through the least scratch or abrasion of the cuticle, and the severe pain it occasions at these points.

Electro-puncture.—Faradization through steel or platina needles passed into the deeper tissues is one of the most efficient modes we possess of localizing the current and stimulating them to healthy action, or restoring them to lost contractibility. Triangular shaped needles, similar to those employed by glovers, are best adapted for the purpose; when of steel they should be plated with gold, for their oxidation in the wound during the passage of the electric currents, not only increases the pain, but leaves an indelible stain behind them. Bloodvessels should not be transfixed, nor is it absolutely requisite to pierce a nerve; it is quite sufficient if the needles come in contact with it.

Baths.—Electricity penetrates the skin without difficulty through water, and the application of to and fro currents in a bath, is a powerful means of arousing the action of the system in cases of debility. The hip bath, foot bath, or merely inserting the hands into a basin of water, also gives a ready entrance and exit to the currents if one conductor be put into the vessel, and the other, a moist sponge, be placed above the part to be Faradized. Salt increases the conducting power of the water, and it may be conveniently added to it when operating through the hands or feet.

Sponge Electrodes.—Next in point of penetrability are sponges moistened with salt water, which, when pressed firmly upon the wet skin, act as good conductors to the deeper tissues without electrization of the cutaneous surface, which however becomes momentarily affected on bringing the electrodes into contact with it, or on removing them, whilst connected with the working instrument; this may be readily obviated by crossing the wires of the two poles until the sponges are placed.

Electro-cutaneous Excitation.—When the skin is dry beneath one or both electrodes, the currents flow chiefly along or within its surface, and when intense, act painfully upon the superficial muscles beneath. Before Faradizing the skin, all humidity should first be absorbed by means of a little rice powder or corn starch, then having placed a moist conductor on some other portion of the body, apply a dry one to the part to be excited, or, holding it in the hand, pass the back of the fingers lightly over the surface. The application of the metallic brush, however gentle, is a much more severe mode of arousing sensibility, and is very painful when the cutaneous surface is struck slightly with the extremities of the wires. Duchenne calls this latter *electric fustigation*, and *electric moxa* when the ends are left in contact with it.

Of the Nerves.—The muscles are much better conductors of electricity than the nerves, therefore, when it is desired to apply them to the latter, it should be done where they are most superficial, and in contact with tendons or aponeuroses, or surrounded by cellular tissue; and even in these situations but a portion can be made to traverse the nerves.

Weber has proved, after many interesting researches, that although Faradization of the spinal marrow alone, produces violent contractions in the muscles of the trunk, these contractions arise, not from electricity, but from nerve force brought into action by the stimulus to the cord. And that neither contractions nor heat can be observed in nerve matter on electrical excitation.

Induced currents passed through the sympathetic, or through the organs to which it is distributed, produce contractions in the muscular tissue of the latter, which, however, differ from those of the voluntary muscles in being less energetic and more permanent, and in succeeding each other in an order corresponding to their functions, which they increase.

Of the Muscles.—Faradization of the muscular tissue, is said to be *general* when produced through the nerves, and *local* when applied to the fibres themselves; the latter is more superficial except when a powerful current is employed. Next to electro-puncture, local electrization is best accomplished by means of the sponge electrodes wet with brine, and pressed firmly upon the skin within a few inches of each other, moving them frequently until every part has been brought under its influence.

Excitation of the periosteum is peculiarly painful, and should be avoided when possible.

Paralysis.—Ever since its discovery, Faradization has been recommended as a remedial agent of great efficacy in paralysis, both local and general, stimulating the nerves and muscles in the former, into renewed life and activity, and supplying them in the latter with electrical, in lieu of deficient nerve force; thus keeping up their action and development, and preventing atrophy, whilst nature is restoring the power of the nervous centres. It cannot however be made immediately available as in all forms of local paralysis. In both local and general, the to and fro currents are particularly adapted, and should be applied directly to the parts affected, without passing them through the seat of any recent cerebral or spinal injury. They should be employed for short periods, and be frequently repeated.

Where there has been a separation of a nerve by injury, or even a loss of its substance, with years of permanent paralysis, the patient application of electricity will occasionally be found to restore the action of the muscles supplied by it, showing that there has been regeneration of the nerve filaments in the cicatrix, and that want of stimulus alone has prevented the return of power. After accidents of this kind, the rule is, that when muscular contraction has not been destroyed, the parts should be submitted, as soon as possible, to local electrization; but when lost and insensible, from four to ten months must be allowed for the perfection of the nerve fibres.

Paralysis of the nerves of smell, taste, sight, and hearing, have each occasionally been restored by electrical excitation.

I have had some encouraging, although but partial successes, with it, in loss of smell from chronic catarrh in which I employed the double currents, placing one sponge over the nostrils, and the other at the nape of the neck.

Dr. S. Wells recommends it in cases of strabismus dependant upon paralysis of muscles of the orbit without cerebral lesion; he directs one moist sponge to be placed on the lid over the weakened rectus, and the other to the temple, and begins with applications of five minutes duration daily, increasing them gradually to 20 minutes.

In deafness without evident cause, but deficient cerumen, Faradization is well worthy of a trial. The ear should be filled with water, and weak and slow currents be passed through it from the back of the neck, being careful not to allow the conductor to touch any portion of the meatus or tympanum.

Local paralysis of the bladder with incontinence