has been undertaken by the churches, the schools, the laws and the rest in order to accomplish definite results that are regarded as desirable, but they have largely failed because it is difficult to change human nature. What we can do is determined when we are born; what we actually do depends on circumstance. Individuals at birth have definite constitutions and will react to their surroundings in accordance with them. But we can place them in situations where they will behave as nearly as their constitutions permit in the way that we want. By changing the surroundings we control behavior most effectively. This is what our industrial civilization has done, but it has advanced without special reference to the kind of mental life and behavior that will follow. What we need is a science that will coordinate all efforts to control conduct with the effects of all changes in the environment. This is the primary business of psychology; it requires the cooperation of all the sciences and of all the professions.

As I understand it this medal of the Society of Arts and Sciences has been conferred on a science rather than on an individual. It is a recognition of what psychology has accomplished within a period of fifty years, a mark of confidence in what psychology will do in the future.

OBITUARY

FLORIAN CAJORI

ON August 14, 1930, there died at Berkeley, California, Florian Cajori, the most prolific and best-known writer on the history of mathematics that this country has produced. He was not, however, a native of America, having been born at St. Aignan, near Thusis (Graubünden), Switzerland, on February 28, 1859, and having come to the United States at the age of sixteen. Entering the University of Wisconsin, he received the degree of B.S. in 1883, spending the year 1884–1885 in graduate work at the Johns Hopkins. He then went to Tulane University (1885) as assistant professor of mathematics, becoming professor of applied mathematics two years later (1887). In 1889 he went to Colorado College as professor of physics, subsequently taking the chair of mathematics (1898–1918) and becoming dean of the department of engineering (1903–1918). During all these years he paid particular attention to the history of the subjects of his major interest, and in recognition of his work in this field he was called to the University of California in 1918 as professor of the history of mathematics, a unique title either in this country or abroad. This position enabled him to devote his time largely to research and writing, and the result amply justified the action of the university in creating the position, and his own decision in accepting it.

Forty years elapsed from the date of the publication of his "Teaching and History of Mathematics in the United States" (1890) to the time when death compelled him to lay aside the work which he had hoped to complete—an edition of Newton's "Principia." During these years his contributions to the history of mathematics, physics, geodesy and astronomy were numerous and of increasing value. Besides writing a large number of articles and making a brief excursion into the text-book field, he wrote the following historical works: "History of Mathematics" (1894, with a revised edition in 1919), "History of Elementary Mathematics" (1896, with a revised edition in 1917), "History of Physics" (1899), "History of the Logarithmic Slide Rule" (1909), "William Oughtred" (1916), "History of the Concepts of Limits and Fluxions in Great Britain from Newton to Woodhouse" (1919), "The Early Mathematical Sciences in North and South America" (1928), "The Chequered Career of Ferdinand Rudolph Hassler, First Superintendent of the United States Coast Survey" (1929) and the work by which he will chiefly be remembered—"The History of Mathematical Notations" (2 volumes, 1928, 1929).

It is interesting to see how he developed in the two-score years of his literary activity. His work of 1890, published when he was thirty-one years of age, showed a considerable range of study of source material and a commendable plan of exposition, but it also showed a lack of thoroughness and of finish. His next three books (1894, 1896, 1899) gave less evidence of the study of sources and showed a somewhat excessive dependence upon other writers, notably Gow and Cantor in the case of mathematics. It was not until he was invited to contribute to the fourth volume of Cantor's monumental treatise, the "Vorlesungen über Geschichte der Mathematik" (Leipzig, 1908), that he showed himself in his true light, that is, as an investigator of the history of mathematics whose work was based upon source material. From this time until his death his books displayed this new spirit. His history of the slide rule, though written twenty years ago, still stands as one of our best authorities. This led him to his first important biographical work, the life and labors of William Oughtred, the leading popularizer of mathematics in England in the first half of the seventeenth century. His other venture in the same field, the work on Hassler, may have been prompted by the fact that this leader in establishing

our coast survey was his compatriot, but in any case he succeeded in gathering a considerable mass of material about a man who contributed notably to the scientific work of America. The same spirt of careful research showed itself in his study of the history of limits and fluxions in England and in the investigation of the early mathematical sciences in the New World. By far his best work, however, is his "History of Mathematical Notations," a worthy culmination of his career as a historian. While it is greatly to be regretted that he did not live to publish his edition of the "Principia," he had the satisfaction of seeing this treatise on notations appear in a worthy form and of knowing that the scientific world fully recognized its merits.

