# Books

## *Man's World of Sound*

*by John R. Pierce and Edward E. David, Jr.*

*Doubleday and Company, Inc.* *$5.00*

*Reviewed by Robert V. Langmuir*

This is a book which treats speech, hearing and the related fields of psychology and acoustics at an intermediate level. Essentially no knowledge of physics or mathematics is presumed on the part of the reader, yet the book is not easy reading for there is considerable content here – much of it new and very interesting to this reviewer who is *not* an expert in acoustics. It is very refreshing to find among the complicated technologies of today one that can be explained in some detail and at quite a high level to an amateur in science without using the calculus.

Both of the authors are research scientists at the Bell Telephone Laboratories in Murray Hill, New Jersey. John R. Pierce, director of research in electrical communication, received all his degrees at Caltech–a BS in 1933, an MS in 1934 and a PhD in 1936. His most recent book *Electrons, Waves and Messages,* was published in 1956.

Edward E. David, Jr., a graduate of Georgia Tech and MIT, is assistant director of visual and acoustics research at the Bell Laboratories.

The book first discusses some of the physical aspects of sound–the relation of frequency and wavelength –and has a simple discussion of resonators. Next is a fascinating discussion of the details of the human vocal system. It is almost impossible to read this silently as the reader must immediately check just what the tongue is doing when, for instance, he pronounces the vowels in "eat" and "lost." The acoustics analysis of speech is very interesting–particularly the comparative ease with which various speech sounds are described by phonetic symbols and the difficulty of representing them by physical means such as frequency content, wave form, etc.

The chapters on hearing by their very nature contain as much physiology and psychology as physics and acoustics. Here there is much of interest to the hi-fi fan, in particular the discussion of what can be accomplished by various stereo systems.

The last chapter is a summary of the unsolved problems in this field and a plea for scientific amateurs to jump in and get their feet wet with some research of their own. This field is one of the few left where the natural philosopher or non-expert is almost sure to make many of the important contributions of the future.

I can recommend this book highly for just such amateurs – those with a strong interest in science, with or without much formal training.

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