of "Geist" or other qualifications, were urged to enter laboratories. They might cooperate in the contemplated discovery of the etiology of cancer or they might be set the task of counting paving blocks—it was immaterial, but all in the name of science.

The sobering effect of the economic crash upon industrial and financial structures has had far-reaching repercussions and has been seriously felt in most of the clinics of this country. The problem of curtailment and economy has involved all those interested in clinical investigation and we are now confronted with the inevitable and healthy task of taking account of stock and separating the wheat from the chaff. In other words, we must decide what, out of this great orgy of clinical investigation, is most worthy of salvage.

There is no doubt that what we desire to save above all else is that backlog of solid and profitable research which has continued to advance medical science and which may be defined as a product of thoughtful and critical curiosity supported by ingenuity in experimentation. Whether or not the results are of immediate practical value is relatively unimportant, but that the stimulus to investigation should be a query either of fundamental or of practical significance is vital. Of two general approaches to research, experience has shown time and again through the ages that the outstanding advances in the realm of science have resulted from the efforts of individual investigators possessing the spark essential for creative work. To be sure, in this approach the full harvest of results may frequently be reaped only through the subsequent cooperation of others better versed in various technical aspects of the problem, but the fact remains that it is the individual investigator whose creative force furnishes the opening wedge. It is, consequently, this rare individual who above all is to be treasured and who deserves the support necessary to enable him to exercise his powers to the full.

The largest group interested in clinical research is composed of individuals, many of whom are the clinical teachers responsible for the development of critique and a point of view among students of medicine. These investigators share in common one characteristic, namely, that of intellectual curiosity; they perceive the significance of fundamental observations and are frequently able to extend them, but their capacities for critical and thoughtful experimentation naturally cover a range so wide that the products of their scientific endeavors, while often good, are more frequently indifferent and occasionally very bad. Nevertheless, the progress of medical science is greatly enhanced by these gleaners. Consequently they, too, deserve encouragement and should continue to receive financial support. However, the time has come when the qualifications of the recruits for this class of investigators should be scrutinized meticulously, because it is the futile efforts of the many lesser lights among these gleaners which lead to untold waste.

Another approach to clinical investigation has been developed in recent years and lies in sharp contrast to that already described. This is the *research project* which demonstrates in its point of view total ignorance of the means by which science has advanced. It attempts to force progress through regimentation of workers who lack the essential critical curiosity in the subject under investigation and it stifles the untrammeled play of imagination which often seizes upon a most significant by-product in the course of individual research. It is not the product of creative thought, but is usually initiated by energetic and misguided promoters inspired by the effectiveness of mass production in big business. It involves the wasteful expenditure of large sums of money. In other words, it assumes that scientific knowledge can be bought, and that dollars give birth to ideas. The research project in clinical medicine has proven consistently barren and has resulted in the disbursement of funds which, if applied to the endowment of individual investigators or university departments where creative thought is fostered, may reasonably be expected to further the progress of science. Hence I make my plea for the support of those individuals engaged in fruitful research, for the reapportionment of the limited funds available for clinical investigation and for their direction into recognized productive channels.

THE HISTORY OF SCIENCE SOCIETY AND THE DAVID EUGENE SMITH FESTSCHRIFT

By FREDERICK E. BRASCH and LAVADA HUDGENS
LIBRARY OF CONGRESS

IN January there appeared before the intellectual world another of those unique historical works known as a Festschrift, a term which ordinarily connotates a collection of essays, written by scholars commemorating the service of another scholar. In America we do not follow this procedure as much as scholars in Europe have done. Nevertheless, it is indeed an excellent expression of appreciation and method of honoring those to whom honor is due.

