require. And that is how I have used salicylic acid in combination with opium.

We may learn from the case just quoted how opium may control fever in a measure, and we know how surely it relieves and cures pain. We may learn from easy experience how salicylic acid may relieve pain in a measure, and how surely it may control fever. Each, then, the complement of the other, the two may join and work together, and the two—as Dr. Latham puts it—become confederate for the cure of the disease. As further illustrating the use of these two—opium and salicylic acid—I may quote from a case to which already I have referred earlier in this paper; it is the case in which the temperature rose to 106 deg., because, as I said, of the omission of due purgation. Throughout a great portion of this case opium was given steadily, and its use was regulated by its effect. But something more was needed, over and above what opium alone could do. The temperature took sudden leaps, attended with aggravation of all symptoms, and to meet this—and only as was needed to meet this—salicylic acid was used. Again and again, in the protracted course of this case, salicylic acid was thus repeated, and always with the same success. Thus, on one occasion, the temperature, at 9 P.M., was 104 deg., having risen in the course of the day from 99.6 deg. At noon, next day—in fifteen hours—salicylic acid having been given every three hours, the temperature was 100 deg.; and in fifteen hours later, it was 99 deg. This time, salicylic acid was used alone. On another occasion, the temperature was 104.4 deg. at 1.30 P.M. Then, opium having been in use every four hours for several days, salicylic acid with three minims of tincture of aconite (B.P.) was given every two hours, and the opium continued as before. In three hours and a half, after one dose, the temperature came down 3.4 deg.; and by 9 P.M.—after four doses of the acid and aconite (and only four were given at all)—the temperature was just over 99 deg. The record states that the patient slept well that night, and that pain, which had been severe in the afternoon, had remitted altogether by 9 P.M. It is worth notice also that the bowels had acted twice freely, after castor oil, within the previous twenty-four hours. Again, the temperature rose from 98 deg. to 102 deg. in three hours, and thence to 103 deg. in two hours more. Opium had been going on every six hours in half-grain doses, when salicylic acid and aconite were given; in two hours the temperature had fallen from 103 deg. to 98 deg. This lower temperature, within less than a degree, was maintained for thirty hours, the acid and aconite not being continued. Then, within a few hours, the temperature rose again from 98.6 deg. to 102 deg.; one dose of salicylic acid and aconite brought it down again to 98.4 deg. in the space of two hours. In the case of nerve-symptoms with tendency to hyperpyrexia, that I spoke of, a similar plan was pursued, and with like success. Only, in this case, to meet a special character in the nerve-symptoms, I used bromide of morphia instead of opium. Such, and other similar experience, almost compels the conclusion that, under conditions, the combination I advocate might be used with a certainty little short of precision.

Opium avails us not only for the relief of pain; in inflammatory conditions its value is well-attested. Opium serves a double purpose as an auxiliary to salicylic acid. This brings me to the last of my conditions: the condition that inflammation, articular and cardiac, should be treated on its own account and by its own remedies whilst fever is being treated by salicylic acid. I must pass over other modes of treating the cardiac and articular inflammations—well known and not neglected, I am sure, by any of us—and speak only of aconite now. The good effects of aconite in inflammation, and especially in acute inflammation of serous membranes, its power to calm and subdue high vascular action, its control over fever, are matters of history. History, too, unfortunately, attests its dangers. Perhaps because of the extreme care needed in its use, aconite has never been very popular. But the usefulness and the danger of aconite depend on the dose. In small doses and carefully used its value is unquestionable. I have used aconite in combination with salicylic acid (and in the same mixture), because I hold that the fever of acute rheumatism has a double source and a double significance. It owns, on the one hand, a source in the circumstances that cause the disease, and is so far essential and a part of the general disease. It owns, on the other hand, a source in inflammation. Now, it is for the fever from this last source that I use aconite; and I use it when the articular or cardiac inflammation is stubborn and severe, and when hyperæmia and vascular tension are great. The state of the pulse is our chief and safest guide to its use; used early and promptly, I think it is most useful and then safest. I have already illustrated its use.

