up into the throat; he also complained of severe pain in the leg; he also stated that he had two similar attacks in the previous night, which he had not mentioned before. A little brandy was given, and, in a short time, he appeared to be quite recovered.

About an hour afterwards, another summons came, saying the man was dying. All the symptoms of the former attack had returned, with the addition of twitching of all the facial muscles, and insensibility. The inhalation of chloroform, to a very small extent, again relieved him, but not so perfectly as before, the pain in the jaws and twitching of the face remaining. He could not put out his tongue steadily, nor speak distinctly, and had a difficulty in swallowing. His pulse was quick, and face flushed. A poultice was ordered to the leg and foot, a line of caustic was pencilled round the leg, above the inflamed parts, and two drops of chloroform in camphor mixture ordered to be taken every two hours.

At 11 p.m. had had several other paroxysms; the twitching and pain in the jaw continue, but are not so bad, and the pain in the stomach has subsided. To continue the chloroform mixture, and take a draught containing twenty-five minims of liquor opii sedativus.

August 24th. Has slept pretty well, but rambled a little; during sleep even a slight twitching remains, but no violent paroxysm has occurred. He is feverish and thirsty; pulse 112; occasionally rambling. The leg is painful, and the sloughing has increased. Free incisions were made in the leg, which was then covered with a poultice, and ten drops of liq. opii sedat. were added to his mixture.

In the afternoon hæmorrhage occurred from two of the incisions; one was controlled by a compress of lint, in the other, a vessel, which had given way, was divided and tied.

10 p.m. Rather better. To continue mixture, and take three ounces of wine, and some strong beef-tea.

August 25th. Has slept, but is restless, and rambles; no twitchings or pain in the face; pulse 107; leg very painful. Omit liq. opii sedativus, and take a grain of quinine in an ounce of infusion of roses three times a day.

10 p.m. Has had two slight paroxysms in the afternoon, accompanied with pain in the stomach and face, as before; very thirsty; pulse 112. To continue beef-tea, quinine, etc., and to take the chloroform mixture when necessary.

August 26th. Slept but little; pulse 117; is very weak and low; bowels open; has no pain or spasms.

10 p.m. In the evening he has had three or four very severe paroxysms, the limbs being rigid and immovable, a catching in the throat, as if for breath, and violent twitching of the nose and face. Chloroform, which was inhaled to a small extent, relieved him immediately, as it had done when administered on each of the previous attacks; pulse 105; weak. To take a grain of extract of belladonna every four hours.

On the 27th and 28th he had some few attacks. Average of pulse, 105. The sloughing has stopped.

Sept. 3rd. Had a slight attack for the first time since the 28th. The sloughs have separated, leaving three wounds, each larger than the palm of the hand, which discharge a great deal. To have meat, and six ounces of brandy beaten up with eggs, during the day. Continue quinine; dress the leg with ung. zinci, and take the chloroform mixture when required.

Sept. 8th. Has had twitchings once or twice during the last few evenings, once very severely, being unable to speak intelligibly for several hours; pulse 84. Leg looks well; feels better in himself. To keep on with quinine, brandy, and eggs, and have four ounces of wine in addition.

Sept. 30th. Had been gradually better; no more spasms. The leg to be dressed with red wash. Medicines and diet as before.

October 20th. Much better; wounds healing up. There is a good deal of thickening about the instep, and the ankle is stiff. To be done up with strapping from the toes upwards, leaving apertures to dress the wounds.

Nov. 10th. Less swollen; more motion in the ankle. A

small piece of exfoliated bone came from one of the wounds in the leg. Wounds healing fast; has gained flesh.

Dec. 4th. Rambled during the night, and had several shivering fits. Bowels costive; foot much inflamed. To have low diet, and take effervescing mixture, with a quarter of a grain of antimony, and a two-grain calomel pill three times a day. Poultice to the foot.

Dec. 5th. Has rambled a good deal; pain and inflammation in the foot very severe, with erythema, extending up the leg.

