ORIGINAL COMMUNICATIONS.

EPIDEMIC JAUNDICE OF CHILDREN IN 1852, WITH METEOROLOGICAL CHANGES DURING THAT PERIOD.

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DURING the months of September, October, and November of 1852, so many cases of jaundice in children, varying from a year and a half to ten years of age, came under my notice, as to lead to the supposition that the disease was epidemic. This opinion was confirmed on ascertaining that the same frequency was observed by other medical practitioners in this town and neighbourhood.

The disease has been so similar in all the cases which have occurred in my practice, that the details of the following case will serve as a specimen of all of them.

CASE. L. E. B., aged nine and a half years, came under my care on the 2nd of November. She laboured under general indisposition and languor; complaining of headache, chilliness, loss of appetite, and of a feeling of uneasiness in the epigastric region, accompanied with nausea. She had lost her natural buoyancy of spirits, and was peevish, fretful, and restless. The tongue was coated with white fur; she was somewhat thirsty; the skin was hot and dry; the bowels were constipated; and the urine was scanty and high coloured. There was no abdominal enlargement.

She was ordered a foot-bath at night, a light farinaceous diet, and the following medicine:—

R Hydr. chlorid.,
Pulv. jalapæ, aa gr. iij. M.
Fiat pulvis horâ somni sumendus.
R Sp. ætheris nit. 3ij.
Liq. ammoniæ acetatis 3vj.
Extracti taraxaci ʒj.
Magnes. sulphatis 3iij.
Syrupi simplicis ʒss.
Mist. camphoræ 3ij. M.
Fiat mistura cujus cap. ʒss. 4tâ quâque horâ.

Nov. 3rd. Rather less feverish; still complained of weight at the epigastrium, and of nausea. The powder was rejected, and the two first doses of the mixture. Slight perspiration during the night. The bowels had been relieved, but the alvine evacuations were pale, and the urine was still scanty and high coloured. The powder to be repeated at bed-time, and the medicine to be continued.

Nov. 4th. To-day there was yellow discoloration of the sclerotic, and slight tinge of yellowness of the skin. The vomiting continued occasionally; she had no appetite, was thirsty, and still complained of weight at the epigastrium. She was restless during the night. The stools were constipated and clayey. The urine was also very high coloured. The following powder was ordered to be administered night and morning:—

R Hydr. chloridi gr. j.
Pulv. rhei comp. gr. iv. M.
Fiat pulv.

The mixture to be continued, with the addition of four minims of Scheele's hydrocyanic acid.

Nov. 5th. The yellowness of the skin and sclerotics was considerably deeper. She had not vomited so frequently. She was still thirsty, and had no appetite. The bowels were more open. The evacuations were still clayey, and the urine was of a deep saffron colour. To continue the mixture and powders.

Nov. 6th. The vomiting had entirely ceased. The skin was very yellow, and the excretions still morbid. The thirst had diminished. She complained of itching and tingling of the entire surface of the body. The night powder to contain two grains of the colomel. The mixture to be continued.

Nov. 7th. The bowels were now more decidedly acted upon, and the evacuations to-day contained a small quantity of bile, and some little masses of mucus. The urine was not quite so deep coloured. No sickness. No difference was observable in the colour of the skin. She had asked for food. She was more lively, but was soon fatigued. The powders to be continued. The sulphate of magnesia to be omitted from the mixture. A small quantity of animal food allowed.

Nov. 8th. The yellowness of the skin had somewhat diminished, and there was a decided improvement in the appearance of the excretions. Her appetite was improving, and she only complained of soon being tired. Omit the morning powder, and to substitute the following mixture:—

R Quin. disulph. gr. iv.
Acid. sulph. dil. ℥viiij.
Syr. aurantii ʒss.
Aque distill. ʒiiss. M.
Fiat mistura cujus sumat ʒss. ter quotidie.

To take gentle exercise in-doors.

Nov. 10th. The discoloration had nearly disappeared. She was stronger; her appetite was good. I ordered a powder every other, instead of every night. To continue the mixture. To take exercise out of doors, as well as in doors.

