Fig. 4. Elevation of box.

Fig. 5. End elevation.

Fig. 6. Mode of hanging the lid.
(Reduced to half the diameter.)

Scale of feet.

I trust, therefore, that all our number of medico-meteorological observers will, kindly and at once, adopt this form of box.

It is necessary to state that the prepared paper is suspended between two narrow slips of wood, which are attached to the centre of the partition in the lid or roof of the box—there being no partition in the box itself. The whole of the interior, including the internal and external surfaces of the screens *E F*, together with the upper and under surfaces of the bottom *B*, are blackened, to absorb every ray of light. If the box is carefully made according to the plan, and a boy enclosed for a few minutes, he will not discover a single ray of light. When the box is elevated three or four feet from the ground, a current of air will be continually circulating around the suspended paper.

Uckfield, February, 1851.

CASES OF SPONTANEOUS FRACTURE.

By SAMUEL TAYLOR CHADWICK, M.D.

In the *Periscope Review* of the ASSOCIATION MEDICAL JOURNAL for February 3rd, 1854, there are six cases recited of spontaneous fracture, as having occurred in the practice of Professor Barker of America; and five out of the six, ac-

ording to the report of Dr. Smith, made a recovery equally soon with, if not more rapidly than, fractures of an ordinary description.

I certainly consider, from what I have read, together with the little I have seen pertaining to the above subject, that British practitioners cannot lay claim to quite so large a proportion of successful cases as that of our transatlantic brethren.

The following case, which happened to a widow lady, was at the time a source of considerable anxiety, and the result, as the sequel will prove, was exceedingly unsatisfactory and discouraging. Indeed, whatever confidence the patient and her friends might have reposed in me at the commencement of the case, it was evidently on the wane as the case progressed, inasmuch as, at the time she left my care, there were unmistakeable manifestations that, in their opinion, the case might have been brought to a far more successful issue. On reviewing the treatment, however, I was not aware but that the greatest vigilance had been exercised; and also, under the circumstances, nothing more could have been done which would have averted the unpleasant result.

CASE I. Mrs. N., aged 51, who resided in the neighbourhood of Newton, of a sanguine temperament and active habits, the mother of four children, stated that she had invariably enjoyed excellent health, which her general appearance fully confirmed. Except during her accouchements, she had not been confined to her bed-room from any ailment. At the final cessation of the catamenia (which took place four years ago), she laboured under some indisposition, but of so slight a nature as not to interfere with her usual avocations.

She consulted me for an injury of the arm, which she stated to have been sustained under the following circumstances. The previous evening, whilst in the act of removing the tea-tray from a table, she was suddenly seized with violent pain about midway between the elbow and shoulder, attended with an audible snap; the arm dropped to the side, and the tray, with its contents, fell to the floor. After having recovered from the shock, she found the limb motionless; and any attempt to raise the shoulder was accompanied by excruciating pain. Her friends had endeavoured to reconcile her to the belief that she was labouring under nothing worse than a severe sprain, inasmuch as her arm could not possibly be broken from so trivial a cause—an opinion which was strengthened by the fact that she retained the power of moving the fingers. Notwithstanding these assurances, however, the patient did not acquiesce in their belief, feeling confident that the arm was fractured. On her advancing from the couch to a chair, to allow an examination of the injury, it was evident, both from her gait and the manner in which she supported the limb, that she was labouring under something more than a sprain. I found preternatural mobility, loss of voluntary motion, swelling, crepitus: in short, there was fracture of the os brachii immediately below the insertion of the deltoid muscle. Scarcely any attempts at reduction were required, as the weight of the forearm brought the fractured ends of the bone into apposition. Two or three straps of the emplastrum saponis, four well padded splints, and an ordinary roller, were applied. She was directed to take two of the following pills, if she felt pain, at bed-time:—

R Pulveris opii, gr. iij.
Pilule aloes et myrrhæ, ʒij.
Extracti hyoseyami, gr. xv. Misce.
Fiant pilule xij.

A mild aperient draught was also ordered to be taken occasionally. As she concluded to remain in the town, I had frequent opportunities of seeing her. There was more swelling than customary of the hand and forearm, which could not arise from the appliances interfering with the venous circulation, for they were not tight. The pain at the seat of injury was of a dull aching character, but not of such severity as to induce her often to take the anodyne pills. After the first few days, she did not remain in bed, but went about the house; and, as there was nothing to

contra-indicate it, the regimen was the same as that to which she had been generally accustomed.

At the expiration of a month, on removing the splints, I was much chagrined, and the patient exceedingly disappointed, on discovering that there had not been the slightest attempt at bony union; indeed, the bone was as loose as on the first day she came under my observation. I again put the arm up with splints and bandages, and ordered her to return to the country, and to partake of an extra quantity of animal food, with wine and porter. I also prescribed the following mixture:—

Rx Sulphatis quiniæ, gr. xij.
Infusi cascarillæ, ad ʒij.
Acidi sulphurici aromatici, ʒ iss.
Syrupi aurantii, 3vj. M.

Fiat mistura cujus sumantur cochlearia ij ampla bis in die inter cibos.

