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THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE MELODY AND THE ORIGIN OF THE MUSICAL SCALE¹

IN the vice-presidential addresses of the American Association great latitude in the choice of subjects is allowed and taken, but there is, I believe, no precedent for choosing the review of a book, printed fifty-five years before. Helmholtz's *Tonenempfindungen*, produced by a masterful knowledge of physiology, physics and mathematics, and a scholar's knowledge of the literature of music, has warded off all essential criticism by its remarkable breadth, completeness and wealth of detail. Since it was first published it has been added to by the author from time to time in successive editions, and greatly bulwarked by the scholarly notes and appendices of its translator, Dr. Alexander J. Ellis. The original text remains unchanged and unchallenged on physical grounds. In taking exception at this late day to the fundamental thesis of Part III., I derive the necessary courage from the fact that should such exception be sustained, it will serve to restore to its full application that greater and more original contribution of Helmholtz which he included in Part II. Having given a physical and physiological explanation of the harmony and discord of simultaneous sounds, and therefore an explanation of the musical scale as used in modern com-

¹ Address of the vice-president and chairman of Section B—Physics—American Association for the Advancement of Science, Chicago, 1907-8.

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