From this date, my little patient continued to improve daily, and was nearly as strong and well as usual in a fortnight from the commencement of the attack.

In all the cases which have come under my notice, there was considerable irritability of the stomach, which rendered it very difficult to retain either food or medicine. In one case, there was some degree of drowsiness at the height of the disease; and, in another, so much restlessness during the night, with sudden startings and screamings, as to give rise to apprehension of cerebral mischief. In one case only was pain referred to the right hypochondriac region; and in none was pain in either shoulder, or between the shoulders, complained of.

In one case, two large and long lumbrici were voided during the progress of the disease. In another case, after the bile began to flow into the intestines, it was excreted in excessive quantity, constituting a severe attack of bilious diarrhoea. In no case was any abdominal enlargement observed; and the itching of the surface was not felt in every case.

Instances have been recorded of the epidemic occurrence of jaundice. Dr. Cleghorn mentions a slight jaundice without fever, which soon yielded to purgatives and saponaceous medicines, as having been a "common distemper in Minorca in July and August, 1745" (*Obs. on the Epidemic Diseases of Minorca*); and Dr. W. Batt has described a similar affection (*Edin. Med. and Surg. Journal*, vol. i, p. 107), as occurring in Italy in 1792-93 (*See Lib. of Medicine*, vol. iv, p. 160).

Dr. Copland writes: "Jaundice is generally *sporadic*: but, according to Monro, Alibert, and others, it has assumed, on rare occasions, an *epidemic character*, particularly at the termination of campaigns, or after or during very wet summers and autumns. It was thus said to have been epidemic in Cronstadt in 1784 and 1785, and at Geneva in 1814." (*See Dictionary of Practical Medicine*, art. "Jaundice.")

That the epidemic occurrence of jaundice is rare, there can be no doubt. If numerous cases of the disease were observed in the autumn of 1852, by other medical men in different parts of the country, it is desirable that they should communicate the results of their observations to the medical journals. I am therefore induced to bring forward these few remarks, with the hope of ascertaining if the same epidemic occurrence of jaundice was generally observed through the country at that period, and of eliciting particulars which may perhaps throw some light upon the pathology of this disease.

It is not probable that much information on the subject can be obtained from the mortality records; inasmuch as, happily, it has not occurred, at any rate in this district, as a fatal disease. On referring to the Reports of the Registrar-General, they show, however, an increase of deaths in

London, from diseases of the liver, during the months of July, August, September, October, November, and December, of 1852, as will be seen in the following extracts:—

Causes of death.	Quarters ending September.				
	1848.	1849.	1850.	1851.	1852.
Hepatitis	63	57	47	46	60
Jaundice	40	41	52	41	59
Diseases of the liver	144	156	125	139	164
Total	247	254	224	226	283

Causes of death.	Quarters ending December.				
	1848.	1849.	1850.	1851.	1852.
Hepatitis	45	20	44	40	61
Jaundice	36	33	36	40	45
Diseases of the liver	147	133	155	157	157
Total	228	195	235	237	263

These tables show an excess of eighty-five deaths from hepatic diseases in London beyond the mean mortality from the same diseases during the same months of four preceding years. On referring to the subsequent tables issued by the Registrar-General, it will be noticed that the deaths from these diseases during the three first quarters of 1853 have decreased. The increase in the mortality from these diseases would probably indicate a very considerable increase in the number of cases which did not prove fatal.

Among the remote causes which most frequently induce jaundice, there are several which are not likely to affect children, such as habitual excitement of the liver, duodenum, and digestive organs generally, by too rich, too stimulating, or too much food, or by spirituous or intoxicating beverages; sudden and violent mental emotions; anxiety, or the depressing passions; indolence, and full living. Some of the other remote causes, such as *high ranges of temperature, vicissitudes of temperature, and miasmata or exhalations from the soil, especially in connexion with humidity of the air* (see Copland), may reasonably be suspected to have had some connexion with the cases which occurred in the latter part of 1852. An examination of the meteorology of England during those few months, as reported in the Registrar-General's Quarterly Reports, will show that these favourable circumstances did exist at that time. For instance: the weather, during the quarter ending Midsummer 1852 was *cold and unseasonable*: the mean daily temperatures having been, with few exceptions, below their average values.

