As a summary of my experience on these points, I may state that we have found in Bristol that maculated typhus spreads only by infection; that each case may be traced to another from which it has sprung; and that its spread is not affected by mere cleanliness; but that the destruction of the germs by strong chemicals, of which real carbolic acid is the best, is a sure means of stopping it. We have been able to trace most cases of enteric fever to germs of the disease derived from the intestine of another patient; and analogy leads me to believe that all cases of this disease have a similar origin. We have found enteric fever as amenable to hygienic measures as typhus. We have found that terror of nations, Asiatic cholera, to be under the control of measures within the command of every public authority. We have found these three diseases to spread and kill our race entirely through the ignorance and neglect of man.

It follows from the above that mere sanitarianism, however desirable, will not, when other measures are neglected, prevent the spread of zymotic disease; that, whilst we are evicting a few pigs or a stray cow which may find their way into our towns, or indignantly removing a heap of dry ashes, a fatal epidemic may be marching, unimpeded, through our crowded population.

My views have been remarkably corroborated by the success of the Government measures for stamping out the cattle-plague, and the small-pox in sheep.

"There is much land yet to be possessed." Who can tell us how to render scarlet fever as amenable to hygienic measures, *practically applicable* to the overcrowded populations of our towns, as Asiatic cholera and typhus have proved to be in Bristol? Who can tell us how to diminish the fatality of measles and whooping cough among the children of the poor, during the cold spring months? Who can tell us how to stop the ravages of that fell destroyer of our race, which fills our work-houses with paupers, by taking away the lives of the bread winners—I mean tubercular phthisis; a disease which, I have special reasons to believe, will shortly be proved to be of a zymotic character, and communicable by germ from man to man? Who will show us how to remove that disgrace of our country and of our religious profession—the slow, but certain murder, by starvation and neglect, of illegitimate children, whose deaths are often registered as caused by summer diarrhoea, marasmus, tubercular meningitis, and other diseases? Who will teach the wives of our working classes how to nurse their husbands and children when struck with disease? Above all, who will teach all classes self-restraint and common sense in matters affecting their own and the public health?

These remarks which, owing to the short time unavoidably allotted to the reading of papers, give only an imperfect account, in fact, only a mere glimpse of the efforts nobly and honourably carried out by the Board of Health of Bristol, to improve a populous place laid out and built during the middle ages, are made in no dictatorial, self-satisfied, or fault-finding spirit. Whether the sanitary theory involved in them be right or not, the result has been good. I may humbly say, that my own opinions on the subject have not been formed by the reading of learned treatises or voluminous authors, but by the patient observing of facts in the courts and alleys of a crowded city, frequently among the groans of the sick and the dying.

If my remarks should be thought worthless, let them be forgotten, with an apology for occupying the time of the meeting; but if, on the other hand, I have brought forward or made prominent a single idea which will assist in solving the great and difficult problem of public health, and which may tend to alleviate the woes of suffering humanity, I shall always look back with satisfaction to this meeting.

APPENDIX.—I make the following suggestions for the improvement of the sanitary laws, founded on observations of their shortcomings on these points.

1. *Registration.*—The registration of deaths in each local authority's district should be under the superintendence of one person, who should be a medical man. His duties should be, to publish a weekly analysis of the deaths in his district; to represent such analysis on a map by different coloured points; such map to be on view in a public office in the district, so that medical men would be able at a glance to see the attitude of disease, and be prepared to meet the pathological constitution of the season. The want of this, we have felt very much in Bristol. By the present arrangements, we can have no analysis of disease, except in an indirect way from the Registrar-General's office. Part of the deaths in Bristol are registered in the Bourton Union, in Somersetshire; another part at Stapleton, in Gloucestershire; another part at Westbury-upon-Trym; and the remainder in Bristol.

The Superintendent Registrar should have power to amend any gross error in the certificate of the cause of death, with the approval of the Registrar-General, so as to bring all deaths within the official nosology. The present registration is grossly erroneous; typhus, enteric fever, and

non-specific febricula, being confusedly returned the one for the other. Specific Asiatic cholera, dysentery, bilious diarrhoea, are in the same confusion. Pneumonia, tubercle, bronchitis, chronic disease of the bronchial tubes, and asthma, are often jumbled together under the head "consumption" or "phthisis". At present, I find the returns of but little use without private inquiry as to the nature of the disease.

