D.Math., D.Sc., professor of rational mechanics, University of Rome.

IX. "The Cosmical Constant and the Recession of the Nebulae": Sir Arthur Stanley Eddington, Sc.D., LL.D., professor of astronomy, University of Cambridge.

A series of four colloquium lectures entitled "Topics in General Analysis" were delivered by Professor E. W. Chittenden, of the University of Iowa. The series will appear in book-form. By invitation of the Committee on Program, Professor G. C. Evans, of the University of California, gave on Saturday morning an address of one hour's duration entitled "Methods of Modern Analysis in Potential Theory." Besides these extended lectures there were nine sessions of the society at which short papers numbering 118 were presented.

The joint dinner of the mathematicians at the Copley Plaza was attended by 520 people. Professor and Mrs. Harlow Shapley entertained the visiting mathematicians and astronomers at a garden party on Thursday afternoon at the Harvard Observatory. There were numerous excursions to points of interest in Boston and the neighboring country.

It was announced at the meeting that the invitation extended by the American Mathematical Society to the International Congress of Mathematicians to hold the 1940 International Congress in America had been accepted.

R. G. D. RICHARDSON,
Secretary

THE DEBT OF INDUSTRY TO THE UNIVERSITIES

ON the occasion of the Harvard Tercentenary celebration six industrial leaders addressed a letter to President Conant which reads as follows:

The coming 300th anniversary of the founding of Harvard College is an appropriate occasion for calling public attention to the indebtedness of American industry to the universities.

In the Tercentenary about to be celebrated Harvard is commemorating not only its own birth but the founding of higher education in this country. For this reason it seems fitting that some of us who are engaged in industry should take this opportunity to send our greetings to Harvard as the first of a now large family of centers of learning in this country and at the same time to acknowledge the vital importance of university education to industrial progress.

The large and increasing number of university-trained men in industry and business gives ample evidence of the great influence that university education has had on industrial progress. In addition, a different sort of contribution has been made that in promise and initial achievement seems to be of almost revolutionary importance.

Scientific research is still young, even in the life of the universities, which are primarily responsible for its existence. Having caught the spirit of research from the universities, industries have applied its methods to their own affairs—in many cases with amazing results. The last quarter century has seen the number of industrial research laboratories in this country grow from a mere handful to more than 1,500 and the number is rapidly increasing.

Without the evolution of research in the universities, these industrial laboratories might never have come into existence. Besides the very idea of research the universities have furnished industry with men possessing knowledge not only of the underlying scientific facts and theories but of the methods and techniques of research. From the universities also flows much of the basic knowledge of science on which modern technical industry has built and will build in the future.

It seems fitting at this time, therefore, that we who are engaged in the management of industry, in recognition of our indebtedness to the group of institutions which you represent, should send to you as president of Harvard University our greetings and our congratulations.

In doing so we hope to stress—what may not have been widely enough recognized—that our industrial progress, and hence much of our national well-being, has many of its roots in, and derives much of its nourishment from, the institutions of which yours is the senior representative.

This letter is signed by Walter S. Gifford, president of the American Telephone and Telegraph Company; Alfred P. Sloan, Jr., president of the General Motors Corporation; Thomas G. Watson, president of the International Business Machines Corporation; Pierre S. du Pont, chairman of the board of E. I. du Pont de Nemours and Company; Owen D. Young, chairman of the board of the General Electric Company, and Walter C. Teagle, president of the Standard Oil Company of New Jersey.

DEGREES CONFERRED AT THE HARVARD TERCENTENARY CELEBRATION

AT the Harvard Tercentenary exercises on September 18 sixty-two degrees were conferred on those who took part in the Tercentenary conferences. These included twenty-three doctorates of letters, two doctorates of law, one doctorate of music, two doctorates of divinity and thirty-four doctorates of science. In conferring the degrees in science, President Conant read citations as follows:

EDGAR DOUGLAS ADRIAN—A physiologist whose brilliant experimentation established new principles concerning nerve impulses and the action of sense organs.

EDWARD BATTERSBY BAILEY—A British geologist whose

skillful questioning of the Scottish Highlands drew forth revealing answers, telling of the origin of mountain ranges and their evolution in the past.

SIR JOSEPH BARCROFT—An investigator of many phases of the respiration of higher animals; a beloved guide to younger men on both sides of the Atlantic.

FRIEDRICH BERGIUS—A modern magician; his knowing touch transforms coal to oil.

