jointly by Abel Wolman, chief engineer of the State Department of Health, Maryland, and Professor Thorndike Saville, dean of the College of Engineering, New York University. They will be followed by a paper on "The Economic Aspects of Flood Control," by Nathan B. Jacobs, president, Morris Knowles, Inc., Pittsburgh.

The first paper to be presented in the Symposium on Flood Control on Wednesday morning will be a discussion of "The New England Floods of 1936," by W. F. Uhl, hydraulic engineer, Chas. T. Main, Inc., Boston, Mass. This will be followed by an examination of the reports of the "New York State Floods of 1936," by A. W. Harrington, district engineer of the U. S. Geological Survey at Albany, N. Y.

Further discussion of the "1936 Flood in the Upper Ohio and Tributaries" will be presented on Wednesday afternoon by E. K. Morse, engineer member, Water and Power Resources Board of Pennsylvania, and Professor Harold A. Thomas, department of civil engineering at the Carnegie Institute of Technology. This will be followed by an address by Lieutenant-Colonel W. E. R. Covell, Corps of Engineers, U. S. A., U. S. district engineer, Pittsburgh, in which he will discuss "Federal Plans for Flood Control." The session then will be thrown open for general discussion of flood problems and methods for flood control.

Other symposiums on the civil engineers' program include "Economic Aspects of Energy Generation"; "Structural Application of Steel and Light Weight Alloys"; "The State System of Plane Coordinates"; "Volume of Traffic and Financial Problems Involved in the Planning of Major Highways"; "Stream Pollution," and "Modern Highway Design and Construction."

It is expected that attendance at the meeting, one of the most extensive in technical discussions in the history of the society, will exceed 1,200. Included in the list of speakers will be civil engineers of prominence from Albany, N. Y.; Baltimore, Md.; Boston, Mass.; Charleston, W. Va.; Cincinnati, Cleveland, Columbus and Massillon, Ohio; Denver, Colo.; Fairmont, W. Va.; Madison, Wis.; Midland, Mich.; New York, N. Y.; Pittsburgh, Pa.; Princeton, N. J., and Washington, D. C.

The American Society of Civil Engineers, of which Dr. Daniel W. Mead, professor emeritus of hydraulic and sanitary engineering of the University of Wisconsin, is president, is the oldest national body of its kind in the United States. Founded in 1852, its present membership of more than 15,000 is divided geographically into 58 local sections, which include all states and possessions. In addition, there are 114 student chapters in engineering colleges throughout the country.

THE SUMMER MEETING OF THE AMERICAN MATHEMATICAL SOCIETY

THE forty-second summer meeting of the American Mathematical Society and the nineteenth colloquium were held at Harvard University, Cambridge, Massachusetts, in connection with the Harvard Tercentenary Conference of Arts and Sciences, from Monday, August 31, to Saturday, September 5. Harvard University, celebrating its Tercentenary, was a gracious host, and hospitality was unbounded. All lectures given during the week under the auspices of the Tercentenary Committee were open to the mathematicians. More than half of those attending were housed without charge in the Yard. All the facilities of the university were at the disposal of the visitors, who were unanimous in praise of the arrangements made for their comfort and convenience.

The Mathematical Association of America, the Institute of Mathematical Statistics, the Association for Symbolic Logic and the American Astronomical Society held sessions during the same week. One thousand persons attended the mathematical meetings, of whom 443 were members of the society.

One of the chief features of the meeting was the series of Harvard Tercentenary Conference Lectures delivered by eminent mathematicians, both foreign and American, whom Harvard University invited as lecturers. These lectures were all broadcast on both long and short wave, and will be published in the journals of the society or elsewhere. Following is a list of the titles:

I. "Uncertain Inference": Ronald Aylmer Fisher, Sc.D., professor of eugenics, University of London.

II. "The Indian Mathematician, Ramanujan": Godfrey Harold Hardy, D.Sc., LL.D., D.Phil., professor of mathematics, University of Cambridge.

III. "Truth in Mathematics and Logic": Rudolf Carnap, D.Phil., professor of philosophy, Deutsche Universität, Prague.

IV. "L'extension du calcul tensoriel aux géométries non-affines": Élie Joseph Cartan, D.Sc., professor of mathematics, University of Paris.

V. "Waring's Problem and Its Generalizations": Leonard Eugene Dickson, Ph.D., professor of mathematics, University of Chicago.

VI. "The Mathematical Work of Ramanujan": Godfrey Harold Hardy, D.Sc., LL.D., D.Phil., professor of mathematics, University of Cambridge.

VII. "The Relativistic Problem of Several Bodies": Tullio Levi-Civita, D.Math., D.Sc., professor of rational mechanics, University of Rome.

VIII. "Astronomical Consequences of the Relativistic Two-body Problem": Tullio Levi-Civita,

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