Dec. 6th. Has had several shivering fits; the erysipelatous blush has extended up the leg; bowels open. To continue the medicine, and have a line of caustic pencilled round the leg, just above the knee.

Dec. 8th. Rather better, though the erythema still remains.

Dec. 10th. Mouth slightly affected by the calomel, and he has been very sick. To leave off the calomel, and take simple effervescing mixture.

Dec. 12th. Better. Erythema dying away. Swelling in the foot diminishing.

Dec. 15th. Much better; all the wounds closed.

Dec. 20th. Discharged. The wounds perfectly healed; the foot still somewhat swollen, and the ankle stiff. A firm roller bandage applied, and directions given to exercise the ankle-joint gradually.

March 4th. He came to the Infirmary with his leg quite healed, and had free motion in the ankle-joint.

CARNARVONSHIRE AND ANGLESEY INFIRMARY.

SURGICAL CASES.

By HUGH R. HUGHES, Esq., M.R.C.S., Surgeon to the Infirmary.

CASE I. *Eight Fractures, with Severe Contusions: Recovery.* Jonathan Griffith, aged 25 years, a railway labourer, was admitted into the infirmary at Bangor on the 14th February, 1846, having met with the following injuries, caused by a large quantity of earth falling upon the lower half of his body, whilst working in a deep cutting: fracture of the ilium; comminuted fracture of femur immediately above the condyles, implicating the knee-joint; and a severe compound fracture of tibia and fibula all on the right side; double fracture of tibia and fibula, one in the upper and another in the lower third of the left leg, with an extensive laceration of integuments. Both limbs also were greatly bruised.

Upon admission, and for some hours afterwards, he was in a state of collapse, there having been considerable hæmorrhage from the wounds of both legs, particularly the right. Stimulants were constantly given, and hot bottles applied to the body and feet. When reaction was fairly established, the right extremity was placed on a double inclined M'Intyre's apparatus, a many-tailed bandage being used; but before reduction of the compound fracture could be accomplished, it was necessary to saw off a portion of the fibula. The wounds were brought together by adhesive plaster. A broad bandage was passed around the pelvis, to secure the fractured ilium. An eighteen-tailed bandage and common wooden splints were applied to the left leg, which was supported upon pillows; and a full anodyne was given.

It is not my intention to give a detailed progressive account of the case during a period of fifteen weeks; suffice it to say, that great constitutional disturbance arose; both limbs swelled enormously; the injured knee required repeated leeching; the wound of compound fracture sloughed and discharged unhealthy pus for a considerable time. Happily, the pelvic viscera escaped injury.

Feb. 27th. An abscess was opened on the left leg.

March 1st. There was an immense discharge from both legs, which weakened the patient greatly.

April 4th. I made a free incision into an abscess that had formed on the outer side of the leg, where the fracture

was compound: about six ounces of unhealthy matter escaped.

April 6th. I removed splints from the left leg, which was quite firm. A starch bandage was applied. Passive motion was ordered to be used daily to the right knee.

April 22nd. A portion of necrosed bone was extracted from the right tibia, where the abscess had been opened.

May 12th. The wound was perfectly healed; fractures firmly united. Starch bandages and pasteboard were applied, and the patient was ordered to get up daily.

May 28th. He walked tolerably well upon crutches. Both limbs nearly corresponded in length, the right being shorter by scarcely a quarter of an inch; the knee-joint rather stiff, but not ankylosed. Discharged convalescent.

REMARKS. The above was one of those dreadful accidents which were frequently brought into the infirmary during the formation of the Chester and Holyhead Railway; and I have been induced to record it by seeing a case published in the JOURNAL of the 9th of February, headed "St. Mary's Hospital", where there were fractures of four bones, with concussion of the brain, and the patient recovered: here there were eight fractures, three of a very severe character, with a like result. I think also it is a fair example of conservative surgery.

