SCIENCE

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ON THE NATURE OF MATHEMATICAL AND SCIENTIFIC DEMONSTRATION[1]

IN the development of every science there is a growth of method as well as of results. We are accustomed to give close attention to the latter, and frequently we reorganize them into connected and logical wholes so that every student may conveniently view them in their entirety and in their proper relations to one another. In determining the method by which the matter shall thus be organized we are generally guided by considerations of convenience in exposition.

In much of our teaching, likewise, the selection and arrangement of material is determined primarily by a desire to arrive at results in the most expeditious manner possible.

One effect of this controlling emphasis, both in lecturing and in the writing of books, is that many of us never come to a proper appreciation of the labor which has been expended in perfecting our tools of investigation and never have a vital conception of the character of the important problem of method. Such a person usually will be able to employ only the tools which are presented to him by others. He will not be able to devise a new method to meet the needs of the new problem which arises in his own work.

Now the most important steps forward are made by the introduction of new methods of advancement. It is obvious that the person most likely to discover the

[1] An address delivered on the evening of October 6, 1913, to "The Euclidean Circle," an organization among the graduate and undergraduate students of mathematics in Indiana University.