I have now only to add that I give two or three minims of the tincture of aconite of the *British Pharmacopæia* for a dose, that I give this dose every two or three or four hours, and always under observation, and only for so long as the effect may be required. I give opium in

form of the solid extract, in half-grain or grain doses, every two or three or four hours, and I begin it early in the case, and regulate its use by the pain. I give salicylic acid in fifteen or twenty-grain doses (and this quantity with three drachms of liquor ammoniæ citratis)* every two or four hours, and the use of this remedy is regulated by the temperature.

We may think it matters little what treatment we adopt in acute rheumatism so long as our patients get well; and no doubt we may all point to cases in which, under very various treatment, our patients have got well; but in many of the graver cases we cannot think that. The fortunes of cardiac inflammation, at least, are too serious to allow anything but the gravest anxiety for the cases in which such fortunes are involved. And this is why I make known to others how my own anxieties have been much allayed.

TWO CASES OF OBSCURE LIVER-DISEASE.†

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DURING the past year, two cases of hepatic disease have been under my care, the diagnosis of which was attended with considerable difficulty. As an opportunity was afforded in each case of clearing up the difficulty, I thought it might probably interest the members of the Branches if I read brief notes of the cases and commented very shortly upon them.

CASE I.‡—*Abscess of Liver, probably due to Migration of Round Worms into the Bile-Ducts: Aspiration: Recovery.*—T. W., aged 34, married, a coprolite-digger, was admitted into the hospital on December 26th, 1877. He is a native of Barton, Cambridgeshire, where he has resided all his life. With the exception of occasional attacks of pain in the abdomen and chest, for one of which he attended as an out-patient at the hospital four years ago, he had always had good health. He had never had dysentery. His present illness commenced a month before his admission with sudden pain in the right hypochondrium. Treatment by his club-doctor gave relief for a time; but the pain remained more or less for a fortnight. Seven weeks before admission, he passed a round worm, and during the last ten days eighteen more had been found in his stools. Since his illness began, he had sweated freely at night. His urine had been dark-coloured, his motions "brimstone-looking"; and he had lost flesh considerably. His wife thought that at the beginning of the attack he looked yellow; but there had never been decided jaundice.

On admission, he was still fairly nourished; his complexion was sallow; and he complained of pain in the region of the liver, and of inability to lie on his right side. The heart- and lung-sounds were normal, with the exception of slight dulness and rather feeble inspiration at the base of the right lung posteriorly. Hepatic dulness extended in the right mammary line from the lower border of the fifth rib to the costal edges, but slightly beyond this at the level of the cartilage of the eighth rib. There was no bulging of the ribs over the area of the liver, but some pain on pressure. The urine was normal; the tongue was clean; the appetite good; bowels open; the skin was moist; pulse 108; temperature in evening 101.4 deg. He was ordered a powder containing two grains of santonine and five grains of sugar, to be taken on alternate mornings for six days.

December 30th. He passed seven round worms and vomited one. In the evening, he passed four more worms. He sweated profusely.

January 1st, 1878. The pain in the right hypochondrium was very severe. He was ordered half an ounce of castor-oil. The motions were relaxed and clayey-looking.

January 2nd. He was ordered the following mixture thrice daily. R. Tincturæ lupuli ʒss; tincturæ hyoscyami ℥xv; potassii bromidi gra. 20; aquæ chloroformi q. s. ad ʒj. M. In the evening, the pain was easier.

January 3rd. He complained of agonising pain over the liver, darting to the shoulder. He rolled about in the bed. He was relieved by hypodermic injection of one-third of a grain of hydrochlorate of morphia. Morning temperature 98.6 deg.; evening temperature 101.2 deg.

January 4th, 5th, 6th. Intense pain recurred at intervals, which was only relieved by frequent injections of morphia. He was losing flesh rapidly. He sweated profusely at night, soaking his bedclothes

* Salicylates of ammonium and of sodium are so easily decomposed, that when we give these salts we must consider the effective remedy to be salicylic acid itself.

† Read before the combined meeting of the Cambridgeshire and Huntingdonshire, East Anglian, and South Midland Branches, at Peterborough.

‡ For notes of the cases, I am indebted to Mr. J. K. Fowler, House-Physician.

with perspiration. The temperature rose beyond 102 deg. each evening.

