argument, "that our patient's habitual condition was not one of immediate danger". I am disposed, on the contrary, to think, first, that the condition was not a "habitual" one, but a recent one; and, secondly, that it was one of imminent danger. I can scarcely suppose, with Dr. Heaton, that "the fatal syncope could hardly have been anticipated." Dropsy of the pericardium is not common, but hydrothorax on the left side is rather common, and, as one of the reasons for my frequent resort to the trocar in these latter cases, I have constantly said to the students that patients with a pleura distended with fluid are in hourly danger of fatal syncope. Such a termination as that in Dr. Heaton's case, I think, occurs not uncommonly when we least expect it, especially in cases where the effusion has been rapidly poured out.

The elasticity of the pericardium discovered after death is very important. Oppolzer (*Vorlesungen*, Bd. I, Lief. i), among other *à priori* objections to the operation of tapping the pericardium, says that, as the pericardium is an inelastic bag without a vent, its fluid will not run out. Oppolzer's objections have about the value which such objections generally have; and, as to this one in particular, we see that in some cases, at least, the bag is elastic. We can count, therefore, on its reacting upon its contents, as well as upon the rising of the diaphragm and the expansion of the lungs. Dr. Heaton says that, after exposure of the pericardium, "from an accidental puncture, a jet of serum was discharged with some force;" and other persons present assured me that the jet rose to two feet in height, at least, and was visible from all parts of the room.

The next point of importance is that, in spite of its dropsy, the pericardium was overlapped by the left lung to the normal extent, or nearly so. I suppose this observation was made before the "accidental puncture" of the sack; but in any case I hesitate to rely upon the *post mortem* arrangement of the parts, uncontrolled by previous examination, as a guide of their arrangement during life. Many changes take place after death which tend to disturb the relations of the organs to each other. Granting, however, that this overlapping might have made the diagnosis difficult (and, if so, this is a most important clinical fact), yet I cannot see how it should "seriously increase the dangers of the operation." The space of normal dullness is surely amply sufficient for the insertion of the trocar; and, as a matter of fact, in both my cases the trocar was inserted at the upper border of the fifth left cartilage, about a third of an inch from the sternum, a puncture which, even in the present case, would have been perfectly safe. Careful percussion during life would, moreover, enable us easily to avoid any injury to overlying lung.

Dr. Heaton then goes on to say—"We must consider that the operation is never free from danger. This is, no doubt, true, not only of paracentesis pericardii, but of every interference with the human body. But is it quite fair to say, as a measure of this danger, that—"In the majority of cases, I believe, the result has been unfavourable?" Now, let us ask, first, what is meant by an unfavourable result? Clearly, it ought to mean that the operation was itself the cause of death, as in an unsuccessful ovariectomy or amputation; or that it hastened death, as in an unsuccessful tracheotomy; or, again, that while it was of no benefit to the patient, it added much to his suffering. I believe that even this last interpretation could not be established, and I feel sure that the first two could not. The pain of the operation is very slight; and, if performed with a fine trocar (Weiss, No. 1) is, I believe, wholly devoid of serious risk. Again, let us inquire how often the operation has been performed? I believe I am the only medical man who has had recourse to it in England. It has been performed for me once by Mr. Wheelhouse with striking success, in the case to which Dr. Heaton alludes; and Mr. Teale operated twice for me in a second case. In this latter case we had to deal with a "phthisical" effusion in a girl dying of rapid bronchitis of a consumptive character, probably of tubercular character. Her distress from the pericardial effusion was such, that Mr. Teale drew off the fluid for me twice with great relief to the poor girl, whose lung-malady, however, soon killed her. This case can scarcely be counted among the unfavourable results; but it might be placed on the other side.

On the continent the operation has been performed more frequently; but, on the whole, in a very few cases. My own impulse came from Trousseau, with whom I was for many months in close connection as a pupil. He said to me on two separate occasions, "If the need ever arise with you, tap the pericardium; the operation has never yet had a fair trial."

