A NEW CURRENT INTERRUPTER FOR INDUCTION COILS.

MAY I call attention to the most remarkable electrolytic current interrupter due to Dr. A. Wehnelt, of Charlottenburg, which appears to me to be by far the most important improvement that has been made in connection with Ruhmkorff induction coils for many years. From a description in the *Electrical Review* for February 17 we have made in this laboratory one of these appliances, and tried it on a 10-inch Apps coil. The apparatus is of extreme simplicity, consisting merely of a glass vessel filled with dilute sulphuric acid, into which dip two electrodes. One of these is a plate of lead of considerable area. The other is a glass tube, through the end of which protrudes a short piece of platinum wire, sealed into the glass. The glass tube is open at the other end, and is filled with mercury, into which is dipped one of the wires from a source of continuous electric current; in our case the mains of the Westminster Electric Supply Company. The glass tube is immersed in the acid so that the platinum wire is some distance below the surface, and is within half an inch or so of the lead plate. No condenser is employed, the primary terminals of the coil being directly connected to the supply mains (100 volts) through the electrolytic cell, the positive current being arranged to pass through the cell from the platinum wire to the lead. On turning on the current a rapidly intermittent arc is seen to take place in the vicinity of the platinum wire, apparently between the latter and the dilute acid. Judging from the loud hum, the frequency must be some hundreds per second. At the same time, between the terminals of the secondary of the coil placed some five or six inches apart, a perfect torrent of sparks takes place, which follow one another so fast that the stream appears to be almost continuous. The effect is in fact very similar to that produced with a Tesla high frequency coil, but is much more constant and much less diffuse, while the stream of sparks curls about in a curious and distinctive manner, emitting all the time a very loud and continuous note.

The arrangement seems likely to have wide and important applications in connection with Röntgen-rays, wireless telegraphy, and many other purposes. It is a distinct step towards obtaining, from continuous currents, alternating currents of any desired high frequency without the necessity of moving parts. A. A. C. SWINTON.

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NOTES.

IN view of the advancement of zoological science to be expected from researches in the South Polar Lands and Seas, the Council of the Zoological Society of London have agreed, on the part of the Society, to contribute a sum of 200*l.* to the funds of the National Antarctic Expedition.

THE seventh "James Forrest" lecture of the Institution of Civil Engineers will be delivered by Prof. J. A. Ewing, F.R.S., on Thursday, April 20, at eight o'clock, the subject being "Magnétism." The lecture will be repeated on Friday, April 21, at four o'clock, for the benefit of members and their friends.

WE regret to announce that Dr. William Rutherford, F.R.S., professor of physiology in the University of Edinburgh, died on Tuesday morning, at sixty years of age.

AT the annual meeting of the Russian Geographical Society, on February 2, the following medals were awarded:—The Constantine medal to Dr. Gustav Radde, the director of the Tiflis Museum, for his forty-five years' work in the study of Russia;

the Count Lütke medal to I. I. Pomerantseff, for his researches into the forms of the earth's geoid in the province of Fergana; the Semonoff medal to M. Kleiber, for his investigations into the periods of high water in the Volga; the great gold medal of the Section of Ethnography to N. L. Gondatti, for his three years' work of exploration of the Land of the Chuckchis; the Przewalski medal to L. A. Jaczewski, for his physico-geographical researches in Siberia; and three small gold medals to M. Tachaloff, for his instruction of travellers in astronomical observations; A. A. Rostkovsky, for a map of population in the Bitol vilayet of Turkey; and N. A. Zarudnyi, for researches in Persia; a number of silver medals were awarded for minor works.

THE Reale Istituto Lombardo announces in its *Rendiconti* the award of prizes as follows:—The Cagnola prize of 2500 lire and a gold medal of 500 lire has been awarded to Signor Angelo Battelli and Signor Annibale Stefanini for their joint paper containing a critical exposition of electric dissociation considered principally in regard to the experimental proofs of its deductions. For the Kramer prize, on an essay relating to the use of condensers in the transmission of electric energy by alternating currents and their construction for industrial purposes, two competitors entered, and prizes of 2500 lire and 1500 lire respectively have been awarded to Prof. Luigi Lombardi, of Turin, and Signor Giovanni Battista Folco, director of the electric tramways of Leghorn. For the Fossati prize, on some physiological point connected with the human encephalus, two competitors entered, and awards of 400 lire have been made to both—namely Dr. Domenico Mirto, of Palermo, and Dr. Carlo Martinotti, of Turin. For the Brambilla prize, given for the invention or introduction of some new machine or industrial process of real practical value, seven competitors entered. A gold medal and 500 lire has been awarded to Fratelli Boltri, of Milan, for their grain desiccators; a similar award to Premoli and Zanoncelli, of Lodi, for their preparation of Gaertnerised milk. Gold medals and 200 lire have also been given to Rossi, Enrico, and Co., of Milan, for their manufacture of varnishes, &c.; to Piola Alfredo, of Milan, for artists' colours; and to Pizzoni Pietro, of Milan, for the manufacture of baskets.

THE prizes offered by the Reale Istituto Lombardo for future competition include prizes of the Institution for 1899 for a list of unusual meteorological events that have been recorded from the earliest times, and for 1900 for an essay on collective property in Italy; two triennial medals for improvements in agricultural or industrial processes in Lombardy; a Cagnola prize and gold medal on the subjects chosen by the Institution, viz. in 1899, for an essay on Hertz's phenomenon, or the effect of active radiation or of products of combustion on the sparking distance in air, and in 1900 for a critical study of toxin and anti-toxin; a Cagnola prize and gold medal for 1899 on one of the following subjects chosen by the founder: viz. the cure of "pellagra," the nature of miasma and contagion, the direction of flying balloons, and the methods of preventing forgery of writings; a Brambilla prize for industrial improvements in Lombardy; Fossati prizes for 1899 on the macro- or micro-scopical anatomy of the nervous system, for 1900 on the regeneration of peripheral nervous fibres in vertebrates, and for 1901 on the anatomy of the encephalus of the higher animals; a Kramer prize for an essay on the transmission of heat between the steam and walls of the cylinders of steam-engines; a Secco Commeno prize for 1902 for a description of Italian natural deposits of phosphates; a Pizzamiglio prize for an essay on the influence of socialistic doctrines on private rights; Ciani prizes for popular Italian books, a Tommasoni prize for a history of the life and works of Leonardo da Vinci; and a triennial Zanetti prize for some improvement or discovery in pharmaceutical chemistry.