Arrhenius, of Ostwald and Nernst, of Einstein, Debye and Langmuir, the men who, by their contributions to theoretical chemistry, their new laws, their new generalizations, will provide the broader foundations upon which may be built a more satisfying scientific superstructure.

THE HARVARD TERCENTENARY

HARVARD UNIVERSITY will confer on September 18 honorary degrees on sixty-six of the principal speakers at the Tercentenary Conference of Arts and Sciences, which will be held from August 31 to September 19.

Those selected do not include those who have received honorary degrees from Harvard in the past. Among these are Albert Einstein, Robert A. Millikan, John Dewey, Henry N. Russell and William B. Scott.

Fourteen of the scholars to be honored are from the United States, twelve from England, ten from Germany, six from France, five from Switzerland, three from Italy, two each from Japan, Denmark, Scotland and Sweden and one each from the Netherlands, Argentina, Norway, Canada, Czechoslovakia, Austria, China and Australia.

The scientific men who will receive degrees with the descriptive statements sent to SCIENCE by the Harvard University News Office is as follows:

Edgar Douglas Adrian, Foulerton professor of the Royal Society and fellow of Trinity College, University of Cambridge, Nobel Prize winner in physiology and medicine, is an acknowledged leader of the modern school of neuro-physiologists, and has elucidated the neurological basis of sensation, the action of the various sense organs and the activity of nervous centers.

Edward Battersby Bailey, professor of geology at the University of Glasgow, Scotland, is a world leader among geologists, and has made important contributions dealing with the origin of mountains and the nature of volcanic and intrusive rocks.

Sir Joseph Barcroft, professor of physiology at the University of Cambridge, is a leading member of the group of British physiologists who have contributed largely during the past quarter of a century to knowledge of the blood as a carrier of oxygen and carbon dioxide.

Friedrich Bergius, of the Deutsche Bergin-Aktiengesellschaft, Heidelberg, Nobel Prize winner in chemistry, has developed processes in fuel technology which rank among the most important advances in chemical technology since the development of the method of making synthetic ammonia.

Niels Bohr, professor of physics at the University of Copenhagen, Nobel Prize winner in physics, is one of the world's outstanding figures in theoretical physics, and has pioneered in the study of atomic structure and the quantum theory.

Norman Levi Bowen, petrologist in the Geophysical Laboratory of the Carnegie Institution in Washington, is one of the world's leaders in the application of physical chemistry to problems in geology, having done notable work on igneous rock.

Elie Joseph Cartan, professor of mathematics at the University of Paris, one of the leading European mathematicians, has made important contributions to hypercomplex numbers and the theory of groups in the field of algebra, differential geometry and complex geometry in the field of geometry, integral invariants in the field of analysis and the theory of finite continuous groups.

James Bertram Collip, professor of biochemistry at McGill University, collaborated in the isolation of insulin and has done other important research in the chemistry of the blood, internal secretions, insulin, the parathyroid hormone and placental hormones.

Arthur Holly Compton, professor of physics at the University of Chicago, Nobel Prize winner in physics, is one of the world's outstanding figures in the study of cosmic rays and x-rays.

Peter Debye, professor of physics at the University of Leipzig, is one of the world's leading authorities in the field of polar molecules and has made many important contributions to physics.

Leonard Eugene Dickson, professor of mathematics at the University of Chicago, is one of the foremost algebraists and number theorists in the United States.

Sir Arthur Stanley Eddington, professor of astronomy and director of the observatory at the University of Cambridge, is one of the world's outstanding astronomers, and one of the great elucidators of modern astronomy and physics.

Hans Fischer, professor of chemistry at the Technische Hochschule in Munich, Nobel Prize winner in chemistry, is a world leader in the study of the structures of haemin and of chlorophyll, substances of extreme complexity and of the utmost importance in the understanding of animal and plant life.

Ronald Aylmer Fisher, professor of eugenics at the University of London, has made major contributions to the theory of statistics, has designed improved layouts for agricultural experimentation and has made a notable contribution to the genetical theory of natural selection.

Corrado Gini, professor of statistics and sociology at the University of Rome, is one of the most prominent sociologists, statisticians and demographers in the world.

Godfrey Harold Hardy, professor of mathematics at the University of Cambridge, is one of the most outstanding figures in mathematics, his principal contributions having been made in the fields of analysis and the analytic theory of numbers.

Ross Granville Harrison, professor of biology at Yale University, developed the method of embryonic transplantation which led to great advances in experimental biology, and has made important contributions to knowledge of the nervous system, symmetry and development after heteroplastic transplantation in the amphibia.

Werner Heisenberg, professor of theoretical physics at

the University of Leipzig, Nobel Prize winner in physics, is a world leader in theoretical physics, and has done notable research on atomic physics and the quantum theory.

