last about four hours at a time, and were so violent as to make her cry. She had never had any fits. She subsequently had an attack of what her general medical attendant, Dr. Jeffree of Kennington, considered meningitis; and after this she completely recovered the vision of the affected eye. I, at the onset, diagnosed the amaurosis as depending on some effusion within the orbit pressing on the optic nerve or retina; and I consider the ultimate progress of the case justifies me in adhering to this diagnosis.

[*To be continued.*]

CARCINOMA OF THE STOMACH.

By John Richard Wardell, M.D., M.R.C.P., Physician to the Tunbridge Wells Infirmary.

The following cases are not given as presenting any very peculiar characteristics of the above named disease; but rather as a fair illustration of its examples which are ordinarily met with in practice.

Case i. I was requested, by Dr. Johnson of this place, to see with him, January 28th, 1863, Mr. S., who had for some weeks previously been under his care. The patient was head gardener to a gentleman residing in the neighbourhood; and he had regularly pursued his occupation up to the time of the more urgent symptoms of his illness. He was now, and had been for some days, confined to his bed. He was 51 years of age, and had always been a healthy man until about two years prior to the above date, when he first began to experience what he conceived to be merely impaired digestion, for which the ordinary remedies had been employed. During the summer of 1862, he had been slightly jaundiced. Subsequent to that affection, he had abscess of the liver, which opened externally; and for some months a sinus remained, from which a small quantity of purulent matter continued to escape.

At my first visit, he had a cachectic look, was much emaciated, and then laboured under persistent sickness and vomiting; the ejections being sour, and a biliary mucous fluid. The respirations were not accelerated; percussion over the thorax generally elicited the clear pulmonic notes; and auscultation proclaimed no abnormal sounds. The pulse was 92, small, compressible, and regular; the cardiac impulse weak, not diffused; there was no valvular disease. On carefully percussing the hepatic region, dulness manifestly extended over a less space than natural; the abdomen was so distended with flatus that now palpation could detect no abnormities of the viscera. Pressure at the epigastrium gave acute pain; and he described this pain as "sharp and shooting". The bowels were regular; and, when they were moved, only small amounts of fæcal matter were voided. The urine was of specific gravity 1020; no morbid products were detected on the application of ordinary tests. He had had a variety of tonic and stomachic medicines without any material benefit. He had taken the bitter infusions, mineral acids, bismuth, quinine, oxide of silver, prussic acid, aloes, and belladonna, and other remedies of a similar kind. On a general review of the case, and when the tympany existed, the diagnosis could be but a doubtful one. The solution of morphia, with hydrocyanic acid, were agreed upon, to be taken at short intervals; and concentrated beef-tea, with port wine, every two hours. Under this treatment, the sickness was for a time relieved.

I saw him with Dr. Johnson again in the course of another week. The tympanitis had now subsided; and, on again examining the abdomen, we could feel an irregular hard lump, of about the size of a small orange, at the right epigastric region, corresponding with the situation of the pyloric orifice. It was now abundantly clear, from this fact, the history, and the whole of the accompanying symptoms, that this was a case of carcinoma. He continued to waste and decline in strength; the sickness, vomiting, and epigastric pain, being to the last persistent and predominant symptoms.

He died February 14th, 1864. No inspection was made.

Case ii. The next example of this disease was in the person of Mrs. D. who, Oct. 16, 1863, came from a distance to consult me. Her case was reported as being one of stricture of the œsophagus. She was 49 years of age, married; her countenance was dusky, yellowish, anæmic-looking; the volume of flesh was considerably reduced. About two years before, she had first began to experience pain at the epigastrium immediately after taking food. Her affection had been regarded by an hospital physician as dyspepsia, and by a general practitioner as mere indigestion; for which a great variety of remedies had been tried, yet with little real benefit. The loss of flesh and strength, anorexia, with occasional vomiting, becoming more and more pronounced, and the opinion having been given that the disease was stricture of the œsophagus, herself and friends became alarmed, and my advice was requested. Three months prior to my seeing her, she had had, from time to time, attacks of vomiting almost immediately after a meal, and the ejected matters were invariably sour.