January 7th. Santonine was repeated every other morning. The urine contained a small quantity of albumen.

January 10th. He passed another worm. There was dulness at the base of the right lung from the angle of the scapula, and diminished vocal resonance and feeble respiration over this area.

January 13th. The pain had continued. He passed two more worms. He was much weaker. There were sordes on the teeth and gums. The tongue was raw, with aphthous patches on the dorsum.

January 15th. He was ordered a nitro-hydrochloric acid mixture.

January 16th. He passed three worms. The motions were clay-coloured. The abdomen was tympanitic. He was ordered a powder of four grains of hydrargyrum cum creta and three grains of santonine.

January 19th. He passed two worms. At 4 P.M., he had a severe rigor, lasting five minutes. The temperature rose gradually to 105 deg. The powder was repeated.

January 21st. Evening temperature 103.2 deg.; pulse small and thready.

January 24th. He passed another worm. The pain was not quite so severe. He had lost flesh wonderfully since admission. The sweating continued.

January 25th. The abdomen was less tympanitic. The rounded edge of the liver could be felt about three inches below the margin of the ribs in the right mammary line. Morning temperature 99.6 deg.; evening temperature 103.6 deg.

January 30th. He had had no attack of pain since the last note. Pulse dicrotous. He passed another worm.

February 10th. His condition was unimproved. He had had at intervals pain, which had been relieved by hypodermic injections of morphia. The very profuse sweating continued, his clothes being soaked through every night. Emaciation had become extreme. The temperature ranged from about 97.4 deg. in the morning to about 102 deg. in the evening. The pulse was about 100, feeble and thready. He had a rigor for about twenty seconds at 5 P.M.

February 11th. He passed another worm. He had rigor for twenty-five seconds at 1 A.M. Temperature 103 deg. He was sick once.

February 13th. He shivered yesterday and to-day. He was ordered ten grains of quinine thrice daily and three ounces of brandy.

February 17th. He had no rigor since the 13th. The patient was cinchonised by the medicine. The pills were omitted. On this day, I decided to tap the liver. A fine needle of the bottle-aspirator was inserted between the seventh and eighth cartilages close to their junction, and pus flowed immediately into the bottle. After sixteen ounces of thick and very fetid matter had been drawn off, it ceased running. Thinking that the tube might be plugged, the needle was withdrawn, and a longer inserted into the same spot and in the same direction as the first; but, probably from the contraction of the abscess-sac having altered its position, it was not hit, and no more pus was drawn off. The patient being very feeble and exhausted, it was not considered advisable to puncture again. Examination with the microscope of the pus drawn off failed to detect any hooklets of echinococci.

February 18th. The liver could not now be felt beneath the margin of the ribs. The patient passed a good night, without sickness or rigor. He was ordered five grains of quinine in pills thrice daily. Morning temperature 99.4 deg.; evening temperature 101 deg.

From this time he gradually improved. The morning and evening temperatures showed less and less difference, and by March 9th were normal. His appetite and nutrition improved rapidly; he had no more rigors, and very little pain. The liver-dulness never increased again, and his motions soon became natural in colour. He left the hospital convalescent on April 6th. He was last seen on June 8th, looking remarkably well, and having gone back to work.

REMARKS.—From the time of first seeing this patient, my own impression was that the intense pain in the right hypochondrium from which he suffered was produced by the round worms. The little pleurisy he had was not sufficient to account for it, and by the process of exclusion it was difficult to see what other cause there could be but the worms. There was no history of gall-stones, or of gastric or intestinal ulceration. Those, however, who saw the case with me did not adopt my diagnosis. Some thought the case was one of cancer of the liver; but the patient's age militated against this view, carcinoma hepatitis being very rare in persons under forty. After a time, the nature of the disease became less obscure. The intense pain, the rigors, the profuse nocturnal sweating, the hepatic enlargement, and the extreme exhaustion, all clearly pointed to suppuration having taken place; and I then decided to introduce the needle of an aspirator. The result was most satisfactory, the patient recovering without there

being any necessity for repeating the operation. There can be little doubt that the round worms set up the suppurative inflammation in the liver, although positive proof of this is of course wanting. Cases of abscess of the liver due to this cause are mentioned in medical works; but such cases must be very rare. Murchison does not, I believe, give a single case in his excellent *Lectures on Diseases of the Liver*. The *habitat* of the round worm is the duodenum; and, when this parasite exists in large numbers, it is easy to imagine its passing thence along the bile-ducts into the liver, and setting up inflammation in that organ. The man passed altogether forty-two worms.

