

PRACTICAL LESSONS IN ELECTRO-THERAPEUTICS.

BY ARTHUR HARRIES, M.D.,
AND
H. NEWMAN LAWRENCE, MEMBER INSTITUTION
ELECTRICAL ENGINEERS.

(Continued from page 124.)

THE ordinary medical batteries are generally arranged with fixed connections in series, and for many applications of electricity to the body this is the most convenient form of arrangement. For the electro-cautery and electro-laryngoscope, &c., it is of great advantage to be able to arrange the cells in parallel. Whenever it is required to pass a large c-s through a low R, as is the case when a cautery has to be heated, cells should be connected in parallel, but when at other times, as generally happens in medical work, a small c-s is required through a high R, the cells should be connected in series.

Having now dealt with batteries, their internal working, and the arrangement of their cells, so far as the generation of continuous currents is concerned, we proceed to give definitions of a few terms employed in their use. It will be best to arrange them alphabetically:—

ANODE.

The electrode attached to the positive pole.

CIRCUIT.

The system of conductors by means of which electricity flows out from and returns to the battery or other generator. For instance, a patient, a galvanometer, the electrodes, and rheophores, when all connected together electrically to the poles of a battery form a circuit.

CONDUCTORS.

A conductor is any substance which will allow electricity to pass through or along it. Ordinary conductors are wires of some metal, such as copper, silver or iron. The human body is also a conductor under certain conditions.

CURRENT.

The quantity of electricity flowing through or past any point in a conductor during any given time.

ELECTRODES.

The conducting media of many and various forms which are connected to the distant ends of the rheophores, and are used to conduct electricity to the patient by direct contact with his body.

INSULATION.

This consists in the isolation or confinement of electric currents and charges in such a manner that

they do not escape from their proper conductors. All substances which are bad conductors are insulators more or less—e.g., silk, india-rubber, gutta percha, dry air, glass, wood, &c.—but none are perfect insulators. The difference between the conductivity and insulating power is one of degree only. A substance which might be a fairly good *insulator* for a current of low E.M.F. might be a fairly good *conductor* for one of high E.M.F.

KATHODE.

The electrode attached to the negative pole.

RHEOPHORES.

The flexible conducting wires which conduct electricity from the terminals of the battery or switch board.

SWITCH BOARD.

The board usually placed at the top or front of a medical battery (but which may be quite separate) on which the knobs, buttons, screws, switches, &c., are placed, and from which electricity may be taken to a distance from the battery. This is sometimes incorrectly termed the *element board*.

TERMINALS.

The termination of the wires which conduct electricity from the cells to the switch-board. They are sometimes called binding screws, or binding posts.

In bringing this lesson to a close we desire to call attention to the fact that we have so far dealt with the generation and control of continuous currents only. Other forms of current and their generation will be considered in a future lesson, but at present we content ourselves with the consideration of the continuous current drawn direct from the battery.

(To be continued.)

PRIVATE NURSING.

A PAPER READ BEFORE THE BRITISH NURSES' ASSOCIATION,

BY HELEN FOGGO-THOMSON.

(Continued from page 127.)

I KNOW cases in which Nurses, discharged for serious faults from one institution, have been immediately taken on at another, and probably everyone here to-night has heard of similar cases. I do not say that this is done knowingly, but I adduce it as a clear proof of the powerlessness of the public and of Medical men to prevent ignorant or bad Nurses being palmed off upon them again and again. I firmly believe that nothing would so greatly advance the condition of the Nursing

[previous page](#)

[next page](#)