without deformity or shortening, and she regained a good use of the limb.

REMARKS. May not this old woman's rapid recovery be attributed to the treatment employed? Had she been subjected to the ordinary treatment by the double inclined plane or the long splint, how much trouble and inconvenience would the incontinence of urine have given rise to, besides the almost certainty of bed-sores from lying constantly in one position?

CASE X. M. A. Girling, aged 7 years, was placed under treatment for fracture by direct violence of the right thigh bone at the middle of the shaft, on the 21st February 1854. The apparatus was applied precisely the same as for an adult. In some cases, however, the millboard employed should not be of the same thickness, that it may be more conveniently fashioned to the size and shape required. During the first two days, while the apparatus is becoming dry, it is advisable with children to attach a wooden splint outside, to reach from the axilla to the foot, because from their restlessness the limb might bend at the seat of fracture, and so produce deformity; it serves also to fix completely the hip-joint. When the apparatus has dried, it is sufficiently strong of itself to act as a splint; while from the equal pressure it exerts, it effectually controls muscular action, and so prevents displacement of the fragments and shortening of the limb.

When the long splint was removed from this little patient, the apparatus was cut open, and a thick fold of lint having been laid over the upper fragment, it was reclosed by bandaging, and worn without further interference for the next three weeks—she being dressed daily, and allowed to move about on the bed or couch as much as she chose; that portion of the apparatus from the knee downwards was then removed, the part upon the thigh and hip only being retained, but not so firmly applied, that she might begin to regain the use of the limb.

She was discharged on the 17th March, having been under treatment twenty-seven days; the bone had then perfectly united without shortening, and she was fast obtaining her former gait.

CASE XI. Emily Parsonage, aged 3 years, was admitted on January 20th, 1854. A ladder fell upon her, causing concussion of the brain and fracture of the middle third of the right femur. It was some time before consciousness returned. The same method of treatment was pursued as in the former case. She had regained full use of the limb in a month without shortening or deformity.

CASE XII. Henry Tyerbuck, aged 6½ years, met with fracture of his left thigh bone on August 6th, 1853, and was under treatment, until September 16th, seven weeks; he was of a very delicate constitution; and although without much danger the apparatus might have been removed sooner than it was, yet as the injury had occurred almost spontaneously, it was thought prudent to treat it constitutionally as well as locally. On one occasion, while showing this boy to the surgeon at his visit, as a case successfully treated by the modern method, he observed to my chagrin that the injured limb was shorter than the sound one. The boy was lying full length upon his back, and stretched out the sound limb, while he had no power over the injured one with the apparatus on. In this position, I made measurements of the legs, and found shortening to half an inch in the left—the respective points being the anterior-inferior spinous process of the ilium and the malleoli on each side. Upon raising the boy into a sitting posture, this apparent shortening no longer existed; both limbs were of the same length.

CASE XIII. Ellen Wilson, aged 6 years, broke her thigh at the junction of the middle and upper thirds transversely; she was running and slipped down upon the pavement. She was brought to the hospital on April 27th, and was immediately placed under the treatment adopted in the foregoing cases, and was discharged on the 20th May 1854, having been a patient twenty-three days. The fracture had united, and she had acquired tolerable use of the limb.

CASE XIV. Sarah Ann Field, aged 5 years, was brought to the hospital on the 5th May 1854, having sustained fracture of the middle third of the left femur. She wore the apparatus for three weeks, and was discharged from the hospital five days afterwards. In this case, as the amount of swelling was trivial, the apparatus was not disturbed from the time it was put on until it was finally removed. The treatment was perfectly successful, requiring less attention or time than any other method I know of. I have now tried it upon many children from the age of 16 months upwards, and never had a single failure: the worst result being a temporary lameness, protracted in some instances, but never lasting beyond three months. Stiffness of the knee or ankle-joint, common amongst adults for a time after injuries of the lower limbs, requiring them to be kept rigidly in one posture, I have observed to be rarely present with children after fractures.

[*To be continued.*]

Birmingham, June 1855.