CASE 11. *Large Hydatid Cyst of the Liver, three times aspirated without the Withdrawal of any Fluid: Death: Necropsy.*—William Moule, aged 42, married, living in Cambridge, the father of several healthy children, was admitted into the hospital on October 31st, 1877. He had led rather an irregular life. He had drunk freely of beer, and had had gonorrhoea, but not syphilis. Of late, he had gained a living by playing a cornopean in public-houses. Eighteen years ago, he first noticed a swelling beneath the edge of the costal cartilages, rather to the left of the middle line. He was an in-patient in the hospital for a week. He complained also at that time of nausea, vomiting, and dragging sensations about the heart. His own impression was that this swelling had been gradually increasing in size ever since it first appeared. During this period, he had suffered from occasional attacks of vomiting; but he had never had hæmatemesis, nor lost flesh. His appetite had been good, except during attacks of sickness. He had at times had occasional aching pain in the left hypochondrium. His bowels were regular.

On admission, he was well nourished. His skin was of a dusky brown colour, and had a papular eruption upon it; tongue clean; appetite good; bowels open. The heart- and lung-sounds were normal. The liver-dulness commenced at the sixth rib in the right mammary line, and extended to the costal edge. In the mid-sternal line, the upper limit was the same; the lower, about one inch above the umbilicus. The dull area extended into the left hypochondrium, and the edge of the left lobe could be felt under the margin of the left costal cartilages. The epigastric region was rounded and prominent, and the lower edge of the liver could be distinctly felt just above the umbilicus. The surface of the liver was hard and nodulated to the left of the epigastrium. The tumour was inelastic, and did not yield the hydatid fremitus. Pulse and temperature were normal.

November 2nd. The needle of an aspirator was plunged about three inches and a half into the left hepatic lobe in two distinct places; but no fluid was drawn off.

On November 5th, he was made an out-patient at his own request. He was readmitted on March 5th.

On March 3rd, six hours after eating a heavy dinner, he felt a severe pain over the liver. On the following morning, his urine was of a dark colour; and later in the same day he became jaundiced. On readmission, his skin and conjunctivæ were deeply jaundiced, and his urine contained a large quantity of bile-pigments. His fæces were clay-coloured. The liver was slightly larger than when he was discharged from the hospital. Just beneath the ensiform cartilage, a distinct ridge could be felt on the surface of the liver; and close by this was a rounded elastic spot. The left lobe of the liver pulsated, and a systolic *bruit* could be heard at its left edge. There was no cardiac *bruit*. Urine free from albumen; temperature normal; pulse 84. He was ordered the white mixture of the hospital thrice daily.

March 9th. During the last two days, the temperature had been rising, being 101.2 deg. last evening. The urine was deeply bile-tinged, and deposited lithates.

March 12th. He had a distinct rigor, during which the temperature rose to 104.2 deg. He complained of pain in the abdomen. The mixture was repeated twice daily.

March 15th. Systolic *bruit* was heard all over the liver. Evening temperature 103 deg.

March 16th. The edge of the liver reached to the umbilicus. The temperature was still very high (103 deg.)

March 18th. He complained of diarrhoea. The white mixture was therefore discontinued; and, when the diarrhoea was stopped, he was ordered to take a mixture containing five grains of iodide of potassium twice daily.

March 19th. I still thought the case was probably one of hydatids of the liver; I therefore again decided to insert the needle of an aspirator. This was done in the middle line about an inch below the ensiform cartilage. No fluid was withdrawn, and the needle was not blocked.

March 22nd. The diarrhoea had stopped. The dose of iodide of potassium was increased to ten grains. Temperature 102.8 deg.

