two different types of charges—one an internal polarization and two
the deposition of ions on the surface.

Chapter 2 by Sesler includes an analysis of the fields, forces, and
currents due to charged dielectrics. Also covered are isothermal decay
processes. This is important in determining the life time of the de-
vices.

Chapter 3 by J. van Turnhout discusses the investigation of elec-
tret properties by thermally stimulated discharge (TSD). The TSD
method has provided extensive information on dipolar and trapped
charge effects in dielectrics.

Chapter 4 by B. Gross presents a review of radiation-induced ef-
facts in dielectrics. One particular type of radiation, namely charging
by electron beams, has become one of today's favorite polling meth-
ods.

Chapter 5 by M. G. Broadhurst and G. T. Davis of the U. S. Bureau
of Standards describes piezo- and pyroelectric properties of polymer
materials. While the connection between electrets with preferentially
oriented dipoles and piezoelectricity and pyroelectricity was appreci-
ated as early as 1927, it was not until the large piezoelectric effect
was found in polyvinylidene fluoride (PVDF) by Kawai that this ef-
fect was investigated further. This chapter presents several theories
of the effect.

Chapter 6 by S. Mascarenhas discusses electrets in biomaterials and
biopolymers. Bioelectrets do play an important role in life processes.
The final chapter by Sesler and J. E. West (Bell Telephone Labora-
tories) deals with the many applications of electrets and piezoelectric
polymers. While microphones and xerography are the largest applica-
tions, there are many other potential applications which may develop
in the future.

Altogether the book lives up to the expectations of the authors,
namely as a cohesive treatment of the entire field of electrets.

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Perception and the Senses
Evan L. Brown and Kenneth Deffenbacher
xii + 520 pp. Price $16.95.

This textbook is designed for use in upper division courses on
sensation and perception. Considerable effort has been expended in
its preparation. Each chapter is carefully summarized and is supple-
mented by a glossary. The illustrations are good and well-produced.
There are numerous references in the body of the text, and each
chapter contains a section with suggestions for further reading. A
useful guide to library research is included as an Appendix, which
lists the major journals in the field, reference aids, major secondary
sources, and so on.

The book is organized in the following way. Part I consists of a
single chapter that describes the ethological, physiological, and
psychophysical approaches to the study of sensation and percep-
tion. Part 2 consists of three chapters devoted to the "minor sen-
ses." The first chapter deals with the skin senses, the second with
movement and active touch, and the third with the chemical senses.
Part 3, which also consists of three chapters, is devoted to hearing.
The first chapter is concerned with the nature of sound and subjec-
tive auditory attributes. The second is concerned with neuropa-
tomical and neurophysiological substrates of auditory perception.
The third chapter deals with relatively complex phenomena such as
the perception of auditory sequences, auditory aftereffects, and
speech perception. Part 4 consists of five chapters dealing with vis-
ion. The first discusses the physical and biological bases of vision.
The second chapter is concerned with the processing of brightness,
lightness, and color. The third deals with figure-ground phenomena
and visual shape perception. The fourth is concerned with percep-
tion of size and distance, and the fifth with visual perception of di-
rection and motion. Part 5 consists of a single concluding chapter,
which assesses the development, state of knowledge, and prognosis
for the future of the field, with emphasis on the role of technology.
The general orientation of the book is strongly biological. The
discussions of neuroanatomy and neurophysiology are detailed and
informative. There is also a strong emphasis on ethology; discus-
sions of the evolutionary value of different sensory mechanisms
abound, and interesting interspecies comparisons are often made.

On the other hand, the book lacks sophisticated treatment of
cognitive mechanisms related to perception. The concept of sep-
ate storage boxes for very short term memory (VSTM), short term
memory (STM), intermediate term memory (ITM), and long term
memory (LTM) is accepted uncritically, though recent research has
shown this view to be inadequate, both for visual and for auditory
configurations. Attentional phenomena also receive a scant and
rather unbalanced treatment which focuses almost exclusively on
low-level factors.

The final chapter that deals with the role of technology in the
development of knowledge concerning sensation and perception
provides the student with a useful perspective. However, given the
strong biological orientation of the book, it is surprising that there is
no mention of the recently developed neuroanatomical techniques
which are currently revolutionizing the field. For example, the use
of radioactively labeled deoxyglucose enables us the first time to de-
termine, by noninvasive methods, the structures that are activated
when the organism is confronted with specific stimulus configura-
tions. Another new and important technique not mentioned in-
volveds the use of horseradish peroxidase in tracing connections.

On the whole, however, the book is interesting and informative.
For advanced students, especially those with biological interests, it
should serve as a useful text and reference source.

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Intervals, Scales and Temperaments
Llewellyn S. Lloyd and Hugh Boyle
xix + 322 pp. Price $15.00.

This book is a revision of one that was first published in 1963.
The prefatory material states that the purpose of the book is to pro-
vide an introduction to the study of musical intonation. An addition-
al purpose identified in the Introduction is to relate the facts of musi-
cal acoustics to the musical experience. Citations of literature in mus-
cical acoustics and to interpretation of music history and theory are,
for the most part, to sources no more recent than 1963. The excep-
tions are the three books by Donnigton, Benade, and Jorgensen,
found in the four book bibliography on page 398.

Part I of the book is a coherent selection of papers written by Ll.
S. Lloyd that are arranged in excellent order. These papers are fol-
lowed by a complete list of Lloyd's writings on Musical Acoustics.
Reading these chapters, I wished that Boyle would have referenced
the original locations of the material in the article. Instead, the reader
must scan the entire list to find these citations. I could not determine
from the book to what extent, if any, the original articles have been
edited or provided with new footnotes. Such matters have no bearing
on the quality of the information, but would clarify the interaction
between the writings of Lloyd and Boyle.

Part II, the Introduction, and the Appendices are the work of Hugh
Boyle. These sections are, in many aspects, an expansion or ex-
planation of the publications of Lloyd. In other aspects, we find
commentary on music history and material for in-depth study of the
laws of vibrating strings. The material by Boyle contains numerous
interesting and surprising references to music theory, psychoacoustics,
and musical instruments. The author does not make clear his use of
the work of other authors or of observations that are the result of his
own scholarship or research. The references and footnotes citing
the literature and research in the area of musical scales form a short