

PROF. THEODOR BILLROTH.

In simple traumatic and suppurative fever, which does not pass the usual limits, we need generally use nothing but cooling drinks, fever diet, and a little morphine at night, to secure good rest.

If the fever lasts longer and assumes a peculiar character, we may resort to febrifuges. *Digitalis* is of little use, on account of its uncertain action. *Veratrum* reduces the temperature, but appears to do little good in toxic traumatic fevers. *Aconite* was formerly highly recommended, but Dr. BILLROTH has seen no good from it. *Quinine* he has found the most efficacious, especially in intermittent suppurative (hectic) fever, particularly in combination with opium. He gives grs. vj-xvj in the course of the afternoon, followed at night by gr. j of opium.

Of remedies which directly oppose the toxic condition of the blood, he has seen no effect from the mineral acids, the sulphites and chlorine water. Nor has the administration of purgatives or emetics proved of avail. When the skin is dry, we can occasionally do good by inducing profuse perspiration. This may be done by a warm bath, lasting for an hour, and then wrapping in blankets. He has seen patients so low with septicæmia that they were pronounced incurable, saved by this remedy. Copious diuresis does not seem much to affect the general condition.

PROF. D. HAYES AGNEW, OF PHILADELPHIA.

In the surgical fever of vigorous patients, where there is no gastrointestinal irritation, the following antimonial is applicable:

151. R. Antimonii et potassii tartratis, gr. j.
Liquoris potassii citratis, f. ℥ vj.
Liquoris morphinæ sulphatis, f. ℥ vj. M.
A dessertspoonful every two hours.

After the bowels have been freely evacuated, and the circulation has become quiet and the temperature fallen, an opiate may be given; but if it is desirable to exhibit the opium before the pyrexia has abated, it should be given in combination with such articles as tend to increase the activity of the kidneys and skin. The following formulæ embody the best combinations of the kinds in Dr. A.'s experience:

152. R. Antimonii et potassii tartratis, gr. ʒ.
Spiritus ætheris nitrosi, f. ℥ iij.
Liquoris morphinæ sulphatis, āā f. ℥ ss. M.
Aquæ aurantii florum, āā f. ℥ ss. M.
A dessertspoonful in a half tumbler of water, every two hours.

153. R. Morphinæ sulphatis, gr. i.
Misturæ potassæ citratis, f. ℥ vss.
Curacœ, f. ℥ ss. M.
A dessertspoonful every two hours.

TRAUMATIC NEURALGIA AND PARALYSIS.

DR. J. MASON WARREN, OF BOSTON.*

Severe traumatic neuralgia is not an infrequent sequela both of gunshot wounds, amputations and other injuries. Frequently its severity and persistence is out of all proportion to the extent of the lesion itself; a slight wound, where the injury seems to have been to the tissues surrounding a nervous trunk, rather than the nerve itself, being followed by intense and protracted pain.

It is important to inquire into the alleged efficacy of *dividing the nerve* as a remedy in such cases. In answer to this, it may be stated that if the nerve is simply divided, sensation will probably return before the tissues implicated in the original injury have had time to recover their normal condition, and that, therefore, the operation will afford only very transient relief, and may have to be repeated several times. If, on the other hand, a portion of the nerve is excised, the restoration of the nervous function will be very much longer in taking place; but there will also be great danger that the repair will be incomplete, or that it will fail altogether, and thus entail permanent loss both of sensation and motion. The deliberate removal of a long section of the nerve can be but very rarely indicated, and then only as a last resort, as the possible alternative of amputation.

The rational treatment of these affections should be based on the fact that their natural tendency is to recovery, if only we can keep the patient comfortable. This can only be effected by division of the nerve, or by the use, either local or general, of narcotics. Gratifying success, in some instances, has been obtained by the repeated hypodermic use of morphia. In a case of severe neuralgic affection of the median nerve, Dr. WARREN injected half a grain of the sulphate of morphia, in solution, deep under the skin of the forearm twice a day for six months. At the expiration of that time, he laid bare and dis-

* *Surgical Observations.* Boston, 1867.

sected out the nerve, but did not divide it. The edges of the wound were loosely approximated, and water-dressings applied. The pain disappeared, and, under the use of continued injections, the patient recovered.