March 24th. The urine was almost free from bile.

March 28th. Marked dulness was found in the right flank.

March 30th. He had another rigor, commencing at 9.45 A.M., and lasting thirty minutes. Temperature 105.2 deg. at 11.15 A.M.; pulse 120.—9 P.M. He was sweating profusely. Temperature 96.6 deg. The iodide of potassium was omitted, and five grains of quinine ordered in pills thrice daily.

April 2nd. The right base was dull from the angle of the scapula. The respiratory sounds were rather feeble. The left base was rather flat on percussion. Pulse 92; evening temperature 100.2 deg.

April 17th. There was not much change since the last note. He was made an out-patient at his own request.

April 20th. On the afternoon of this day, he was seized at home with severe pain in the abdomen. He vomited frequently; and, when seen by a medical man, he was in a state of collapse. He died the same evening.

NECROPSY.—A *post mortem* examination was obtained with difficulty. Leave was only given to open the abdomen. On cutting through the abdominal wall, the sac of an enormous hydatid, full of fluid and vesicles of various sizes, was found. The sac had evidently undergone suppuration. The diaphragm was cut through, and recent pericarditis discovered. The wall of the parent hydatid cyst was cartilaginous in consistence, and quite a quarter of an inch thick. No cause could be discovered for the needle of the aspirator not having reached the sac.

REMARKS.—This case was a very puzzling one. The history of it was certainly in favour of its being one of hydatids, and yet the three aspirations yielded negative results. Against its being cancer there was a history of eighteen years' duration, and the patient had not wasted. In favour of cancer were the great enlargement of the liver and the hard nodulated feel of its upper surface; also the man's age. In favour of hydatids were the history of the case and the absence of emaciation; against them, the absence of the hydatid fremitus, the negative results of the exploratory punctures, and the jaundice. The history of the case was against its being syphilitic, although the rash on the man's skin looked suspicious. Why the three exploratory punctures so signally failed to reach the fluid in the cyst, it is difficult to explain. At the first operation, it was noted at the time that the needle was inserted to the depth of three inches and a half. At the last operation, no note was made of the depth; but I distinctly remember its being plunged well in, for I know from experience the importance of a deep insertion. This is the only case of hydatid tumour which has been under my care which has not recovered. I am still at a loss to explain my want of success in this case. I shall be glad if any member present can suggest an explanation of it.

ON THE MORBID HISTOLOGY OF THE SPINAL CORD IN FIVE CASES OF INSANITY.

By RINGROSE ATKINS, M.A., M.D.,

Resident Medical Superintendent District Lunatic Asylum, Waterford; late Assistant Medical Officer District Lunatic Asylum, Cork; etc.

[Concluded from page 136 of last number.]

CASE V.—M. G., male, aged about 38, was transferred to the asylum from the union workhouse on January 25th, 1877. It was believed that he had recently returned from America; but any particulars regarding his history appear not to have been elicited. He had no family or friends. He was stated to have had two paroxysms of mental excitement previously to his admission to the asylum, the first dating from January 20th, 1877, during which he had attempted to burn himself by catching the bars of a fireplace. On admission, there was considerable restlessness, with moderate excitement and general incoherence. He kept constantly moving about; was frequently sleepless, knocking during the night at the door of his room. He fancied his mother and relations were in his vicinity, and made efforts to get to them by endeavouring to open doors, etc. He spoke in a slow hesitating manner, without any modulation of the voice, and answered questions generally in an unconnected and rambling style. His memory seemed much impaired; he could give no particulars whatever regarding his history. In appearance he was tolerably healthy-looking; his features were stupid and solid, with a fixed and somewhat vacant gaze. He moved about in an uncertain unsteady way, and could not walk in a straight line for any distance. There was a similar unsteadiness, almost amounting to a tremor, in the upper limbs and facial muscles. He was untidy in his habits and person. For a month after admission, there was a general improvement in his mental condition; he became more coherent and brighter, neater in his habits, and began to help in

the working of his ward. On the morning of February 20th, 1877, he became again quite suddenly stupid and demented, sat silent and indifferent to what was going on around him, and did not appear now to understand anything said to him. When he spoke, he did so in the same drawing toneless manner already noted, but in a more marked degree, and his movements were altogether slower and more clumsy than before. From this date until April 1st, he became gradually feebler and more demented. On that date, a hæmatoma began to develop in the concha of the left ear.