On January twenty-first, the seventy-sixth anniver-

sary of the birthday of Dr. David Eugene Smith was celebrated at Columbia University. This celebration took the form of a tea, attended by a group of his intimate friends, associates and students. The occasion for the tea, unknown to Dr. Smith, was the presentation of a collection of essays, beautifully bound, commemorating his great service in the field of the history of mathematics and science in general. Dr. George Sarton, editor of *Isis* (an international journal devoted to the study of the history of science), with a few well-chosen words, presented the Festschrift to Dr. Smith. The real significance of this particular volume is all so well stated in the preface and contents that only a list of contributors need be given here. The Festschrift contains 38 studies on the history of mathematics and the history of science, which illustrate admirably the richness and manysidedness of these studies. Most of the papers are in English, a few in French, German, Italian and Spanish. Those contributing are: Raymond Clare Archibald, Providence, R. I.; Sherman B. Barnes, New York; Charlotte H. Boatner, New Orleans, La.; Ettore Bortolotti, Bologna; Julian L. Coolidge, Cambridge, Mass.; George O. S. Darby, Greenwich, Conn.; H. Gray Funkhouser, Exeter, N. H.; Solomon Gandz, New York; F. H. Getman, Stamford, Conn.; Benjamin Ginzburg, Long Island City, N. Y.; C. Doris Hellman, New York; Theodore Hornberger, Ann Arbor, Mich.; S. A. Ionides, Denver, Colo.; Francis R. Johnson, Palo Alto, Calif.; L. C. Karpinski, Ann Arbor, Mich.; Gino Loria, Genoa; J. Millás i Vallicrosa, Barcelona; U. G. Mitchell and Mary Strain, Lawrence, Kansas; J. Pelseneer, Bruxelles; A. Pogo, Washington, D. C.; Vera Sanford, Oneonta, N. Y.; P. Sergescu, Cluj; Lao G. Simons, New York; A. N. Singh, Lucknow, India; Lynn Thorndike, New York; J. Tropfke, Berlin; D. Uvanovic, Zagreb, Jugoslavia; A. Van de Vyver, Gand; Q. Vetter, Prague; K. Vogel, München; J. A. Vollgraff, Leiden; Helen M. Walker, New York; P. P. Wiener, New York; E. Zinner, Bamberg. The first article, which was prepared by Bertha Margaret Frick, librarian, is an exhaustive bibliography of the critical, historical and pedagogical writings of David Eugene Smith, together with an account of the mathematical library which Dr. Smith presented to Columbia University in 1931. This Festschrift is the first volume of the new series called "Osiris." It contains 800 pages, 22 plates, 35 facsimiles and 24 figures, and was edited by Dr. George Sarton.

Dr. Smith's great service to the history of intellectual progress in the United States is not to be found alone in his many books and monographs, or in the collection of mathematical manuscripts, portraits, instruments and incunabula, through which he has left a concrete and invaluable monument to the university he has served so long, but also in the advancement of the humanistic or cultural movement in the sciences.[1] The history of this cultural movement in the United States, namely, the history of science, has been long and varied, from the time its influence first became felt through the works of Joseph Priestley's two large volumes on "The History of Electricity" and "Vision and Light" to Andrew D. White's "The Warfare of Science and Religion."

While we have had a great many books treating of the various phases of the history of science, we must also recognize the work of pioneer scholars who began offering courses in our colleges and universities around 1890. The outstanding men whose teachings, writings and efforts toward collecting source material paved the way for the organization of a definite cultural movement are: Florian Cajori, William A. Locy, W. H. Welch, E. F. Smith, T. W. Richards, Henry Crew, H. W. Tyler, L. J. Henderson, Walter Libby, C. R. Cross, J. Playfair McMurrich, Herbert M. Evans and David Eugene Smith.[2] It was not until 1916, when Dr. George Sarton transferred his permanent residence from Belgium to this country, bringing with him his newly established publication, *Isis*, that the influence of the history of science studies became recognized. The coming of Dr. Sarton and *Isis* was the inspiration needed to crystallize the movement in this country.

The first definite step was taken by the American Association for the Advancement of Science and the American Historical Association, who, taking cognizance of the efforts being made by a few prominent scholars and interested students, formulated plans for organizing this movement.[3]

The development of these various phases of growth became so marked that some sort of central organization was found necessary to foster them. Through the far-sighted effort and untiring interest of Dr. David Eugene Smith was brought about the founding of The History of Science Society in 1924, which, by the end of that year, had reached a membership of 500. The geographical distribution of these 500 foundation members was such as to establish an international character for the society.

The society was organized in Boston on January 12, 1924, and was incorporated under the laws of the District of Columbia on January 30, 1925. It was affiliated with the American Association for the Advancement of Science on April 26, 1925, and admitted as a constituent member of the American Council of Learned Societies, on February 2, 1927. The society

[1] SCIENCE, n.s., 83: 79–80, 1936.
[2] SCIENCE, n.s., 42: 746–760, 1915.
[3] *Ibid.*, 50: 66–68, 1919; *ibid.*, 52: 559–562; *ibid.*, 53: 315–318.

meets annually, usually with the American Association for the Advancement of Science or the American Historical Association, and participated actively in the second International Congress of the History of Science and Technology in London in 1931.