THE SOUND OF THE *BRUIT DE POT FÊLÉ* AND ITS MODIFICATIONS, AS OCCURRING MORE PARTICULARLY IN THE CHRONIC BRONCHITIS OF CHILDREN.

By JOHN COCKLE, M.D., L.R.C.P., Physician to the City Dispensary, etc., etc.

THE peculiar but easily recognised sound of the *bruit de pot félé* appears to have eluded the patient search of Auenbrugger; at least, there does not appear in the *Novum Inventum* any passage which would bear the construction of familiarity with it. Nor was his great and impartial commentator, Corvisart, more successful. This non-acquaintance with the sound, however, may have resulted, not so much from the method of percussion employed by these early investigators, as from an inexperience of the conditions upon which it depends. Perhaps, in point of priority of claim, though disavowed by him, Laennec may be mentioned as the person to whom modern science stands indebted for the first description of the phenomenon. In his work upon *Auscultation*, as also in an article in the *Revue Médicale* for the year 1824, he pointed out the peculiarity of the sound, and regarded it as specially characterising tuberculous excavation of the lung. In this view, he has been supported by the greater number of systematic writers upon the subject almost to the present time.

Contemporaneously, or nearly so, with the discovery of Laennec, Husson and Martinet indicated the existence of a peculiar "*tintement métallique*" upon percussing the upper part of the chest of a phthisical subject. At a later period in the history of percussion, Raciborski announced a fact interesting in a physiological rather than in a pathological point of view—that a *quasi* cracked metal sound might be occasionally elicited by percussing the thorax of children during the act of crying, and even of thin-chested persons during expiration. The occurrence of percussion metallic resonance under these last named circumstances has still more recently attracted the attention of Professor Wintrich of Erlangen, who has given the subject a yet greater extension. Dr. Stokes, restricting his observations to the department of special pathology, admits the occurrence of a metallic resonance, resembling the sound of the *bruit de pot félé*, in the effusion stage of bronchitis in children; and considers the subject worthy of greater attention in this particular than has hitherto been bestowed upon it. Dr. Walshe also regards the sound as a frequent one in infantile bronchitic disease. My own observations confirm the opinion of these distinguished physicians, that the sound has no necessary restriction to the excavation stage of phthisis. I further believe, however, that it is frequently developed with remarkable intensity in the chronic bronchitis of children, both in its dry and secretive stages, and under circumstances where there does

not exist the slightest ground for suspecting tuberculous complication.

It may be necessary to state that, when investigating this phenomenon, the more ordinary sources of error should be remembered and avoided: for example, the imperfect adaptation of the percussing medium; the proximity of some metallic substance in which vibrations might be simultaneously excited by the percussing stroke, as first pointed out by Andral; or the contiguity of a distended stomach (Piorry); but the last source of error is easily avoided by observing the ordinary site of the pulmonary metallic sound. For the perfect development of the sound, the finger should be used as a plessimeter. The ivory disk rarely elicits the metallic tone, possibly from the force of the percussing stroke being diffused over a larger extent of surface.

The following histories of cases, in which this phenomenon was audible, occurring within the last few months, are derived from reports in the case-book of the City Dispensary.

CASE I. Thomas Hudson, aged 10, admitted May 10th, 1855, was considered by his parents to be a healthy child, with the exception of suffering from winter cough. For the last nine months, he had suffered under chronic bronchitis, evidenced by wheezing, *râle sonore* at the superior part of the left side of the chest, and sibilant and sonorous râles at both bases. When first examined, respiration was somewhat weak at the upper part of the right lung, probably from partial obturation of the bronchial tube, either by some viscid mucus or tumid membrane. The percussion sound was normal over the site where the respiration seemed weak. Upon percussion, the sound was clear generally; but the *bruit de pot fêlé* was elicited over both infraclavicular regions; it was well marked upon the right side, but less so upon the left. The sound ceased somewhat abruptly at the mammary region, and was altogether absent posteriorly.

May 17th. The sound was still present upon both sides.

May 20th. The sound was still heard.

June 5th. It was audible only upon the left side.

