aeronautical science has made such vast progress. Physical science is also indebted to him for that great work, the "Dictionary of Physics," and in international science he has played a conspicuous part.

ROYAL MEDAL, AWARDED TO PROFESSOR W. H. LANG

Professor Lang's work on the fossils of the Old Red Sandstone is of high scientific importance. It has led to the discovery and description of a new and unexpected group of plants in which root, stem and leaf are not differentiated. For the first time it thus becomes possible to trace in a circumscribed group the probable origin of these structures from a source in which they did not exist as distinct members. The work was begun in collaboration with the late Dr. Kidston and continued by Professor Lang after the death of his colleague in 1924. Professor Lang's previous intensive studies on the morphology of the liverworts and ferns had eminently fitted him to provide a morphological point of view which has given most important results.

DAVY MEDAL, AWARDED TO PROFESSOR A. LAPWORTH

Professor Lapworth's work has been largely concerned with the application of physical methods to the investigation of the reactions of organic chemistry. His study of the bromination of acetone yielded results of primary importance in relation to the reactivity of carbonyl compounds and has formed the basis of many subsequent investigations. His researches on the addition of hydrocyanic acid to organic compounds, besides leading to results of theoretical and synthetical importance, made clear the mechanism of the formation of cyanhydrins. His investigations of the effect of small quantities of water in diminishing the activity of acids in alcoholic solution indicated the existence of the oxonium ion and added considerably to our knowledge of catalysis by acids. Among his more notable synthetical achievements are the synthesis of zingerone, derived from the pungent principle of ginger, and of homocamphor. His work on the mutual influence of groups in the same molecule, his recognition of induced alternate polarity and his classification of reagents as anionoid or kationoid have played an important part in the development of the present state of knowledge of the reactivity of organic compounds.

SYLVESTER MEDAL, AWARDED TO PROFESSOR E. T. WHITTAKER

Professor E. T. Whittaker is one of the best known of British mathematicians, his work showing extraordinary versatility. He has written five books, on entirely different subjects, and numerous papers which touch on almost every branch of mathematics. All his books show, besides their more technical qualities, powers of arrangement and exposition of a most unusual order; and the "Modern Analysis" and "Analytical Dynamics" have had a considerable influence on mathematical thought. Professor Whittaker has made important additions to the theory of the solution of differential equations, ordinary and partial, by definite integrals; to the theory of Lamé and Mathieu functions, the functions of the elliptic and parabolic cylinders and the integral equations associated with them; to the theory of interpolation; and to the theory of the solution of dynamical problems by trigonometrical series. He has also in recent years made a number of interesting contributions to the pure mathematics of relativity, electromagnetism and quantum theory.

HUGHES MEDAL, AWARDED TO PROFESSOR W. L. BRAGG

Professor Bragg's recognition of the fact that the Laue diffraction spectra could be considered as produced by reflection from the planes of the crystal lattice, besides being a great simplification of a difficult geometrical problem, was the starting point of two important and fruitful lines of physical investigation, namely, the measurement of x-ray wave-lengths and the elucidation of crystal structure. Work on the first of these led to Moseley's discoveries and their subsequent developments. Bragg's concentration on the second has resulted in a wonderful extension of our knowledge of the structure of crystals, both simple and complex, and of inter-atomic distances and linkages. His work may truly be said to have laid the foundations of a chemistry of the solid state.

AWARD OF THE CHANDLER MEDAL TO PROFESSOR CONANT

THE Chandler Medal for achievement in chemical science has been awarded for 1931 to Professor James Bryant Conant, chairman of the division of chemistry in Harvard University, according to an announcement recently made by Professor Ralph H. McKee, at Columbia University, chairman of the Committee on the Chandler Lectureship.

Professor Conant will receive the medal at a national gathering of scientific men in Havemeyer Hall, Columbia University, at 8:15 P. M., on February 5. He will deliver the annual Chandler lecture.

The medal, an outstanding distinction in chemistry, was instituted in 1910 by friends of the late Professor Charles Frederick Chandler, pioneer in industrial chemistry, and a founder of the American Chemical Society. The award was established with a gift which constitutes the Chandler Foundation.