Trousseau was at one time in favour of operation by incision, but I believe that farther experience had modified his opinion. In most of the recorded cases tapping was done in chronic cases as a last resource, and had the success which belongs to last resources, or indeed something more; for Trousseau, Champouillon, and Aran, had each a successful case, with recovery. Henri Roger published a case in the *Union*

Médicale, No. 141, 1868, which resembles that under the care of Mr. Teale and myself. He twice punctured the pericardium in a chronic case, a girl, aged 11. He drew off 100 grammes by the first and 500 grammes by the second puncture, the sack having rapidly refilled. After the second puncture the heart-troubles wholly ceased, though at the time of writing, which was thirty days after the second operation, the girl was in great danger from the effects of disease and dropsy elsewhere. It is very important to observe here that the sac which filled twice did not fill again a third time. In estimating the failures of paracentesis pericardii, the kind of operation ought also to be noted. Riolan trepanned the sternum, but this procedure, supported though it was by the great name of Velpeau, has many dangers and disadvantages and no merits. The scalpel operations, again, whether thoracic (Trousseau) or epigastric (Larrey), are unnecessarily elaborate and have risks and drawbacks which do not belong to the puncture; while, on the other hand, the risks attributed to the trocar operation—the risk, for instance, from non-opposition of the orifices—are found in practice to have no reality. Finally, it is said that serious mistakes have been made in puncturing the pericardium for pleural dropsy or for no dropsy at all. Roux is said to have tapped a dilated heart; and perhaps the less said about it the better. Pleural dropsies, I admit, have been taken for pericardial, and the mistakes were made by no less men than Desault and Larrey. But, in these cases, the exudations were curiously circumscribed and pressed severely upon the heart; so that they were dropsies of the heart in a clinical, if not an anatomical sense. It is said that Skoda once tapped a medullary carcinoma of the mediastinum with the intention of relieving a distended pericardium; but a similar mistake has been made over and over again in cases supposed to be pleural dropsies, without prejudicing the operation of thoracentesis. So far, then, from discouraging the operation of paracentesis pericardii, I would urge upon my friend Dr. Heaton, and upon the profession, that the operation by trocar, if carefully performed, and performed after a careful physical examination, has few risks or none; that it is not an alarming or a very painful operation; and that it gives a chance of life or indeed a fair hope of life in many cases which are now abandoned to death.

CASE OF GRANULAR DEGENERATION OF THE VOLUNTARY MUSCLES.

By EDWARD MERYON, M.D.

I HAVE now under my care at the Infirmary for Epilepsy and Paralysis a case of degeneration of the voluntary muscles, such as I have described in two papers communicated to the Royal Medical and Chirurgical Society, and which the Council have done me the honour to publish in the *Transactions* for 1852 and 1866.

The subject of the present case is a girl aged ten, in whom the peculiar waddling gait is as yet the only symptom. There is, however, a gradually increasing weakness of the muscles of the back and legs, and an entire absence of any indication of nervous disturbance. The girl has neither ache nor pain, nor is there, at any time or under any circumstances, the quivering or starting of the diseased muscles which Cruveilhier has remarked in the cases which he has described as of "atrophie musculaire progressive."

When the patient was first admitted into the Infirmary, I hoped that I had detected a clue to the cause of the disease—as being in the semi-lunar ganglion—in consequence of pain in the region of the epigastrium, which occurred after any little exertion; but that pain was undoubtedly of a dyspeptic character; for no sooner was the child carefully fed than the pain vanished, and for the last seven weeks she has had none of it, notwithstanding that I have made her walk, and use gymnastic exercises as much as she is able to do. For about six weeks her power of walking remained nearly stationary. At one time, I thought it was somewhat improved; and during that time she was under the influence of arsenic.

About a fortnight ago, for no adequate reason, I discontinued the arsenic, and ordered the hypophosphite of soda, with a bitter tincture, and continued the faradisation which has been used from the day of her admission; but, during the period that she has taken the hypophosphite, she has rapidly lost power; so much so, that she can now scarcely stand without supporting herself with her hands. I have therefore resumed the use of the arsenic.

