swollen, and very painful. He was ordered to have on twelve leeches, and a linseed poultice afterwards; and to take three grains of iodide of potassium thrice daily. After a few days, the dose of the iodide was increased to five grains thrice daily. The same treatment was continued until the end of August, when he attended as an out-patient; but he still took the iodide of potassium.

September 25th. He was again admitted into the Hospital, in consequence of its being thought that there was thickening of the periosteum. He continued the iodide of potassium, and had on several blisters, each of which gave him temporary relief.

November 8th. It was intended to-day that an incision should be made down to the head of the bone, and the seat of the disease explored; but some family affliction caused him to leave the Hospital.

December 1st. He returned to the Hospital to-day; but, on his way, he fell down and sprained the knee, so that, on admission, it was so painful and swollen that he was ordered to have on eighteen leeches, and twelve more afterwards, if not relieved, which were also applied. Some few days after, he had on twelve more leeches, followed by linseed-meal poultices. He then had a blister applied.

December 20th. He was put under chloroform in the operating theatre, when Mr. Lawrence made a semicircular incision from the upper and outer margin of the tibia downwards and inwards to below the tubercle, and dissected back the flap, when a soft springy surface, of about the size of a crown-piece, was laid open. There had been a slightly fluctuating spot, of small extent, just in this situation, which had led to the supposition that there was an abscess in the head of the bone. Mr. Lawrence then cut through the periosteum freely, and discovered a thick substance of putty-like consistence, occupying nearly the entire head of the tibia. In fact, all the head of the bone had disappeared, with the exception of a shell; and this soft pulaceous matter had taken its place. The cavity extended upwards as far as the cartilage of the knee-joint; and it was deemed expedient by Mr. Lawrence, and the others of the surgical staff of the Hospital then present, to amputate the limb above the joint at once, lest the disease might spread into the joint, and the patient's life be sacrificed through a too zealous attempt to save the limb. This was accordingly done by the flap operation; and, the vessels having been secured by ligatures, and the wound closed by a strip of plaster, the patient was removed to bed.

On recovering from the effects of the chloroform, the patient was found to be losing blood from the wound, which was laid open, and a small artery secured; and, all hamorrhage having ceased, the edges of the wound were brought together by several sutures, and a piece of wet lint applied. A longitudinal section of the bone was made immediately after the operation, which displayed such an amount of disease as, in the opinion of those present, fully to justify the proceedings that had been taken.

The soft putty-like substance presented, under the microscope, an appearance similar to that which Pott speaks of as "degenerated blood-cells, mixed with broken-down tissue". The cavity was of very large size, so that it might contain a small apple; it had entirely consumed all the cancellous tissue of the head of the tibia, and penetrated so far upwards that only a very thin shell remained, separating it from the knee-joint. The cartilages of the latter could be plainly felt, at the time of the operation, through the upper wall of the abscess. There was, however, no trace of inflammation of the joint. The man is progressing favourably, as far as the amputation is concerned.

REMARKS. We have brought forward the preceding case as illustrating an enforced departure from what is justly held to be the rule in treating abscess of the head of the tibia; viz., not to amputate till the effect of trephining has been tried. In the instance before us, although the knee-joint had not yet actually yielded to the slow advance of the chronic abscess, there could be no reasonable doubt that it would at once participate in the more acute inflammation which would be necessary to fill up its cavity after it had been opened. It would, therefore, have been unjustifiable to submit the patient to a risk which might, and very probably would, have involved fatal consequences. It is useful to note such cases as these, which, without marking any retrogression in the art of surgery, show that there are limits beyond which the more prudent of its professors do not care to push their attempts at conservative surgery.

ST. GEORGE'S HOSPITAL.

PHTHISIS AND DISEASE OF THE LIVER OCCURRING IN AN OPIUM-EATER: WITH REMARKS.

By G. GODDARD ROGERS, M.D., Medical Registrar.

C. W., aged 52, came into the Hospital as Dr. Fuller's patient, on February 10th. He was formerly in a very good position in life, but had got through his money; and after drinking to excess, had indulged largely in opium. Of late his occupation had been that of a stableman at Anderson's. Nothing more was learned as to his antecedents.

Three weeks before admission, he became weak, and lost to a great extent the power of standing. It was also said that he had passed blood a few days previous, but whether by the rectum or by the urethra, was not clearly made out. His tongue was clean; pulse 110, but regular; urine free from albumen; bowel secretions tolerably healthy. At times he was quite violent; and soon after being placed in bed, he got out repeatedly, but sank down after making an effort to proceed further. A morphia draught was given each night; and three times a day he took ammonia with bark and chloric ether. His manner at times was excessively genial and hilarious, and he lay for the most part on his back with a smile on his countenance; greeting those who approached him with expressions more familiar than polite.

On February 4th, his depressed state was much more apparent. The bladder was relieved by the catheter; warmth was applied to the abdomen; and brandy, sulphuric ether, etc., were given to sustain the powers of life: but he gradually sank, as though completely worn out by his previous irregular life, and expired early on February 17th.

