even resolve some unanswered questions about the EEG.

The AEP recorded from the scalp is a complex wave, probably the result of a distinct number of spatially independent components of different latencies, whose amplitude depends on the position of the recording electrodes. This partly accounts for the variability in evoked responses recorded under seemingly identical conditions. Assigning and assessing the sources of this variability are discussed by Emanuel Donchin, the organizer of the conference. In his chapter "Data analysis techniques," he stresses the contribution that multivariate statistical analysis and the general purpose computer can make in AEP studies.

Jerome Cohen's chapter, "Very slow brain potentials relating to expectancy: The CNV," reviews research on this new phenomenon, first reported in 1964, which requires averaging in order to be detected.

Other research topics covered in the book are: "Cross modality comparisons of average evoked potentials," by W. R. Goff *et al.*; "Specification of psychological variables in an AEP experiment," by Samuel Sutton; and "Diagnostic uses of the AEP," by Enoch Calloway. The discussion that followed the presentation of each paper at the conference is included.

Although much of the material has been published in other sources, this volume is useful as an excellent, easy-to-read overview, with a comprehensive bibliography. It should appeal to psychologists, neurophysiologists, clinicians, biomathematicians, system engineers, and other researchers concerned with the AEP or EEG.

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Air-Sampling Methodology

The Analysis of Air Pollutants. W. LEITHE. Translated from the German edition (Stuttgart, 1968) by R. Kondor. Ann Arbor-Humphrey, Ann Arbor, Mich., 1970. x, 304 pp., illus. $18.75.

There is a widespread demand for a reordering of national priorities in favor of tackling the problems of the human environment. However, for purposes of simplification the various types of pollution have been compartmentalized although the human environment is a single, interrelated system.

Air pollution is one of the important compartments of the environmental problem. Authoritative analytical books are needed in this field. The present volume is one of the first of many that will be appearing to fill this need.

The first few chapters consider the background of the problem. The definition of terms, meteorological effects, and the hygiene of air pollution are briefly discussed.

Air sampling for the gaseous components of the atmosphere is discussed in 12 pages. Considering the limitations imposed by the size of the book the subject is well handled. The main deficiency is the absence of discussion of methods and equipment for the collection of airborne particles that are to be analyzed for the chemical components. Since the components of the air that cause the most misery to human beings are in the particulates, it would be a good idea to include much of the work on particulate analysis available in the literature in the next edition of this book. However, a section is presented in a later part of the book on dust and its collection for the purposes of gravimetry, microscopy, or counting.

A well-balanced presentation is given of a wide range of pertinent topics, among them photometric analytical methods, gas detection devices, automatic devices, gas chromatography, mass spectrometry, odor analysis, and radioactive substances. Of these topics, continuously operating automatic devices and gas chromatographic methods are the most thoroughly discussed.

Analytical methods are given for the standard air pollutants that are present in the atmosphere in fairly large amounts. In most cases for each pollutant the physiological and toxicological properties, the available methods, and some working procedures are presented. Pollutants thus surveyed include hydrogen sulfide, the sulfur oxides, ammonia, hydrazine, nitrogen oxides, carbon oxides, halogens, arsenic, lead, mercury, aldehydes, aliphatic chlorinated hydrocarbons, monocylic and polynuclear arenes, phenols, benzo(a)pyrene, and others.

A few minor errors are present. For example, on page 135, lines 23 and 24, "fluorescein" and "fluorescin" should be interchanged in the first part of the sentence, and on page 234 the determination of acetone is said to involve colorimetry when actually titrimetry is used. Another point worth considering is the absence from the book of any discussion of the chromotropic acid method for formaldehyde. Simpler, faster methods are available for the determination of the polynuclear arenes than what is described. Much more selective methods are available for the determination of benzo(a)pyrene. In the method described benzo(k)fluoranthene would be a serious interference.

A table in the appendix on the conversion of aerotoxicant concentrations from ppm to mg/m^3 and vice versa is a worthwhile portion of the book. Another table worth including in a future edition of the book would be one showing the range in concentration of urban air pollutants and the highest values that have been obtained.

I was favorably impressed with this book. I think it should be on the shelves of all people interested in the technical aspects of air pollution.

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High-Frequency Sound

Physical Ultrasonics. ROBERT T. BEYER and STEPHEN V. LETCHER. Academic Press, New York, 1969. x, 382 pp., illus. $18.50. Pure and Applied Physics, vol. 32.

Physical Principles of Ultrasonic Diagnosis. P. N. T. WELLS. Academic Press, New York, 1969. viii, 284 pp., illus. $12.50. Medical Physics, vol. 1.

Physical Ultrasonics is a veritable handbook of all the important interactions of matter and ultrasonic energy, especially as used to delineate the properties of matter. It is intended for the graduate and the advanced student, as well as for the worker in the field. *Physical Principles of Ultrasonic Diagnosis* pays due attention to the physical and engineering aspects of ultrasound but is intended chiefly for the medical specialist who would like to (indeed who should) know more about the tools he is using.

For its intended audience *Physical Ultrasonics* provides a ready reference to theory, description of experiments, and comparison of measurements and predictions. A good working knowledge of thermodynamics is required to derive maximum benefit from the book.

The introductory material includes a clear exposition of Eulerian and Lagrangian formulations, in which the