June 12th. The sound was remarkably distinct upon both sides, extending upon the right to one inch below the nipple. The phenomenon was so marked as forcibly to remind one of the jingling of coins together. A *râle sonore* was audible extensively over the chest.

CASE II. John Barker, aged 4, was admitted April 16th. He had had two or three attacks of bronchitis, which had left his breathing habitually short. His father was asthmatic. There was no evidence of phthisis; but, upon inspection of the chest, a singular heteromorphism was observed. The lower sternal region presented a remarkable conical projection, resembling an ancient buckler in shape. It was difficult to determine whether this peculiarity was physiological or otherwise: the child's mother thought she had only noticed it these last two years. Upon percussion, a well-marked sound of *bruit de pot fêlé* was detected on both infraclavicular regions. There was slight obscurity of sound under the right clavicle. Vocal fremitus was more marked upon the right than the left side. Under the right clavicle, respiration was somewhat weak. A slight *râle sonore* was heard under the left clavicle.

May 29th. The sound was still audible upon both sides.

June 5th. The sound upon both sides was more distinct than heretofore.

June 12th. It was well developed upon both sides.

CASE III. Thomas Mitchell, aged 15, admitted March 5th, a stout healthy-looking boy, had been suffering for these last two months from chronic catarrh, attended by wheezing respiration and sibilant and sonorous râles over the lungs generally. Upon percussion over the right infraclavicular region, a well-marked sound of *bruit de pot fêlé* was detected.

March 14th. The cracked metal sound was entirely gone; a faint *tintement métallique* being alone audible. Slight *râle sonore* and rough respiration were heard over a considerable portion of the lungs. His general symptoms were much improved.

March 24th. He was still improving in health; all trace of metallic sound was absent.

March 28th. The metallic sound was gone. He considered himself nearly well.

June 14th. The faintest *tintement* only was audible.

CASE IV. Richard Redmond, aged 11, was admitted May 7th. He was a healthly-looking boy, but had been subject to winter cough for some years. He had now been suffering for four months from chronic bronchitis. Nearly all varieties of râle were present over both lungs. The tubes contained a considerable quantity of fluid. Upon percussion, an exceedingly characteristic sound of the *bruit de pot fêlé* was elicited over both infraclavicular regions. Not the slightest trace of metallic resonance existed posteriorly.

May 14th. The bruit was only audible upon the left side.

May 21st. The sound was well marked upon both sides.

May 28th. The same condition existed.

June 12th. There was well-marked *tintement métallique* upon both sides.

CASE V. Catherine Redmond, aged 10, was admitted May 3rd. She was a sister of the boy whose case was last described. She was somewhat delicate in appearance, and had been ill twelve months with chronic bronchitis. The right side of her cheek, upon simple inspection, looked contracted; but measurement gave the normal proportion. The vocal fremitus was slight. The percussion sound over both infraclavicular regions was tolerably clear, but developed a well-marked sound of *bruit de pot fêlé* as far as the mammary regions, where it abruptly ceased. Not a trace could be detected posteriorly. Sonorous râle was audible over the chest generally. She complained of pain in the right mammary region. There did not exist the slightest tendency to consumptive disease in her family.

May 7th. The sound was absent upon the right side, but still marked upon the left.

May 10th. The sound was distinct upon the right side, but absent upon the left.

May 14th. The cracked metal sound was gone, but slight *tintement métallique* was audible.

May 21st. The *tintement métallique* was heard only upon the left side.

May 24th. All trace of the sound was absent.

May 28th. The sound was well marked upon the right side, but absent upon the left.

June 7th. There was *tintement* under both clavicles.

This girl belonged to a charity school, and wore the metal badge upon her dress. Upon the first examination, although her dress was partly removed, yet so strikingly was the cracked metal sound developed upon percussion, that it seemed difficult to believe otherwise than that the metal must have had vibrations excited in it by the act of percussion. To guard against this possible source of fallacy, the metal badge was entirely removed; but the sound remained as distinct as ever.