The average daily deficiency of temperature till May 6th was $1^{\circ} 4$.

From May 7th to May 20th was tolerably warm; the average daily excess was $1^{\circ} 5$.

From May 21st to the end of the quarter, the average daily deficiency was $4^{\circ} 2$.

The long period from February 10th to the end of June was generally cold.

The deficiency of rain, which had prevailed from the middle of February, continued till the end of April; but, in June, the fall exceeded by more than double the average amount.

Of the three months, July, August, and September, till August 2nd, the weather was hot; on July 5th, the temperature exceeded 90° at all places excepting those situated near the sea, or at a high elevation, and those whose latitude exceeded 50° ; the mean temperature of this day was 14° in excess above its average value, and the following day it was in excess to the amount of 12° .

The average daily excess to August 2nd was $5^{\circ} 2$.

From August 3rd to August 16th, the daily tempera-

tures were mostly below their averages, the mean daily defect being $1^{\circ} 2$.

From August 17th till September 11th was warm, and the average daily excess of temperature was $2^{\circ} 6$.

From September 12th was cold, and the average daily defect was $1^{\circ} 9$.

The quarter was remarkable for great heat in July, very frequent and severe thunder-storms, frequent and heavy falls of rain, and for an excess of rain.

The mean temperature of the air at Greenwich for the quarter ending August, constituting the three summer months, was $61^{\circ} 6$, being $1^{\circ} 7$ above the average of eighty years.

Not less remarkable was the weather during the last quarter of that year. The daily temperature was below its average value till October 19th, and it was alternately in excess and defect from Oct. 20th to Oct. 29th. On Oct. 30th, a period of weather set in, of higher temperature and longer continuance, at this season of the year, than any on record. The mean temperature of the month of November was $48^{\circ} 9$, being $6\frac{1}{2}^{\circ}$ in excess of the average of eighty years; during which period one instance only of a higher temperature has taken place, viz., in 1818, when the average temperature of this month was 49° . The mean temperature of December was $47^{\circ} 6$, exceeding the average of the month by no less than $8\frac{1}{2}^{\circ}$; and being of higher temperature than any December, so far as our records extend. The nearest approach to this value was in 1806, when the mean temperature of December was $46^{\circ} 8$.

The quarter was remarkable for a continuance of heavy falls of rain, which characterised the preceding quarter. In some places, as much rain fell within this quarter as occasionally falls in the entire year. The fall in the year greatly exceeded its average, amounting to fifty inches in depth nearly in the counties of Cornwall and Devonshire; between thirty and forty inches at most inland places; and exceeding fifty-eight inches at both Stonyhurst and North Shields.

During the whole of the quarter the weather was unsettled, the reading of the barometer was subjected to great and frequent fluctuations, and was generally low; the amount of water mixed with the air, in the invisible shape of vapour, notwithstanding the continued rain, was that only due to the season; and therefore, on account of the much higher temperature than usual, the degree of humidity was less than common to the season.

The mean temperature of the air at Greenwich for the quarter ending November, constituting the three autumn months, was $51^{\circ} 2$, being $1^{\circ} 9$ above the average of eighty years. (See Registrar General's quarterly return of marriages, births and deaths in England. No. 16, p. 30.)

The summary which has been given decidedly shows that one or other of the three conditions which may act as remote causes of jaundice, viz., *high ranges of temperature, vicissitudes of temperature, and humidity of the air*, existed during the year 1852.

During the months of September, October, and November, fifteen cases of jaundice in children came under my own observation; and I find that a few cases were presented to the General Infirmary of this place. During the same period, a few cases of jaundice, in children, came under the care of Mr. Hamilton, of Ampthill, in this county; one case under Mr. Slinn, also of Ampthill; and two cases (both girls, one seven and the other five years old) under Mr. Godfrey, of Turvey, in this county. A young friend, Mr. Philip Banks, then an assistant in an extensive practice in Yorkshire, reported to me seven cases occurring at that period in children, two of which were fatal, and three cases in adults.