His work was not by any means limited to his published books, however. He was a prolific contributor to a large number of scientific journals such as the *Bulletin* of the American Mathematical Society, SCIENCE, the *American Mathematical Monthly,* the *American Journal of Mathematics, Schlömilch's Zeitschrift, Silliman's Journal, The Scientific Monthly, Popular Astronomy,* the *Archivio di Storia del Scienza,* Loria's *Bollettino, Scientia, Bibliotheca Mathematica, Isis, Mathematical Gazette, Popular Science Monthly, School Science and Mathematics* and the *Publications* of the University of California and those of Colorado College. During his years at the University of California he contributed no less than 140 articles and reviews, all of high rank, to these and other periodicals.

His work was duly recognized by learned societies and by various colleges and universities. He was a member of the American Mathematical Society, the Mathematical Association of America, the Deutsche Mathematiker-Vereinigung, the Mathematical Association (England), the American Academy of Arts and Sciences and the American Association for the Advancement of Science, holding offices in at least two of these societies. He was honored by the degrees of Ph.D. (Tulane, 1894), LL.D. (University of California, 1912, and Colorado College, 1913) and Sc.D. (Wisconsin, 1913). As the leading historian of mathematics in this country, his loss will be deeply felt by all who have an interest in this important field of learning.

DAVID EUGENE SMITH

RECENT DEATHS

MR. MICHAEL B. RICH, president of the board of directors of Williamsport-Dickinson Seminary, Pa., was killed in an automobile accident on August 8.

FATHER JOHN GEORGE HAGEN, S.J., director of the Vatican Observatory, died in Rome on September 6 at the age of 83. He was formerly director of the astronomical observatory at Georgetown University.

WILLIAM NELSON REID, for several years metallurgist in charge of the heat treating department of the International Motor Company at Plainfield, N. J., died on September 3.

THE *Electrical World* reports the death in Milan of Professor Francesco Grassi, Italian electrical engineer, at the age of 78. Professor Grassi was one of the Italian delegates to the International Electrotechnical Congress in Chicago in 1893.

Nature reports the following deaths: Dr. Henry Fraser, formerly director of the Institute for Medical Research, Federated Malay States, when he made valuable contributions to our knowledge of beri-beri, bacillary dysentery and leprosy, on July 17, aged fifty-seven years; Mrs. Albert Howard, second imperial economic botanist to the Government of India, who was associated with her husband in the work of the Institute of Plant Industry, Indore, on August 18, aged fifty-three years; His Grace the Duke of Northumberland, K.G., president of the Royal Institution and chancellor of the University of Durham, on August 23, aged fifty years; Professor Conrad von Seelhorst, professor of agriculture in the University of Göttingen, author of "Handbuch der Moorkultur," on July 6, aged seventy-seven years.

MEMORIALS

ON August 17 in the presence of the immediate family of the late Rear Admiral Robert Edwin Peary, U. S. N., and a large number of interested spectators, a boulder, bearing a bronze tablet describing the meridian line marked by Admiral Peary while a resident of Fryeburg, Maine, was unveiled with appropriate ceremony. The meridian has been used by surveyors since then, and is recognized by the United States topographical authorities for its accuracy. The principal speaker was Professor Alfred E. Burton, of Carmel, California, formerly dean of the Massachusetts Institute of Technology. Mrs. Peary unveiled the memorial, and Robert E. Peary, 2nd, spoke of his father.

SCIENTIFIC EVENTS

THE HARVARD SCHOOL OF GEOGRAPHY

ANNOUNCEMENT was made on September 14 by officials of Harvard University of the establishment of a school of geography under the terms of a gift from a Harvard graduate, Dr. Alexander Hamilton Rice, of Newport, R. I., who is an amateur of the geographical