REMARKS. The above cases present many features in common: indeed, upon reflection, this would be perceived almost of necessity to occur, inasmuch as they consist but of the repetition of the familiar cohort of symptoms incidental to chronic bronchitis, and dependent upon tumid membrane and dilated tubes, more or less filled at times with viscid secretion. From their consideration, the following conclusions appear to be legitimately inferrible.

1. The sound of the *bruit de pot fêlé* frequently occurs in children suffering under chronic bronchitis, both in the dry and secretive forms.

2. It occurs over a considerable extent, being frequently audible in both infraclavicular regions.

3. It is evanescent in character, and passes, in a comparatively short period, through all possible modifications of the metallic sound—from the most clearly defined cracked metal sound to the faintest *tintement*.

4. The sound pitch is usually somewhat higher in the bronchitis of children than in the cavern of adults.

5. It is generally limited to the infraclavicular regions,

rarely transcending these limits, and never audible over the posterior surface of the chest.

There are, it appears to me, two fundamental facts which lie as it were at the foundation of any attempt to unravel the mechanism of the *bruit de pot fêlé*. The first of these is the general limitation of the sound to the antero-superior portion of the chest: at least, I have never hitherto succeeded in detecting even the faintest *tintement* during the percussion of the posterior region of the thorax; and, secondly, the immediate cessation of the sound upon the closure of the mouth and nares of the living subject (Walshe), or the ligation of the trachea of the dead subject—a fact long ago pointed out by Miguel, during some experiments performed conjointly with Piorry. We are thus as it were compelled, in any explanation of the sound in question, to include the elastic (bony and cartilaginous) structures of the anterior chest wall, and the unimpeded passage of the column of air displaced by the act of percussion through the glottis, as among the actual necessary conditions of its occurrence.

The elements, then, for the production of metallic sound would appear to be complex in their nature. Upon forcible percussion of the easily depressible and elastic anterior chest wall, corresponding to the part where the lung is least in point of bulk, the column of air contained within the underlying, dilated, and congested bronchi, is suddenly displaced. The sonorous vibrations therein excited mingle with those originated in the solid walls of the thorax and bronchi. These united sound waves become modified in their passage through the glottis, and again by reverberation from the irregular structures of the hard and soft palate.

107 Guildford Street, Russell Square, June 1855.

BIBLIOGRAPHICAL NOTICES.

ELEMENTS OF PSYCHOLOGICAL MEDICINE: being an Introduction to the Practical Study of Insanity. By DANIEL NOBLE, M.D., Visiting Physician to the Clifton Hall Retreat; Lecturer on Psychological Medicine at the Chatham Street School of Medicine; etc. Second edition, pp. 356. London: 1855.

THE first edition of Dr. NOBLE's *Elements of Psychological Medicine* was published about two years ago, in the form of Lectures. In the present edition, this form is withdrawn, and the book appears as a systematic treatise. The amount of matter is doubled; and the former materials have been subjected to most careful revision. The work, as it now appears, is one of the most valuable works on Psychological Medicine in any language. It is well written, highly philosophical, and eminently practical.

As we noticed the first edition at some length in this JOURNAL (April 7th, 1854, p. 312), it will not now be necessary to examine the work in detail. We shall therefore merely point out the principal additions and alterations.

In the first place, we notice that the author has modified his definition of insanity. In his first edition, he stated insanity to consist in "*chronic disorder of the brain, inducing perversion of ideas prejudicial to or destructive of the freedom of the will*": the definition now given is, that insanity consists in "*a physical disorder of the brain, perverting thought or feeling, to the destruction or impairment of moral liberty*".

Dr. Noble thus explains his definition:—

"I have said, disorder of the brain that is *apyrexial*, to distinguish it from the delirium of inflammation, fever, and some other morbid conditions attended with this kind of excitement: I have qualified it as that sort of disorder which perverts thought or feeling, in contradistinction to certain morbid states of the encephalon, simple congestion, tuberculosis, ramollissement, and some forms of hydrocephalus, in which there is sometimes no very obvious derangement either of the intelligence or the moral sensibility: and I have stated another of its characteristics to be the *destruction or impairment of moral liberty*, or a notable diminution of that controlling power over self which belongs to every soundly constituted person, since this last mentioned feature separates insanity from those slighter perversions of the temper and those diminished faculties of thinking which obtain in disease very generally." (p. 11.)

