

ing two experiments, and by relating to you the particulars of a very interesting case which I recently met with at the Hôtel Dieu. One of these experiments will consist in injecting some blood from a mammiferous animal into the circulating system of a bird; the other in introducing some reptile's blood into the veins of one of the mammalia.

I have had the temperature of the injection for the first experiment raised to 42° centigr. The jugular vein of this goose has been laid bare; I now make a small incision in its coats, to allow of the introduction of this little silver syringe. Although I push the piston very gently the movements of inspiration become more and more violent; indeed, animals of this class suffer extremely from such experiments as these. I have now filled and emptied the syringe three times into the animal's veins; that is, I have injected about four centilitres, an enormous quantity, when one remembers that birds have, comparatively speaking, much less blood than the mammalia.

The dog now laid on the table is the one that has already had two injections of frog's blood into its veins; it does not appear to suffer much inconvenience from them; after we part I shall have a new dose introduced. The results of both these experiments shall be made known to you in my next lecture.

The case to which I propose now, in a few words, to direct your attention, is that of a little girl of ten years of age, who was placed in my wards about a month past with an organic affection of the heart, according to the hospital register. On examining her I found that the first sound, that produced by the shock of the point of the organ between the fifth and sixth intercostal spaces, either did not exist at all, or was masked by a very loud and prolonged friction sound. In spite of all the laborious research that has been bestowed on the diseases of the heart, the diagnosis of them is not always easy; in the case I speak of, for example, the friction sound might have been the effect of contraction of the aorta; but I felt disinclined to adopt that opinion, because the pulse was full and strong; the only other condition of serious import presented by the patient was a slight bluish tint of the lips. Several days had passed, and the patient was rather in a satisfactory state; she was even preparing to leave the hospital, when, almost quite suddenly, her whole body presented the certain marks of well-characterised cyanosis: in four and twenty hours she had ceased to live. The autopsy, carefully performed, brought the following state of things to light, as you will have an opportunity of seeing for yourselves by-and-by. The aorta and semilunar valves are perfectly healthy; here, then, no cause existed for the friction sound we had heard during the patient's life. But the pulmonary artery pre-

sents a very marked state of disease; it is extremely contracted; its greatest diameter scarcely measures two and a half, or three lines. Now, as direct experiment teaches us that whenever a liquid passes suddenly from a large to a smaller vessel a friction sound is produced, we can have no difficulty in comprehending how the sound in this girl was caused. It is to be presumed, that the limited width of the pulmonary artery was here, to a certain extent, a congenital defect, for the vessel has only two, instead of three sigmoid valves.

In addition to this contraction of the pulmonary artery, you observe that there is an opening at the upper part of the septum of the ventricles, measuring two lines by three. It is probable, however, that the quantity of venous mixed with arterial blood was very small, or the cyanosis would have appeared sooner and been more highly developed. I am strengthened in this opinion by the fact, that as the ventricles dilated and contracted at the same moment, the liquid in each cavity must have acted as an obstacle to the passage of the other into the adjoining ventricle. The right ventricle has, in this case, almost as thick walls as the left. The septum between the auricles presented a similar opening which, for the same reasons as I have just stated, is not likely to have led to intermixture of the two kinds of blood. I think I may affirm, that death has here been the result of gradual contraction of the pulmonary artery.

CASES OF
LONG-CONTINUED CONTRACTION
OF THE
LOWER EXTREMITIES,

FROM AN AFFECTION OF THE SPINE.

By R. A. STAFFORD, Esq., Surgeon to the St.
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CASE 1.—Jan. 1833. Mary Kean, ætat. 20, a slight-made girl, and of small stature, was admitted into St. Marylebone Infirmary with complete contraction of the right lower extremity, and contraction of the third and little finger of the hand of the same side. She possesses the full power of feeling in both limbs, but the knee-joint is firmly bent and stiff; the calf of the leg rests upon the back part of the thigh, and the heel presses closely upon the nates, the foot being turned backwards. She states that she has been the subject of epileptic fits ever since her infancy; that about two years ago she was seized with violent pain in the spine in the lumbar region; pain in the hip and knee;

and extreme pain along the course of the ischiatic nerve, accompanied with considerable tenderness and increased sensibility of the whole limb. At this period the lower limb became gradually and firmly contracted, and no means employed could prevent it. Some little time afterwards the two last fingers also became contracted, and thrown across the two first on the hand of the same side. She was admitted into one of the London hospitals, where the symptoms became mitigated, but the limbs remained the same.