Johan Hjort, professor of marine biology at the University of Oslo, is a leader in deep-sea exploration, in the study of marine biology, in its application to practical problems of the fisheries and in the coordination of marine investigations by the nations of Western Europe.

Sir Frederick Gowland Hopkins, professor of biochemistry at the University of Cambridge, Nobel Prize winner in physiology and medicine, is one of the world's foremost biochemists and has been a pioneer in several distinct fields, among them vitamins and the studies of chemical changes accompanying muscular contraction.

Bernardo Alberto Houssay, professor of physiology at the University of Buenos Aires, is a leader in the important and rapidly growing field of endocrinology and has brought forth much new information concerning the functions of the thyroid and adrenal glands, the pituitary gland, the parathyroids and the pancreas, and also the relations among these organs.

Pierre Janet, professor of psychology at the Collège de France, is generally regarded as having founded psychopathology as a separate discipline, and is recognized as one of the most distinguished psychologists and psychopathologists.

Charles Gustav Jung, professor of analytic psychology at the Technische Hochschule, Zurich, a great healer of mental ills, has been one of the important pioneers in the investigation of personality, has made notable studies of unconscious psychic processes and has continuously attempted to relate the results of his psychological researches to the dilemmas of modern man.

August Krogh, professor of zoophysiology at the University of Copenhagen, Nobel Prize winner in physiology and medicine, has made important contributions to the physiology of respiration and metabolism in man and the lower animals, to the physiology of the circulation of the blood, and to the chemistry of sea water in its relation to the nutrition of marine organisms.

Karl Landsteiner, of New York City, member of the Rockefeller Institute for Medical Research, Nobel Prize winner in physiology and medicine, has done as much as any living man to further the application of chemical methods and chemical concepts to the field of immunology, and is regarded as a great master who has founded a school of thought which has penetrated wherever immunologists are at work.

Andrew Cowper Lawson, professor of geology, emeritus, at the University of California, is one of the most stimulating and versatile leaders among American geologists, and his many important discoveries have had a world-wide influence in the advancement of geology.

Tullio Levi-Civita, professor of rational mechanics at the University of Rome, is one of the leading figures in mathematics, and has done notable work in hydrodynamics, theoretical dynamics and pure geometry.

Bronislaw Malinowski, professor of anthropology at the University of London, is a pioneer and leading exponent of functional anthropology, his inquiry into the Kula system and his studies of the Trobrianders having led to most that is significant in the modern development of social anthropology.

John Howard Northrop, of New York City, member of the Rockefeller Institute for Medical Research, has brought the study of enzymes within the fold of classical chemistry by their preparation in a crystalline state, and has made important investigations of the nature of enzymes and enzyme behavior.

Antonie Pannekoek, professor of astronomy at the University of Amsterdam, has made contributions of high merit in many fields of astronomy, notably in fundamental astrophysical investigations.

Jean Piaget, professor of the history of scientific thought at the University of Geneva, has done original research upon the developmental characteristics of the child mind, and has applied his findings to sociology in a way which has important implications for the field of social learning.

Leopold Ruzicka, professor of chemistry at the Technische Hochschule, Zurich, has successfully attacked many problems of particular difficulty in the field of the natural products, notably the chemistry of the sesquiterpenes, diterpenes, saponines and obietic acid.

Kiyoshi Shiga, of Kitasato Institute, Tokyo, internationally recognized as one of the great investigators of infectious diseases, is famous as discoverer of the cause of epidemic bacillary dysentery, by which discovery he opened a new field of investigation from which the whole world has benefited.

Filippo Silvestri, professor of general and agricultural zoology at the Regia Scuola Superiore de Agricultura, Portici, Italy, is one of the most eminent of living entomologists and has made outstanding contributions to science in many departments of entomology, both theoretical and applied.

Hans Spemann, professor of zoology at the University of Freiburg, Germany, Nobel Prize winner in physiology and medicine, is one of the world's leaders in biologic thought and has done notable research in the study of developmental mechanics, his work including a detailed study of the eye, the ear and the embryonic axis in the amphibia.

The Svedberg, professor of physical chemistry at the University of Upsala, is a Nobel Prize winner in chemistry whose skill in the solution of mechanical difficulties has enabled him to contribute enormously to chemistry and biology with the methods of physics, his crowning achievement being the development of the ultracentrifuge, which rendered possible the study of the size and shape of molecules whose dimensions were previously undetermined.

Otto Warburg, of the Kaiser Wilhelm-Institut für Zellphysiologie, Berlin, Nobel Prize winner in physiology and medicine, has given the world much of its knowledge concerning the chemical dynamics of metabolism in isolated tissues and cells.