For his former second chapter, on the Physiology of the Brain and Nervous System, the author has substituted his Lectures on the Correlation of Psychology and Physiology, which were published last year in the ASSOCIATION JOURNAL.

The remarks on the Pathology and on the Different Forms of Insanity—Emotional, Notional, and Intelligential—are usefully expanded.

In speaking of Notional Insanity, Dr. Noble takes occasion to introduce a few sensible remarks on the modern fashionable forms of quackery.

"It is a humiliating circumstance—and sober-minded persons are often puzzled and confounded at the fact—that able and educated men can be found in our own days who profess a belief in the preternatural phenomena of Mesmerism, odylism, and homœopathy. It must be supposed that, in such circumstances, conviction obtains possession of the mind by degrees; and that imagination gradually gains the predominance over reason, in some such way as that which Johnson has sketched so graphically in his story of the Astronomer. What are we to think of the phenomenon which is sometimes exhibited by instructed physicians, who, knowing very well that a grain of sulphur or of chalk may be taken without producing sensible effects, yet believe, or tell us they believe, that the decillionth of a grain—practically an impossible, and philosophically an inconceivable, quantity—will cure disease? And what explanation is to be given of the fact, that men, well educated and competent to the ordinary duties of life, tell us every day that persons in a peculiar sleep can see without using their eyes, and talk learnedly upon subjects which they have never studied? Need reference be made to certain recent exhibitions, in which tables obtained so melancholy a distinction? Is all this experience very far removed from the Astronomer in *Rasselas*?* The modern literature of Mesmerism, indeed, has brought out delusions substantially the same as those of Johnson's oriental sage. M. Cahagnet, a French writer on Animal Magnetism, has, in his own conceit, demonstrated experimentally, and in the presence of witnesses, that he is a veritable 'cloud compeller', who, by the pure force of his magnetic will, can effect changes in the atmosphere—making the rain to cease, and the sky to disclose its azure! In sober earnestness, can we do otherwise than regard such follies as constituting a species of notional insanity." (pp. 159, 160.)

In the chapter on the Etiology of Insanity, we are glad to find that Dr. Noble has given more notice to the influence of states of the blood in causing insanity than he did in his former edition. On this subject, after referring to the observations of Bichat, Crichton, Arnold, Andral, Laycock, and Sheppard, he observes:—

"As at this time a certain general consent obtains, that morbid blood is at least one of the causes of insanity, the question now arises: What constitutes the particular condition of the circulating fluid that is productive of mental derangement? And, further: Do certain known substances, when commingled abnormally with the blood, exert, by special election, a determinate action upon the intellect and the emotions, so as to cause insanity? In reference to these inquiries, I apprehend the acknowledgment must be made, that we have no information of a precise and decisive character. But I think we may affirm this: When the cerebral tissue partakes of that vice which predisposes to insanity, *any* serious deterioration of that fluid upon which its functional activity depends, may give effect to the predisposition. Numerous facts authorise the assertion, that unwonted retention within the blood of the products of what Dr. Prout has called the destructive assimilation, does very often precede and accompany the invasion of mental maladies. Carbonic acid, urea, and the elements of bile, retained unduly in the

* "I have possessed," says the astronomer, "for five years the regulation of the weather, and the distribution of the seasons; the sun has listened to my dictates, and passed from tropic to tropic by my direction: the clouds, at my call, have poured their waters, and the Nile has overflowed at my command: I have restrained the rage of the dog-star, and mitigated the fervours of the crab. . . . Not to be easily credited will neither surprise nor offend me; for I am probably the first of human beings to whom this trust has been imparted. . . . If the task of a king be considered as difficult, who has the care only of a few millions, to whom he cannot do much good or harm, what must be the anxiety of him on whom depends the action of the elements, and the great gifts of light and heat." (p. 159.)—Johnson's "Rasselas", chap. xli.