The History of Science Society is now entering upon its thirteenth year of activity, and although it is one of the youngest of the learned societies, the interest shown in it at the outset continues unabated. This interest was such that the initial membership has grown to over 700. It is hoped that the earnest support thus far accorded may eventually lead to the endowment of *Isis* and even to that of the society itself.

It may also be observed that the society is the first, on any large scale, to afford a common meeting ground for scientists, historians and philosophers. Indeed, the study of the history of science seems to provide the only feasible method for bridging the widening gap between men of science on the one hand and men of letters on the other.

The annual programs of the society have been carefully prepared, and consequently have been the means of fostering some notable and original contributions. Probably the most outstanding programs were the following: the commemoration of the Bicentenary of the death of Sir Isaac Newton (1642–1727) given in November, 1927, and the Tercentenary Commemoration of the death of Johann Kepler given in 1931, both of which have been published. Another program of importance and one which invoked considerable interest was entitled "The History of Medicine and Civilization," given in 1928.

Isis, the official journal of the society, is a quarterly publication of international character and is edited by Dr. George Sarton, research associate of the Carnegie Institution of Washington, with the cooperation of eleven associate editors, each representing various fields of learning. This periodical is devoted to the history of science in its broadest aspects, and receives contributions from scholars in almost every branch of historical learning throughout the world. A helpful feature of the publication is the annotated bibliographical contributions, which are arranged both by period and by subject, so that a scholar wishing to work in special branches or in certain epochs of scientific development finds his material already assembled. The reviews are by noted specialists in their respective fields and form one of the most important features of the journal.

In addition it publishes facsimiles of the great classics in the history of science; for example, Sir Isaac Newton's original communication to the Royal Society of London on his "New Theory about Light and Colors," and also the first joint communication of Charles Darwin and Alfred Wallace on "The Perpetuation of Varieties and Species to Form Varieties" and on "The Perpetuation of Varieties and Species by Natural Means of Selection." The illustrations accompanying the original articles, including portraits, have much historical value, and it is the desire of the editor to enlarge upon this feature in future numbers. The society is now publishing the twenty-fourth volume of *Isis*.

The society also undertakes to publish from time to time through its revolving book fund, granted by the Carnegie Corporation of New York, important contributions in the field of the history of science, which are not within the scope of commercial publishing firms. The following are the titles of the new series thus far published: "The Black Death and Men of Learning," by Anna Montgomery Campbell, 1931; "Correspondence and Papers of Edmond Halley, Preceded by an Unpublished Memoir of His Life by One of His Contemporaries," and the "Eloge," by D'Otrous de Mairan, edited by Eugene Fairfield MacPike, 1932; De Venarum Ostiolis 1603 of Hieronymus Fabricius of Aquapendente (1553?–1619), Facsimile Edition with Introduction, Translation and Notes, by K. J. Franklin, 1933; "The Background of Modern Science," 2 volumes, by Lynn Thorndike, 1934; "Scientific Organizations in Seventeenth Century France (1620–1680)," by Harcourt Brown, 1934; "Jöns Jacob Berselius, Autobiographical Notes," published by The Royal Swedish Academy of Sciences through H. G. Söderbaum and translated from the Swedish by Olof Larsell, 1934; "The Modernization of the Medical Sciences," by Dr. Richard H. Shryock, 1936 (in press).

It is very evident from the foregoing account that the history of science movement, together with the present influence and progress of this society, have combined to build for Dr. Smith a monument which his fondest hopes did not envision. The intellectual world owes him a great debt, and the officers of this society take this opportunity to acknowledge that indebtedness and to offer him their congratulations.

SCIENTIFIC EVENTS

ACQUISITION OF BULL ISLAND FOR A BIRD REFUGE

BULL ISLAND near Charleston, S. C., has been bought by the U. S. Biological Survey for a bird refuge. The island is part of a land-and-water tract of about 7,700 acres which has been added to the 55,000-acre Cape Romain Migratory Bird Refuge in South Carolina. The new purchase brings the water frontage of Cape Romain Refuge to about 25 miles.

Except as a haven for wildlife, for which it is well