

loss to determine what to do. The patient's life was one of torture, increased at the time by her cystitis and pregnancy; and while the procuring of abortion was regarded a desperate remedy, it was nevertheless considered, and the idea abandoned. Upon a consultation with the family and friends, and a full explanation of the nature and uncertainty of success in the operation, I decided to attempt reduction by manipulation.

Accordingly on the 10th of August, having selected as the anæsthetic equal parts of chloroform and alcohol, anæsthesia to be maintained by ether, and having prepared the patient on a low couch with pelvis firmly fixed by a T-shaped system of padded straps fastened to the floor and side rails of the bed, I cautiously administered the chloroform to full insensibility, and then grasping the ankle with my left hand, with the bend of my right arm under the knee, giving me perfect control of the limb, I slowly flexed the thigh inward and upon the abdomen, to dislodge and throw out the head of the femur and relax the Y ligament, and then with a circular abduction over the abdomen, brought the thigh to a perpendicular and right angle with the body with slight rotation and sudden and forcible traction in the direction of and against the socket, and then down alongside its fellow. Comparison showing it too short, the same movements were repeated, but this time flexing the thigh less, and making firmer traction perpendicularly toward the socket; this was followed by an *audible snap* announcing the completion of the work, and then bringing down the limb and comparing it with its fellow, I found it to mate it in every particular. To secure it in this position and prevent a luxation on a reaction and contraction of the muscles of the hip-joint, the knee slightly everted was firmly bound to the bed-rail until the muscles and ligaments concerned had become reconciled to the new location of the head of the femur. The operation occupied but *one minute*, and was performed without the aid of any person or machinery.

The patient gained strength in the hip slowly on account of her feeble health, until, at the expiration of about two weeks, by some imprudent movement on her part, she slipped the hip, but it was easily replaced again, the head of the bone taking its place with an audible snap.

The patient's condition now continued to slowly improve, but her pregnancy advancing so rapidly, the predisposition of the hip-joints to slip during this state, formerly so annoying, began to be felt in the

right hip, rendering her almost helpless, besides impeding the recovery of the wounded hip, and indubitable evidence having been furnished of the extreme shallowness of the socket, and of the great relaxation of the ilio-femoral or Y ligament, it was found impossible without the use of the angular splint as recommended by Bigelow (which in her condition could not be applied) to hold the femur steadily in its place; for in defiance of all efforts the femur was disposed to settle upon the lower edge, or just below the socket as the patient lay upon her back. The limb, however, remains the exact mate of its fellow, and foot everted to the same degree as the other, while strength and use of the limb are gradually regained, so that now, October 1st, she moves about on crutches; bears considerable weight upon the foot, and will eventually find it a useful limb, but not much so until after her confinement.

AN INSTANCE OF A SO-CALLED "ENDLESS" NERVE, WITH REMARKS.

By THOMAS DWIGHT, JR., M.D., Boston.

PROFESSOR Hyrtl, in the *Natural History Review* for 1862, called attention to a peculiar kind of anastomosis between nerves in which certain fibres passing from one trunk to the other return to the nervous centres without any peripheral distribution. These he called "endless nerves" (*nerven ohne ende*). The most familiar examples are the anta-hypoglossi formed by the descending branch of that nerve uniting with fibres from the second and third cervical, and also the union of two of the terminal branches of the two hypoglossi in the substance of the tongue.

As far as I know, these nerves have been observed only in human anatomy, so that the occurrence of an example in a lower animal is worthy of notice. The present instance occurred in the face of a common seal (*Phoca vitulina*), in which the second division of the fifth pair is very large, and chiefly distributed to and among the roots of the hairs of the upper lip. The facial is not more than a fourth as large. In this specimen, several of the smallest fibrillæ of these nerves form a network together, as is usually the case; but in one instance a small bundle of fibres of one nerve is seen to unite with one from the other at some distance from their final breaking up, and one small band goes as a loop from one bundle to the other. As the specimen had been detached from the bone before dissection

(which had been undertaken to show the relations of the nerves to the hairs), it is impossible to say how far this loop might have been traced; it could be followed to the point of exit of the fifth nerve from the infra-orbital foramen, where it had been divided, but the facial had unfortunately become dry, so that it could not be traced throughout its whole length. The other side of the head of the seal was too much lacerated by the fatal shot to be available.