The autopsy was made twenty-six hours afterwards.

The brain was very wet, and there was much subarachnoid fluid, but no excess of fluid in the ventricles. The central structures of this organ were quite healthy.

There was a small deposit of atheroma on the mitral valve and at the commencement of the aorta. With this exception, the heart was healthy. Both lungs were congested. At the base of the upper lobe of the right one was a vomica of about the size of a hen's egg, of ragged irregular form, and filled with pus. The lower part of the lung contained miliary tubercle. The liver was very large, of a light yellow colour, and extremely firm consistence. Its capsule was not thickened. On breaking a portion of it, it was found to be granular, and the separate acini seemed very clearly divided from each other. The microscope showed a large quantity of fat, both as free oil and contained in the hepatic cells. There was also a small amount of fibrous tissue.

The kidneys were coarse in texture, but the capsules peeled off readily. The spleen was healthy.

REMARKS. The history of this case is by no means so perfect as one could wish; nevertheless, it presents one or two salient points of interest. It does not appear that the patient indulged in opium until after he had become reduced in circumstances, when it is highly probable that the drug told far more rapidly on his constitution than it would have at an earlier period.

Smith, in his *History of China*, as quoted by Dr. A. T. Thomson, says distinctly that the more opulent natives suffer but little from smoking or eating opium; whilst to those who live in poverty it is most destructive.

In a former number of this JOURNAL, we had occasion to make a few remarks on the latent form which phthisis will from time to time assume. Often there is no apparent reason why so formidable a disease should give no sign of its progress; and this case perhaps is as difficult to account for as any: but the continued sedative influence of large quantities of opium might have something to do with hindering any manifestation of disease by cough and expectoration. And as to the first setting up of the pulmonary affection, the man's intemperate habits might originally have caused such hepatic congestion as materially interfered with the decarbonising office of the gland, thus giving increased work to the lungs. Then, as opium was habitually taken, imperfect respiration was induced, and partially decarbonised blood found its way into the systemic circulation. Thus the lung-tissue itself was badly nourished, whilst the respiratory organs were called upon for more energetic action, owing to the liver becoming more and more diseased. And who will, under these circumstances, deny that the very slightest tendency to scrofula would be rapidly aroused, and that speedy disorganisation of the lung from tubercular deposit would follow? Probably, the dis-

charge said to have occurred before admission was melæna of a purely passive character. Had the man then been under medical care, this symptom might have thrown much light on the case, and rendered an accurate diagnosis easy.

Original Communications.

THE METEOROLOGY OF 1856 AND 1857.

By J. A. HINGESTON, Esq., Brighton.

[Continued from page 87.]

In each year in which the cholera has broken out in this country, the barometer has invariably stood at 30 inches, a little more or less, throughout the whole period of its continuance. This was the case in 1832. My attention was drawn to the circumstance from observing a high barometer with a cloudy sky, although I was not aware of the eventual importance of the observation I was then making. In 1853 this was remarkably the case: the disease was at its worst when the barometer was at 30 inches, and it declined in exact proportion as the mercury sank to 29.500 inches, or thereabouts. I published an account of it in the *ASSOCIATION MEDICAL JOURNAL*, No. XLIII, October 21st, 1853. It was again the very same in 1854, according to a series of very careful observations that I made in that year, as well as from all that I could gather from the observations of others published on this interesting point. At p. 33 of the *Registrar-General's Returns* for the quarter ending September 30th, 1854, it will be seen that, at forty-seven stations in England, Wales, Jersey, and the Isle of Man, where authentic observations were taken, the barometer stood at 30 inches, a little above or below, but chiefly at 30 inches, during September, when the disease was at its worst; and that subsequently, when the disease was declining, the returns from the same localities for the quarter ending December 31st, 1854, showed the barometer at a mean elevation of 29.740 inches, and occasionally as low as 29.600 inches. But last year, 1857, which was so remarkable for its salubrity, the barometer oscillated between 28.500 inches and 30.578 inches—a difference of two inches or more, as may be seen by referring to the *Registrar-General's Returns* for the three first quarters of that year, giving the observations taken at the same places as those already quoted for 1854. My own observations agree entirely with these returns. In the *ASSOCIATION MEDICAL JOURNAL*, No. CXLVIII, October 18th, 1856, I published an account of the barometer for that year, when cholera was absent, in comparison with that for 1854, when cholera was present; and the contrast was as striking as it was complete and conclusive. It showed the barometer obstinately at 30 inches in the year of the cholera, and oscillating considerably above or below it when the disease was absent or declining.