Shortly after these cases had come under my notice, I wrote to my friend Dr. Moffat of Hawarden, a gentleman fully alive to the importance of meteorological researches as relating to disease, and thoroughly versed in all that practically relates to this difficult science. I cannot do better than transcribe a part of his interesting letter, bearing date Dec. 20th, 1852.

"I have lately had three cases of disease of the liver, with jaundice; the dates of the commencement of which you will find in the following table. In Table I you will observe the dates of the commencement of all the cases of hepatic disease that have come under my notice since January 1st, 1850. In Table II, you will find the per centage of cases with the state of the barometer and thermometer, and the presence and absence of ozone; and in the diagram of a compass card you will perceive the number of cases that occurred, with the per centage of times the wind was from each point of the compass on the day of attack.

TABLE I.

1850.	May 23rd	Jaundice	1 case (suicide).
	July 29th	Jaundice	1 case.
	July 31st	Jaundice	1 case.
1851.	Jan. 7th	Hepatic disease	1 case.
	Feb. 25th	Ditto	1 case.
	Mar. 26th	Ditto	1 case.
	May 5th	Ditto; Jaundice....	2 cases.
	July 18th	Ditto; ditto	2 cases.
1852.	Nov. 13th	Hepatitis.....	1 case (death).
	Nov. 14th	Jaundice	1 case.
	Nov. 27th	Jaundice	1 case.

"You will observe by this table that there is a tendency in hepatic disease, with or without jaundice, to assume an epidemic character. Indeed, I believe that investigation is only required to show that all diseases do, at times, as certainly take an epidemic form, as that there are sporadic cases of epidemic diseases. For instance, we occasionally see diseases that are usually viewed as sporadic, such as bronchitis, pleuritis, and even premature uterine action, become epidemic, and we often meet with isolated cases of such epidemics as influenza and Asiatic cholera. Now, I believe that the causes which give rise to the one form of disease are the same as those which produce the other; and that the only essential difference between the two, is the number of cases that occur in a given time. The prevalence of an epidemic is owing to a great number of people being susceptible of an exciting cause at the same time; and as the remote causes of disease require a length of time to bring the predisposing to the required pitch of susceptibility, epidemics cannot be otherwise than periodical. As soon, then, as the point of excitability or susceptibility is attained, the exciting causes produce active diseases.

TABLE II.

State of barometer, etc.	Barometer.		Thermometer.		Ozone.	
	Increase of readings.	Decrease of readings.	Increase of readings.	Decrease of readings.	Present.	Absent.
When disease commenced.						
Per centage of cases of hepatic disease	10.00	90.00	20.00	80.00	60.00	40.00

This table speaks for itself.

"From long experience, and from tables formed from the observations of two years, I find that it is at the time of transition (adopting the theory of rotation of the winds) from one current of the air to the other, that the greatest number of diseases commence; indeed, some diseases are almost peculiar to the points of the compass at which transition most frequently takes place. These points are between S. and E., and N. and W.; and you will observe by the compass card on the opposite column, that hepatic disease has a partiality to these points. I believe I may state it as a fact, that a case of Asiatic cholera, influenza, or premature uterine action, never occurs but at the time of transition from the polar to the equatorial current; or they are succeeded by a calm; and it is perhaps owing to the simultaneous occurrence of these diseases that it has been stated that cholera and influenza induce miscarriage and premature labour. Epidemic influenza so frequently

Compass Card.

prevails during thaws, that it has been attributed to the influence of melting ice and snow; but time and investigation are only wanted to prove that the transition from the polar or frost-current of the air to the equatorial or thaw-current is the cause of influenza as well as the melting of the ice and snow; and to establish as a fact that cholera will prevail with greater or less violence, and for a longer or shorter period just according to the number of persons brought to the point of susceptibility by the remote cause of the disease, and to the length of time that locality is under the influence of the process of atmospheric transition.

