

may have played in sidereal evolution. The answer to this problem depends upon the extent of the sidereal universe, the number of stars in it, and the character of their motion. The discussion leads to the conclusion that the relatively near approaches of the stars have probably been an important factor in stellar evolution. This paper will be published by the Carnegie Institution of Washington.

The next regular meeting of the association will be held at Johns Hopkins University under the presidency of Professor T. C. Chamberlin, of Chicago University. A summer meeting will be held at Dartmouth College, beginning the last Monday in June. Professor C. J. Keyser, Columbia University, was elected vice-president and chairman of Section A, and Professor G. A. Miller, University of Illinois, was re-elected secretary. The former election is for one year and the latter for a period of five years in accord with the general rules of the association. A resolution of the council which is of especial interest to the various scientific societies is that sectional committees may dispense with a sectional program whenever an affiliated society covering the same scope meets with the section. This resolution was reaffirmed to avoid duplications of programs and to secure more hearty cooperation between the scientific societies and the association.

G. A. MILLER,  
*Secretary.*

UNIVERSITY OF ILLINOIS.

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#### SHORTER NOTICES.

*Memoir and Scientific Correspondence of the late Sir George Gabriel Stokes, Bart., Sc.D., etc.* Selected and arranged by JOSEPH LARMOR, D.Sc., LL.D., Sec. R.S. Two vols. 8vo. Cambridge, at the University Press.

THE history of mathematics and physics during the latter half of the nineteenth century is inseparably bound up with the career of Sir George Gabriel Stokes. As an investigator of the highest rank himself and as one who left a permanent mark on his own science, the story of his life and career is a necessary part of the development of the subject. But it is much more than this. His position as secretary of the Royal society

for over thirty years and as president for five years gave him unusual opportunities to become acquainted with those who were active in scientific work generally, and to keep in touch with all the scientific progress of his time. Of these opportunities he made the best possible use, not for himself or for his own interests, but in assisting those who wished to consult him or to obtain his advice. He was absolutely unselfish in his willingness to give his time and thought to all who wished to obtain assistance from him, and as even his first opinions on any debatable point were rarely wide of the mark, and as he would nearly always throw out some valuable suggestion or idea, the influence which he exerted cannot be easily overestimated.

Professor Larmor undertook the difficult task of gathering together and publishing the materials which should show properly these features of Stokes's character and at the same time record the inner scientific history of the time; there can be no doubt that he has achieved a notable success. The former are set forth partly in a memoir by Mrs. Laurence Humphry, the daughter of Sir George Stokes, and partly in appreciations by Professor Liveing, Sir Michael Foster, Sir William Huggins, and the Right Rev. Bishop G. F. Browne. Though the bias which necessarily accompanies the point of view of one writer is thus avoided, one cannot help wishing that the editor, as one well fitted to judge and as belonging to a later generation, had himself contributed a notice instead of confining his share of the work to selection from the materials at his disposal and to the filling in of such details as were necessary to make them intelligible or clear. The latter object, a record of the inner scientific history of the time, has been mainly achieved by the publication of numerous letters to and from various correspondents.

In the first volume the arrangement of these letters is mainly chronological, but the subjects dealt with in them are kept together as far as possible. With the careful selection of headlines the editor has made it easy for a reader to obtain the main outlines of Stokes's scientific career by merely turning over the pages. A full index enables him to find those parts which deal with any particular subject. In the second volume we are given almost entirely letters to and from correspondents arranged under the names of the latter. A striking omission — the absence of letters between Lord Kelvin and Stokes — is explained in the preface. We are glad to learn that they suffice to form a collection by themselves and that it has been

decided to publish them separately with a memorial of the lifelong friendship and collaboration of the writers.

The memoir by Mrs. Laurence Humphry is full of interesting details. In a letter to Lady Stokes before their marriage we learn how the notable paper, "On the discontinuities of the arbitrary constants which appear in divergent developments" was finally brought to a successful conclusion. Stokes writes, "I have been . . . sitting up till 3 o'clock in the morning fighting hard against a mathematical difficulty. Some years ago I attacked an integral of Airy's and after a severe trial reduced it to a calculable form. But there was one difficulty about it, which, though I tried till I almost made myself ill, I could not get over, and at last I had to give it up and profess myself unable to master it. I took it up again a few days ago, and after a two or three days fight, the last of which I sat up till 3, I at last mastered it."

In speaking of these same letters Mrs. Humphry writes, "They are remarkable also from the curious place which he assigned to his original investigations; it almost seems as if he considered them the height of dissipation and everything else a duty." One might quote almost at random from the letters to his numerous correspondents and give something worthy of notice. A considerable number of them are scientific papers of the highest value, although the results have of course been incorporated in the published memoirs of the time. But we may gather much from the tentative suggestions which may be made in a private letter but which one might not feel justified in publishing in a scientific paper. Whether we read through these volumes continuously or dip into them here and there, their perusal cannot fail to be of interest and value.

E. W. BROWN.

*Computation and Mensuration.* By P. A. LAMBERT. The Macmillan Company, New York, 1907. ix + 92 pp.

THIS little volume is intended to help bridge the gap which frequently exists between the mathematics of the secondary schools offering advanced algebra and trigonometry for entrance to college and college mathematics proper. In colleges where algebra and trigonometry are taught as a part of the regular curriculum in mathematics the book might very readily be used as a review text preparatory to the work in the calculus. Opportunity to review and apply mathematical principles learned is given by