As to the electricity of healthy and unhealthy years, the results are less satisfactory, because the subject, in a medical point of view, is a recent, if not a new one; and yet my observations, such as they are, supply data by no means insignificant, and which, when coupled with those of the Astronomer-Royal at Greenwich, published in the *Registrar-General's Weekly Returns*, furnish matter of no small value and interest. Thus, during the cholera of 1853, the terrestrial and atmospheric electricity was generally considered negative; while, during the cholera of 1854, it was reported positive, but weak. In 1832, I had not thought of connecting electricity with pathology, nor am I aware of any published records on this subject of that date; but, judging from the kind of sky which prevailed, the stillness of the air, and the debility that characterised disease at that time, I should, on comparing it with what I now know of the question, have no doubt in regarding it as negative, weak, or *nil*. My opinion is problematical, and open to correction by those fortunate enough to possess any authentic remains on this point, and which would be most acceptable were they recovered and brought to light. In 1854, my private observations led me to conclude that the electricity was negative, certainly weak, and frequently inert. In 1853, when the cholera was so severe at Newcastle, in the month of September, the prevailing electricity was negative.

We do not yet know the precise meaning of *positive* and *negative*, as applied to electricity. They are conventional terms used to express opposite scientific relations, but not significant of any acknowledged quality or state. Neither is it possible to designate either the one or the other with the

same exactness as we describe an algebraic quantity, a mathematical axiom, or a medical fact. We rather imply conditions, the extent and nature of which are indefinite. This ambiguity is unavoidable, but not irremediable. The subject is still *sub judice*; and an approximation to the truth is preferable to no knowledge of it. To me it appears all but incontestable, that what is called negative electricity goes with diseases called asthenic, while the positive belongs to such as are sthenic or inflammatory. Negative electricity is coincident with mild and moist weather; the positive with the cold and frosty, or the hot and dry. In the summer, the electricity is considerably less energetic than in the winter; but then, in the former season, its energy is restored by lightning or gales of wind. In 1857, when the temperature was high and dry, the electricity was for the same space of time (270 days) positive and generally active, with strong tension; and the negative was limited to a very small number of days. (See the *Astronomer-Royal's* observations in the *Registrar-General's Weekly Returns* for 1857.) Now, that year was a singularly healthy one. More extended inquiries may show many of these notions to be erroneous or nugatory; and, on some future day, electricity itself may stand on a new and firmer basis. My mind is open to conviction, and I am ready to consider the question in all its bearings.

Be this as it may, the kind of electricity is certainly connected with the amount of daylight. There is less light on those days on which the negative electricity prevails, than on the bright, when the electricity is, with few exceptions, positive. In cholera periods, the light is diminished. I have already described this kind of atmosphere in the *ASSOCIATION MEDICAL JOURNAL*, No. CXXXVII, August 2nd, 1856. Of the two years 1856 and 1857, the latter, though much fairer than the former, was darker by one-eighth. This diminished daylight was owing to the greater amount of clear blue sky in 1857; for blue sky gives back no reflected light. Large white-headed clouds were numerous, and there was a good deal of snow, in the winter of 1856, both of which increased the reflected light greatly. But reflected light contains polarised rays, which are reasonably supposed to be less favourable to health and life than the direct solar beam; and the insalubrity of the moon's ray is thus accounted for. The year 1857, although somewhat darker than 1856, was illumined by the direct solar beam, which may help in accounting for its greater salubrity.

The returns of health are seldom favourable when the sky is grey, the air moist, the daylight diminished, and the electricity negative. The cholera atmosphere is a case in point. On the contrary, the public health is good when the season is open, the clouds distributed in masses, the moisture condensed into showers, and the electricity positive. A large amount of solar beam is as essential to the human as it is to the vegetable creation: hence the insalubrity of cities enveloped in smoke, the northern aspect of dwelling houses, barracks, and hospitals; and the short lives of miners, clerks, and artisans, shut out from the daylight at noon.

By a small contrivance, an account of which was published in the *ASSOCIATION MEDICAL JOURNAL*, No. CII, November 23rd, 1855, I have been able to measure and record the amount of daylight for the last two years and upwards. I regret that I had not found out the means of doing so twenty-five years ago. I find that February is the darkest month in the year, and August the brightest; the last six months are brighter by one-fourth than the first six, the atmosphere seeming to have acquired a luminosity of its own, which it does not lose till the end of January. If carefully prosecuted, it is an inquiry intimately associated with health and longevity; and it would be most interesting, were it applied to town and country, high and low situations, sea and land, northern and southern latitudes.

The years following an outbreak of cholera have been hitherto marked by an increase of human life, shown by the returns of a diminished rate of mortality. This phenomenon has been prominently exhibited in the last three years, succeeding to 1854. It has been variously accounted for. The epidemic was supposed to have carried off the sickly, and left only the strong; but this is contrary to the fact, for it was the mature and strong that were the most obnoxious to the disease. Others have surmised that cholera occupied the place of other diseases; and that, when it had attacked and carried off its particular victims, it left a healthy population behind. This is so far true, as that, in 1853, the rate of mortality from the ordinary causes was one-fifth below the average. Again, it has been conjectured that the better habits of hygiene adopted by the public, impressed with a dread of infection, tended to im-