2. *Consolidation of all the Sanitary Laws* in one code is required. Clerks to Boards of Health could speak to this point better than any other persons.

3. *The Thirty-Fifth Clause of the Sanitary Act should be made Compulsory*, and not permissive. I have most materially felt the want of bye-laws under this section.

4. *Every District should be brought up to the same High Level.* In Bristol, we have extinguished continued fevers in an epidemic form; but we have cases continually poured in upon us from our neighbours. Last year, we had several cases of enteric fever from a populous part of Bristol, outside our district (Horfield). At Winterbourne, a village seven miles from Bristol, there have been at one time forty cases of enteric fever. At the Bourton Union Workhouse, whither the paupers from one part of Bristol go, there were over one hundred cases of enteric fever last year, from drinking water from an infected well. I could multiply instances of the want of equalisation of sanitary arrangements.

RAILWAY AND OTHER ACCIDENTS: CASES AND OBSERVATIONS.*

By P. C. LITTLE, F.R.C.S.I., Dublin.

ACCIDENTS are becoming more frequent in this age of progress. Those occurring upon railways are distinguished by the severity of the shock which generally accompanies them. The rapidity and momentum of the train, the suddenness of collision or other disaster, the unpreparedness and helplessness of the traveller, concur in producing most appalling results. The nervous system is especially affected—from without, by the intensity of concussion; from within, by the suspension of mental influence. The soldier who faces the storm of bullets recovers sooner from amputation of his shattered limb than the man who undergoes a like operation after railway injury, it is said. In surgical and medico-legal aspects, the element of shock is, therefore, of great importance, and, when properly appreciated, contributes much to correct diagnosis and successful treatment, and to harmony of opinion between medical witnesses.

Within the past few years, many railway and other accident cases have been under my care, the records of some of which I now beg to place before the Association, and trust they will be found not altogether devoid of practical interest.

CASE I. *Concussion: Nervous Debility.*—Aug. 29, 1863. I was in attendance upon D. D., a commercial gentleman, aged 37, for injuries which he had received this day on a railway. An error of the ticket-inspector led to a request that my patient should leave the train, which he declined to obey. Much force was then used by the company's servants to drag him out; but, being a powerful man, and fortified by a sense of right (afterwards affirmed by a jury), he successfully resisted for ten minutes the combined attack. His fellow-passengers then interfered, and he was allowed to proceed on his journey. On his arrival in the City, he visited me, and was suffering from the effects of a violent nervous shock.

He complained of severe pain in the head and vertigo, much sickness of stomach, faintishness, and soreness all over. His face was livid and perspiring, the lips quivering, the eyes suffused, the pupils dilated; the left temple was contused; the limbs were trembling; the speech thick; the skin cold; pulse small, variable, about 90; irregular respiration; inspiration short, gasping; heart's action quick, nervous; diaphragm heaving, epigastrium tender. The body was much bruised, particularly on the sides of the chest, right hip and thigh, and back of the left hand.

I ordered him a stimulating anodyne, and mustard foot-bath; perfect rest in bed, freedom from business anxiety, abstinence, cooling and nourishing drinks. I subsequently resorted to quinine, shower-baths, and other general tonics. Notwithstanding those applications, the symptoms, especially vertigo, persisted for more than a year, when they imperceptibly passed away. The cold shower-bath seemed to have been most serviceable to the patient. The prognosis in this case was not easy. The constant vertigo gave ground to fear an unfavourable

* Read before the Surgical Section at the Annual Meeting of the British Medical Association in Leeds, July 1869.

issue; namely, epilepsy. Dr. Marshall Hall was of opinion that fright, or any sudden mental emotion, would be capable of producing that deplorable malady.

