applied." Probably these authorities express the limit to which forbearance on the part of the attendant could be justified. I am certain these rules could not be followed, in many cases, without serious risk to mother and child. Dr. Burns seems to have appreciated the necessities of the case when he said that, "when mischief arises from the application of the forceps, it is always owing either to harsh and unskilful conduct, or to a state induced by delaying too long." It appears to me that the time for bringing effective assistance is unmistakably indicated by the increasingly feeble efforts of the uterus. Nature should be helped when she shows that she can no longer, unaided, help herself. It has been urged that, from the sudden emptying of the uterus, flooding may take place. I have never met with this complication in any case I have delivered with the forceps, but I can understand how it may occur with those practitioners who apply this remedy "after the head has been impacted for four hours", for then the power of the uterus would be exhausted, and contraction rendered improbable. In these cases, the delay in delivery produces uterine inertia; if not the true inertia as obstetricians define it, it is at least an inertia similar to the temporary paralysis of the over-distended bladder, and, in this condition, the sudden emptying of the womb, doubtless, exposes the patient to this complication. But the case is otherwise if effective aid be given in time. The sudden relief from pressure of an organ which still retains a certain amount of vital force will give rise to renewed vigour. A timely delivery should thus prevent, instead of cause, *post partum* hæmorrhage. When I have found it necessary to deliver in cases where labour-pains were absent, I took special precautions to avoid flooding, and it would only be when the condition of mother or child rendered delivery at once necessary that I would resort to this dangerous step. But the chief object of preventing delay in the passages, is to obviate any tendency to the very distressing diseases which occasionally follow inflammatory action. The late Sir James Y. Simpson said that vesico-vaginal fistula was "most commonly found as a consequence of difficult and prolonged labour, more especially the latter" (*Diseases of Woman*, p. 32); and there can be no doubt the long continued pressure of the foetal head on the maternal passages is a very certain way of "producing mortification and sloughing of the vagina and part of the uterine wall". Kindred results have so frequently been observed by surgeons to take place when even, for a few hours only, the hernial sac is strangulated, and also in other diseases accompanied by compression, that I believe the onset of inflammatory disease in the vaginal passages to be due more to the detention of the fetus than to any temporary injury which the judicious application of the forceps could give. When I began to apply the forceps at the onset of the patient's failing strength, it was with a view of securing, if possible, a living child, for the delay seemed to act as prejudicially against the fetus as the mother. In my private practice, I find, on an average, every twenty-sixth labour suffer from the symptoms of debility; these I have delivered with the forceps, and in not one of them was the child still-born.

ON GENERAL PARALYSIS AND FRAGILITAS OSSIUM.

By N. G. MERCER, M.D. Edin.,

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THE fact has been some time pretty well known that, in not a few cases of general paralysis of the insane, there exists a brittle condition of the bones, which must render them especially liable to fractures. The subject is evidently one deserving the most attentive consideration, as, in all instances of serious injuries taking place in asylums, we must steadily bear in mind the possibility—in average asylums not the *probability*—of the patients having been subjected to ill-treatment at the hands of their attendants. A few years ago, the public mind was greatly agitated by a concurrent series of asylum catastrophes, whose startling and common distinguishing feature was a large number of dreadful fractures of the bones of the chest. Sensational and garbled accounts of these cases were given in the general press, and served to propagate a wide-spread, though ill-founded, feeling of mistrust in the management of public asylums. It will not have escaped recollection, that a criminal prosecution was in one of these cases successfully instituted against two attendants upon a charge of manslaughter, the result being their conviction, and a sentence of seven years' penal servitude. Without calling into question the truth of the verdict, or the justice of the sentence, or the propriety of that jubilant frame of mind with which, outside asylum walls, the result appeared to be universally hailed, it has always seemed to me that it would have been a judicious course on the part of those who were entrusted with the charge of the