The girl is of healthy parentage, but has a sister, older than herself (about 14), who is similarly, but more, affected. She can no longer stand, and her arms are beginning to be implicated in the disease. A brother, not yet three years old, is already showing symptoms of the disease.

In every case of so-called muscular atrophy which I have seen or read of, in which disease either of the spinal cord or of the medulla oblongata has been detected, some symptoms of nervous disturbance have manifested themselves during life, either in pain, or in tremor, or quivering of the diseased muscles; but in every case which I have described as of *granular degeneration of the voluntary muscles*, there has been an absolute absence of any indication of nervous disturbance, as there is in my present patient. I am therefore induced to continue in the belief which I have heretofore expressed, of an idiopathic disease of the muscles, which is probably dependent on a defective nutrition of the sarcous elements. Every case, also, has begun in the lower extremities, and has appeared to extend in a centrifugal direction, regardless of the course and distribution of nerves. In the case in question, the sacro-lumbalis, the longissimus dorsi, the spinalis dorsi, the quadratus lumborum, and, I believe, the psoas and iliacus muscles are affected, so that the spinal column has nearly lost its sigmoid curves; and if the arsenic fail to arrest the morbid action, the muscles of the thigh will be next diseased, and then those of the legs. When the legs are disabled, I doubt not that the serrati and splenii muscles, the spinati, the deltoid, the biceps and triceps, and eventually the muscles of the forearm, will become successively implicated, in the order in which I have named them.

SINGULAR CASE OF ATTEMPTED POISONING BY LAUDANUM.

By JAMES DOBBIE, M.D., Glasgow.

A SHORT time ago, I was called to see a lady who, I was informed, had swallowed laudanum. On arriving at the house, I found the lady, apparently about forty years of age, unmarried, sitting up in bed, in a considerable state of excitement, and vomiting a dark fluid with a strong smell of laudanum. I encouraged the vomiting by administering mustard and water, and afterwards gave her coffee; and kept her awake most of the night. On calling early next morning, I found the patient well, and none the worse for the dose.

The peculiarities of the case are, that this patient, who at one time had been insane, and who, at the time when I saw her, was labouring under an attack of the same disease, so that it was necessary to send her to an asylum, had, on the day on which I saw her, called on two respectable chemists, and purchased from each one ounce of laudanum; she went home, mixed the two ounces together, swallowed the dose, and retained it for two hours and a half, when she became sick and vomited; she then told her friends what she had done, and I was sent for. I ascertained from the druggists that she had purchased the laudanum; and the ejected matter had all the colour, smell, and appearance of it. Moreover, the laudanum had been taken on an empty stomach; for the patient had partaken very sparingly of potatoes and milk, at 2 o'clock, and she had taken the laudanum at 6; and it was at 8.30 p.m. that I was sent for and saw her. It is singular that two ounces of laudanum should have been swallowed by a person not accustomed to it, taken on an empty stomach, and retained for two hours and a half, without producing any deleterious effect—not even the slightest inclination to sleep.

CLINICAL NOTES.

(Reported from the Practice of Dr. WILKS, at Guy's Hospital.)

VI.—TIC DOULOUREUX CURED BY GALVANISM WHEN ALL MEDICINES HAD FAILED.

THE following case is reported by Mr. Blenkarne.

Sophia C., aged 60, was admitted January 7th, 1870, under Dr. Wilks. In August 1869, the patient first began to suffer from neuralgic pains in the left side of the head, referred to the upper part of the left frontal region, and extending down the left side of the nose. At first, the pains were slight and transient, but they gradually became worse and more frequent, until now they were most excruciating in character, and brought on by slight causes, such as blowing the nose, talking much, or eating. The nerve involved appeared to be the first division of the fifth. She had lost all her teeth on that side; and in consequence of that and of the pain which attempts at mastication caused her, she was obliged to chop her food very small. She never had rheumatic fever nor ague; and, excepting for the present complaint, was in good health. She was ordered three minims of tincture of aconite three times a day; this was gradually increased until it reached seven minims on the 27th. During this time she was upon the whole