CASE II. Cerebral Concussion: Loss of Memory.—July 28, 1864. I was consulted on the case of T. E., a merchant, aged 45, who, a year and a half previously, had been thrown from his horse and had fallen upon his head. Unconsciousness, vomiting, and relaxation of bowels, followed. The insensibility lasted about three hours. At the vertex the scalp was extensively bruised, but fracture was not discovered. He had since been under surgical treatment in a provincial town.

He almost constantly suffered from acute pain of the head, fits of giddiness, inability to stoop through fear of falling, increasing weakness of the limbs and spine, and loss of control over his movements. His memory had failed him. He found it "impossible to calculate", shunned company, and, when alone, was melancholy. His spirits and strength were daily growing worse; his appetite was bad, sleep disturbed, bowels irregular, urine scanty.

In his previous life he had always been healthy. Since the accident his friends observed that he had become more fleshy, full in features, and absent in mind. He was stooped; the cervical muscles appeared stiff; the countenance was puffy; the eyes had a fixed, unmeaning gaze; the pupils were dilated. He was unsteady and hesitating in gait, unable to walk on a straight line, and staggered if looking down for a little time; he could not make up accounts, but forgot the first figure on his taking up the second; he failed to remember familiar names. His skin was dry and warm; pulse 60, pretty full; heart and lungs normal, respiration slow and oppressed; urine acid, cloudy, and of specific gravity 1.025.

I placed the patient upon a gentle course of mercury, followed by counter-irritants to the vertex, and tonics generally. For the first fortnight his sufferings became aggravated. In the third week the mineral announced its presence in the system, and all the symptoms began to subside. The after-treatment completed recovery in the eighth week. I recently saw him, and was informed that he has since been in excellent health.

The prognosis in this case was doubtful, because of the long continuance and progressive character of the disease. From the history and symptoms, I was of opinion that the concussion resulted in chronic inflammation of cerebral hemispheres and of cerebellum, with some effusion. "How intimately the cerebral convulsions are allied with the mental phenomena of attention, association, and memory", even Willis, nearly two hundred years ago, apprehended; and in our time, we frequently observe how impairment of those faculties follows injury of the cerebral hemispheres, especially of their anterior and superior aspects. In the same way do we, with Flourens and Foville, trace the origin of disturbance in coordination and muscular sense to the cerebellum.

The value of mercury in stimulating the absorbents of the brain in inflammation was here admirably exemplified.

CASE III. Spinal Concussion: Paraplegia.—May 17, 1865. I attended J. T., aged 35, suffering from the effects of a railway accident, which had happened three months previously. He had been sitting in the train, facing the engine, when a collision unseated him, and he fell with great force, the lower part of his spine striking the edge of the seat behind him. He became insensible, and remained so for about a quarter of an hour; his urine and stools passed involuntarily, and the stomach ejected its contents. Since then he had been very ill, had had paralysis of motion and sensation of the lower limbs, and incontinence of the bowels and bladder. He was under treatment in the country, was salivated, and frequently blistered on the back, but felt no improvement.

He now complained of mental and physical weakness, loss of power and of feeling in both legs, pain and soreness of the loins, spine, and back of the head; "pins and needles" in the feet, rigidity of the muscles of the back, giddiness on stooping, capriciousness of the bladder and bowels, pain at stool, priapism, and disagreeable seminal emissions; absence of virile power, impaired vision, cold clamminess of extremities, and loss of flesh.

He stated that before the accident he was robust and muscular; now his general aspect was that of debility and enervation. The features were washy, the eyes staring, the pupils dilated, the conjunctivæ injected; skin cold and perspiring; pulse 64, nervous and feeble. There was much tenderness on percussion over the dorso-lumbar region; he walked in a shuffling way, with two sticks, owing to loss of power of his legs, especially of the right leg; cutaneous sensibility was gone from the knees downwards; there was wasting of the lower extremities, evident from the flaccid state of the muscles, the shrivelled skin, and previous measurement. Before the disaster, the calves of his legs measured fifteen inches; now the right was thirteen and a half, and the left fourteen inches in girth. An ulcer on the right shin had remained unhealed since the accident; the genitals were debilitated, the prepuce inflamed;

the urine dribbled away; it was ammoniacal, with thick mucus, of sp. gr. 1.018; the stools escaped involuntarily.

