

like and particle-like aspects of light in a coherent pedagogic manner and to convince the reader that there is in fact no paradox in this wave-particle duality. Out of its eight chapters, the first four deal with the classical wave theory. The treatment is elementary enough that a student with some knowledge of calculus should be able to follow it. The last four chapters deal with the electromagnetic and quantum aspects of light. Here the presentation is on a different level. Because he assumes no previous knowledge of electromagnetic theory or quantum mechanics, Goldwin tries to teach some aspects of both of them in the remaining 85 pages. While it is not an easy task, he has largely succeeded in it. His presentation is clear and he has worked out the mathematical steps in sufficient detail.

Goldin has taken a daring step in introducing the Dirac formulation of quantum mechanics in an elementary undergraduate optics textbook. He thus deals with concepts that are abstract in nature and employ "strange-looking" mathematical notation. The problem here is that the intended readers may not have enough background in quantum mechanics to grasp these concepts and correlate them with their previous knowledge. In my opinion, the study of Heisenberg's matrix approach in a quantum-mechanics course would help prepare a student to follow the Dirac formulation. Goldin has, however, made ample use of analogies and illustrations, with the hope that a student will not feel completely lost.

A shortcoming of the book is that even though it is subtitled "An Introduction to Quantum Optics," recent advances in this field are not even mentioned. An overview of the possible applications of the theoretical formulation would have certainly been useful. I have also noticed a few typographical errors. These are, however, minor in nature and should not be a cause of concern.

In summary, this book provides a good introduction to the classical and quantum aspects of light and may prove useful as an elementary textbook.

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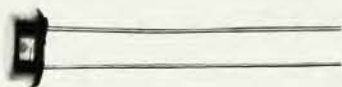
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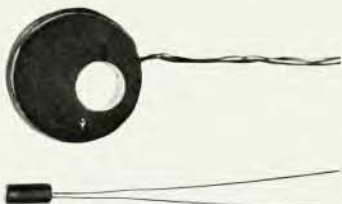
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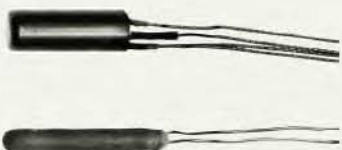
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