SCIENCE

VOL. 84 FRIDAY, DECEMBER 11, 1936 No. 2189

SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. MCKEEN CATTELL and published every Friday by

THE SCIENCE PRESS

New York City: Grand Central Terminal

Lancaster, Pa. Garrison, N. Y.

Annual Subscription, $6.00 Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C.

NEW VANTAGE GROUNDS IN THE PSYCHOLOGY OF MUSIC[1]

By Professor CARL E. SEASHORE

THE STATE UNIVERSITY OF IOWA

THE Baconian series of lectures was established for the purpose of furnishing from time to time a highlight review of the state of progress in given fields of knowledge. Ten years ago, I had the pleasure of giving the first lecture under this new organization. At that time I reviewed the status of the psychology of music. Since that time much water has run under the bridge, and this evening I have the pleasure of returning to the same subject with the satisfaction of reporting gratifying progress.

I. MEASURING INSTRUMENTS

The progress that has taken place in the last decade by leaps and bounds is due to the extraordinary development of recording, measuring, transmitting and generating instruments by electrical engineers. We see this progress exemplified in the radical changes which have taken place in the recording of music by phonograph and film and in broadcasting over the radio. In acoustical engineering, as in every other science, there is a normal order of evolution. Each introduction of a new fundamental principle in physics or chemistry furnishes a vantage ground for further achievement. The recent development of the microphone and the thermionic tube has been revolutionary.

By the use of such tubes, a sound may now be amplified a million times. A sound made by a parasite squirming and crunching in a grain of wheat may be amplified so as to disturb the conversation in an adjoining room. Such amplification we hear every day in listening to our radios. We may now pick up the minutest characteristic of a single vibration in a tone

[1] An address in the Baconian series of lectures at the University of Iowa, November 13, 1936.