I prescribed quinine and iron, residence at the sea-side, and other general tonic treatment.

June 22. The patient had a sudden change for the worse. After breakfast his stomach (as usual after partaking of food) became sick, and on his way to the water-closet he fell completely paralysed. On being raised up, his stomach again turned; he threw up blood; urine and stools passed unconsciously. He became chill, and felt difficulty of breathing. I was at once summoned, and found him very low. His skin was bathed in cold perspiration; pulse 60, thready; spirits desponding. An attempt to protrude the tongue caused emesis. He was unable to stir in bed. Suitable restoratives revived him in a short time.

June 30. Finding little benefit from the previous treatment, I now resorted to strychnia, in doses of one-twenty-fourth of a grain, which I gradually increased to one-eighth of a grain.

July 5. He had a second attack of threatened general paralysis; nevertheless, I persevered with the alkaloid for about two months, and had then the satisfaction of seeing my patient restored to health and strength. He is to-day a model of manly vigour and spirit. What was the nature of the injury here? Spinal concussion causing immediate suspension of nervous influence over lower half of body, I believed. What more likely? Have we not heard of fatal results following a strong blow on the pit of the stomach? Abercrombie, Boyer, Erichsen, and others, record cases in which concussion produced death without leaving any discernible pathological changes in the nervous system. It does not appear, as many think, that injury of the capillaries in such case is the immediate cause of death; for we see the trifling occasions which disturb the nervous influence in the system, in blushing, blanching, etc., when certainly the capillaries are not injured. And has not death resulted from fear, joy, etc. merely by the suspension of nervous power?

CASE IV. Concussion: Unusual Dislocation of Elbow: Permanent Injury.—March 13, 1868. I was summoned in haste by J. S., aged 37, who had been precipitated from an outside car, the horse having stumbled in crossing an iron bridge. The patient exhibited symptoms of severe shock. He said he had been cast violently forward, fell upon his left side, and became insensible. The left arm, with which he tried to break his fall, sustained the greatest injury. It was in pronation at the time. The upper and inner surface of the left ulna and internal condyle of the humerus first struck the bridge.

On examination, I observed contusions of the left temple, cheek, side of the chest, abdomen, great trochanter, thigh, and leg. Locomotion was very painful and difficult. The inner and under aspects of the left elbow-joint were also contused. The ulnar side of the left palm was scratched and bleeding. With the right hand he supported the left arm, which was in a semi-prone position, and had a peculiar twist near the elbow. The outline of the limb, just below the external condyle of the humerus, was interrupted by a round, hard tumour—the capitulum of the radius. The tendon of the biceps was extremely tense and painful. The olecranon was more prominent posteriorly, and on a plane three-quarters-of-an-inch higher than that of the right arm. The girth of the left joint at the antecubital space was an inch greater than that of the right. There was much effusion, chiefly between the olecranon and the internal condyle, where also there was great tenderness. The limb was almost powerless; attempts at extension were painful; flexion in the semi-prone position was comparatively easy, as far as a right angle, when a hitch rendered further progress that way impossible. He could not touch his forehead with his fingers, nor endure the pain, weight, and helplessness of the whole limb.

The following was my immediate treatment. I exercised strong downward traction of the arm, and extension of the injured joint over my flexed knee; then, by rapid flexion and supination, the dislocation was reduced. So great, however, was the muscular reaction that, on my relaxing control of the limb, the luxation quickly returned. I again reduced it by a persevering effort, and kept it pretty well in position by a rectangular splint to the under surface of the joint, a firm pad in front of the capitulum, and an evenly applied bandage over all. The limb was then slung to the neck by a wide slip of calico, and rest was enjoined. It is unnecessary to detail the subsequent treatment, which consisted in subduing the inflammation, preserving as nearly as possible in their normal relations the constituents of the joint, and preventing anchylosis, which is often a result of injuries of this character. The patient progressed slowly, but satisfactorily. He had little power of the limb for about a year, and even now has not, and probably never will have, the same flexibility and strength in it which he enjoyed before the mishap.

