This method of determining the number of electrons in the atom is by far the most direct yet devised, as the interpretation of the experiments does not involve the rather difficult averaging necessary for the compound scattering produced by the electrons.

Now if we make a table of all the elements arranged in order of atomic weights, as is done by chemists for the study of the Periodic Law, and if we number them in this order, starting with hydrogen at 1, helium at 2, and so on, as on p. 53, it will be seen that the resulting numbers are always in the neighbourhood of half the atomic weight. The nuclear charge is by hypothesis some multiple of the electronic charge, and by experi-

ment is about half the atomic weight, and so we are almost forced to suppose that the ordinal number of an element in the table is the same as the number of electronic charges on its nucleus. We do not anticipate an exact correspondence throughout the table, because there may be (and in fact are) gaps in it which represent hitherto undiscovered elements. But apart from this we arrive at the conception of an *atomic number* for each element. The atomic number of an element is defined as the number of positive electronic charges carried by its nucleus, or, which is the same thing, as the number of electrons surrounding this nucleus.

(To be continued.)

Obituary.

CANON C. H. W. JOHNS.

BY the death of the Rev. C. H. W. Johns, Master of St. Catharine's College, Cambridge, and Canon of Norwich, Assyriology has lost another of its most prominent representatives in this country. It was almost exactly a year after the death of Prof. L. W. King that Canon Johns passed away. He had been noted as an Assyrian scholar for many years past; held the post of lecturer in Assyrian at his college of Queens', in the University of Cambridge, for fourteen years; and preceded Prof. King as Assyrian reader at King's College, London. These lectureships he vacated on his appointment as Master of St. Catharine's in 1909. The duties of the head of a college in no way interfered with the continued prosecution of his Assyrian studies, and to the last Dr. Johns was at work on the cuneiform inscriptions to which he had devoted a large part of his life. He was an excellent decipherer of the tablets, and had had much experience as a student of Ashurbanipal's library in the British Museum, to the officials of which, and especially to the late Prof. King, he was always *persona grata* and a valued colleague in science. His most notable publication is probably his "Assyrian Deeds and Documents," published in 1898—a series of copies and translations of a large number of cuneiform legal and other records preserved in the British Museum. He also wrote on the famous legal code of Hammurabi, delivered the Schweich Lectures on the relations between the Laws of Babylonia and the Laws of the Hebrew peoples, and contributed articles on Mesopotamian law and history to various scientific journals and dictionaries, notably to the "Encyclopædia Biblica." His death is a great loss to the scientific study of Mesopotamian archæology.

H. R. HALL.

PROF. ADAM POLITZER, whose death has just been announced from Vienna, was recognised in all lands as the leading specialist of his time in diseases of the ear. He was born in Hungary on October 1, 1835, and, taking his medical degrees at the University of Vienna in 1859, went

abroad to study the anatomy and diseases of the ear, coming to London to work at the pathology of the ear under Mr. Joseph Toynbee, F.R.S. Returning to Vienna, he quickly established himself as the leading exponent of the newest learning concerning the organ of hearing and its defects, and his growing fame drew medical men to Vienna from all parts of the civilised world. The secret of his success was that he founded his methods of treatment on a first-hand knowledge of the structure, action, and pathology of all parts of the ear. He sought to give to the practice of the aural surgeon a foundation on fact, and not the least of his discoveries were made in the fields of normal anatomy.

THE death of SIR CHARLES LYALL leaves a gap in the ranks of the older school of Orientalists, in which field he will be remembered rather than as an eminent Indian administrator. Sir Charles became a member of the Civil Service in the United Provinces of Agra and Oudh in 1867, and, without much experience of district work, he was absorbed in the Provincial Secretariat, and then went to Simla and Calcutta. Much of his service was passed in Assam, of which province he became Chief Commissioner. Transferred to the Central Provinces, his training in administration failed to prepare him for the emergency of the great famine of 1897, and he was removed to the India Office as Secretary of the Judicial and Public Department. Here he was able to resume his work on Indian languages, particularly Hindustani, and he showed his profound knowledge of Arabic by numerous translations of its poetic literature, which he discussed in successive editions of the "Encyclopædia Britannica." Sir Charles Lyall was a tower of strength to the Royal Asiatic Society, of which he was vice-president, working with Orientalists like James Kennedy and Vincent A. Smith, both of whom recently died. His services to literature were rewarded by several honorary degrees, and by the coveted distinction of fellowship of the British Academy.