Previous medalists include Dr. Irving Langmuir, Leo H. Baekeland, W. A. Hillebrand, W. R. Whitney, F. Gowland Hopkins, Edgar F. Smith, Robert E. Swain, E. C. Kendall, S. W. Parr, Moses Gomberg and J. Arthur Wilson.

The announcement describes Professor Conant as "one of the most brilliant of the younger organic chemists which this country has produced." He was born in Dorchester, Massachusetts, in 1893. From Harvard he received the A.B. in 1913 and the Ph.D. in 1916.

Upon his graduation he became an instructor in chemistry at Harvard University, and in the following year entered the army as a lieutenant in the Sanitary Corps, later becoming a major in the Research Division in the Chemical Warfare Service.

At the close of the war Professor Conant returned to Harvard as an assistant professor of chemistry. He became an associate professor in 1925, and a full professor in 1927. Meanwhile he had acted as a visiting lecturer at the University of California Summer School.

Professor Conant is a former chairman of the Organic Division of the American Chemical Society. He is the author of "Organic Chemistry," and joint author of "Practical Chemistry." He has written a series of papers on subjects relating to physical organic chemistry, in which field he has been extensively engaged.

His research has included work in reduction and oxidation, hemoglobin, free radicals and a quantitative study of organic reactions. He is a member of the American Academy of Arts and Sciences and of the National Academy of Sciences.

SCIENTIFIC NOTES AND NEWS

THE American Association for the Advancement of Science, with some thirty-five affiliated and associated scientific societies, has been meeting this week in New Orleans. This is the second New Orleans meeting, the first having been held there twenty-five years ago. Full information concerning the meeting was given in the preliminary announcement printed in the issue of SCIENCE for November 27, and supplementary statements have been given in other issues. A report of the meeting edited by the permanent secretary will appear in the issue of SCIENCE for February 5.

DR. WILLIAM KING GREGORY, of the American Museum of Natural History, was elected president of the New York Academy of Sciences for 1932 at the annual meeting held in New York City on December 21. The address of the retiring president, Dr. Clark Wissler, was delivered after the annual dinner. Dr. Wissler's subject was "The Primitive Background of Civilization."

MR. H. P. CHARLESWORTH, vice-president of the Bell Telephone Laboratories, New York, has been officially nominated for the presidency of the American Institute of Electrical Engineers.

IT is announced that Dr. Harvey Cushing, surgeon-in-chief of the Peter Bent Brigham Hospital and Moseley professor of surgery at the Harvard Medical School, will retire on September 1. He will reach the age of retirement of sixty-three years on April 8.

THE governors of the University of Toronto have accepted with regret the resignation of Professor J. C. McLennan, dean of the school of graduate studies, professor of physics and director of the physical laboratory. Professor McLennan has been granted leave of absence from the end of January and he and Mrs. McLennan will leave at that time to live in England. His resignation takes effect at the end of June, 1932.

PROFESSOR E. FREUNDLICH, director of the Astrophysical Observatory at Potsdam, delivered on December 2 a lecture on the results of the Potsdam Solar Eclipse Expedition to Sumatra in May, 1929, to determine the deflection of light in the sun's gravitational field and to examine its variation with distance from the sun.

DR. EDWARD TYSON REICHERT, professor of physiology at the University of Pennsylvania from 1886 until his retirement in 1920, died in Florida on December 25, aged seventy-six years.

DR. DANIEL DRAPER, who until his retirement in 1911 had been official meteorologist in New York City for forty-two years, died on December 21 at the age of ninety-one years.

THE Cullum Geographical Medal of the American Geographical Society for 1931 has been awarded to Professor Mark Jefferson, of the Michigan State Normal College. The presentation will be made at the twenty-eighth annual meeting of the Association of American Geographers.

SIR CHARLES SHERRINGTON has been awarded the first Hughlings Jackson Medal of the Royal Society of Medicine and will give the first triennial lecture before the neurological section of the society. The medal and lecture have been established with a fund of £1,110 subscribed in memory of Hughlings Jackson, the distinguished British neurologist.

THE Royal Meteorological Society has awarded the Symons Gold Medal to Professor V. F. K. Bjerknes, of the Physical Institute of the University of Oslo.