In a number of cases, Dr. WARREN succeeded without resorting to any operation whatever. His plan was to keep the whole limb in a state of perfect rest, by suitable appliances; to maintain its capillary circulation stimulated by wearing a sleeve of oiled silk, closed at the end, so as entirely to exclude the external air; by an invigorating course for the general health; and by the internal use of iodide of potassium. Warmth and moisture constantly maintained, locally passive motion, with otherwise entire rest of the part, proved most effective in his hands.

No doubt in many cases of traumatic neuralgia, the pain is kept up by infiltrations and indurations in and around the neurilemma; and in case that the suffering does not yield to the usual external and internal remedies, the operation of cutting down upon the nerve is demanded. Several successful cases have formerly been reported by Dr. H. C. WYMAN, of Michigan. (*Peninsular Journal of Medicine*, Oct., 1874.) He dissects down to the nerve, splits open the neurilemma with a sharp bistoury, closes the wound with sutures, and lets it heal by the suppurative process. He claims that the successful issue of his cases demonstrates the feasibility of operative procedures in a class of patients who have hitherto received no benefit from the treatment laid down by medical writers.

In regard to *complete division of the nerve*, this operation has lost much of its serious character since the dread of consequent paralysis has been dissipated. It has been demonstrated by experiment that if a nerve be cut some distance from its termination in a muscle, and its irritability exhausted, it will first show signs of returning irritability nearest its distal extremity. HERRMAN experimented upon the sciatic nerve of a dog, which he exposed high, and cut, and exhausted its irritability. The distal portion of the sciatic being separated from the remainder of the nerve, and entirely cut off from the spinal system, could receive no recuperative power from that source. Yet it was found, after a time, to have regained its irritability, and perceptibly in a greater degree nearest its distal extremity. The interesting question as to how this nerve was able to resume for a time its normal condition, and to give rise to natural phenomena, can only be answered

by admitting that, after being exhausted and rendered completely incapable of reacting to the usual stimuli, it had recovered and been nourished from its distal extremity, whether through its ultimate connection with muscular fibre, or through a grosser circulation which exists between the muscular and nerve tissues.

PROF. THEODOR BILLROTH.

This distinguished surgeon, in treating the pain and stiffness following old injuries, especially of the joints and the parts adjacent, has great faith in *massage*. Looking upon the pain as excited by infiltrations around the nerve-sheaths, he teaches that the resorption of such infiltrations can only take place by permeable lymphatics, assisted by an energetic circulation in the blood-vessels, especially the small veins; and fluxion excited in the parts by the systematic employment of massage, and active and passive movements, favors the resorption of the infiltrations that have been thus dispersed. Those cases must be exempted from this mode of treatment in which the pathological process has led to softening of tissues. In these, as a general rule, the walls of the vessels are also softened, and massage might give rise to extravasation, inflammation and the formation of abscess. The procedure, therefore, requires to be employed with great prudence in white swelling; but in pains and stiffness following old injuries, and chronic rheumatic inflammation of joints, we are able to act more boldly, and surprising results may be obtained by perseverance. The least trust is to be placed in this kneading treatment in those articular neuroses in which there is absolutely no objective abnormality to be found, neither swelling nor infiltration being present.

DR. W. H. WATKINS, OF NEW ORLEANS.