"The oscillations of the barometer and thermometer have been very great since the beginning of June; and, from the 1st of that month to the 30th of November, 26.8 inches of rain fell; an amount in six months greater by 3.2 inches than the average annual fall. I believe there has been less ozone since the above date, than for the same length of time since I commenced observations."

The observations which have been brought together in reference to the increased frequency of jaundice, especially among children, in 1852, tend to illustrate the importance of observing the prevailing epidemic constitution of the atmosphere at particular periods. Very much was known of meteorological changes to the great father of medicine, Hippocrates; and the epidemic constitution of the air claimed much attention from that keen and faithful medical observer, Sydenham; but meteorology, as a science relating to medicine, was never in so promising a position as in the present day. Many observers are now quietly but perseveringly at work "interrogating nature", as Bacon would term it. Instrumental aids were never so perfect and to be depended upon, and the time is not far distant when important truths, based upon extended and faithful observations, will be enunciated. Let every observer contribute his mite, in the shape of any facts, however slender they may appear. The more numerous the facts, the surer inductions will be founded upon them, and the more practical will be the results. Diseases which are not now suspected to arise from atmospheric causes, will, in the end, be certainly anticipated; and if anticipated, will admit of the use of prophylactic measures. We cannot now foresee the extent of the good effects of a more extended and more certain knowledge of the connexion between meteorological changes and the manifestation of disease.

These remarks are penned with a hope that some of the readers of the ASSOCIATION JOURNAL may forward the results of their observations. Thus it may be ascertained if meteorological changes were followed by the same results in different parts of the country. If jaundice were unusually

prevalent in the summer and autumn of 1852 in many other parts of the country, and not more fatal than in Bedford and its neighbourhood,—the *only* means of ascertaining that fact will be through the journals; for the tables of mortality will render us no assistance.

Bedford, January 7th, 1854.

CASE OF THREATENED AMPUTATION, THE RESULT OF A SIMPLE FRACTURE OF THE LEG BECOMING COMPOUND.

By J. CHURCHILL, Esq., Surgeon.

CASE. J. M., a healthy labourer, aged 62, a stalwart Cumbrian, six feet in height, proportionably stout, of temperate habits, and of a temperament indicating but little nervous sensibility, was, on Nov. 12th, 1851, about 8 o'clock P.M., driving a horse and cart. The animal shied suddenly, and jerked him from the front of the cart, where he was sitting, to the horse's heels; and the wheel passed over the left leg, or the foot probably became entangled in the spokes, and a fracture of both bones was the result. As the accident occurred near his home, he was speedily conveyed thither; and I was sent for. In the interim, the poor man's employer obtained a neighbouring practitioner, who had got the patient undressed and removed to bed, and had dressed some superficial scratches about the limb with adhesive plaster, when I arrived.

The limb was now carefully examined, and there proved to be a simple oblique fracture of both tibia and fibula, rather below the middle of the leg, with slight fracture of the internal malleolus; and the ankle-joint was evidently much strained. On the knee being fixed, and moderate extension made, the fracture was easily reduced, and the spine of the tibia traced without any inequality; the short lapse of time not having allowed tumefaction to take place. But when the equable pressure and extension effected by the hands were permanently substituted by an outside and inside splint, retraction, possibly to the extent of a quarter of an inch, unavoidably ensued, owing to muscular action and the obliquity of the fracture. The other attendant agreeing with me that the position could not be improved, the ordinary measures were adopted, and the patient was left for the night; and, by the request of his employer, I consented to see him again the ensuing morning.