For the last two years, excepting the contraction, she has continued pretty well, but at present she is suffering from her original symptoms. The pain in the back, hip, and knee, is extremely acute; and the tenderness and sensibility of the whole limb are so great that she cries out at the slightest touch, and she cannot even bear the weight of the bedclothes upon it. On tracing and pressing upon the ischiatic nerve, it is extremely painful and tender. Her pulse is quick; fever high; tongue furred; skin hot and dry, and thirst great. She has constant restlessness and sleepless nights.

These symptoms continued, being more or less violent, for three or four months; and the treatment adopted was frequent abstraction of blood from the lumbar region by cupping; the application of leeches along the course of the ischiatic nerve; the exhibition of antimonials, opiates, and aperients, as often as required, and according to the necessity of each remedy. When the chronic stage commenced counter-irritants were employed and frequently repeated, both on each side of the spine and along the course of the ischiatic nerve, in the form of blisters and the tartar-emetic ointment. Lastly, issues were made and kept open for a considerable time on each side of the spine in the lumbar region.

When the inflammatory symptoms had entirely subsided, the pain in the back had ceased, and the tenderness of the limb had diminished, an attempt was made to unbend the contraction, and bring the limb into its natural state. To effect this purpose small thin pillows were first introduced between the calf of the leg and back part of the thigh, drawing them as near as possible to the flexure of the knee-joint. At first this caused extreme pain, and occasioned several attacks of epilepsy. By degrees, however, the patient was able to bear the treatment. Thicker pillows were then employed, and, as before, occasioned great pain, but which, after the limb was accustomed to them, subsided. When the pillows had been worn for some time (six weeks or two months) the contraction had relaxed sufficiently for a machine to be introduced between the two limbs, and which is so contrived that, by turning a screw, the leg can be gradually extended. It consists of two

splints joined by a hinge at the flexure of the knee-joint,—one resting on the back part of the thigh, and the other on the calf of the leg; a bow made of iron, the extremities of which rest upon each splint, and through the centre of which passes a screw, which is also attached to the angle at the junction of the splints. A nut (as it is termed) is turned on the screw, and presses on the centre of the bow; consequently, when the centre is pressed upon, the two extremities extend the splints.

With this machine the limb was gradually extended, inch by inch, until at length the leg and thigh were as straight as natural. During the progress of the extension friction was employed, and the knee was frequently steamed. The limb was then exercised, and after the period of seventeen months from the beginning of the treatment to the termination of it, the patient was discharged from the hospital cured. The fingers likewise were gradually extended, and returned to their natural use and position.

This case appears to me to be one of great interest, inasmuch as it points out,—First, the nature of these affections; secondly, the treatment necessary to be employed; and lastly, that however firm and complete a contraction of this description may be, yet by perseverance and care, and the gradual and equal employment of extension, the limb can be restored to its healthy action.

That the spine in this case was the seat of the disease is shown by the symptoms; the acute pain in the back, the pain and tenderness of the ischiatic nerve, the pain in the hip and knee, the extreme sensibility of the whole limb, and lastly, the firm contraction of the leg, are all of them symptoms denoting some affection of the medulla spinalis. It appears probable that that portion of the medulla or cauda equina, from whence the right ischiatic nerve derives its origin, was either inflamed or in a morbid condition, and thus the painful affection and contraction of the limb were produced. The ring and little finger of the hand of the same side being contracted also shows that the origin of the ulnar nerve was similarly affected. Independently, however, of the symptoms, the benefit derived from the treatment is another proof that the disease was situated in the spine.

