entific career, a continual flow of medals, prizes, degrees and honorary memberships in scientific societies came for his reception, till the possibilities were exhausted. His departure leaves a great gap in the band of astronomers. It will be long before we again have one of equal untiring energy.

G. W. HILL

SIMON NEWCOMB

IN the death of Professor Newcomb American astronomy has lost its chief ornament and American science in general one of its most commanding figures. His exact relation to contemporary science must be determined by the judgment of future times but to those who have been his associates during any part of the past half century his career bulks too large for oblivion, too generous to be dismissed without some word of appreciation. The common incidents of his life, its offices and honors, may here be dismissed summarily since he has given in his "Reminiscences of an Astronomer," an autobiography that must always remain their most authentic exposition.

Born in Nova Scotia, of New England ancestry, and returning in early manhood to the land of his fathers, there to build a scientific career upon a youthful experience containing scant preparation for such work, he found in the Nautical Almanac office, then at Cambridge, Mass., a position which he himself describes as his first introduction to the world of sweetness and light. Appealing equally to his tastes and talents this work upon the almanac proved decisive of his whole career in which for fifty years problems of celestial mechanics constituted the core about which all other activities centered. Even upon his deathbed his mind was fixed upon the last of the problems that had been marked out as his life work and with its completion he sank visibly and rapidly to the end. Newcomb was, however, far from being a man of one idea. During his long professional career duty and inclination alike brought him into relation with nearly every phase of astronomical activity; popular exposition and the writing of text-books, the design and use of astronomical instruments, research into astronomical history and the utilization of its ancient materials, the organization of individual effort either for such special cases as a transit of Venus and a congress of science, literature and art or for continuous relationship in a permanent scientific body, such as the Astronomical and Astrophysical Society of America or the National Academy of Sciences in both of which he was active and influential. The newer fields of spectroscopic and photometric research in astronomy into which he did not profess to enter as an investigator, commanded his active interest and especially in his later years he was solicitous to combine their results with those of the older branches into a consistent whole.

But no one science, however diverse its paths, seemed to Newcomb an adequate field for the exercise of his powers and numerous were his excursions beyond the bounds of astronomy, *e. g.*, into economic theory, physics, politics, fiction and occult psychic phenomena, most of which, however, can be expected to contribute but little to his permanent fame. In the field of his first choice, theoretical astronomy, while his attainments were large and his powers great, it may be doubted whether posterity will rank his work as of the first order. His greatest achievements unquestionably lie in the border land between theory and practise where an enormous body of observed data has been utilized by an army of computers under

his direction and guidance, in determining the fundamental constants of astronomy, together with the elements of the planetary orbits, and in building upon these tables of the motions of the planets and the positions of the fixed stars that are now in daily use by the astronomers of the world.

Recognition and honors came to him in most unusual degree and from the most diverse sources, but his medals and diplomas, although obviously prized, were rarely exhibited. The ornaments of his home were his three daughters and his wife, Mary Hassler, to whom he was married in 1863. All of these survive him. Although socially inclined and fond of the amenities of life, Newcomb's leonine appearance and conscious dignity of bearing were not infrequently a source of awe to younger men who found it difficult to cross the supposed barrier between them. To the dullard or impostor the barrier was sometimes made real by a word of cutting sarcasm, but toward what he conceived to be real merit Newcomb was always singularly appreciative, seeking to bring out the man of promise and to secure for him recognition through every legitimate means. By none save his own kin will his departure be more sincerely mourned than by his juniors in astronomy whose careers have been furthered by his kindly aid.

G. C. C.

THE ANNUAL REPORT OF THE UNITED STATES COMMISSIONER OF EDUCATION FOR 1908

A FEW years since on the editorial page of the most dignified of our semi-popular magazines it was remarked with facetious seriousness that the annual report of the United States Bureau of Education was without exception "the dullest book in the world." Deserving or not of this charge, it will be generally admitted that the two fat, black-garbed volumes, the issuance of which had become an annual habit of the bureau, did possess, for both the initiated and the disinterested, a forbidding outwardness, which was not much altered by a survey of the twenty-five hundred odd pages of contents. Whatever their value to the cause of American education, very great in the credited judgment of many, these reports were not for those who would read as they ran. However this may have been in the past, within the brief three years of his commissionership, Dr. Elmer Ellsworth Brown has wrought reforms in the publications of the bureau which are certain to develop a more wide-spread recognition of the genuine service which it is possible for the federal government to render to American schools and American education. The annual report of the bureau for 1908 well illustrates the more important of these reforms; attractiveness in make-up, promptness of publication, condensation of contents, timeliness of topics, simplification and interpretation of the detailed array of statistics, and a cautious editorial supervision.

For the first time since the establishment of the bureau the funereal black binding of the report has been discontinued and the volumes appear in an artistic soft toned olive. This is a reform certainly meriting commendation. Why should not the publications of the Bureau of Education have advantage of an inviting exterior? Perhaps, too, the influence of the example may be felt with the official publications of other governmental departments and bureaus.

The prompt appearance of the report—the first volume being distributed before the close of 1908 and the second early in 1909—greatly enhanced its value. Formerly the annual reports of the bureau were one or two years behind. There were undoubted obstacles in the way of prompter publication which were not easily overcome. That they could be overcome has been effectively demonstrated, much to the relief of those who believe that the Bureau of Education should furnish authentic data and information concerning education at a time and in a form to be of largest service.

By reducing the size of the report from twenty-five hundred pages to somewhat more