mals and of free-living forms will permit the exploration of nematode physiology. Application of root-culture techniques to the study of host-parasite relations is already proving fruitful. Wallace presents a useful summary of our present position. As nematologists apply modern techniques to the pursuit of knowledge, we may expect a closer approximation to a "biology" of the plant-parasitic nematodes.

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## Ornithology

**Les Oiseaux du Nord de l'Afrique de la Mer Rouge aux Canaries.** R. D. Etchécopar and François Hüe. Boubée, Paris, 1964. 606 pp. Illus. F. 120.

Africa north of the Sahara is predominantly European in its fauna, the important barrier between the Palaearctic and the Ethiopian biotas being the Sahara, not the Mediterranean. Zoologists have been aware of this, but a somewhat parochial attitude has nevertheless caused the northern parts of Africa to be slighted by specialists on both European and on African zoology, although as far as birds are concerned we have, it is true, detailed books on the avifauna of Egypt and less complete works on the birds of Tunisia, and even of Rio de Oro. The present work brings together in compact and useable form our knowledge of the birds of the entire Mediterranean portion of Africa, from the Canary Islands on the west, across Rio de Oro, Morocco, Algeria, Tunisia, and Libya, to and including Egypt at the eastern end of the region.

The book is a convenient summary of what is known of the appearance, distribution, and status of each of the birds as well as a manual for their identification. Preceding the treatment of each family there is a key for identification of the included species. Some of these keys are of the "museum" sort—that is, they involve such items as measurements of specimens in the hand, while others are more of the "field guide" type.

Each species is listed under its French name and Latin designation, and under each is added the name in English, Italian, German, and Spanish. This is followed by a discussion of identifying characters (both in the laboratory and in the field), behavior, nesting habits, distribution, and races. The account of each species is illustrated with a map on which its distribution and its migration are outlined. The plates are semidiagrammatic in some but not all cases; however all are obviously designed as adjuncts to identification, not merely as decorations for the book. There is an adequate index, and even a special index to the Arabic and Berber names of the birds.

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## Boreal Faunas

**Ordovician Paleontology of the Northern Hudson Bay Lowland.** Memoir 90. Samuel J. Nelson. Geological Society of America, New York, 1963. x + 152 pp. Illus. Plates. $6.75.

Ordovician rocks are exposed interruptedly along several of the rivers that drain into the southwestern Hudson Bay. This monograph is concerned with the exposures in northeastern Manitoba near Port Churchill and Port Nelson. The localities have been described much more fully than in the past, many excellent sections have been measured, and the fossils are recorded and described. The sequence of carbonate rocks is separated into several new groups and formations. The similarities in lithic and faunal sequences support the correlations with the Red River, Stony Mountain, and Stonewall formations of southern Manitoba, which are representative of medial and late Ordovician carbonate rocks that are widespread in the northern and western parts of the continent. Most of the memoir is devoted to systematic descriptions of fossils of several classes, particularly descriptions of corals and cephalopods; these are represented by many genera and species, some of them new. Brachiopods, which are abundant, and cephalopods of the genus *Diestoceras* are not included. The table of identified forms would be more useful, if relative frequencies were indicated. The many plates provide an excellent record of typical specimens.

The classification of the Manitoba sequence against the classic sections in eastern areas has been a controversial subject. Stratigraphers seem to agree that the lower limestones can be traced on the surface and in the subsurface into Middle Ordovician Trentonian limestones; they attribute the faunal differences to undetermined ecological factors. Some paleontologists have been impressed by dissimilarities in organisms, particularly cephalopods, with those reported in Middle Ordovician in the East; they have classed the Red River as Upper Ordovician Cincinnatian. Thus, solutions are strongly affected by the faith that the investigator places in differing sorts of information. Nelson does not enter the controversy significantly, but, with this memoir, he adds appreciably to knowledge on these so-called Arctic or boreal faunas that lived in the most extensive seas that have spread over the continent.

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## Mathematics

**Symmetry: An Introduction to Group Theory and Its Applications.** R. McWeeny. Pergamon, London; Macmillan, New York, 1963. xiv + 248 pp. Illus. $7.50.

In less than 250 pages, the author gives an introduction to group theory, a survey of the representation theory of finite groups, and the basic ideas of the applications of group theory to many problems in physics and chemistry. The book is aimed primarily at physics and chemistry graduates who do not have an extensive mathematical background. The author's plan to give a leisurely treatment of the mathematics that these students need and to do justice to the applications in such a short space rules out full discussions of most of the deeper topics, but his striking ability to illustrate each mathematical idea and physical application by well-chosen, fully worked out examples allows McWeeny to give more than a superficial presentation of his subject.

Close study of the examples is essential to counteract the occasional weakness of the accompanying discussion of the general mathematical concepts (for example, the impression that every linear mapping of a vector space has a multiplicative inverse is given in