After this, I saw her about once a week for the next three weeks, when I again removed the bandages, and still found the same unfavourable state, the only difference discernible being a little thickening, which appeared to be of a ligamentous character, without affording any additional firmness to the parts. I put it up a third time, but now used the starched bandages, with pasteboard; and, the time of the year being favourable, I urged her to go to the seaside, and persevere with her tonic. These suggestions were carried out, but were not attended with any beneficial results. She had now become anxious and despondent, feeling apprehensive that she would never more regain the use of her arm.

On several occasions, I had strictly inquired into the state of her general health, but could not discover anything to lead me to infer either a cancerous or a scrofulous diathesis. The circulation was tranquil, the respiration free, the appetite and digestive functions were correct. There was no induration about the mammary glands, nor any evidence of uterine disease. I consequently inclined to the opinion that the seton was deserving of a trial; on suggesting this course, however, the patient most positively asserted that she would never submit to either application or operative procedure which would produce a wound of the skin. I recommended her to have another opinion, and the next time I saw her, she informed me that her friends had wished her to see Mr. Bickersteth, of Liverpool, but that she thought, if she concluded to see any one, it would be either Mr. Wilson or Mr. Turner, of Manchester. I assured her that, whichever of the three gentlemen named she might select, she might fully rely on any steps they might advise. Whether she sought the advice of the gentlemen named, or not, I never heard; for I did not see her afterwards.

I was informed that, soon after her last visit to me, she removed from this part of the country to beyond Lancaster; and that one morning, on turning in bed, she fractured her thigh, from the effects of which she survived only a few months. The femur, as the humerus, never united; she became the subject of extensive bed-sores; great emaciation and suffering followed closely the occurrence of her second casualty.

At the time I first saw her, the history she gave of her general health, her appearance also at the time, militated against any suspicion being entertained of the osseous system having undergone that degeneration known as *mollities ossium*; and, on the other hand, her age was not so far advanced as to lead to the inference that the inorganic constituents of the bones should so far preponderate over the organic matter as to give rise to such unusual frangibility.

CASE II. This case is remarkable principally from the frequency of spontaneous fracture occurring in a young man.

T. L., aged 22, residing in this town, and engaged in the occupation of book-keeper to a cabinet-maker, was low in stature, and of an exceedingly spare habit. He came to my surgery in consequence of a fracture of the right arm, about four inches above the elbow. Nothing unusual occurred in the progress of the case, further than that the limb

remained weak beyond the ordinary time. His neighbours, and the officers belonging to an Odd Fellows' club, did not give credence to his narrative how the accident occurred, viz., that, on lifting a young child from the bed, the bone gave way. His dissipated habits and irregular hours gave rise to their suspicions.

In fifteen months after the receipt of the first accident, whilst removing a pan from the fire, he fractured the left humerus about the centre. This case was more protracted than the first. Union of the bone, however, was ultimately effected.

It is somewhat remarkable, that for seven or eight years he had a regular succession of fractures, occurring on not fewer than nine occasions, having had the bones of both thighs and upper arms broken more than once. I only attended him in his two first misfortunes. He lived to upwards of thirty years of age, and, for the last three or four years of his existence, he had to be carried, as he was not able to move about on crutches, his lower extremities having become too weak to support him either in standing or progression. I was not aware of his death until the last few days, which I learned on inquiring from his mother what had become of him. I was somewhat amused on her relating to me some of the slight causes that had produced his accidents. On one occasion, he was merely removing a chair with his foot, when he broke his thigh; and she added, that they had become quite weary of paying doctors for setting his limbs; and, having witnessed the operation so often, and the splints used on the last occasion not having been returned to the surgeon, she, by the aid of her husband and a daughter making the necessary extension, applied the bandages and splints, and, for anything she could see to the contrary, he had gone on quite as satisfactorily as on former occasions.

I also questioned his mother whether she could attribute the frequency of her son's fractures to any cause, when she replied that, in early youth, his habits were of the most dissolute character. At the early age of fourteen years, he indulged in intoxicating drinks to excess; and, at sixteen, he was confined several weeks to the house in consequence of labouring under the venereal disease, which he contracted three or four times before he was twenty years of age, and for the cure of which he was constantly taking mercury pills. She further stated that, at the time of his death, he had, as she termed it, gone into quite "a little lad", so wasted and decrepid had he become; and when they came to wash him, after death, it was found that one of his arms and his thigh-bones were quite as loose as joints. I presume there can be no question that the patient was labouring under the disease known under the appellation of *malacosteon*.

CASE III. Some years ago, a poor woman, aged 65, who had an open cancer of the mamma, the ulceration of which had extended to the axilla, on raising herself from the chair, fractured the femur about the junction of the middle and upper third. The limb was placed on a double inclined plane. She was the inmate of a wretched hovel, and had scarcely the necessary attention and food. As it was evident that she could not long survive the malignant affection of the breast, the indications were to place the limb in as easy a position as possible. I do not recollect how long she lived after the receipt of the fracture; and it is unnecessary to add, that at her decease there was no ossific union.

I have only met with two other cases (in an extensive practice of upwards of twenty years): in one of them, there was considerable doubt as to its origin; they both, however, made a satisfactory recovery. Certainly fractures by muscular action (if we except those of the patella and olecranon), are so infrequent, that without a close investigation we are not warranted in placing implicit reliance on the veracity of every patient, unless the age or a cachectic appearance may indicate a predisposition to fractures without external violence.

I consider it singular, that I have only met with it in the bones of the femur and humerus.

Bolton-le-Moors, Lancashire, February 10th, 1854.