When I saw her, she said the swallowed morsel always produced pain, and it "felt as if it stuck very low down", on which account she had been compelled to live on fluid or on semi-fluid diet. The tongue was clean, smooth, and red; and the papillæ, even at the V-shaped circumvallate lines, were almost indistinct. Her bowels were regular; pulse small and weak, 92. Percussion and auscultation gave no indication of thoracic disease. The abdomen, on palpation, gave no evidence of lesion, except at a circumscribed place at the epigastric region between the mesian line and the anterior border of the left false ribs. Over this space even moderate pressure gave great increase of pain. Pressure could be borne at the right side of the epigastrium. She said the pain was always in one place; that she could cover it with the palm of the hand; that it was a "sharp, pricking, wringing, sometimes a burning, pain." Her husband and daughter, who drove over with her, were much concerned at her inability to swallow solids, and were afraid of death by starvation. I softened an œsophagus bougie in hot water, oiled it well, and very cautiously introduced it. Not the slightest resistance was felt until its end reached the cardiac orifice, where there was slight obstruction; but excessive pain was produced, which was felt through into her back. The instrument was at once withdrawn, the object not being dilatation, but a mere help to diagnosis. From the history, symptoms, and all the circumstances, I did not hesitate to pronounce the case as being a fatal one. On careful manipulation, some thickening of the cardiac end of the stomach could be felt through the attenuated parietes. It was a plain case of carcinoma. I ordered pills, with extract of belladonna, aqueous extract of aloes, and quina; and a belladonna and opium plaster to the epigastrium. I also directed her to have new milk, thickened with some farinaceous article of diet; concentrated beef-tea, with isinglass, tapioca, and port wine. The pain increased in intensity; her flesh and strength decreased; sour vomiting became more frequent; and the desire for food less and less; the difficulty of taking it greater;

and she gradually sank on December 16th, about two years and three months from the commencement of her illness.

CASE III. I was desired by Dr. Johnson, May 16th, 1863, to see a patient who for three months previously had been under his care. He was a tall, powerful man, 55 years of age, of florid complexion, who, twelve months before this date, had enjoyed good health. He then began to labour under a sense of pain and fulness at the epigastrium, but he did not for some time subsequently seek advice. In Feb. 1863, he consulted Dr. Johnson, who treated his case in the ordinary manner when such symptoms are exemplified. He had given to him, from time to time, a variety of stomachic medicines, which were followed by some temporary improvement. But he did not make progress, and my own opinion was asked. When I first saw him, the pulse was 78, volume good, and regular. The physical signs of the thoracic organs were natural. The tongue was covered with a thin creamy coat; his appetite was impaired; the bowels were inclined to be confined, necessitating the occasional use of some aperient. On examining the abdomen, the epigastrium was full, rounded, and preternaturally resonant on percussion. Pressure over this region, at the mesial line and towards the left hypochondrium, gave pain which extended into the left back. He placed his fingers on the precise spot, which "felt tender." No tumour, nor well defined hardness, could be detected. The kidneys acted normally. The urine was of specific gravity 1020; no morbid products were found, except excess of triple-phosphates. He had latterly become desponding, and was easily fatigued. It was now impossible to say, whether it was or was not malignant disease. There was yet no great wasting; nor had he the cachectic expression. He had hydrocyanic acid, strychnine, aloes, extract of opium, extract of belladonna, belladonna plaster to the epigastrium, and like remedies, with a carefully regulated diet. He improved for a time; but the pain, which was of the stabbing kind, never entirely removed. He made no real progress; and he was recommended to go to Brighton, where he remained a month. On his return, he was thinner; and the face began to wear a haggard, sharper expression. Nitrate of silver, extract of conium, decoction of cinchona, and dilute nitric acid, were given; and morphia at bed-time. He had more pain after meals; the vomiting matters ejected were always sour. He was ordered to have a liniment of camphor, extract of belladonna, tincture of opium, and chloroform, to be applied to the epigastrium.

Now (Sept. 20th), we believed in the existence of malignant disease. The loss of flesh was rapid; the pain sharp and lancinating; the vomitings more frequent. He was recommended to consult Dr. Brinton; and, at Dr. Johnson's request, I wrote a short account of the case. That gentleman's reply was as follows:

"I have examined Mr. —— very carefully; and, on the whole, fear your opinion is only too correct. At least, I find considerable thickening of the stomach near its cardiac end; and surmise that a certain degree of softening and abrasion of the mucous membrane, if not some downright ulceration, is present here. At the same time, it is quite *possible* that these symptoms and appearances may be due to mere ulceration without a markedly cancerous deposit. Even in the latter case, I should hope much may be done (as I have certainly found in cases with peculiarities analogous to this) to relieve his sufferings and defer the result. The prescription and diet conour in essentials with the plan already pursued." (The prescription was for pills, with extract of colocynth and extract of belladonna, and quina; strong soups and farinaceous food for diet.)