defence, had they summoned the evidence of some high and competent surgical authority, to deliver his opinion, founded on an exceptional experience of chest-fractures, as to what amount of "kneeing," given a healthy condition of the skeleton, would have sufficed for the production of fifteen fractures of the ribs. At this trial, an opinion was unhesitatingly expressed that such multiplied fractures could not have been caused by heavy falls against a wooden bedstead. Whether or not such an event were possible, and whether or not the bones were so changed in their composition as to render fractures a probable circumstance from any slight accidental cause, are questions which would scarcely modify the complexion of the offence, seeing that deliberate violence was held proved by direct evidence; nevertheless, the subject of fragilitas ossium, in any class of lunatics, must be regarded as one both of medico-legal importance and pathological interest. It would be an useful contribution to surgical practice as affecting asylums, if some surgeons, with the highest opportunities of being well informed, would give their experience respecting the maximum amount of injury to the bony chest-wall which can be accomplished by one healthy man thrusting his knee with all his might against the prostrate breast of another. Would a fractured sternum *plus* nine rib-fractures, as in one case, or fifteen rib-fractures, as in another, be foreign, or would it be familiar to such experience? The case which I am about to describe, and which was recently under treatment in this asylum, will afford an illustration of the fact that an important fracture of the chest, which might readily have been attended with fatal complications, may occur in a person suffering from general paralysis, while, at the same time, there was no reasonable explanation of the cause of such fracture but the patient's own restlessness.

J. H., aged 58, engine-fitter, was admitted here, September 24, 1873. His case was at once diagnosed as one of general paralysis in an advanced stage. The phenomena of mental unsoundness were rapidly losing their maniacal or monomaniacal aspect, and assuming that of dementia. The lips and tongue were able to frame speech with the utmost difficulty; his power of recognising persons was all but gone; and the functions of deglutition and progression were very much impaired. The patient was not of meddlesome or aggressive habits, as general paralytics not uncommonly are, but was, on the contrary, a particularly quiet, inoffensive, harmless man. His symptoms, both bodily and mental, gained ground with a rapidity seldom witnessed in this disease, and, in the course of a few days after his admission, he was, in consequence of helplessness, removed for additional care to the hospital ward. Shortly after being transferred thither, he became rather more uneasy in his mind, and insomnia developed itself. Having been put to sleep in a dormitory with eight other patients, he got out of bed in the night time and rambled about the room, and a fellow-patient described how, in the course of this restlessness, he fell rather heavily and helplessly on the carpeted wooden floor. He was then placed to sleep in one of the ordinary single-bedded rooms; here, however, his restless conduct underwent no improvement, and he was found by the night-attendant out of bed, tottering about the room, very wakeful and uneasy. His powers of locomotion at this period were becoming much more feeble, and his tendency to fall heavily was increasing in an alarming degree. After a two nights' residence in this apartment, therefore, he was considered no longer safe in any other than the padded room, and thither he was accordingly carried. Although there was then no injury discoverable upon him, I still considered it quite a probable event that, during his past restlessness, he might have suffered some hurt. The progress of the case was naturally attended with much anxiety to me, and the rapid advance of the paralysis in all his functions rendered necessary the utmost possible care and gentleness in his management. After he had been two days an inmate of the padded room, a bruise on the right side of his chest, in extent approaching the size of the palm of the hand, was pointed out to me, by his attendant, at the morning visit. This bruise appeared to be of a few days' standing, but beneath its site, nothing, upon careful examination, was detectible in the way of crepitus from fractured ribs, nor was there present any functional disturbance of the respiration to favour the idea that any deep seated injury had happened. During the subsequent progress of the case, too, there was a total absence of dyspnoea, although the symptom was anxiously watched for from day to day. About a fortnight before his death, the dysphagia became so extreme that fluids only could be ingested, as any solid nourishment of which he partook appeared to stick in his pharynx, so much in abeyance was muscular energy in those parts. While in the padded room, he tossed and tumbled about a good deal, but there was no evidence, as indeed, so complete was the padding, there was scarcely any possibility, of his having sustained an additional bodily injury whilst there. Although he was very little in one position, yet vital power had grown so depressed that the slight intermittent pressure, to which the skin was exposed,

produced an extensive bed sore over the sacrum, and small sores of similar character formed on the upper surfaces of several toes and one knee. During the last three days of his life, there was a total cessation of his habits of restlessness, this disappearance of perverted motor-power being entirely due to the extremity of the paralysis. Under these circumstances, it was deemed safe again to put him to sleep in an ordinary bedstead and common bedroom. His restlessness did not return, and he gradually sank, and died exhausted on November 13.