Loss of the power of motion in the wounded limb, to a greater or less extent—in other words, *traumatic paralysis*—is not rare after gunshot wounds; and the treatment is usually quite unsatisfactory. Dr. WATKINS, however, reports a case of paralysis of the deltoid, both of sensation and motion, in which the local application of *strychnia* brought great amendment. (*New Orleans Journal of Medicine*, Jan., 1868.) The formula used was as follows:

154. R.	Strychnie sulphatis,	gr. ij.	
	Chloroformi,	f. ʒj.	M.
	For a liniment. Apply night and morning.		

This solution was thoroughly rubbed into the skin of the affected muscles twice daily, about one-half of it being used at a time. After continuing these frictions for twelve days, the patient complained of an uneasy sensation in the arm, and on pricking the skin with a pin, it was found that some pain was experienced. Passive motion was then ordered, and the application continued. The power of motion gradually returned, and at the end of the fourth week he was discharged, using his arm nearly as well as ever.

DR. JOHN VAN BIBBER, OF BALTIMORE.

This author has urged the treatment of paralysis, especially that from traumatic and toxic causes, by means of the *elastic relaxation* of the paralyzed muscles. (*Transactions of the Medical and Chirurgical Faculty of Maryland*, 1875.) He employs an artificial muscle, made of an india-rubber ribbon, so disposed that the affected limb can be moved by the motion of the nearest portion of the body not involved in the paralysis. He maintains that, in all forms of peripheral paralysis, from injury, cold, toxic influence and the like, where, not being able to restore the nerve to its normal condition, if we can, by mechanical means, give the affected muscles, as nearly as possible their natural motions, we prevent any further degeneration in the muscles, and actually improve the condition of the nerve or nerves.

There are two results, he claims, to be derived from this course of treatment: first, the muscular fibre is improved, and its condition rendered more natural; second, through the improvement of the muscles, the distal extremities of the nerves are affected favorably; and, finally, the whole part is placed in the best hygienic condition to receive the influence of the will, as soon as the lesion should commence to disappear.

DR. S. WEIR MITCHELL, OF PHILADELPHIA.*

Punctured wounds of superficial branches of nerves rarely demand special treatment. Occasionally they are caused by the lancet in bleeding, and give rise to troublesome consequences. The older surgeons were accustomed to treat them by cautery at the point wounded; this was effected by placing a morsel of *potassa fusa* in the lips of the cut; while others made an incision above the wound, or isolated it by carrying the knife around it.

* *Injuries of Nerves and their Consequences*. Phila., 1872.

Mr. PEARSON has reported cases of extreme pain from lancet wounds, in which, after every means had been exhausted, the most remarkable ease was afforded by the use of the following liniment;

155. R.	Olei olivæ,	f. ʒ ijss.	
	Olei terebinthinæ,	f. ʒ iss.	
	Acidi sulphurici fort.,	f. ʒ j.	M.

For a liniment.

This was employed repeatedly, so as to cause the most intense inflammation of the skin of the whole arm. Where it failed to irritate sufficiently, he added a larger amount of the acid.

In regard to *electricity* in traumatic palsy, there is but one practical rule in respect to the form of current to be chosen, and that is, which ever will best act on the muscles is the one to be made use of. Muscles which seem only capable of response to galvanism will more slowly, but surely, amend under the use of a good primary current. Whatever form is employed, it is advisable to lessen the power as the muscles regain their excitability. It is often advisable to interrupt the electric treatment for a month, after it has been continued for two or three months. So, also, if neuralgia comes on during the treatment, it is best to pause for awhile.

The value of *massage* in the treatment of all forms of traumatic palsy is very great. If only the skin is to be acted on and excited, the operator should pinch lightly every part of the surface, and move it to and fro over the adjacent parts. The most intense redness may be brought about in this manner. When the limb is wasted, and there is general sluggishness and loss of motion, the skin may first be treated by gently pinching and tapping it; then the joints are to be moved in turn; and, lastly, the muscles to be acted upon by firmly but gently kneading, rolling and working them, gradually increasing the power employed. A sitting by massage should last about an hour, and should be preceded by a local hot bath.