Nov. 13. A restless night had been passed. The swelling above the injury was inappreciable, but below and around the ankle-joint considerable ecchymosis had taken place. The lower tapes were therefore slackened, and the use of leeches and lotions left to the discretion of the attendant in whose hands the further treatment of the case remained. I confidently expressed to the master of the patient, that "in all human probability he would be well in from seven to nine weeks; the unavoidable shortening of the limb being nothing more than the thickened sole of a shoe would effectually remedy". Directly after the visit just referred to, I accompanied the other medical attendant a short distance to his residence; he observed *en route* that he was unwilling for the limb to be any shorter; and that he would obviate it by making greater extension with the long splint. To this I demurred, impressing upon him that any greater force than that employed would be productive of mischief; and adding that it would be an error to confine the muscles of the thigh, and to some extent stiffen the knee-joint, when not implicated in the injury. At the same time I observed that, if he wished for more "surgical display", I would readily procure a McIntyre's splint from the District Infirmary, where I had previously been house surgeon. But I strenuously urged that, for the present, *the patient should be let alone*; and believing I had over-ruled the preconceived idea of employing a long splint, and on the assurance he would make no alteration in the treatment without apprising me, I and my neighbour parted.

The same evening, having to call at a carpenter's adjoin-

ing, again the same party and myself accidentally met, and he gravely observed he was ordering a long splint. Wishing to avoid any repetition of the morning's conversation indicative of difference of opinion, I left the house immediately without one word of comment.

Nov. 14th. This morning I was apprised that a journeyman carpenter, the long wooden splint, and the practitioner, all arrived at the poor man's cottage a little before 10 o'clock the previous night, and twenty-six hours after the accident; that all the appliances used had been removed; and that, with the aid of its manufacturer, the long splint had been applied in a manner which effectually destroyed a second night's rest, and with an injurious tendency of which the result proved ample evidence. However, the practitioner assured the patient that the altered treatment was made solely for the benefit of the latter and his own credit (doubtless so intended), and he left the room, assuring the sufferer that, if anything, "the broken limb was then made the longer of the two".

The interval that now ensues until the 6th of the ensuing month can only be transcribed from the sufferer's own account; and deficient as that may be in professional technicality, yet no doubt can be entertained of the truthfulness of the statement. So acute were the man's sufferings during the night of the 14th, that he soon compelled his wife to clip the bandages in several places; this, however, was censured by his attendant, who daily visited him and administered some medicines.

On Thursday, the 20th November, the limb was unbandaged, and a wound appeared about the centre of the leg, through which a portion of the fractured bone appeared to be protruding; the fact was, a simple fracture had become a compound one. However, the long splint was persevered with; and matters became worse. More than one consultation was held with two other junior practitioners between this date and the 5th of December, a period when this simple case promised to my mind to have been progressing towards a creditable cure. The result of the consultations referred to was an opinion that a spiculum was ulcerating its way from the seat of fracture; and under this impression, forcible but futile attempts were made to remove it, thus enlarging the existing ulceration. However, the parties consulted appeared to amend the appliances; and about the 2nd of December employed a McIntyre's splint, but without effecting anything like an apposite proximity of the extremities of the fracture, which was now unattainable.

Dec. 3rd. Matters appearing thus unsatisfactory, the sufferer was told by his attendant that the only alternative left him was amputation of the limb. A clear day was given him to consider of it and consult his friends, and on the 5th the operation was advised to be performed. To this alternative, however, the poor fellow refused to submit; and I had repeated solicitations to take the entire management of the case. This, as may be supposed, was declined by me; unless the patient became parochial, and I attended him in my duty as surgeon to the district. The principal incentive for my adopting this course was the certainty I wished to insure of an adequate diet from the resources of the union, being certain that if recovery was permitted, it must be protracted, and a full diet essential to effect it.

On December 6th, the case accordingly became mine; and, in justice to myself, I obtained the unbiassed opinion of Dr. Fidler, of Whitehaven, whose long previous experience in the surgical cases occurring in the collieries of the Earl of Lonsdale, gave me reason to value it, and to whose aid I have much pleasure in acknowledging myself indebted.

The patient at this date had slight irritative fever, a pulse of 98, and furred tongue; he was taking a tablespoonful of brandy diluted every four hours. For several nights before, he had had but short intervals of sleep, and awoke with considerable pain and twitching below the knee throughout the injured limb. He was ordered to take half a grain of the hydrochlorate of morphia at night. The limb was lying upon an extended McIntyre's splint; below