This form of luxation is unusual and very serious, as involving disintegration of the elbow-joint. The annular ligament in such case is neces-

sarily ruptured, leaving the biceps uncontrolled action over the head of the radius, and rendering complete restoration of the joint impossible.

In a medico-legal view this case is interesting, as showing one of the greatest difficulties upon which medical witnesses have often to give an opinion; namely, as to the permanency of injury. For the reasons above stated, I had little doubt in this case upon that point.

CASE V. *Fracture of Rib: Phthisis.*—Aug. 7, 1868. B. G., a steward, aged 30, sought my advice upon injuries resulting from a railway accident which occurred on the 17th of February. The train in which he travelled ran off the track, and he was thrown violently on the left side of his chest against the opposite seat. He lost his sight and partially his other senses for about five minutes. For the week following he was obliged to keep his bed on account of the excruciating pain or "catch in the side", and the difficulty of breathing which he endured. At the same time he had constant cough and expectoration of bloody sputa, and sometimes of lumps of dark blood. As he was living in the country, distant from a medical man, his only remedy was a mustard-poultice now and then applied to the side. For nearly five weeks after he got up, his respiration was so short and distressing that he was unable to ascend a hill, or to stoop to the ground without great suffering. The side was very tender to the touch, and he could not lie upon it. The breathing subsequently improved, but the cough and pain in the side had never ceased, and were growing worse. Before the sad event, he was stout, strong, always healthy and cheerful: his parents were the same. Six weeks after the accident, he noticed his loss of flesh and strength; he had night-sweats, day-perspirations from trifling causes, and failure of appetite and spirits.

He now appeared tall, lank, but well-formed; his manner was melancholy; complexion dark, eye brilliant black, pupils dilated, cheeks hectic and hollow, teeth white and much denuded of gums, skin dry and hot, pulse 88, irritable; chest very lean, bulging of the heart at the left side; intercostal muscles inactive. The ribs were prominent, and shewed evidence of an united fracture of the ninth rib, about two inches external to the costal cartilage; the infraclavicular regions were sunken; percussion was dull over entire lungs; respiration in both was feeble and rough; in the upper third of the left lung, it was cavernous; in the lower third, at the seat of the injury, were indications of old adhesions.

I prescribed for him anodynes, cod-liver oil, and occasional counter-irritants over the lungs. But, at the same time, I intimated my belief that attention to hygienic means would be likely to do more for him than medicine. He went to the sea-side, and, when last I heard of him, the disease had progressed, and indicated a fatal termination at no distant period.

There are some features of practical interest in this case. The accident was not thought grave until consumption appeared, which no doubt was at least excited by the injury to the lung. Whether the accident was the prime cause of that disease, is still an open question. The history of the patient's progenitors excludes the presumption of phthisical predisposition in him; while on the other hand it may be said that, in their case, no such exciting cause was applied. The necessity of early surgical aid and advice in such accidents was deplorably manifested. The unfortunate victim, unadvised, accepted for the primary injury a paltry compensation. Here, also, the necessity of caution in giving our opinion upon such cases is clearly demonstrated.

CASE VI. *Concussion: Injury of Cervical Nerves: Paralysis.*—Feb. 14, 1868. J. F., an artisan, aged 36, consulted me for intense pain, and paralysis of the right upper extremity, caused by an accident about four months previously. A portion of a lofty roof of iron and glass under which he had been working gave way, and a heavy girder, striking him between the base of the right scapula and spine, felled him to the ground. Insensibility, extensive injury of the right side of the trunk, and paralysis of the right arm, resulted. He was placed under surgical care, and for the first fortnight suffered chiefly from extreme weakness, loss of appetite, and rest. Subsequently a pain of a burning and wearying character attacked the arm, and had never since ceased. For it he was salivated, and the limb was very often hypodermically injected with morphia, which for a time afforded relief, but soon produced, as the patient thought, sleeplessness and mental irritation. He was now pale, sad-looking, bent, and turned as if the spinal column were consolidated. The right arm was in a sling, and was besides supported by the left hand, as if a painful burden. The muscles of the injured limb, including the deltoid and pectorals of the same side, were flabby and wasted, the ligaments relaxed, the head of the humerus drooping from the glenoid cavity, the forearm and hand tumid, the latter puffy and oedematous; the finger-joints were red, across the nails clubbed; the temperature was lower, and the pulse more feeble than in the left arm. Paralysis of motion and of cutaneous sensibility of the right arm was complete; deep pressure of its muscles was intolerable, adding to the weight of the

limb, which was most distressing; there was tenderness on pressure over the second, third, and fourth cervical vertebræ. The lungs were sound, respiration weak, the heart's actions normal; the pupils very much contracted; vision was defective since the use of morphia. The relative measurements of arms were:

RIGHT ARM.	Inches.	LEFT ARM.	Inches.
Acromion to olecranon	15	Acromion to olecranon	13½
Middle of arm	9½	Middle of arm	10
Axilla to acromion	9½	Axilla to acromion	12½
Bend of elbow	11	Bend of elbow	9½
Middle of forearm	8½	Middle of forearm	8
Wrist	6½	Wrist	6½
Internal condyle to styloid	10½	Internal condyle to styloid	10½
Around knuckle	7½	Around knuckle	7½
Chest above mammæ	33½	Before accident	42

A magneto-electric current passed through the arms slightly affected the deep muscles of the right. The effect was much increased by placing one pole of the battery on the spine, the other in the right hand; the right deltoid and biceps most strongly responded. During the application the pain was intensified; soon afterwards the patient felt great ease for some hours, and more flexibility of the spine. This remedy, with strychnia in small doses, counterirritation to the spine, and attention to hygienic measures, constituted my treatment. After the first month he was enabled, by revived muscular power, to move the right elbow from the side six inches, and to approximate the thumb and index-finger. The wasted muscles were enlarging, as measurement showed, which it would be tedious to detail. There was much jerking in the limb; and his condition in every respect was improved. He continued attendance upon me at irregular intervals for about two months, and on all occasions experienced great relief from the electricity. He then left the city, and I have no further knowledge of his health. He may possibly recover through the action of the strychnia, aided by favourable hygienic circumstances. The primary injury here appears to have been twofold—concussion of the spine and contusion of the posterior cervical nerves; the first causing immediate paralysis of the arm, the second resulting in neuritis of its nerves. The latter complication leaves me less hopeful of the ultimate restoration of the patient.

CASE VII. *Fracture of Fibula, and Dislocation of Tibia.*—Dec. 4, 1868. P. N., aged 30, when walking to-day, stepped upon a worn-out grating; his right foot went through it, and he was thrown down on his right side. "The foot was wrenched; he grew faint, and trembled all over." He now suffered great pain on the external side of the right ankle, especially on resting the foot upon the ground; soreness of the right hip, thigh, and groin. The foot was much swollen around the instep, the inner malleolus was very prominent; the toes and outer side of the foot were everted, and the veins were enlarged at the external ankle. The joint was very hot, and so sensitive that a satisfactory examination was impracticable. I, therefore, ordered a few leeches to be applied to the injured part, and afterwards a bran-poultice. Next day, I discovered fracture of the fibula, about two inches from its lower extremity, and dislocation inwards of the tibia. There was no crepitus, but distinct solution of continuity was felt by grasping the external malleolus and the shaft of the fibula. There was, moreover, abnormal lateral motion of the joint. Having steadied the limb in a box-splint with a foot-board, I prescribed a cold evaporating lotion. The inflammatory conditions had so far subsided on the eighth day, that I was enabled to put up the fracture in a starched bandage. In two days the starch had become dry, and I allowed the patient to sit up. He made a good recovery in about a month. The only undesirable consequence of the injury that remained was a weakness of the joint. How long may that continue? and whether the accident predisposes to dislocation from a less cause? are questions of great magnitude in a medico-legal sense, and may be answered differently, according to the experience of surgeons. My observations during several years incline me to the opinion that severe luxation of the ankle-joint is usually followed by weakness of the structures for a considerable time, and a predisposition to recurrence of the injury. In a case which now and then, for ten years, has come under my care, the accident has many times recurred from trifling occasions; the joint, from repeated inflammation, has become much enlarged, stiff, and somewhat ankylosed. In this case, however, the patient was obliged, by his calling, to use the joint sooner than was advisable.

