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ADDRESS OF THE PRESIDENT OF THE ROYAL SOCIETY[1]

By Sir HENRY DALE, G.B.E.

THE council's report, covering the period of a year ending September 30, makes mention of the scientific mission to Australia now completed by our Foreign Secretary, Sir Henry Tizard, whom we are glad to welcome on his return. The report does not extend, however, to the later departure for India of our secretary, Professor A. V. Hill. The Government of India, through the Secretary of State, asked the Royal Society to depute a distinguished scientist to visit India for consultation on scientific matters, and in particular to advise on scientific and industrial research in relation to measures of post-war reconstruction and on the coordination of such plans in India with corresponding activities here and elsewhere. We felt that our proper response to such an invitation was to let India have a man of the highest qualification from our own fellowship; and I feel confident that the fellows will approve of our action in releasing for the necessary period our senior secretary, who is also one of our research professors, to enable him to accept this important mission. I ask you, further, to send from this meeting a message to Professor Hill of good wishes for the full success of his undertaking and of hope that one of its results will be to strengthen the bonds of understanding and true comradeship between our Indian colleagues and the men of science of this country. In that connection I ought further to report to you a step which I have taken, with the approval of the council, and for which I have not found any precedent in our records. It was brought to my notice that of the six distinguished Indian men of science who are at present on the roll of our fellows only two have hitherto been able to present themselves here in order to subscribe the obligation in our charter book and to be admitted according to the statute. It seems certain that the war will create still further difficulty and delay for the attendance here of the other four, and I have accordingly

[1] Delivered at the 281st anniversary meeting, November 30, 1943.

it is in the dioxanes. A slide holder or clothespin should be used to hold the slide during the first two steps. Insufficient time has elapsed to determine whether or not the stain will fade after only one minute of washing. The dioxane solutions should be kept in tightly stoppered bottles when not in use and should be renewed often if used frequently.

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A PRESSURE-CONTROLLED ELECTRIC CIRCUIT

THIS circuit consists of two ordinary bell-ringing transformers and what may be called an electrolytic switch actuated by pressure. It is connected to the ordinary 60-cycle lighting circuit, and the output power is sufficient to light a neon glow lamp or to actuate a sensitive relay.

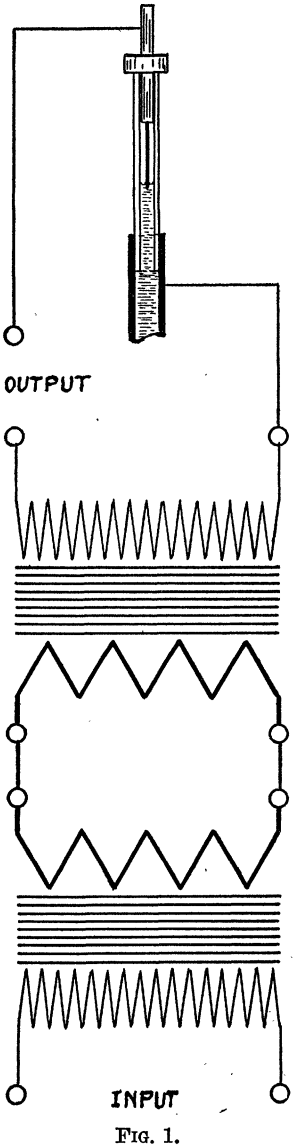

FIG. 1.

The two transformers are connected together so that in effect they constitute a single one-to-one transformer. The power output is from the high-voltage winding of the second of the pair, the low-voltage windings of the two being simply connected together as shown in the diagram. The purpose of the transformers is to permit grounding of any selected part of the power output circuit, and to provide a safe limitation on the power that might accidentally be obtained. The power is so limited that no flash can be obtained, and no shock more than a nip of the finger, by inadvertence or accident of any degree.

The electrolytic switch may be of any of widely various forms. The diagram shows one designed to be actuated by the least fluid displacement. A small metallic rod extends down into a short glass tube. A wire is fixed centrally in the bottom of the rod, extending down to make contact with the electrolyte in the tube. This glass tube is cemented into a metallic sleeve or tube which connects below to the water vessel or source of pressure. One electric connection is made to this metallic tube, the other to the rod above. The action of the switch will be readily understood. What calls for remark is the fact that this arrangement is effective, that it works out advantageously in practice. Ordinary tap water is sufficiently conductive to afford a clear and definite signal even with a 3-watt neon glow lamp. It takes very little to increase the conductivity of the water to the point where a one-watt lamp is lighted substantially as it is when connected directly in the lighting circuit. There is no electrode trouble, because the current is alternating and small.

A striking sensitivity is obtained by connecting a length of rubber tubing to the switch, pinching off the lower end and carefully adjusting the water level and the upper electrode. The adjustment can readily be made so that the circuit is closed by a very slight movement of the rubber tubing or by a very slight pressure.

CARL D. MILLER
NORTH ANDOVER, MASS.

BOOKS RECEIVED

GOLDRING, WILLIAM and HERBERT CHASIS. *Hypertension and Hypertensive Disease.* Illustrated. Pp. xv + 253. The Commonwealth Fund. $3.50.

GRAHAM, VERNE OVID. *Mushrooms of the Great Lakes Region.* Illustrated. Pp. vii + 390. The Chicago Academy of Sciences.

KROEBER, A. L. *Peruvian Archeology in 1942.* Illustrated. Pp. 152. Viking Fund, New York City. $3.00.

MORRISON, A. CRESSY. *Man Does Not Stand Alone.* Pp. 107. Fleming H. Revell Company. $1.25.