gation of electron paramagnetism in metals is ably presented by Knight, who has contributed so much to these developments. Pake's article is a lucid introduction to nuclear magnetic resonance and is long on discussions of relaxation times but short on other types of applications to solid-state problems (for example, one looks in vain for mention of the interesting results on the sublattice magnetization obtained by Poulis in his work on the proton resonance in an antiferromagnetic crystal).

A book like this, however, can be all things to all men. If, by chance, the particular volume contains a good article of special interest to the reader, he will be very pleased; otherwise, the tendency is to ignore entirely a given volume with its heterogeneous collection of articles and return to the less exhaustive but more coherent discussion to be found in a single-volume presentation. One can hope, though, that coherence will appear when the series as a whole is available, although the student will still require a good guide through the maze.

The book appears to have an adequate name and subject index; it is nicely composed and printed, but it has an unimaginative binding which, in my copy, quickly tore loose from the main bulk of the pages.

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Chemistry and Uses of Pesticides. E. R. de Ong. Reinhold, New York; Chapman and Hall, London, ed. 2, 1956. 334 pp. Illus. $8.75.

As stated in the preface, this book has been rewritten and brought up to date. Numerous references to the literature of 1955 are included. Citations to the literature, rather than the author's knowledge and experience, are the source of authority. The book is a compendium rather than a textbook or treatise, for it considers individual pesticidal active principles as single or pure substances, giving for each something of the chemical and physical properties, the uses for which it has been recommended, and its toxicology and pharmacology.

No important omissions have been noted, and a number of substances that are still considered experimental are mentioned. References to crops and pests are therefore incidental but can be traced through the index. Inorganic compounds are treated in 81 pages; petroleum products in 26; fumigants in 38; derivatives of plants in 30; synthetics in 96; heat, cold, dehydration and radiation in 15; and tolerances and exemptions from the requirements of tolerances of residues in two. Citations grouped at the end of each section are relied on for details of directions not to be expected in a book of this size.

There is no section on the pesticide laws and the requirements of lawful labeling, nor is there one on fertilizer-pesticide mixtures. Since the book relies so much on publications, its reliability can hardly be questioned. It should be more valuable to workers and students with a chemical background than to growers and farmers.

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Handbuch der Physik. Band XXXVI. Atome II. S. Flügge, Ed. Springer-Verlag, Berlin, 1956. 424 pp. Illus. DM. 88.

This volume of the famed *Handbuch*'s new edition contains four articles: "Quantum mechanics of the atom" by Friedrich Hund and "Statistical treatment of the atom" by Paul Gombas, both in German, and "Theory of atomic collisions," and "Excitation and ionization of atoms," both in English, by Harrie Stewart Wilson Massey. The authors write from great authority and with careful attention to the latest advances in their fields, but the vast amount of material covered in such review articles makes for a condensed style that demands much study as a prelude to understanding.

In Massey's beautiful article on atomic collisions, enough illustrative detail is provided for the simpler cases of *s*-wave scattering to make clear the essential ideas. It might nevertheless have been more helpful to the student if a few more steps had been provided at the risk of boring the experts. The article is much more general than the title indicates, and the enrichment of the calculational techniques by contributions from workers in nuclear scattering problems is evident throughout.

Massey's second article interweaves in a skillful manner a historical discussion of experimental techniques and results and a comparison with theoretical predictions. The article concludes with a description of applications of excitation and ionization to electric discharges in gases, the aurora, and so forth, thus relating the discussion to other fields.

Hund's article proceeds through a brief historical introduction, leaning heavily on the correspondence principle, to a treatment of the one-dimensional model and the approximations of perturbation theory and the method of Jeffreys (WBK). It is my impression that the emphasis on the correspondence principle is rather heavy despite its historical importance. A description of the periodic system is given; it lists the various quantum state specifications in spectroscopic notation without much discussion of how these things came to be known. However, these criticisms are of minor importance when the article is viewed as a whole, for the article provides a comprehensive summary of the symmetry characteristics of atomic systems from the point of view of group theory, the effect of electron spin, the basis for the vector model, and a discussion of approximation methods, stressing the self-consistent treatment due to Hartree.

The article by Gombas introduces the necessity for a statistical point of view which results from the complexity of the many-body problem. The basis for the treatment of atomic problems in the Fermi-Dirac statistics is noted as applying to electrons, and the simple Thomas-Fermi model is treated. Various corrections to the model such as exchange and relativistic effects are described, as well as the application of the model to the equations of state for extreme pressures and temperatures. Comparisons are made between the results given by the Hartree-Fock method and those of Fermi-Thomas statistical theory, and it is made clear that remarkable agreement between the two points of view is often possible. The general usefulness of the statistical method to questions of molecular structure and of the interaction of gamma radiation with atoms is also indicated. In addition to copious references throughout the Gombas article, an extensive bibliography with references through 1955 is given at the end.

Infrequent typographical errors and failures of the printing to register made for a small amount of confusion.

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Ninth Annual Report of the Advisory Council on Scientific Policy 1955–1956. Her Majesty's Stationery Office, London, 1956 (order from British Information Services, 30 Rockefeller Plaza, New York 20). 12 pp. $0.14.

In the United Kingdom, the member of the cabinet who is responsible for the formulation and execution of government scientific policy is the Lord President of the Council. On general questions relating to the whole field of civilian science, the Lord President is advised by an Advisory Council on Scientific Policy, which was established in 1947 and is composed of eminent men from the universities, industry, and government. The type of information contained in the annual reports of the council parallels in many instances that to be found in the reports of the U.S. National Science