CASE II. *Fracture of Scapula, Clavicle, and Femur; also a Compound Comminuted Fracture into Elbow-Joint.* On the 19th May, 1854, Abraham Pettit, aged 35 years, of the Coldstream Guards, an officer's servant, a remarkably strong, muscular man, while crossing an unfinished bridge in a dark night, missed his footing, and fell into a road below, being a depth of about twenty-five feet. He was admitted into the Bangor Infirmary on the following day (having been conveyed a distance of seven miles), when it was found he had sustained a fracture of the clavicle near its middle, a compound and comminuted fracture of the olecranon and humerus into the elbow-joint, and a fractured femur close to the trochanter—all on the left side. The body of the scapula was also broken through; but this was not detected until after the man's recovery, when, from his extreme emaciation, it was accidentally discovered, firmly united, by an irregularity in the part being both seen and felt, which left no doubt there had been a complete division of the bone. As pain had not been referred to that spot, such an injury was not suspected.

A clavicular bandage, consisting of two leather loops, fastened together at the back by straps and buckles, was applied to the shoulders. After removing many loose pieces of bone from the wound (which fully exposed the elbow joint), it was brought together by adhesive plaster; and the arm, being lightly bandaged, was flexed, and laid on a rectangular splint. The fractured thigh was reduced, and a long straight splint applied. A full anodyne was given at bed-time. Ordered low diet.

May 21st. Arm swelled and painful. Eighteen leeches to be applied; antimonial salines every three hours; calomel and morphia at night.

May 22nd. Complains of the clavicle apparatus hurting his back; so it was removed, and the shoulders left quite free, being merely lowered in bed. Arm easier; swelling less. To have an evaporating lotion. Continue the medicine.

May 26th. More swelling and pain in the arm; great redness around the joint; wound discharging. To have a linseed poultice applied, and the saline and anodyne repeated. The clavicle and femur keep in good apposition.

June 2nd. Phlegmonous erysipelas has set in. Pulse 130, and feeble. The upper arm swollen to an enormous size; deep free incisions made along it; and to have fomentations and poultices applied. To take a calomel and jalap purge, and continue the antimonial medicine.

June 6th. Upper arm three times its ordinary size, and the skin vesicated. Fluctuation detected. An incision made on the outer side of biceps gave vent to a quantity of pus. To be enveloped in a poultice.

June 11th. Swelling still very considerable. Another incision was made at the back of the arm along the triceps.

A free discharge of matter from all the cuts, as also the joint. To take a mixture composed of quinine, dilute sulphuric acid, and bark.

June 18th. Arm better; less swelling; wounds discharging copiously. Complains of great debility, loss of appetite, and night perspirations. Continue the mixture. To have full meat diet, and a pint of porter daily.

From this time there was an evident, though gradual amendment. The joint continued to suppurate throughout July. On the 5th September, he was discharged, with an evenly united clavicle; a useful arm, though of course ankylosed at a right angle; and with the fractured thigh firm, straight, and very slightly shortened.

REMARKS. Inflammation in this case ran so high that at one time the man's life was in the greatest jeopardy; and I believe it was saved chiefly by the deep incisions made along the arm. Fractures of the clavicle, although so simple, are frequently very troublesome to manage, from a difficulty often experienced in keeping the broken ends in correct apposition, as is sufficiently evidenced by the numerous contrivances invented for the purpose; and I would wish to direct especial attention to the method of treatment pursued in this instance—a plan doubtless known to most practitioners, but I believe adopted by few, and first recommended by that pre-eminently practical surgeon, the late Mr. Vincent: viz., by merely keeping the patient on his back in bed for a fortnight or so, without using any means of fixing the shoulders by bandage or other appliance whatever. It is one I have followed for some years, with very satisfactory results. But I also place a wedged-shape pad in the axilla, and confine the elbow to the side by passing a broad bandage round the body. The foregoing case shows that fracture through the body of the scapula may be successfully treated in the same manner.