The consideration of this subject suggested that sufficient importance had hardly been ascribed to the great number of communications between the different nerves of the cerebro-spinal system, and that a more minute study of these inosculation might tend to throw light on many obscure points.

Anastomoses (using the word loosely) of nerves may be divided into two classes—the apparent and the real. The *apparent* are when one nerve places itself in apposition with another, which it again leaves. A remarkable example is furnished by the ulnar collateral branch of the musculo-spiral nerve, which, joining the ulnar nerve, lies for a considerable distance within its sheath without any interchange of fibres, and finally separates from it to be distributed to the inferior fibres of the triceps. The *true* anastomoses may be subdivided into “endless” nerves, in which the fibres return towards the centre, and into those anastomoses in which they continue together for a common distribution. The latter are again of two kinds—namely, of spinal or mixed nerves one with another, and between two of different nature. The spinal nerves, except most of the dorsal, interchange fibres shortly after leaving the spinal canal and again near the surface; and here the union is rather of small nerves than of minute filaments. Such anastomoses occur in the hands and feet; and it is worthy of notice that in the foot, in the sole, the two plantar nerves, both from the posterior tibial, and, on the dorsum, the musculo-cutaneous and the anterior tibial, although *all* are from the great sciatic, are joined to one another no less regularly than the three distinct nerves—the median, ulnar and musculo-spiral—which supply the hand. The union between nerves of different nature occurs sometimes when they are broken up into fine filaments, as is the case with the facial and the first and second divisions of the fifth pair, but also between the large trunks near their origin, as the pneumogastric, glosso-pharyngeal, spinal accessory and hypoglossal at the base of the skull. The two forms of true anastomosis often exist together, as is indeed the

case with the specimen from the seal, some fibres passing backward to form the loop, while others go onward together.

Hyrthl, in this case, speaks only of coarse appearances, but the microscope reveals similar ones equally instructive. In the cornea of frogs and toads treated with chloride of gold, I have found, not as an occasional occurrence, but as a rule, that many nerve fibres turn backward. Owing to the tortuous course and tangled condition of the various fibres of any one bundle, it is nearly if not quite impossible to follow any particular nerve tube from its entrance into to its exit from the cornea; but it is very easy where a bundle of nerves bifurcates to trace fibres passing between each two of the three trunks which result, and at a short distance to see the same individual fibres take part in a similar arrangement. This is repeated so universally throughout the specimen, between the larger bundles, that it is hardly possible to avoid the conclusion that many fibres have no other destination than to form part of a system of loops.

Taking into account that many fibres of the roots of the nerves have a downward course after entering the spinal cord, it is hard to deny a certain plausibility to the theory that in connection with the ganglion cells the nerves form long circuits, like the wires of a galvanic battery. It is, however, worse than idle to form theories from imperfect data, and the only object of this paper, besides describing the specimens, is to call more attention to this remarkable system of loops, and to point out that by the immense number of anastomoses between its branches, the nervous system, including the sympathetic, may be held to play even a more general and important part in the regulation of the various functions in health and disease than has been attributed to it.

A CASE OF PERFORATION OF THE STOMACH.

By SAMUEL P. FRENCH, M.D., WARWICK, MASS.

MR. B., of Richmond, N. H., aged 55, tall and slim, has been a great sufferer for years from dyspepsia and bilious derangement. He has always been temperate. Although he has been complaining and melancholy for years and was considered by his neighbors to be very nervous, yet for the past eight years he has been confined to his house only six weeks—two last spring, and four just previous to his death.