The case afforded, in many respects, quite a typical illustration of general paralysis, although it differed from all other cases known to my experience in its terrible rapidity of progress towards fatuity, helplessness, and death. It might be added that, just before his removal to the padded room, the patient had an attack of severe epileptiform convulsions, attended with perilous prostration, from which, however, he at once rallied. Sanction having been given by the relatives to my performing a *post mortem* examination, I commenced this thirty-two hours after death, on November 14. On denuding the chest, however, I discovered a transverse fracture of the manubrium of the sternum, and at once abstained from proceeding with the necropsy until I had communicated with the coroner, and received his instructions as to what steps further should be taken in the presence of such an important injury. It was arranged that, as an independent medical witness, Dr. Boulton, senior, of Beverley, should be present with me at the *post mortem* examination, and should also give evidence at the inquest which the coroner decided to hold. We accordingly made the examination in concert; and the following were the various appearances noted in course of it.

Head.—There was an inconsiderable degree of adhesion between the skull-cap and dura mater. Effusion of serum in the membranes existed to the amount of probably half-a-pint. The arachnoid was in many places, but especially at the base of the brain, opaque and of a pearly whiteness. The grey substance of the convolutions was not obviously affected. On making the usual sections of the brain, there was noticed, when the centrum ovale minus was exposed, a remarkable difference in the vascularity of the two hemispheres, the left being much congested, and its cut surface presenting multitudes of dark bloody points, while the right was tolerably healthy. This difference was perceptible throughout the entire area of the section, but nothing further was observed until, on displaying the centrum ovale majus, the posterior lobe on the right side was found to be extensively affected by softening, portions of the diffident mass having clung to the blade of the knife whilst finishing the section. The greater portion of the posterior lobe was the seat of this morbid change, and it reached to close upon the upper surface of the cerebellum. The brain-substance was transformed into a reddish, pulpy, semifluid mass, having no resemblance to the original brain, and in some parts of it supuration had evidently made progress. The posterior cornu of the corresponding lateral ventricle was invaded by the diseased action, and the ventricle itself was distended with a sero-purulent fluid, which had passed in great abundance into the opposite ventricle, through the broken down and disorganised layers of the septum lucidum.

Chest.—The fracture of the manubrium sterni first and principally claimed attention. This portion of the bone was broken straight across at about the middle part of its length. The fractured ends were bathed in a small quantity of fluid, which had a grumous oleaginous appearance, only remotely partaking of the physical character of non-laudable pus. There was no attempt at reparation; and, although a few weeks was suspected to be the age of the injury, yet this could not be alleged very positively. (I need scarcely say that at no time during his residence here, had there been any external bruise on this part of the man's chest.) The cancellous texture of the bone was far gone in disorganisation and disease, its colour being deep red, and much resembling that of a muscle. It was soft and boggy, and a knife could with perfect ease be made to sink into and scoop out a portion of it. Experimentally, in course of the further dissection of the chest, the sixth rib on the right side was removed from the body, and its degree of fragility tested. Outwardly it had the character of a well-developed bone, but, on the application of very gentle violence, it snapped in two, revealing a brittle exterior periosteal shell, and, internally, the same dark-red spongy material which had been seen in the broken sternum. A slight quantity of oleosanguineous fluid exuded from its fractured ends. With the exception of the cranium, the examination of the bones was not further pursued. In opening the head, the easy and pleasant manner in which the saw did its work, excited the astonishment of the attendant who did this duty; and, when removed, there was no difficulty in cutting the skull-cap with a knife. The heart and lungs were perfectly normal, and so likewise, although the patient had been much addicted to habits of intemperance, were the viscera of the abdomen. All the structures in the neighbourhood of the fractured sternum were quite uninjured, there being indeed

no displacement calculated to do any damage to adjoining organs. The original certificate of death was not therefore impugned; it stated that deceased died from "disease of the brain and general paralysis," and Dr. Boulton agreed with me, that the injury found upon the body had not in the slightest degree accelerated the man's death.

