

**Woodcock Ways**

By Henry Marion Hall. Pp. xii + 84 + 8 plates. (New York and London: Oxford University Press, 1946.) 30s. net.

**The Ruffed Grouse**

By Henry Marion Hall. Pp. vii + 91 + 8 plates. (New York and London: Oxford University Press, 1946.) 30s. net.

**I**N these two books, Mr. Henry Marion Hall, assisted by Mr. Ralph Ray as illustrator, gives us accounts of the ruffed grouse and the woodcock from the point of view of the American sportsman. However, both species are of considerable ornithological interest, and there is much in the volumes to hold the attention of the reader on the other side of the Atlantic, who will admire the dramatic colour pictures and the excellent black-and-white sketches. The author's remarks on game preservation, in particular his remarks on the protection of the ruffed grouse and on predator control, are most commendable. "The experience of generations of gamekeepers abroad," he says, "has shown that foxes, hawks, owls, weasels, and other animals must be controlled wherever their abundance proves dangerous to feathered game. To exterminate them, however, is worse than useless. A reasonable number should be left alive to eliminate weakly or diseased game birds. This service leads to the survival of alert, vigorous stock and at the same time tends to check the spread of infectious ailments."

After considering the fox in relation to gamebirds, Mr. Hall adds: "Cats are a worse menace than foxes—particularly those homeless animals . . . that roam the woods and fields, where they destroy innumerable birds. On some farms as many as a dozen predatory cats have a precarious, nominal home, or at least a headquarters. These animals are even more destructive than foxes."

Such remarks apply equally to the English countryside, and as already hinted the British sportsman reader will find much in Mr. Hall's two books not only to interest him but which he will also endorse.

F. PITT

**Meson Theory of Nuclear Forces**

By Wolfgang Pauli. Pp. vii + 69. (New York and London: Interscience Publishers, Inc., 1946.) 12s.

**T**HIS little book consists of amended lecture notes of a course given by the author at the Massachusetts Institute of Technology in the autumn of 1944. It will be welcome to many who are interested in the problem of nuclear forces without being able to study the extended and difficult literature.

The first of the six chapters contains an account of the interaction of nucleons regarded as point sources of the meson field. The method used is explained for the scalar meson field in detail, and so clearly that the reader will have no difficulty in understanding the more condensed sections on the pseudo-scalar and vector meson field which follow. In Chapter 2 the nucleon is introduced as an extended source; the reason for this step is the singularities which appear in the point source theory when higher approximations are attempted. Here a constant  $a$  of the dimension length is introduced which determines the spin inertia, that is, the reaction of the eigenfield of the nucleon to the motion of its spin. This quantity is not experimentally known, but cannot be zero, because this would lead to wrong values for the magnetic moment of the nucleon. These magnetic moments are investigated in Chapter 3

together with the scattering of mesons, treated classically. The following chapter contains the quantum theory of scattering. This section will be welcome to many, as it gives an excellent account of Heitler's theory of radiation damping and Heisenberg's  $S$ -matrix, which is intended to be a new formulation of relativistic quantum mechanics. Chapter 5 deals with the neutron-proton scattering, and Chapter 6 with the two-nucleon system in the so-called strong-coupling case (where the 'dimension' constant  $a$  of the source is small compared with the Compton wave-length of the meson).

The results of the calculations are compared with the experimental data. The most important of these are enumerated right at the beginning of the first chapter; they are the binding energy of the deuteron, the cross-section for neutron-proton scattering and the quadrupole moment of the deuteron. Rather scanty material indeed, if compared with the complication and refinement of the calculations; and even these few data are not satisfactorily explained by the theory. One gets the impression that one has to do with a preliminary exploration which may lead to nowhere until a quite new and unexpected turn is taken. However this may be, the author deserves our thanks for his short and clear exposition of a difficult subject.

MAX BORN

**Science and the Creative Arts**

By W. B. Honey. Pp. 84. (London: Faber and Faber, Ltd., 1945.) 6s. net.

**I**T is impossible not to welcome this sensitive, and in part brilliant, essay with open arms. At the same time, it is equally difficult to accept all of it without reserve. Mr. Honey does well to stress that a work of art is an 'ultra' event, transcending the metrical limitations inherent in scientific methodology. Nevertheless, it is very doubtful whether men of science do, in fact, claim to evaluate art in terms of immediate usefulness. What is more likely is that the difficulty experienced in deciding what is 'pure science' and what is 'applied science' has extended to the frontier region between the 'fine arts' and the 'applied arts' with the equivalent blurring of intention. The author's ideal State, sketched in his last chapter, will need to focus upon this boundary line very critically if it is not to produce aberrations gross enough to obliterate the true image. For the rest, many will be encouraged by such a deeply felt attempt to discover the good and the beautiful, and to render them available to all and sundry; and this in spite of one or two sweeping generalizations which either side (materialist or 'other-worldly') will do well not to take too seriously.

F. IAN G. RAWLINS

**English-Spanish Chemical and Medical Dictionary** Comprising terms employed in Medicine, Surgery, Dentistry, Veterinary, Biochemistry, Biology, Pharmacy, Allied Sciences and related Scientific Equipment. By Morris Goldberg. Pp. ix + 692. (New York and London: McGraw-Hill Book Co., Inc., 1947.) 50s.

**T**HIS is a dictionary intended to assist technical translators in the preparation of literature in Spanish. Apart from the Spanish equivalent of each English word there follows, wherever necessary, a brief simple explanation of the term in Spanish. The scheme is excellent and well executed, and the book should be of great value to commercial undertakings dealing with Spain and Spanish America.