NORMAN LEVI BOWEN—A scientific Vulcan, in his laboratory furnaces he measures those forces which once formed our igneous rocks.

RUDOLF CARNAP—A philosopher of penetrating insight, who lights the way for those who seek through logic the unity of the world.

ÉLIE JOSEPH CARTAN—A versatile investigator in the realm of pure thought; a mathematician who has advanced his science on many fronts.

JAMES BERTRAM COLLIP—A skillful biochemist; a bold explorer among the tangled complexities of the internal secretions.

ARTHUR HOLLY COMPTON—A physicist who forces light itself to illumine the dark secrets of its still mysterious nature.

PETER DEBYE—A large-hearted physicist who gladly lends the chemist a helping hand by elucidating the electrical properties of matter.

LEONARD EUGENE DICKSON—A fruitful speculator on the significance of numbers; an algebraist noted for his stimulating work.

SIR ARTHUR STANLEY EDDINGTON—A student of the cosmos who peers within the atom and surveys the expanding universe, an expounder to the multitude of the poetry of modern science.

HANS FISCHER—A master builder of molecular structure whose labors tell us why grass is green and blood is red.

RONALD AYLMER FISHER—A student of heredity who has improved statistical methods and assisted agriculture by the application of his science.

CORRADO GINI—A versatile sociologist and statistician who early turned his attention to that most vital problem, the growth of populations.

GODFREY HAROLD HARDY—A British mathematician who has led the advance to heights deemed inaccessible by previous generations.

ROSS GRANVILLE HARRISON—An embryologist whose method of transplantations yields new insight into the process of development.

JOHAN HJORT—The naturalist of the northern sea, whose studies and explorations have benefitted alike the science of biology and the fisheries of his native land.

SIR FREDERICK GOWLAND HOPKINS—From John Harvard's university, the discoverer of the vitamins, a pioneer in many fields, whose work stands as a symbol of the ceaseless adventure of the human mind.

BERNARDO ALBERTO HOUSSAY—A physiologist noted for his studies of the ductless glands, a leader of science in the New World to the south.

PIERRE MARIE FELIX JANET—A pioneer in studying the multifarious phenomena of mental pathology; his systematic analysis founded a branch of psychology.

CHARLES GUSTAV JUNG—A philosopher who has examined the unconscious mind, a mental physician whose wisdom and understanding have brought relief to many in distress.

SCHACK AUGUST STEENBERG KROGH—A physiologist forever probing with new instruments the unknown mechanism of life processes.

KARL LANDSTEINER—The master of the science of immunology, the discoverer of those fundamental principles which made blood transfusion possible, saving countless lives.

ANDREW COWPER LAWSON—A geologist who has ranged widely both in time and space.

TULLIO LEVI-CIVITA—A mathematician great in his accomplishment, an intellectual leader of the land we all revere, the birthplace of the art and science of the present day.

BRONISLAW MALINOWSKI—An anthropological explorer who initiated a new movement for the study of the gregarious habits of the human race.

JOHN HOWARD NORTHROP—A chemist turned biologist, a skilled manipulator of those catalysts on which life depends.

ANTONIE PANNEKOEK—An astronomer who has gauged the distances of the dark nebulae; an astrophysicist who has assayed the stellar atmospheres.

LEOPOLD RUZICKA—A chemist, daring in his attack, brilliant in his methods, successful in his interpretations of architecture of nature's baffling compounds.

KOYOSHI SHIGA—The discoverer of the cause of epidemic dysentery, a valiant and effective fighter in the international struggle for prevention of disease.

FILIPPO SILVESTRI—A brilliant entomologist who has searched many continents to find those parasites which guard our crops.

HANS SPEMANN—A biologist who experimented with embryonic tissue and discovered a new approach to those agents which determine organic form.

THE SVEDBERG—A man who sees beyond the microscope, at his bidding centrifugal forces make giant molecules reveal their size.

RECENT DEATHS

DEAN HENRY LANDES, for forty-one years professor of geology at the University of Washington and state geologist from 1901 to 1921, died on August 23 in his sixty-ninth year.

DR. JOHN H. MCNEIL, chief of the Bureau of Animal Industry of the New Jersey Department of Agriculture, died on September 18 at the age of sixty-six years.

DR. ALEXANDER ANDERSON, lately president of University College, Galway, for many years professor of natural philosophy in the college, died on September 5 at the age of seventy-eight years.

HENRI LOUIS LE CHATELIER, formerly professor of chemistry at the Ecole des Mines, Paris, and of min-