In the treatment of such fractures, I have found the starched apparatus invaluable, and have set forth my experience of its usefulness in the *Medical Press*.

It appears to me that, in all accident cases, there is especial need of patient investigation of the history of the occurrence, and of the development of symptoms, by which we procure, as it were, a plan of the citadel of our enemy, and so learn the best mode of treatment. The

necessity of perseverance in certain remedies such as mercury, strychnia, counterirritants, etc., is obvious. In a medico-legal aspect, such cases are neither prepossessing nor exceptional. All forensic medicine should be reformed and systematised. The public good, the dignity and interest of our profession, alike require the establishment of some professional authority whose opinion upon medical subjects should be in a sense judicial, and, like a judgment, might be subject to revision. Such an institution would relieve judges and juries from the difficulty of reconciling contradictory medical opinions; counsel would be spared the necessity of resorting to the fallacious and opprobrious argument that "doctors differ"; and we, as brothers of a noble and learned profession, would become more united, and be more respected by mankind.

Mr. President and gentlemen, I now beg to thank you sincerely for your kind attention to my contribution upon the important subject of accidents. The originality of the cases may perhaps clothe with some freshness ideas of the fathers of our art. I shall consider myself honoured and rewarded if my small but willing effort add but one grain to that mighty island of surgical knowledge which, like a coral isle of the ocean, has been accumulating from age to age.

WOUND OF THE HEART BY A NEEDLE: DEATH.

By FREDERICK WRIGHT, Esq., Stamford Bridge.

On Tuesday, August 17th, S. V., a boy five years old, stuck a common sewing needle in the front of his dress. During the dinner hour, when cutting a stick, he drove the needle into his thorax. The boy endeavoured to extract it by pulling the thread, but, unfortunately, broke the needle, and threw away the upper portion which was attached to the thread. He told his mother of the occurrence; she examined his chest and saw a slight mark, but no bleeding. As he complained of no pain, she allowed him to return to school, thinking that the whole of the needle was extracted. In the afternoon he was pale, and sleepy, but remained free from pain. On Wednesday, he complained of pain in the chest, which was relieved on fomentation, and afterwards troubled him only when he coughed.

On Thursday morning he had pain in his chest, neck, and shoulder. His mother again fomented him, and applied a mustard poultice to his chest. After this, he was so much better that he played and looked as cheerful as usual. On Thursday night he walked up stairs, and went to bed. Soon afterwards his mother, hearing him call, ran upstairs, and found the child getting out of bed. She carried him down and sent her husband for me. The boy died in half an hour; he was dead before I arrived.

On Saturday an inquest was held. At the autopsy, I found a slight mark over the cartilage of the fifth rib, and about one and a half inch from the middle of the sternum. On pressure, I could detect a portion of the needle projecting about one-sixteenth of an inch from the surface of the cartilage. On removing about an inch of the cartilage, I found that the needle had passed about three-eighths of an inch beyond it, perforating the pericardium, which was enormously distended with dark fluid blood. On removing this, I found around the heart a firm clot of blood, about one-eighth of an inch thick; this being removed, I found that about a square half inch of the surface of the heart was so much lacerated that only a network, consisting of a few shreds of muscular fibre, remained. This gave way under very slight pressure of the finger. The rupture was very near the apex of the right ventricle. There was not a drop of blood in any of the cavities of the heart.

How was it that the boy, with a needle in such a position, could live about fifty-eight hours, and experience such slight inconvenience? Is it not possible that in the first instance the needle ruptured a small vessel in the heart; and this, bleeding slowly into the pericardium, formed the firm clot which I found around the heart, and protected it from further injury except when the boy was placed in such a position as to allow the heart to fall upon the needle, or the rib to be pressed near the heart? If so, the pain was not relieved by the fomentation, but by the position necessary to that operation. When the boy went to bed on Thursday night, probably he lay upon his left side, and more or less upon his face; if so, the two forces, gravitation of the heart and pressure on the rib, would bring the point of the needle into the closest possible contact with the heart, and hence the sudden cry of pain, the rupture, and gradual filling of the pericardium with blood. I think that the fact of the boy living half an hour afterwards may thus be explained. The rupture not being complete, the blood would have to be gradually squeezed through a network of muscular fibre.

