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student is brought into contact with the electronic properties of real systems immediately. This pedagogical device should create interest in following up qualitative considerations with involved quantitative calculations. In the usual "logical" ordering of subjects, the student is often disheartened by the complexity of the calculations before any systems of interest are studied.

In my opinion *Quantum Chemistry* will prove to be a very valuable first-year graduate text for physical chemists. It can also be recommended to all those who wish to gain some insight into our current understanding of the electronic properties of complex molecules.

Vistas in Astronomy, Volume 3. Edited by Arthur Beer. 345 pp. Pergamon Press, New York & London, 1960. \$18.00. Reviewed by E. J. Öpik, University of Maryland.

THE first two volumes of the *Vistas* were dedicated to Professor F. J. M. Stratton, to mark his 70th birthday. With the third volume, the publication apparently is becoming a serial, nonperiodic international compendium, the main object of which is to offer an up-to-date cross section of astronomical and astrophysical research. Two more volumes are in preparation.

The current third volume is less voluminous than its predecessors. It is also less international, 15 out of a total of 21 contributions belonging to authors from the British Isles, as compared to 64 out of a total of 194 in the first two volumes.

Two thirds of the contributions can be classified as review articles, and one third as normal research "papers". The contributions cover dynamics, instruments, geophysics, solar system, stellar astronomy, photometry, spectroscopy, stellar evolution, galaxies, and cosmology. J. G. Porter's review of the comets 1956h and 1957d is somewhat brief and incomplete, but generally the reviews can be recommended as up-to-date representations of the respective subjects.

Contents of Volumes 1 and 2, and indexes of the current volume are included. The volume is printed on glossy paper, with numerous excellent illustrations.

Luminescence cristalline. By D. Curie. 209 pp. Dunod, Paris, 1960. 14.50 NF. Reviewed by L. Marton, National Bureau of Standards.

SHORT monographs of any kind were fashionable two or three decades ago. Shortly before the war there appeared to be a decline in their popularity. Like many other phenomena, this popularity is subject to periodic fluctuations; if we look at the number of monographs appearing in different languages, they seem to be riding a crest at present.

If all short monographs were of the quality of the present one, they would do a lot of good. Within its 200-odd pages, it gives a very extended view of its subject covering dipole and quadrupole radiation, emission, and absorption probabilities, the emission and absorption spectra in the configuration coordinate curve

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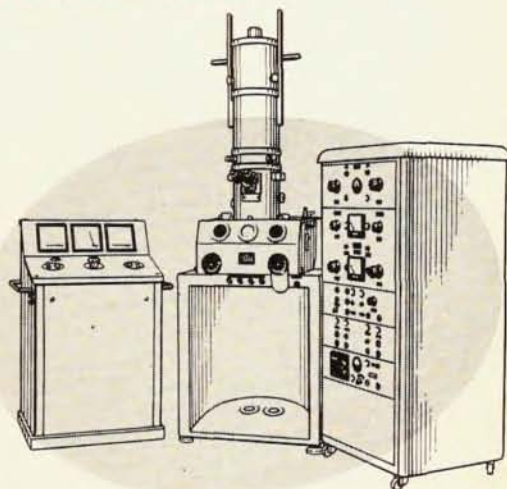
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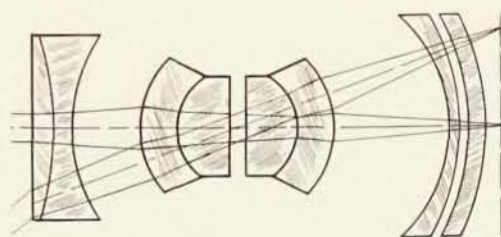
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model, the experimental determination and application of configuration coordinate curves, optical transitions in a crystalline photoconductor, electron traps, their thermal and optical activation, extinction phenomena, energy transfer, sensibilization, and many other subjects. The author skillfully blends experimental and theoretical information into a unified whole. Both are condensed to an absolute minimum. If I had to voice any criticism, it is that I would have welcomed a few more references. Many names are given in the text without any indication where to find the complete information, and the bibliography is essentially limited to review papers or books on the subject. However, the book can be very much recommended to those interested in crystalline luminescence.

X-Ray Spectrochemical Analysis. Vol. 11 of Chemical Analysis. By L. S. Birks. 137 pp. Interscience Publishers, Inc., New York, 1959. \$5.75. *Reviewed by I. Fankuchen, Polytechnic Institute of Brooklyn.*

DR. Birks has written a small, unpretentious book which will be frequently referred to by everyone doing spectrochemical analysis. It is indeed true that x-ray spectra have been used to identify atoms for almost forty years. But it is only in the last ten years or so that suitable apparatus has been commercially available so that routine chemical analysis in an average analytical laboratory could be so attempted. Hundreds of papers on the subject have appeared in the last ten years and these are for the most part in quite readily available journals. However, Dr. Birks has done a very useful thing; he has digested these papers and resubmitted their essence in a most readable and accurate form. The writing is economical, perhaps too much so; there is no stuffing in the book. As a result, some things suffer. Thus, the author index is remarkably incomplete. Only names specifically mentioned in the text are listed. Although each chapter concludes with a list of references to which Birks repeatedly refers in the text, these references are not given in the author index. This makes hunting up someone's work not too easy. The price per page seems somewhat high. This first modern book on an increasingly important subject is to be recommended.

Biographical Memoirs of Fellows of the Royal Society, Vol. 5, 1959. 280 pp. The Royal Society, London, 1960. 30s. *Reviewed by R. Bruce Lindsay, Brown University.*

THE Royal Society continues to confer a boon on all who are interested in the history of contemporary science by publishing the fifth volume of a series, begun in 1955, of biographical memoirs of recently deceased fellows. It contains brief biographies of nineteen fellows, most of whom died in 1958 or 1959 and whose scientific activities were for the most part associated with the first half of the twentieth century. Of these men who achieved distinction in their chosen