cystic duct are provided with plexuses proper to themselves from these and the sympathetic nerves.

Now, the system of bile-ducts constitutes the essential secreting portion, so to speak, of the liver, as the bronchi and air-cells do of the lungs; the mucous membrane, with its gastric glands, of the stomach; and the lining membrane and muscles of the heart—and these are the parts, in these several organs, to which their pneumogastric nerves are distributed. But to prove or to disprove that the hepatic twigs are really given to the system of bile-ducts, and the sympathetic twigs to the blood-vessels, a more minute and correct anatomy is wanted.

In the absence, however, of satisfactory anatomical information as to the symmetrical arrangement of the hepatic nerves of the par vagum in reference to the right and left lobes, it may not, perhaps, be unreasonable to conjecture that the right vagus supplies mainly the right, and the left vagus mainly the left lobe. For the liver, at an early period of foetal life, is a symmetrical organ, the two lobes being equal, and more equally disposed on each side of the median line of the body than they afterwards are. (Quain's *Anatomy*, 7th Edition, vol. ii, p. 879.) Thus, this organ resembles the other members of the pneumogastric series—the pharynx and larynx, the trachea and lungs, the heart, the stomach, the kidneys, etc.—and these are all supplied mainly on their right side by the right, and on their left by the left pneumogastric. It is well understood that branches are interchanged from side to side; but a symmetrical arrangement of the nerves corresponds, on the whole, to

the symmetrical form of the organs. Is it likely, I would ask, that the liver will be an exception to this rule? I find no reason to think that it will prove so to be, since it contains, in its complicated structure, like the other organs of the pneumogastric series, canals of mucous membrane—surfaces of impression, surrounded by walls of muscular fibre, for motor purposes, viz., in the ductus communis choledochus, the hepatic and cystic ducts, and the gall-bladder. Again, the blood-vessels, the portal veins, and hepatic arteries, the lymphatics and the hepatic ducts, are all so far symmetrically arranged as the differing size of the two great lobes will admit; and no doubt the nerves are subjected to the same arrangement.

Further, analogy as to disposition of parts, structure, and distribution of their nerves in the other members of the series, is in favour of the above conjecture, which receives strength also from the pathological observations of John Hunter, Sir Thos. Watson, and others, viz., that it is the right shoulder that is pained when the right lobe of the liver is diseased, and the left shoulder when the left lobe is affected. These observations clearly imply that the lobes and the nerves of the liver are symmetrically correspondent. There is a want of anatomical proof, I am aware, but how is this proof attainable? Observations and facts are wanting; and fresh investigations by competent anatomists are urgently called for in this very difficult field of labour.

From what has been adduced, the conclusion is drawn that the true path of sympathy from a diseased liver to a pained shoulder lies along the lines of the pneumogastric and the two divisions of the spinal accessory nerves.

In a case of hepatitis ending in abscess of the liver, the nerves, along with the other components of the organ, necessarily become irritated, inflamed, and in part destroyed. The result naturally to be expected will be, *inter alia*, pain in the liver, but, as we know, though we cannot account for the fact, the symptoms are often latent, or not observed; when, however, this latency does not exist, as the disease progresses the disturbance of the nerves tends to spread more or less intensely and rapidly to the hepatic plexuses and the nerves that supply them, whether sympathetic or pneumogastric; the great sympathetic ganglia behind the stomach will receive the influence and transmit it to their offsets, or some of them, and these to the viscera supplied by them, hence the epigastric and other abdominal symptoms. The splanchnic and other spinal nerves will carry the influence to the dorsal and lumbar part of the spine; hence the pains in the walls of the chest, the loin, hip, and thigh.

The diaphragm will suffer more or less by contact with the inflamed organ, and through the irritation carried to it along the phrenic twigs of the liver; and so the influence may pass up the trunk of the phrenic nerve to the brachial, and even the cervical plexus, and thus the subclavius nerve and others may be affected, which may account for pain about the clavicle, and partly for that in the side of the neck, and even in the arm. But it is not difficult to conceive that the inflammation or irritation will travel at least as readily along the nerves of the pneumogastric system as along those of the sympathetic or spinal systems, and that it will easily be propagated to the trunk of the vagus on the cesophagus from the gastro-hepatic branches, and pass up the chest; and if the hypothesis of the right vagus going to the right lobe of the liver be correct, then, in the case of the hepatitis and abscess being in the right lobe, the right vagus trunk will suffer more than the left, the nerve-irritation running up higher and higher, till the cardiac, pulmonary, laryngeal, and pharyngeal nerves are reached, and eventually the base of the skull and the side of the medulla oblongata and spinal cord, whence the par vagum and spinal accessory take their origin. Hence, we might expect, and do actually find, pain running up the inside of the chest, dyspnoea, and cough, palpitation of the heart, throat-affections and thirst, cephalalgia, vertigo, etc.

Again, we know that the internal division of the spinal accessory forms a part of the trunk of the vagus in the chest and in the neck, and that under the base of the skull it has intimate connections with the external division, and this again with the pneumogastric. The supposed inflammation, therefore, or irritation, is propagated along this lateral communication also, as far as the terminations of the external division of the spinal accessory in the sterno-cleido-mastoid and in the trapezius muscles, where, particularly in the latter situation, it is felt as active pain or merely as tenderness on pressure. It is worthy of reiteration, that the pains and other disturbances in the organs and parts named are precisely those which we meet with in liver-diseases that are not latent.

The shoulder-pain varies with the affection of the liver in intensity; as the latter increases, the pain corresponds; as it diminishes, the pain lessens or subsides. After the pus of an abscess has been evacuated, and tension is removed, the shoulder-pain disappears.

The pain has been noticed by authors in the following liver-diseases,

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