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insularity and scientific stasis on China. I am persuaded that the power of our literary intellectuals, exercised through their students, is comparable to that of the Chinese intellectual bureaucracy and their all important student.

We should be thankful that Gross and Levitt have provided a wake-up call. Their significant overview of the thinking of those who teach our lawyers, journalists and teachers should be read by all who are concerned by the decline of the status of science in our times.

## Order, Chaos, Order: The Transition from Classical to Quantum Physics

**Philip Stehle**

*Oxford U. P., New York, 1994.*

332 pp. \$59.95 hc

ISBN 0-19-507513-7

In the history of science, two approaches have long persisted to create tension in the field. The last generation has witnessed the increasing popularity of "external" histories, written largely by professional historians of science and emphasizing the interaction between science and society. But these works have not displaced the more traditional, "internal" narratives, mostly written by scientists themselves and focusing on the technical evolution of science from one discovery to another. Despite its catchy title and the dust jacket's assurance of its being "accessible to non-scientist general readers," *Order, Chaos, Order* represents a rather extreme example of an internal history, with both its strengths and weaknesses.

In the introduction, Philip Stehle, emeritus professor of physics at the University of Pittsburgh and author of several physics texts, makes it clear that his interest "lies more in the evolution and interplay of ideas than in the personalities of the participants." Closely following the original events and publications, he surveys the structure of classical physics as it evolved to the end of the 19th century, its various difficulties, new experimental discoveries and the emergence of quantum theory and relativity in their wake. The account covers mainly the period from 1895 to 1925, with a brief last chapter on the new quantum mechanics. General relativity is not discussed. On each major topic, the author carefully reconstructs both the prevailing theories

and their context, often with thoughtful comments on the connections between various physical concepts.

While specialists will probably find little that is new here, *Order, Chaos, Order* provides a reliable guide to the original literature of the scientific revolution in physics at the turn of the century. The clear presentation should also make it a valuable addition to courses in either physics or physics history. The book reads at times like a physics textbook. The language is plain, but the material is dense. There is a fair amount of mathematics in the text, and there is much more in the exercise-like "amplification" pieces scattered throughout the book.

The strictly internal approach to science history, however, has its shortcomings. Although the book presents a good picture of what physicists did in physics, one learns little about how they did it, much less why. There is no mention, for example, of the profound influence of the philosophies of Baruch Spinoza, David Hume and Ernst Mach in the evolution of Albert Einstein's scientific thinking. Given the minimal reference to secondary sources in the text, the short list of suggested readings at the end of the book hardly serves as an adequate introduction to the large extant body of historical scholarship on the subject.

*Order, Chaos, Order* was obviously a labor of love and will interest historically inclined physicists. If supplemented by other more "externally" oriented texts, it will also be useful for an undergraduate course in the history of physics, for which Stehle prepared the book in the first place.

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## From Alchemy to Quarks

**Sheldon Glashow**

*Brooks-Cole, Pacific Grove,*

*Calif., 1994. 692 pp. \$60.75 hc*

ISBN 0-534-16656-3

Since 1979 Sheldon Glashow has been teaching an undergraduate course for nonscience majors at Harvard College based on the material in this book, which he subtitles "The Study of Physics as a Liberal Art." The writing of such a book follows a long-established practice by Eric Rogers, Gerald Holton, Robert March, Steven Weinberg, Leon Lederman and others who have taught—and written physics texts for—nonscience college students interested in satisfying core dis-