no better; the paroxysms which came on at times were of the most violent kind. On February 1st, she was ordered a drachm of chloride of ammonium every six hours. On February 7th, being no better, she was ordered half a drachm of hydrated peroxide of iron and three grains of sulphate of quinine every four hours. On February 11th, she was no better, and was ordered 15 grains of bromide of potassium every four hours. On February 17th, she was no better. All medicine was ordered to be omitted, and a continuous current of galvanism from 25 batteries to be applied. After this she gradually improved. On the 28th, she expressed herself as much better. On March 7th, she had hardly any attacks of pain. On March 15th, she was steadily improving, and had scarcely any pain in the face. On March 18th, she went out, saying that she was quite well.

PROFESSOR FLOWER'S HUNTERIAN LECTURES ON THE COMPARATIVE ANATOMY OF THE MAMMALIA.

Delivered at the Royal College of Surgeons of England.

LECTURE XVII.—Wednesday, March 23rd.

IN Carnivora, the number of digits is never less than five, except in the Hyæna. As a general rule, the thumb is comparatively small, and does not readily reach the ground in the Dog and other digitigrades; but in the plantigrades, such as the Bear, it is more developed. There is generally a kind of symmetry in the length of the digits; the third and fourth being the largest, and the second and fifth smaller and nearly equal. The first is the shortest. The number of bones in the carpus appears reduced; there is a fusion of the intermediate and radial bones (the scaphoid and lunar), forming what has been called the scapho-lunar bone. This is found in the Seals, as well as in the terrestrial Carnivora. The pisiform bone is well developed; and nearly all the Carnivora have a sesamoid bone on the radial side. There is no os centrale. Most Carnivora have a peculiar modification of the last phalanges for the support of large claws. In the Lion, for instance, the ungual phalanx forms a flat compressed plate, from the base of which grows a kind of sheath enveloping it, and leaving a space in which the nail or claw is attached. In the Dog, the outer sheath is shorter, and the claw is straighter and less powerful. In the Bear, the outer sheath is more extended than in the Dog. In order to provide for keeping the claws in an effective condition, there is in some Carnivora a peculiar arrangement for retracting them; the last phalanx is capable of being bent back on the next, which is specially hollowed to receive it. A strong elastic ligament holds the retracted phalanx in position; and the claw, when protruded, is drawn down by the tendon of the flexor muscle. In the Seals, the hand is broad and somewhat flattened, but the ulnar side of the carpus is much aborted, as in many swimming animals; so that the fifth digit is not only articulated to the unciform bone, but is drawn up to the cuneiform bone in the first row.

In Insectivora, as the Hedgehog, there are almost always five non-retractile claws. The scaphoid and lunar bones are generally connate, and the os centrale is often present. In the Mole, the hand is very large and broad; the number of phalanges is normal, and the os centrale is present. The ungual phalanges are disproportionately developed. At the outer or radial side of the hand there is a bone at first sight resembling a sixth finger, but in reality only an extra developed sesamoid bone; it has been called the os calciforme, and is apparently intended to give breadth to the hand.

In Chiroptera, the carpus is small, and presents great tendency to union of bones in various combinations. The fingers are much elongated, to support the membrane used in flying; the thumb is always free, and has a large hooked claw at the end. The third digit is especially lengthened; the other digits are sometimes reduced to two phalanges, as in the Pteropus.

Rodentia nearly always have five well developed fingers; but sometimes the first is abortive, as in the Capibara. The digits generally have the same relative length as in the Carnivora. In the Beaver, the scaphoid and lunar bones are united, and there are a well marked os centrale and a distinct sesamoid on each side. The Capromys and Capibara also have the scaphoid and lunar bones joined, and an os centrale.

Cetacea alone among Mammalia have more than three phalanges; sometimes there are as many as twelve or fourteen. There are mostly