CASE III. *Strangulated Oblique Inguinal Hernia where the Testicle had never descended: Operation: Recovery.* J. W., aged 56 years, a watchmaker by trade, has for three years had a small reducible inguinal hernia on the right side, which he was always able to replace. He neglected to wear a truss. The testicle on that side had never descended into the canal. On Monday, the 14th of last January, while mounting the cathedral clock, to do some necessary repairs, he fell, and immediately felt a dragging sensation, with increase of size in the rupture; and was unable to return it as usual. Experiencing great pain during the night, he sought medical aid; and various remedies were tried, to give relief, from this time up to Saturday night, the 19th, when I was first called in. All the symptoms of strangulated hernia, including hiccup, were then present: there was also considerable tenderness and redness over the abdomen, and tumour, which latter was of great size, considering that it was bounded by the walls of the canal, and did not protrude beyond the external ring.

Having unsuccessfully given the taxis one steady trial, whilst the patient was in a hot bath, the operation was proposed, and cheerfully acceded to; which I at once performed in the ordinary way, the incision extending over the entire length of the tumour, and being about five inches long. Upon opening the sac, a large quantity of serum escaped. A stricture was found at the internal ring, which was freely divided; yet the intestine remained as firmly fixed as ever. Upon closer examination, after somewhat reducing the bulk of the protruded bowel, by making gentle pressure, and so expelling flatus, the further cause of obstruction was discovered to be a strong, thick, fibrous-looking membrane, so closely embracing the gut that I found it impossible to insert a director or probe between them without using unwarrantable force. I therefore cut, or rather scratched, down through it until the point of the little finger was enabled to pass, upon which the opening was sufficiently enlarged to allow an easy return of the bowel. The wound was then brought together by a couple of sutures, leaving the lower end open; and the patient, having been bandaged, was carried to bed. The bowels acted copiously within an hour after the operation. On the following night, he had a sharp attack of peritonitis,

which yielded to bleeding from the arm, leeches, and calomel and opium; after which he made a good recovery, requiring nothing more than an occasional dose of castor oil, or a common domestic enema.

Lawrence relates, in his *Treatise on Ruptures*, page 209, a case resembling the above in some particulars, but having a different result. In that, there was absence of the testicle on the hernial side of the scrotum; the stricture was situated at the internal aperture; this was divided, and the intestine returned: however, the constipation and symptoms of strangulation continued, in spite of all efforts, and the man died on the following evening. The *post mortem* examination showed that within the abdomen, and just behind the ring, there was a small piece of intestine, perfectly black, and gangrenous, which had been strangulated by a preternatural band of adhesion, extending from the peritoneum, close to the ring, to the mesentery. Had the bowel not been so obstinately fixed in the present instance, it is not improbable it would have been returned also, without our discovering this second stricture,* as it was placed above the internal aperture, and, therefore, not within range of an ordinary examination, more especially as the operation was done by candlelight. Of course, such an occurrence would have been fatal to the patient, and it behoves us not to be content in these cases with a mere easy return of the bowel after the division of one stricture, though that be at the internal ring, but to ascertain most diligently that no obscure adventitious cause of strangulation still remains. I may add that no trace of a testicle could be found.

Original Communications.

CASE OF GLANDERS IN MAN.

By FREDERICK MASON, Esq.

[Read at the Meeting of the Bath and Bristol Branch, Feb. 21st, 1856.]

THE earliest surmise on the possibility of the transmission of glanders or farcy to man, is said to be contained in a work by Waldinger, published in 1810; yet no attention appears to have been directed to this subject; and the fact of its being communicable, appears to have remained unknown to veterinary surgeons until the year 1817, when one of the students of the Veterinary College contracted the disease after having received a small wound on the hand whilst dissecting the head of a glandered horse. "Abscesses made their appearance upon different parts of the body; with matter taken from one of which, Mr. Coleman inoculated an ass; and the inoculation ended in farcy and glanders, and death."

"Professor Coleman, in 1811, pronounced that the horse and his fellows in kind, the ass and mule, were alone obnoxious to the disease known under the appellation of glanders and farcy; that man and all other animals, save these, were as insusceptible of taking such a disease, as animals on their part were of taking certain contagious diseases proper to man, or of taking certain other diseases peculiar to certain other distinct species of the animal creation."