During the next three months, all the symptoms were more pronounced. Emaciation went on; strength rapidly declined; he had pain without intermission; the sour vomitings soon after meals became more frequent; and the nature of the malady was only too obvious. At the epigastric region, to the left of the mesian line and towards the hypochondrium, there was resistive hardness, and even moderate pressure increased the pain. Morphia was given every night. The bowels were opened on alternate days by enemata. Lime-water or milk were given to relieve excessive acidity. Having to go to London on Jan. 24th, 1864, he wished to consult Dr. Budd. Again, at Dr. Johnson's request, I wrote a concise detail of the case. Dr. Budd replied as follows:

"I agree with you and Dr. Johnson that the disease under which Mr. —— is suffering is malignant. The gastric symptoms and the loss of flesh are such as usually betoken malignant disease; and in the left epigastric region (to which you directed my attention) an irregular lump can be felt. I would recommend a light diet, some soothing medicines, such as chloric ether, hydrocyanic acid, and tincture of calumba, bicarbonate of potash, or Vichy water; a belladonna plaster over the epigastrium; morphia every night; and occasionally a colocynth or aloetic pill."

In the course of another month, he became confined to the house. The opiates required to be very considerably increased. The emaciation became at length extreme. Port wine, brandy, iced champagne, concentrated beef-tea, for a short time extended his existence; and he died March 12th.

CASE IV. J. T., aged 64, a thin anæmic-looking man, for many years had been in declining health. This gentleman told me that five years previously he began to experience much disorder in the stomach and bowels; the former frequently giving considerable pain; the latter being irregular in their action, with much tendency to be confined. He placed himself under my care March 25th, 1864. He had been treated by several practitioners, yet without deriving more than temporary benefit. He looked languid and haggard, the countenance always being expressive of suffering. The physical signs of the heart and lungs were normal. Pulse 76, soft, regular. He had pain at the right iliac fossa, described as lancinating and shooting up into the right back; also some pain on pressure at the epigastrium. He could lie on either side, but was most free from pain when standing. When he sat down or went to bed, the epigastric pain increased. Hence, at my visits, I generally found him walking about the room; and he would say, "I am tolerably easy when erect." When pressed at the right hypogastrium, pain was experienced; and percussion gave dulness, which, however, from time to time differed in extent and intensity. He was much troubled with flatus; and the bowels were rarely moved, except by artificial means. There was no disease of the bladder; the urine was normal both in quantity and characteristics. His appetite was impaired and capricious; he had now no sickness or vomiting. I ordered him nitrate of bismuth with infusion of calumba and tincture of henbane. The mineral acids, morphia, extract of belladonna, aqueous extract of aloes, quinine, were given; and epithems, with belladonna, opium, and chloroform; and a diet selected of the most digestible and nourishing articles, as pounded meat, new milk, eggs, concentrated soups, jellies, and the like; wine and brandy in small quantities. Under this treatment, he for a time seemed to rally; his appetite was better; he slept longer; and he had more hope; yet

the cachectic look was still present. There was a continuous loss of flesh, and the epigastric pain never entirely ceased. On November 5th, persistent sickness and vomiting supervened; the ejections were a sour muco-biliary fluid, accompanied with much pain at epigastrium, extending down into the right hypogastrium. I ordered hydrocyanic acid and solution of morphia, anodyne fomentations, and opiate enemata. Iced champagne and concentrated soups were given in small quantities and at frequent intervals, as soon as they could be retained. He had a repetition of these distressing attacks, some of which continued for many hours. He gradually but surely lost ground. The appetite declined; he became more and more feeble and attenuated; pain, sickness, and vomiting being the predominant symptoms to the last. He died December 5th.