It is to be regretted that surgical aid was not applied for at an earlier date, as the needle could have been removed, and, perhaps, a life saved. The complete absence of blood in any of the cavities of the heart leads,

I think, to the supposition, that the external pressure of the blood in the pericardium had so completely closed the right auricle, as to prevent any more from entering the heart, and, in the absence of this, its natural stimulus, it would cease to act at the moment when the last drop of blood was squeezed through the network into the pericardium or into the pulmonary artery.

CLINICAL MEMORANDA.

[Under this head, we shall publish from time to time, as materials accumulate, short records of remarkable cases in practice which are sufficiently rare, interesting, or instructive, to deserve record, but do not call for lengthened statement or comment. Brevity and point should be the valuable characteristics of cases forwarded for this column.]

A TEASPOON THIRTY-SIX HOURS IN THE GULLET.

By R. C. TODD, Esq., Staff-Surgeon Royal Army, Netley.

THE interesting case of the impaction of a tooth-plate in the oesophagus, recorded by Mr. Dearden in the last number of the JOURNAL, reminds me of a case in which I was concerned some years ago in Dublin, and which may be of sufficient interest to publish even at the eleventh hour.

About nine o'clock one evening, as I was on the point of going out to an evening party, a gentleman called upon me and asked me to come and see his wife, who had swallowed a spoon. From the account which he gave of the matter, I was disposed to look upon the case, at first, as one of hysteria; however, to make sure, I took with me the instruments which I thought might be needed, in the event of the story proving true.

I was conveyed to the house in one of those abominable vehicles, now happily extinct, called an Irish "covered kyar", and, on entering the lady's bed-room, I found the patient, calm and collected, seated in an arm-chair beside the fire, with a cup of cocoa on the table "fore-nest" her, as they say in Ireland. She at once motioned to her husband to leave the room, and, having made signs to me to be seated, walked over and locked the door, which, I confess, made me feel a little nervous. She then explained that she had pushed a teaspoon, with suicidal intent, down her throat, and that it had been there for thirty-six hours. She spoke in a whisper, had no pain or choking sensation, and swallowed fluids easily, but did not attempt solids.

On introducing my finger into her mouth and tickling the fauces, the effort at retching raised the spoon against the tip of my finger; and, after three or four attempts, I at last hooked the spoon in the top of the bowl, and out it came.

It was a small-sized teaspoon of Britannia metal, and, fortunately, had been pushed down handle foremost, and with the concavity of the bowl looking backwards. I attended for two or three days subsequently, but no bad symptom followed.

The circumstance was brought to light by the lady having sent for her priest, to whom she confessed the deed, and who insisted on her at once informing her husband.

TOXIC ACTION OF QUININE.

By W. B. HEMMING, Esq.

A CASE similar to that related by Mr. Garraway in the JOURNAL of October 9th, illustrative of the occasional idiosyncratic intolerance of quinine, has very recently occurred to me. It is the first time in twenty-five years' practice that I have seen such effects follow its administration; and, so far as my reading extends, I am not aware that they are mentioned by any writer on therapeutics as among the toxic qualities of that drug.

I prescribed for a lady, advancing in life, who was recovering from a very severe accident, a mixture containing one grain of quinine in each dose. The next morning I received an urgent request to visit her, as she had "passed a sleepless night, and a rash had shown itself all over the body." I found this to be the case. The rash was as vivid as in scarlatina, and attended with intolerable and incessant itching; there was slight puffiness of the face, but no œdema elsewhere; a white tongue, and slight uneasiness in the præcordia. My patient immediately said, "I know this is the quinine, as it occurred twice before, and more severely, when I took it in France, some years ago." A made minute inquiry as to her diet, etc., but could not discover anything to account for the rash. A highly intelligent and cultivated friend who was with her at the time confirmed what had occurred on the former occasions; and she said she had a clear recollection of having seen such an effect mentioned by a French author, accompanied by a theory as to its cause,