

rents than he has advised, without producing excessive pain, but I found it was not always possible, even when the greatest precautions were taken, to avoid uneven work.

"In conclusion, the principal advantages of this method can be summarized under six headings:

- "1. It is entirely free from danger.
- "2. It is absolutely painless.
- "3. It invariably checks excessive hemorrhages.
- "4. It rapidly reduces the size of the tumors.
- "5. It stops neuralgic pains.
- "6. It is a system of treatment of fibroid tumors by electricity, based upon principles which make exact dosage possible."

In earlier articles, I have described Apostoli's method generally; also Martin's modification (just given.) It is yet necessary to make some points plainer, and more practical, that, before concluding, there should be fuller description of what my experience shows to be the best forms of the apparatus that can be obtained in this country; also the best method of managing details of application:

THE APPARATUS.

THE MILLIAMPERE METER.—I place the milliampère meter first, because this instrument is indispensable in the electrolysis of uterine fibroids. Strong currents are used, and these currents cannot be used with safety unless their strength can be exactly determined and measured. By the deflection of the needle, the presence of the current and its direction is indicated, and its strength definitely measured. These instruments should be constructed so as to measure as high as 200 or 250 milliampères; they should either be compared with a standard instrument, or tested by a practical electrician. They are manufactured by J. A. Barrett, and by Waite and Barrett, of New York; by Gaifé, of Paris; and by Störner, of Dresden.

As the adjustment of these instruments is very delicate, they require to be handled with the greatest care.

THE BATTERY.—*The Stationary Battery.* The battery may be either portable or stationary. For a stationary battery, I would use some form of the sal ammoniac battery, and preferably either the "Law prism," or the "Conglomer-

ate."* The internal resistance is low, (about half an ohm) and as the cells are sealed, evaporation is prevented. I do not consider the "gravity," or ordinary telegraph battery, at all suitable for a stationary battery.

The Portable Battery.—The only available portable battery, where strong currents are required, is some form of the plunge battery. The dry batteries, such as the chloride of silver batteries, are very convenient for ordinary medical cases, but the internal resistance of the cell is altogether too high (8 or 10 ohms) to admit of this form of battery being used for uterine electrolysis. All things considered, I do not know of a better portable battery for generating strong currents than the McIntosh battery. This battery, with late improvements, is very easy to manage, and not at all liable to get out of order. The internal resistance is low (less than $\frac{1}{2}$ an ohm), and the electromotive force is high (about 1.75 volts per cell). By means of a bifurcated rheophore, the number of cells in circuit may be increased or diminished without the use of a commutator.

THE RHEOSTAT.—Whenever galvanic currents are used, either for electrolytic or for electro-therapeutic purposes, some means must be used for gradually increasing and gradually decreasing the strength of the current, so as to prevent a shock to the patient. There are three arrangements for accomplishing this: 1. The Rheostat. 2. The Commutator or Switch. 3. The Bifurcated Rheophore. I prefer the rheostat. It is much simpler, and it reduces to a minimum the danger of breaking the current abruptly. For several months I have used almost constantly the Bailey rheostat, described in the December number of *THE PRACTITIONER*. It works very satisfactorily. In the January number of *THE PRACTITIONER*, a case is reported where a patient in Montreal received a severe shock on account of a fault in one of the cells. Had a rheostat been used, this accident could not have occurred. I have recently tested a dry rheostat manufactured by "The Elektron Co.," of New York, but I find that it does not work as evenly as the Bailey instrument.

*These batteries are used with the telephone transmitter.