Mr. Percivall says:—"I have scores of times dissected glanderous heads and farcinous limbs, imbued my fingers, heedless whether they had any cuts or scratches upon them or not; in the discharge from the noses of glandered horses, applied even my own nose to the apertures of their nostrils, for the purpose of ascertaining the presence of fœtor; during which, I must have inhaled the very breath of the diseased animal. Scores of times, I repeat, have I done all this, regardless of washing my hands or wiping my face after such examinations; or, at least, until such time as I had leisure and opportunity so to do; and yet,

providentially now I must look upon it—have I escaped every sort of contamination."

Since this time, many very interesting papers on this subject have been published; and I may especially refer to those of Dr. Elliotson, in the *Medico-Chirurgical Transactions* for 1830; Mr. Travers' work on Constitutional Irritation; M. Rayer on Glanders and Farcy in Man, published in 1837; and Mr. Percivall on Glanders and Farcy in Man, in the *Veterinarian* for 1845. The first well-marked case was published, July 1829, in the fourth volume of the *Medical Gazette*; and others have been recorded from time to time in this and the other medical periodicals. At p. 718 of Graves' *Clinical Medicine* (1843), a case of glanders, and one of button farcy in man, is recorded. In the ASSOCIATION MEDICAL JOURNAL for July 22nd, 1853, there is an abstract of the histories of all the cases related during the preceding four years; and in the same journal, April 7th, 1854, is an able paper by Mr. W. I. Cox; so that it is now an established fact that the disease is transmissible from the horse to man, not only by inoculation, but by contagion and infection, and also by the absorption of the poison by the cuticle and mucous membranes, without any abrasion of the surface.

Considering the large number of individuals employed in attendance on farcied and glandered horses, and that in the majority of these cases no greater precautions are now observed than were in Mr. Percivall's time, this disease is still rarely observed in the human subject; so that it would appear that we do, to a great extent, enjoy immunity from it, and that it is only under some peculiar condition of body, such as already impaired health, fatigue, exhaustion, etc., that we become obnoxious to the disease.

Nearly all the cases of this disease having proved fatal, I hoped to have derived some information from the annual reports of the Registrar-General, and for that purpose searched those already published; but, unfortunately, the deaths from this disease appear to be classed with those from erysipelas; and the only mention made of glanders is in a note appended to the table of causes of death in the report for 1841, viz.:—"Under erysipelas are included glanders, two males, aged 32 and 54 years. Glanders, from the matter of a glandered horse, coming in contact with a wound in the thumb, a male, aged 57 years." Also, in the report for 1842, a similar note states:—"Glanders, two males, aged 22 and 46 years."

From such slight data, it is impossible to form a correct opinion as to the annual number of deaths; but knowing that they are few, that the disease is rarely seen in man, and that when it does occur it assumes so many different aspects, that when not clearly traceable to inoculation, it is often difficult of diagnosis, I have thought the following case worthy to be brought before your notice this evening.

CASE. Mr. W. was well known to most of the members of the Bath Branch, he having practised for many years in this city as a veterinary surgeon. He was 58 years of age.

On Sunday evening, Oct. 14th, 1855, he attended Divine Service; as soon as it was finished, he hurried home, complaining of cold shiverings, and acute darting pains in his limbs; he had some warm brandy and water, and found immediate relief, and said he felt quite well again. During the succeeding days, he was harassed in mind, and exposed to cold and fatigue; added to this, he was obliged to leave home for two days: he returned on Friday evening, October 26th. All his previous symptoms were now aggravated, and he soon went to bed. For the next six days, he appears to have remained in bed, to have lived on low diet, and to have taken frequent doses of purgative medicines.

At 10 o'clock p.m., November 1st, I received a message from his wife, asking me, if I passed the house the next day, to call, as she thought her husband was suffering from an attack of rheumatic gout (which appears to be the ordinary form in which this disease attacks its victim). I accordingly called the next morning, nineteen days after premonitory symptoms had set in.

I found him in bed, lying on his back, with a very quick and small pulse, but remarkably soft and compress-

* This structure exactly corresponded with Wilmer's description, in being "annular, thick, and cartilaginous." (Pract. Observ. on Hernia, second edition, p. 41.)