CASE 2.—Ellen Sullivan, æt. 25, a stout, plethoric young woman, of a strumous habit of body, fell down upon her right knee and injured it. She was admitted into St. Marylebone Infirmary, under my care, in February 1835. The synovial membrane was inflamed, and there was considerable enlargement of the joint from the effusion of synovia. Blood was frequently abstracted from the knee by cupping and leeches; counter-irritants were employed; and in six

weeks, or two months, the joint had so far recovered that she was on the point of being discharged from the hospital. The day before the one fixed upon for her departure, however, she was again seized with excruciating pain in the knee, accompanied with pain in the back in the lumbar region. She lost blood from the part by cupping as before; the knee was constantly fomented; and a brisk aperient administered. On the following morning she was no better; the pain was almost insupportable; and, although a splint was placed under the joint to prevent it, yet contraction of the knee had commenced. The pain in the back continued; there was extreme tenderness along the whole side, from the lumbar region down the ischiatic nerve to the foot; and the pain in the knee was so great, that she could neither sleep nor remain quiet a minute together. Her pulse was very quick, averaging from 120 to 130 in the minute; fever high; tongue furred; countenance flushed, and expressive of excessive pain. She was cupped largely from the loins; numerous leeches were applied to the knee and along the course of the ischiatic nerve; fomentations were employed; and purgatives and opiates were administered as often, and in such doses as the symptoms required. The symptoms, however, continued, appearing sometimes to yield to the treatment, and then recurring in a greater or lesser degree. The knee during this time had gradually, but rapidly contracted, and no means employed could prevent it; indeed, any opposition to it, such as using a splint, &c., produced such extreme agony, that it would have been highly imprudent to have resisted it. The calf of the leg at length rested on the inside of the thigh, and the heel on the nates. The knee itself was but slightly swollen, but the skin covering it was tense and shining, and of a scarlet hue.

The acute symptoms lasted two or three months, when they gradually abated. Counter-irritants were now employed on each side of the spine in the lumbar region, along the ischiatic nerve, and on the knee-joint. These were frequently repeated, with now and then loss of blood from the loins and the affected parts, as required. Little amendment took place for two or three months more; during this time every description of medicine which appeared likely to be attended with benefit was administered, but with little effect. To enumerate some of them, without entering into particulars, I may mention carbonate of iron, iodine, veratria, morphia, quinine, hydrocyanic acid, solution of arsenic, the mineral acids, and tonics of every description, &c. But little relief was obtained from any of these remedies. The occasional loss of blood from the affected parts, counter-irritants, with the administration of

opiates, and latterly the employment of mustard cataplasms more particularly, were the only means which appeared to be of any service. Under these remedies and constitutional treatment, after a period of eighteen months, the acute symptoms subsided; the pain in the back and the pain and morbid sensibility of the knee and limb abated. Means were now employed to restore the limb to its natural state; small thin pillows were at first introduced between the contraction of the leg upon the thigh, and their thickness was gradually increased. At length the machine used in the last case was applied; the limb was extended until it was perfectly straight; and by steaming, friction, and exercise, the patient was enabled to use it with perfect freedom.

This case so nearly resembles the last, that but little comment upon it is required. It may be observed that the knee was the original part affected, but that the spine was also implicated is shown by the pain in the back, the pain along the ischiatic nerve, the extreme morbid sensibility of the whole limb, and the inordinate contraction of the leg. The treatment also proves the same. After the recovery of the knee in the first instance, and when the pain returned in it again, but little benefit was derived from treating the joint alone. When, however, treatment was directed to the spine and the ischiatic nerve by the frequent abstraction of blood, counter-irritants, &c., the patient began to amend, and ultimately recovered.

CASE 3.—A young lady, æt. 18, of a strumous habit, fell into bad health. She first found that she had partially lost the power over her legs; she then was seized with violent spasms and involuntary twitchings of the lower extremities. At length these spasms increased, and became so confirmed that the legs were half drawn up in a semi-flexed position, and would remain so, unless they were put down again by another person. At this period of the complaint the case was considered as chorea, and treated as such. No improvement, however, took place; the spine, therefore, was examined, and it was found that five or six vertebræ were diseased, and that there was angular curvature in the dorsal region of the spine, beginning at the fourth dorsal vertebræ. The friends of the patient would not consent to any treatment, consequently the curvature increased, and the contraction of the legs likewise. She remained in this state for a few months, when she came under my care. I found her as above described, and my first object in the treatment was to get the limbs back to their natural position. Leeches were frequently applied to the back, and counter-irritants employed. Under this treatment she improved, some consciousness of feeling in the legs returned, and the contraction became sufficiently re-

