

difficulties of transport, it has been necessary to give up the proposed reception by Lord Treowen on that afternoon, but it is hoped that arrangements can be made for a visit to be paid to Llanover in connection with one or more of the Saturday excursions.

A long list of works, factories, and other industrial undertakings has been compiled, some of which are sure to be of interest to the various members of the association.

Exhibitions will be a great feature of the meeting. The National Museum of Wales is arranging to display some of its treasures. There will be an exhibition of pictures and charts for school decoration arranged by a committee of the association in connection with the educational section. The botanical section is arranging a special ex-

hibit, whilst collections illustrating the work of the various corresponding societies are being arranged in conjunction with the Cardiff Naturalists' Society.

A reception, specially intended for the members of Section I, will probably be given by Prof. J. Berry Haycraft in the new physiological laboratories of the medical school.

The list of foreign guests who have accepted the invitation to be present includes the names of MM. Bruno and Brioux, representing the French Department of Agriculture; Profs. Cayeux, Laplae, Fauvel, and Yves-Guyot, from France; Prof. Gilson, from Brussels; Profs. Chamberlin, Graham Lusk, and Kofoid, from the United States; Prof. Chodat, from Geneva; Profs. Hasselsbalch and Ostenfeld, from Denmark; and Don. G. J. de Osma, from Madrid.

### Obituary.

PROF. J. R. RYDBERG, FOR. MEM. R.S.

PROF. J. R. RYDBERG, who died in December last after a long illness, made an enduring contribution to science by his investigations of the arrangement of lines in the spectra of the elements. Rydberg was one of the earliest workers on this subject, and he entered upon it with a full realisation of its significance in relation to the structure of atoms and molecules. His classical memoir, "Recherches sur la Constitution des Spectres d'Emission des Éléments Chimiques," was presented to the Swedish Academy in 1889, but he appears to have arrived at his well-known general formula before the announcement by Balmer, in 1885, of the formula connecting the lines of hydrogen.

Notwithstanding the imperfect spectroscopic tables then at his disposal, Rydberg discovered most of the important properties of series spectra, including the relation between corresponding series in the spectra of related elements, and foreshadowed discoveries which were made later, when experimental work had sufficiently advanced. Some of the features noted by Rydberg were observed about the same time by Kayser and Runge, but his work had the special merit of connecting different series in the spectrum of the same element into one system, which could be represented by a set of simple formulæ having but few adjustable constants. He especially insisted that the hydrogen constant, now generally called the "Rydberg constant," should appear in the formulæ for all series, and, apart from slight variations from element to element suggested by the theoretical work of Bohr, nearly all subsequent attempts to improve the representation of series have involved this supposition, and have had Rydberg's formula as a basis.

Other valuable contributions to the subject were made by Rydberg, but the memoir above mentioned is the most comprehensive of his published papers; it is a perfect model of a scientific investigation, and may still be read with advantage by all students of physics.

Much attention was also given by him to the

chemical and physical properties of the elements in relation to the periodic system, and in 1913 he published his suggestive memoir, "Untersuchungen über das System der Grundstoffe." His later work in this connection was seriously interrupted by ill-health.

Rydberg was born at Halmstad, in Sweden, on November 8, 1854, and entered the University of Lund in 1873. He obtained the doctor's degree in mathematics six years later, and after holding appointments in the departments of mathematics and physics, was appointed professor of physics in the University in 1901. About a month before his death he had retired from his professorship on reaching the age-limit of sixty-five years. He was elected a foreign member of the Royal Society in 1919.

THE death is announced of PROF. A. A. INOSTRANSEFF, who was for many years professor of geology in the University of Petrograd. Inostranseff was born in 1843, and began his geological researches in Germany, where he was led to devote special attention to petrology. His first paper, on the microscopic structure of some Vesuvian lava, was published at Halle in 1872. On his return to Russia he made important observations on the opaque minerals in crystalline rocks and on the metamorphic rocks of the Government of Olenez. He also did much geological surveying in the Caucasus in connection with projected railways. His interests gradually widened, and in 1882 he published a volume (unfortunately in the Russian language) on man in the Stone Age round Lake Ladoga. He had much success as a teacher, and among other researches which he encouraged may be particularly mentioned those of his pupil, the late Prof. Amalitsky, on the Permian deposits of northern Russia. The Permian theriodont reptile *Inostransevia* commemorates his name.

WE regret to announce the death, on June 19, of Dr. F. A. Tarleton, senior fellow of Trinity College, Dublin, a former professor of natural philosophy, and president in 1906 of the Royal Irish Academy.