A HITHERTO UNPUBLISHED LETTER BY BENJAMIN PEIRCE

A hitherto unpublished letter now in the New York Public Library affords an interesting glimpse of the life of Benjamin Peirce at the moment of leave-taking from the beloved child of his brain, *Linear Associative Algebra*. Peirce's

belief in the epoch-making qualities of his creation and his anxiety over the reception which the world would give to what he considered his most important work, are evident in every line. The reader gets a vivid impression of the seer scanning the future for evidence of the nature of the response to his message.

We know now that the work was at first almost completely ignored by the world of science. In this respect, it shared the fate of a number of other genuine contributions by American scholars in the nineteenth century which failed to receive immediately the attention they deserved. Such, for example, was the case with Gibbs's work on vector analysis. The failure was often due to general distrust shown by European scholars of the achievements of American writers. This attitude, developed when there was more reason for it, was still strong at the time of the completion of Peirce's work. Another reason for failure on the part of contemporary European scholars to recognize this evidence of Peirce's originality was the pitifully inadequate means available to him for making the work known. There were only one hundred lithographed copies printed for distribution among Peirce's friends, about the poorest possible method of announcing such a message to the world. We should not, therefore, be surprised that with the exception of the English mathematician Spottiswoode, who expressed generous appreciation of Peirce's work, there was no response to Peirce's message during his lifetime. Even when the reprint of his *Linear Associative Algebra* came out in 1881 (*American Journal of Mathematics,* v. 4), it did not evoke any response on the continent. In the authoritative *Jahrbuch für die Fortschritte der Mathematik,* v. 13, the work is listed (p. 82) by title only, with a note promising that the report on the work would be given in the next volume. This promise was never kept. Thus it came about that when Scheffers and Study came out with their work, there was nobody to call the attention of scholars to the similarity of their work to that of Peirce. It was not until 1902 that an American scholar, Professor H. E. Hawkes, took upon himself to claim for Peirce the credit which was his due. Professor Hawkes's papers on the subject appeared in the *American Journal of Mathematics* (v. 24, p. 87f.), and in the *Transactions* (v. 3) of the American Mathematical Society. In the first paper, entitled "Estimate of Peirce's associative algebra", Hawkes established Peirce's priority in the matter, while in the second, entitled "On hypercomplex number systems", he enters for Peirce a claim of superiority. According to Hawkes, Peirce's ideas could be used in the development of a more powerful instrument of research than that worked out by the German scholars. This makes the failure of the world to accord Peirce an earlier recognition the more regrettable. It is noteworthy that the reviewer of Hawkes's paper in the *Jahrbuch* for 1902 seems to have overlooked this estimate of Peirce's work. In connection with this see the remarks in Professor R. C. Archibald's *Benjamin Peirce 1809-1880,* p. 16.

Of the lithographed copies distributed by Peirce in 1870, number 53 is now in the New York Public Library. This was the copy on which Peirce had based his fondest hopes, for it was one of the two copies which he sent to George Bancroft,[1] then (1870) American Ambassador to Germany, with the request that he present the other one to the Prussian Academy of Sciences. In the letter Peirce expressed his hope that the Academy would appoint a committee of geometers to pass on the merits of his work.

[1] This is the Bancroft, noted as a historian, with whom Peirce was associated as a teacher at the famous Round Hill School, Northampton, Mass., 1825-27.—EDITOR.