ments in instruments used in the observation of high-energy particles. These will be of great interest to all experimenters in high-energy nuclear physics. There then follows a series of papers on related fields—anti-proton physics and nucleon-nucleon scattering. The next sections deal with the field-theoretical aspects of pion physics, while the rest of the symposium treats the important aspects of pion-nucleon interactions (scattering, photoproduction, production by nucleons, mesonic atoms, interactions with complex nuclei).

Although this volume is mainly directed towards the specialist, the summarizing papers which precede each section are in general written with sufficient clarity to be useful to any physicist interested in acquainting himself with the latest developments in this field. As one would expect, the conference had the broadest possible international representation; it is perhaps noteworthy (although no longer very surprising) that the significant contributions to the symposium showed as broad a national spectrum as did the participation.

**The Physics of Music.** By Alexander Wood. 255 pp. Dover Publications, Inc., New York, 1956. $4.00. *Reviewed by R. B. Lindsay, Brown University.*

This is a reprint without change of a volume first published in 1944 by Methuen of London and the Sherwood Press in the United States. It received a favorable and adequate review by R. H. Oppermann in the Journal of the Franklin Institute (**238**, 384, 1944). Its reproduction at this time in a relatively inexpensive edition is an indication of the interest which still exists in the fundamental acoustics of music. Though the work suffers from the inadequacy of the treatment of recent developments, particularly in the fields of sound recording and reproduction and room acoustics, it remains an admirable introduction to the subject for the non-specialist.

**La Quantification en Théorie Fonctionnelle des Corpuscules.** By Jean-Louis Destouches. 141 pp. Gauthier-Villars, Paris, France, 1956. Paperbound $5.84. *Reviewed by J. Polkinghorne, University of Edinburgh.*

The school lead by M. L. de Broglie has long been devoted to the investigation of modifications and extensions of wave mechanics. In this book M. Destouches proposes a system of mechanics in which a particle is represented not by a geometrical point in physical space but by a function $u$ in some separable function space. These functions are taken to be in some sense more objective than the familiar wave functions and are required to satisfy a nonlinear equation derived from analogy with hydrodynamics. This wider system is to include both classical and quantized solutions and the latter are to be distinguished by their satisfying a certain stability condition.

The precise physical significance of the $u$ functions is not made clear. Moreover the whole scheme is developed in the most general and symbolic form so that

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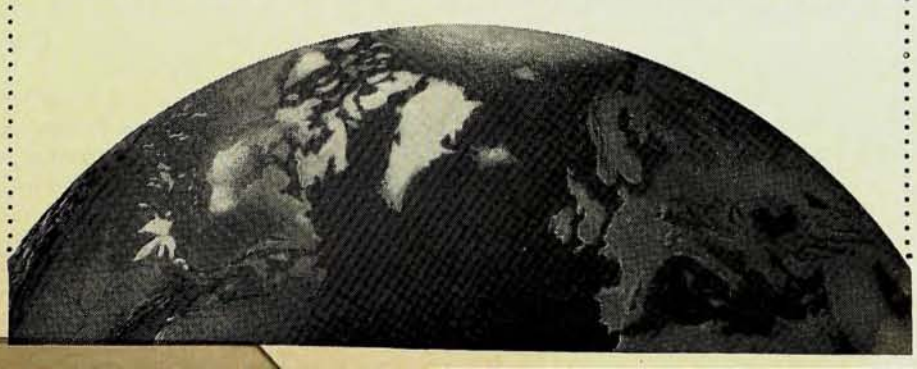

no concrete comparison with nature seems possible. In the concluding chapter the author is able to obtain the well-known spectra of a harmonic oscillator and the hydrogen atom and points out analogies with theories of Čap and Bopp. The real difficulty that bedevils this and other similarly interesting theories is that it is much more likely that an advance in our knowledge will come from a new physical principle rather than by exploiting mathematical analogies.

It is strange that, while French paperbacks are highly priced, the art of mechanical page cutting still seems to be unknown in France.

**Astronomy and Physics.** Vol. 3 of Proceedings of the 3rd Berkeley Symp. on Mathematical Statistics and Probability. (U. of California, Dec. 1954 & July–Aug. 1955) Edited by Jerzy Neyman. 252 pp. U. of California Press, Berkeley & Los Angeles, Calif., 1956. $6.25. *Reviewed by C. Payne-Gaposchkin, Harvard College Observatory.*

The Berkeley Symposia are doing a valuable service in bringing together authoritative presentations of current scientific problems, and a still more valuable service by publishing them promptly. The volume under review unites a group of contributions to astronomy and a shorter series of papers on theoretical physics.

The Hertzsprung-Russell diagram has rightly dominated our ideas of stellar evolution for more than thirty years. Indeed, we first began to regard this problem in modern terms when the importance of the relation between the luminosities and colors of stars was recognized. The recent advances in this field are the results of the new precision furnished by photoelectric photometry, and of the recognition of the very definite and restricted patterns shown by the H-R diagrams of suitably chosen groups of stars. The characteristic arrays of luminosity and color shown respectively by the globular and galactic clusters pointed the way to the modern conception of stellar populations. They provide criteria of age and origin that are forming a basis for convincing theories of the evolution of stellar systems and of stars.

The material on clusters is excellently presented by Harold L. Johnson, who has established the three-color photometric system that has become the standard for such studies. His discussion of the evolutionary significance of the data is closely interwoven with the observations and ideas of Allan R. Sandage.

The colors and luminosities of stars in the solar neighborhood are presented and discussed by Olin J. Eggen; he draws the important conclusion that there is a main sequence "certainly less than $0^m.2$, and probably less than $0^m.1$ wide". He also presents evidence for a clearly defined sequence of subdwarfs.

The array for the *M* dwarfs is critically presented by Gerald E. Kron, with the conclusion that the sequence is probably multiple. The extremely important white dwarfs and subdwarfs are discussed by Jesse L. Green-