I will take leave to say that the importance of the facts above recorded can hardly be over-estimated. Fracture of the sternum is a form of injury very rarely witnessed by the busy general practitioner, and, when it is seen, I think I am correct in saying, that it usually springs from the application of some strong mechanical violence, such as a cart-wheel passing over the chest. It is also a very grave accident, occasioning much anxiety in its treatment. When I communicated my discovery of the injury in J. H.'s case to Dr. Boulton, who is well known as a practitioner of great experience, he was greatly surprised and at once expressed an opinion that some cruel act of violence must be accountable for it. When, however, he came to the *post mortem* examination, and inspected the fracture, his suspicions of ill-treatment immediately vanished, and he gave it as his decided opinion before the jury that, with such a friable condition of the bones as existed in this man, some very trifling cause, as for instance a fall on the floor, which the patient was known to have sustained, and which would not have hurt a healthy person, would be quite sufficient for the production of the fracture. If this patient, instead of having been no earlier than was necessary put into the padded room, had received only such care as would be implied in allowing him, restless and helpless as he was, to knock and tumble about an ordinary bedstead, the discovery of many additional fractures of the chest, with their common attendants of penetrated pleura, pleuro-pneumonia, and empyema, would have been a more than probable event. As a principle of practice, then, the case illustrates how indispensable are good padded rooms in sufficient number for the proper equipment of an asylum. And it also teaches us to be careful when we find important and, it may be, mortal injuries after death, how we impute these to the violence of attendants, without the most convincing proofs of guilt, as it can no longer be regarded as a matter of doubt, the intemperate rhapsodies of that non-professional author who has produced "Shilly-shally" notwithstanding, that, let our nurses be ever so gentle and humane, the victims of certain kinds of mental disease may at times succumb in our asylums to accidentally contracted bodily injuries.

PRIMARY CANCER OF THE LUNG.

By GEORGE F. ELLIOTT, M.D., B.A.,
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MRS. H., aged 28, first consulted me on November 18th last year, and gave the following history. About four months previously to that date, she began to suffer from darting pains in the chest, described as shooting from the lower part of the sternum backwards, at times to the right shoulder, at other times up into the throat. Two months after the commencement of these pains, she noticed a feeling of fulness in the throat and a sensation of "fluttering" in the cardiac region. When first seen, she presented the following symptoms. The face was congested, and the neck enlarged from fulness of the thyroid body; the jugular veins were prominent. Percussion showed normal resonance in the whole of the left lung, and complete dulness in the right lung anteriorly; posteriorly it was tolerably clear, but less so than the left. Vocal fremitus was very marked in the upper and anterior portion of the right lung. Stethoscopic examination showed the respiration puerile over the left lung; in the right, the respiratory murmur was absent, even on forced inspiration, in front; behind, it was tolerably natural at base and apex, but at one point between the spine and lower angle of the scapula it was decidedly bronchial. She complained of dyspnoea, greatly increased on exertion, of violent paroxysms of coughing, and slight frothy expectoration. The heart-sounds were normal.

On December 4th she sent for me, saying she had spat up some clotted blood and "matter" after a more than usually violent fit of coughing. I could find no trace of what she called matter; the blood consisted of two or three small dark clots, and was along with clear and viscid-looking mucus. She remained in much the same condition, occasionally expectorating a little blood, until the 13th of the same month, when she complained of an intolerable aching in the throat. Shortly after my visit on that day, I was again summoned with an intimation that she was dying. I found, so far as I could gather from the attendants, that she had had an epileptic seizure. This was repeated on the two following days, when bromide of potassium was given and the fits ceased. Continued cough and sleeplessness became now very distressing; and from these chloral, hydrocyanic acid, etc., gave but little relief. Three