laxed to enable me to place her on one of Mr. Earle's beds; but if the limbs were touched or moved they immediately retracted. After she had been under my care for a twelvemonth, improving in health, and there being some slight amendment both in the power of feeling and of motion in the legs, her friends became extremely impatient at the tediousness of the case; they made an attempt, without my consent, to get her up; employed friction, and exercised the limbs. The spasms returned in a violent degree; they extended on to the arms and all over the body. At length she became comatose, and in this melancholy state died. No examination of the body was made.

THE LINEAGE OF ENGLISH PEERS OF ANCIENT TITLES

EXHIBITED BY MEANS OF DIAGRAMS.

By T. R. EDMONDS, Esq.

THE history of the heads of families who have, for many generations, filled the highest and most conspicuous stations among the people of this country, is a subject of considerable attraction, and it is hoped that the present attempt to facilitate the acquisition of one of the most interesting branches of such history will be favourably regarded by the public. The names of English peers are interwoven with the more remarkable events in the history of the English nation, some of these peers bearing titles which have been transmitted to individuals, their descendants, highly distinguished in the present generation; there arises thence a corresponding desire to know the lineage and other particulars in the history of these peers. In the historical accounts of the English Peerage will be found detailed the chief incidents which marked the life of each peer. From such histories, by extracting the dates of birth, accession, and death of each peer, I have been enabled to estimate the law of mortality of peers, which has been published in *THE LANCET*. (Feb. 10, 1838). This law of mortality may be regarded as a new and not unimportant addition to the previous history of the English Peerage. In the histories of the Peerage are recorded, also, the degrees of consanguinity connecting together peers and their predecessors in the same title; it is to a new mode of exhibiting this relationship that the attention of the reader is now invited. In the course of investigating the law of mortality referred to, great benefit was found to accrue from the use of genealogical diagrams constructed for the purpose of obviating defects in the record of dates of birth of peers: By the help of these diagrams (now presented) the degree of consanguinity

connecting together any two peers, however remote from each other, who had inherited the same title, was readily ascertained. Without the help of these diagrams it would have been difficult to obtain any clear and distinct idea of the course of succession, and the mutual relationship between the several individuals through whom the title had been transmitted. In the ordinary written descriptions of the line of descent of any family title, the relationship of any peer is stated with regard to his immediate predecessor only (as son or brother, commonly); the relationship between his predecessor and the latter's predecessor is to be sought for in some other page of the book. In so describing the line of descent, no more than two links of the chain are presented to the view at one time. By means, however, of the diagrams annexed the reader will be able to perceive, at a glance, the whole line or chain of descent, the form it has assumed, and the connection between any two links adjoining or remote. He may perceive how many generations have intervened between the first and the existing peer of any title; he may also perceive how many elder branches have become extinct through failure of male heirs. These diagrams will probably be found to convey readily, and perspicuously, without demanding any strain of the attention, a large amount of interesting information respecting the genealogy of the chief of the English nobility, which has hitherto been almost inaccessible to the general reader.

In the annexed diagrams are represented the lines of descent of 74 titles in the English Peerage. In this number are included all existing peerages of any considerable antiquity, or such as remain after having endured more than four generations, or more than 133 years. Similar diagrams applied to the illustration of the shorter lines of descent of modern peerages, would be of comparatively inferior value. The smallness of the number (74) of existing English peerages, whose origin is of any considerable antiquity, is calculated to excite surprise. In the number just mentioned are included three or four peerages which have recently become extinct, but this excess is compensated by three or four existing peerages having been excluded by reason of some defects which rendered them less valuable in the investigation of the mortality of peers, for which investigation alone, these diagrams were constructed, without the entertaining (until lately) of any intention to offer them to the public. The oldest of the English peerages had endured through 18 generations; the least ancient of the English peerages included in the present list, had endured through four generations in 1838, to which year the statements in the diagrams extend.

It may be proper now to say a few words in explanation of the mode of construction