SECTIO CADAVERIS, December 7th, twenty-four hours after death. Dr. Davy, house-surgeon to the infirmary, kindly made the autopsy. The body was greatly emaciated. On opening the abdomen, the omentum was found reddish, vascular, and divested of its ordinary amount of fat. There was no excess of serum; no traces of inflammation in any organs inspected *in situ*. The peritoneum was quite healthy. The liver was small, yellowish, fawn-coloured, and softer than normal to the touch. On making repeated sections of its parenchyma, a nutmeg appearance was exhibited, more especially towards the borders; and this condition was associated with the fatty change. Microscopic examination showed the hepatic cells to be engorged with oil-drops; and the latter, of smaller size, were seen crowded together in grape-like clusters. Both kidneys were lobulated; the capsules could be stripped off without preternatural adhesions. Longitudinal sections of each kidney showed the pelvis and calyces to be filled with fat. The cones in some places had lost their normal configurations, and in some parts the cortical substance had become thin and diminished. The pancreas, duodenum, jejunum, ileum, colon, and rectum were healthy. There was no trace of disease at the ileo-cæcal junction, as anticipated during life. The bladder was healthy. The stomach, when manipulated before its removal, gave abundant evidence of lesion. A hard, irregular, resisting substance was felt at the lesser curvature. The organ being removed and laid open, some dark biliary grumous fluid was discovered in its cavity. Attached to the line of the smaller curvature was a large, irregular, nodulated, jelly-like mass, which extended between the cardiac and pyloric orifices; but both these orifices were quite exempt from disease. On making sections of this tumour, it presented a whity-greyish mottled appearance, with distinct fibroid striations vertical to the axis of the canal; and this fibroid substance contained variously sized loculi which were filled with transparent and semi-transparent gelatiniform exudations. The base of this growth was hard and dense, its density increasing in a ratio with its approach to the peritoneum; it was confounded and incorporated with the filamentous and muscular tissues proper to the organ; and, when regarded at its peritoneal aspect in certain places, its irregularities had a rough tuberculated appearance. Reviewed as a whole, it formed an apt example of scirrhocolloid cancer, so often discovered in its favourite *habitat*, the stomach. Juice expressed from a thin slice, and placed under the microscope, contained very numerously nucleated, non-nucleated, caudate, and fusiform cells; and interspersed were resplendent fat-molecules, all of which constitute the characteristic products of an heterologous or malignant growth.

[*To be continued.*]

Transactions of Branches.

BATH AND BRISTOL BRANCH.

ON THE HYPODERMIC INJECTION OF MORPHIA.

By H. W. FREEMAN, Esq., Resident Medical Officer to the Bath United Hospital.

[*Read May 18th, 1865.*]

I BEG to submit, briefly, to your kind consideration, a few remarks on the action, use, and mode of administration of morphia when given subcutaneously.

I do not aspire to lay anything markedly original before you, but merely to give in the abstract a few observations of the hypodermic method in certain forms of disease in comparison with the usual effects of the drug when taken by the stomach.

It is just ten years ago since Dr. Alexander Wood of Edinburgh first introduced the injection of morphia into the cellular tissue of a part affected with neuralgia. Since that period it has been used extensively on the continent and in our own country, not only locally, but generally; the injection of the drug at a remote part of the body has not been found to materially alter its properties.

The endowed cancer ward of the Middlesex Hospital has, perhaps, afforded as large a field for the observation of its effect as most metropolitan institutions of its kind; and in, perhaps, but few hospitals has the hypodermic method of morphia received so fair and impartial a trial in all varieties of cases, both medical and surgical. Long since it has stood alone as the great remedy for pain in those malignant forms of disease, no other class of remedies seeming so efficacious.

The most convenient form of injection is that by a syringe made by Coxeter, which is graduated into six minims. The standard solution used at University College and the Middlesex Hospital is a neutral one, and prepared so that six minims contain a grain of morphia. Sufficient acetic acid is used to dissolve the salt, and afterwards neutralised with liquor potassæ. The physiological action is the same essentially, although not quite identically, as when the morphia is taken by the stomach. Its effects, however, are more marked and increased in intensity when used hypodermically, one-third of a grain acting as powerfully as one grain taken by the mouth, and much more rapidly. Much as with opium, the action appears to be modified by age, habit, temperament, and idiosyncracy, the tendency always being to rapid alleviation of suffering, to stupor and to sleep. The stimulating stage, although brief, is marked, the patient first experiencing a sensation of slight vertigo and of approaching intoxication, then follow its calmative effects, and something approaching insensibility.

In illustration of the general phenomena, let me draw your attention for a moment to a case now under observation at the United Hospital, under the care of Dr. Falconer.

Louisa M., a middle-aged woman, is suffering from carcinoma of the pylorus, with intense pain, vomiting, and its usual accompanying symptoms. After giving her an injection into the outer side of her arm with a third of a grain, a minute and a half to two minutes elapse before its effects are first felt. She complains of a tipsy feel, slight giddiness, and warmth of body, with other pleasurable sensations. The calmative feeling gradually passes over her in from ten to twelve minutes, proceeding from above downwards,