MANCHESTER.

Literary and Philosophical Society, November 15.—Mr. Francis Jones, president, in the chair.—Dr. W. **Makower** and Dr. S. **Russ**: Note on scattering during radio-active recoil. During experiments on the recoil of radium B from radium A, not only did a surface directly exposed to the recoil stream become active, but surfaces situated outside the direct stream also received active deposit. It was thought that these effects were due to scattering from the surfaces upon which the recoil atoms fell, and experiments were made to test this. These were carried out in a high vacuum, and a plate was mounted in such a way that it was outside the recoil stream coming from an active wire coated with radium A, but so that recoil atoms scattered from a copper reflector could reach it. When the plate was examined it was found to be active, and by measuring its rate of decay with an α-ray electroscope, more than half of the active matter proved to be radium C, and not radium B. This result can be explained if, when the radium B impinges on the reflector, a small portion of it is scattered on to the plate, but the greater part remains on the reflector and subsequently gives rise to radium C, a small fraction of which is then directly projected on to the plate.—D. M. S. **Watson**: Upper Liassic Reptilia. Part iii.: Microcleidus and on the genus Colymbosaurus.

November 29.—Mr. Francis Jones, president, in the chair.—Prof. A. **Schwartz** and Philip **Kemp**: Some physical properties of rubber. Pure rubber strip which has not previously been extended has a large coefficient of linear expansion when tested under loads just sufficient to keep the strip straight. The behaviour of rubber when heated under tension was found to be more complex than had previously been supposed. The previous history of the rubber as to whether it has been previously extended or not largely affects the result. The modulus of elasticity of the rubber probably changes with load and temperature. Considerable change takes place in pure rubber when rested in air for some time at normal temperatures, the strips, which were originally translucent and flexible, becoming opaque and hard. An opaque, hard, and comparatively inextensible condition can be obtained by slightly warming a pure rubber strip and rapidly extending it as far as possible by hand. On keeping it extended thus for a few seconds and then removing the tension it will be found that the rubber remains extended in an opaque condition, but can be brought back to its original dimensions and condition by the application of slight heat. The mechanical hysteresis of rubber has been studied and applied to the testing of rubber. The hysteresis machine was described. A test-piece of rubber, subjected to a series of complete cycles of extension and retraction, was shown to increase in length, according to a logarithmic law, with respect to the numbers of the cycles. The slow stretch of rubber under a constant load also follows a logarithmic law with respect to time. The work done in extension, in retraction, and in the rubber itself, was shown to be proportional to the cross-sectional areas of the specimens.

DUBLIN.

Royal Irish Academy, December 12.—Dr. F. A. Tarleton president, in the chair.—G. H. **Pethybridge** and Paul A. **Murphy**: A bacterial disease of the potato plant in Ireland, and the organism causing it. The authors describe a bacterial disease of the potato plant of frequent occurrence in Ireland, and give an account of the organism which they isolated from diseased plants, and with which successful inoculations were carried out on healthy plants and tubers. It is a multiflagellate peritrichous bacillus, liquefying gelatine and producing decay in the living tissues of a variety of plants in addition to the potato. It resembles in many respects other organisms which have been found causing similar diseases in potatoes both in the Old and New Worlds, but does not appear to be identical with any of them. The name *Bacillus melanogenus* is proposed for it.—A. W. **Stelfox** and Robert **Welch**: A list of the land and fresh-water Mollusca of Ireland. In the introduction the authors give a short *résumé* of the work which has been done in this branch of natural history in Ireland from the time of Captain Thomas Brown to the present day. This includes a list of species added to the Irish molluscan fauna since the publication of Dr. Scharff's valuable work in 1892. The paper is divided into three parts; first comes the list proper, which includes only *bona fide* records, *i.e.* records which are backed up by specimens; secondly, a list of doubtful and erroneous records; and, lastly, a complete list of all species which are known to have been introduced into Ireland in recent years. These are mainly confined to greenhouses and nursery gardens. In the list proper the authors give notes on the principal variation of many of the species, especially that variation which tends to be of interest to those who study the geographical distribution of plants and animals. A full bibliography accompanies the paper.—H. Wallis **Kew**: A synopsis of the false scorpions of Britain and Ireland. The arachnidan order Pseudoscorpiones is represented in the British Islands by twenty-two species, one of which, unknown in Britain, is confined in Ireland to the extreme south-west.

DIARY OF SOCIETIES.

MONDAY, JANUARY 2.

ARISTOTELIAN SOCIETY, at 8.—The Standpoint of Psychology: Benjamin Dumville.

SOCIETY OF CHEMICAL INDUSTRY, at 8.—The Determination of Sucrose (Cane Sugar) in Sugar Factory Products by Clerget's Process using Invertase as Hydrolyst: J. P. Ogilvie.—The Testing of Incandescent Mantles: J. H. Coste and W. E. F. Powney.—Radiation Errors in Flow Calorimeters: J. H. Coste and B. R. James.

THURSDAY, JANUARY 5.

RONTGEN SOCIETY, at 8.15.—The Radioactivity of Thorium: Prof. Rutherford.

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