For traumatic neuralgia, *counter-irritation* is but rarely of value, though the formula given above has occasionally given relief. Veratria and chloroform are of no service. *Aconite* is occasionally useful, but must be employed with extreme caution. Acupuncture is of no avail. Hypodermic injections of narcotics are sometimes demanded by the severity of the suffering. They may prove more or less curative in their action, and, at any rate, give the relief needed to try other and more permanent methods of medication.

Morphia is the only narcotic which can be depended on, and its hypodermic use is superior to any other; gr. $\frac{1}{4}$ is the usual dose to begin with. When its sleep-compelling power is too prominent, we may combine it with atropia.

156. R. Morphiae sulphatis, gr. $\frac{1}{2}$.
Atropiae sulphatis, gr. $\frac{1}{30}$.
For one injection.

In this combination the anæsthetic force of the morphia remains unaltered, but the tendency to sleep is greatly diminished.

Electricity and *massage* may both be employed, with some prospects of success, to give relief to the neuralgia.

The form of pain known as *causalgia*, or "burning pain," is best relieved by water dressings constantly applied. It will get well in time.

In extreme cases of traumatic neuralgia, the general result of experience is favorable to resection of the nerve. It should be done rather early than late in the case, and the resection should include a portion of the healthy nerve, but should, of course, be done at the lowest point possible. Measures should be taken to prevent or delay the union of the nerve as much as possible. With these precautions, the operation will often prove successful.

FREDERICK JAMES GANT, F. R. C. S., LONDON.*

This surgeon directs attention to the fact that in some instances an hysterical constitutional condition not unfrequently causes neuralgic and spasmodic twitchings of the stump, especially, but by no means exclusively, in females. In such cases, no operative interference will be of the slightest use. The constitutional treatment is alone of promise. This is often advantageously prefaced by a change of residence. Depressing circumstances must be removed. The quinine treatment continued for a long time, with moderate doses, sometimes proves curative. If a malarial poison is suspected to be present, preparations of iron, the sulphates, in particular, are more effectual. The urine should be tested for albumen, which, if present, will counteract the restorative effects of the iron. When traumatic neuralgia occurs in females, the menstrual functions should be inquired into, and measures be taken to promote their regularity, if they are disordered.

* *Science and Practice of Surgery*, 1878.

V. SPECIAL FORMS OF WOUNDS.

GUN-SHOT, PUNCTURED AND CONTUSED WOUNDS.—*The Extraction of Balls—Wounds of the Head—Wounds of the Chest—Wounds of the Abdomen—Contusions or Bruises.*

POISONED WOUNDS.—*Charbon (Malignant Pustule)—Dissecting Wounds—Glanders (Farcy)—Hydrophobia—Insect Stings—Poison Oak (Rhus Toxicodendron Radicans)—Snake Bites.*

THE EXTRACTION OF BALLS.

DR. FRIEDERICH ESMARCH, OF KIEL.

In the immediate treatment of gun-shot wounds of all kinds, this distinguished surgeon earnestly discountenances any and all probing or searching for the ball or fragments of bone, clothing, etc. He claims that it is wholly needless, and positively dangerous to examine the wound with the fingers in any manner, as this procedure is certain to introduce septic germs. He urges that, at any rate, the extraction of fragments and balls may certainly be postponed until the patient arrives at the hospital; and even there he would postpone the digital examination until symptoms begin to appear which demand surgical interference, as suppuration, traumatic fever, etc. When these do appear, he would put the patient under the influence of an anæsthetic, and after thoroughly examining the wound, observing all the precautions of the antiseptic method, would endeavor to place the wound under the most favorable condition. If no such symptoms appear, he would assume that no excitants of decomposition had entered the wound, and should be very careful not to disturb it, simply placing an antiseptic covering over the original dressing.

The point of greatest importance in surgical practice for the immediate treatment is the attempt to render all injured bones and joints immovable; and to fix the indications for this method of treatment, it is not necessary to introduce the finger into the wound. All that remains is the application of the first dressing, and here, from an