April 19th.—He was reported to have had a "weakness" this morning, but was not convulsed. At the morning visit, he was found more stupid and demented, stating that he felt sick; but nothing further could be ascertained from him. When requested to protrude the tongue, he was unable to do so immediately; but, after some lolling movements within the mouth, the organ was jerked out rapidly and abruptly, and was with apparent difficulty kept protruded, being fixed by the teeth clenching it. There were marked unsteadiness and fibrillary twitching of the organ, and it was retracted in the same jerky spasmodic manner. The speech was drawing. There was no loss of motor power in the arms and legs when in the recumbent posture. Reflex irritability was preserved, and painful sensations were but little diminished. When placed on his feet, he was weak and tottering, and emaciation was progressing. The hæmatoma was increasing.

May 12th.—Physical and mental deterioration were progressively advancing, his condition being now as follows. A. *Motorial Symptoms*.—His gait was very unsteady and tottering. He could not move in an even line, but swerved from side to side, and, if not watched, would overbalance himself and fall. The movements of the upper limbs did not appear to be interfered with; the grasp was equal and fairly powerful in each hand when he made a strong effort. The tongue was protruded abruptly and convulsively, and, when so, he appeared to have lost all control over its movements, the organ jerking from side to side and up and down until he steadied it by grasping the organ between the teeth. He spoke in the same drawing manner, clipping some of his words and prolonging the last syllables of others. When roused to excitement, he spoke with greater force and distinctness for a short time. There was a barely noticeable tremor of the lips when speaking, and none when at rest. B. *Sensorial Symptoms*.—Tactile sensibility did not appear to be notably impaired, at least as far as the coarse recognition of the pricking of the skin went, as, when this was done, he endeavoured to draw away the part pricked, or to remove the source of the irritation. Reflex excitability was less powerful in the right than in the left leg. C. *Electric Condition*.—On applying the primary current of a double-celled Stöhrer's induction-coil with the index half drawn out, the extensors of the foot responded feebly; the adductors and hamstring muscles contracted normally, as did the muscles of the arms and face. The current appeared to be felt powerfully, as he cried out lustily, became excited, and endeavoured to remove the electrodes. D. *Condition of the Pupils*.—Previously to the examination, the right pupil was dilated and much larger than the left. After the application of the current, both pupils were found to be equal and widely dilated. On bringing a candle now before the eyes, the left immediately contracted, the right remaining immovable, and, on the removal of the light, the left again expanded; but, in a short time, the pupils again regained their former unequal condition. E. *General Bodily Condition*.—The patient was much emaciated, with a cold dry skin, and a tendency on the slightest rub to the formation of superficial sores. On the upper surface of each buttock was a sore larger than a crown-piece, the right being covered with a black eschar, the left denuded; both were surrounded by an erythematous patch. The patient's appetite was at times ravenous. He was very wet and dirty in his habits, both nightly and daily, and appeared to have quite lost control over the sphincters. He was generally quiet by night. The heart-sounds over the apex were slightly muffled; no *bruit*; its action was rapid. At the mid-sternum and over the base, the second sound was "knocking" in character. The respiratory murmur was normal. F. *Mental Condition*.—The man was very demented, almost fatuous. When spoken to, he did not appear to realise what was said in the slightest, and rarely replied directly to any questions, generally muttering incoherently.

May 15th.—The hæmatoma on the left ear had suppurated, and was incised, a quantity of dirty pus mixed with blood being evacuated, the tumour immediately collapsing. The incision appeared to give no pain. The constant tremor of the limbs, with twitching of the individual muscles, was now very noticeable. He could not progress unassisted, and all his movements were clumsy and unsteady. There was deep mental hebetude and almost constant drowsiness.

May 17th.—He was reported to be lying in a semi-somnolent condition; muscular twitchings persistent; he did not utter a sound; the ear-tumour was again filling out. Respiration was unaffected.