bution of many of the fishes form an important part of the book.

The first edition was used in many colleges and universities, and by fishery biologists; this has enabled the authors to produce a nearly perfect second edition, in which great confidence may be placed. However, in the section on "Methods of counting fin rays," one is led to believe that the definitions given for (i) "principal and branched rays" and (ii) "last ray of dorsal and anal fins" are generally accepted. That is not the case, however, for many prominent ichthyologists (i) do not distinguish the "principal ray" but record separately each simple and branched ray and (ii) count and record each fin ray that has a separate base for both the dorsal and anal fins. In a few places in the key one still finds vaguely defined contrasting characters, such as "mouth more oblique, making an angle of decidedly less than 60 degrees . . ." and "mouth less oblique, making an angle of little less than 60 degrees . . ." Of course, in a fauna as complicated as the minnows of the Great Lakes, perhaps some vagueness is unavoidable and I do note that much of the vagueness of the earler version has been removed.

This book is a must in every biological laboratory where there is interest in the zoology of the Great Lakes region. It is an excellent contribution to ichthyology.

LEONARD P. SCHULTZ
Division of Fishes,
U.S. National Museum

Nationalism in Colonial Africa. Thomas Hodgkin. New York University Press, New York, 1957. 216 pp. $3.75.

There is mounting evidence to support the proposition that the fundamental political issue of the 20th century will not necessarily turn out to be the cold war and all it stands for. The fundamental issue may well be found in the problem of whether the more advanced, industrial societies, at present still the masters of science and technology, will succeed in associating in mutually beneficial partnership with the less developed but rapidly evolving new societies of Asia and Africa. That the ideological struggle and its associated power politics are likely to have a very direct bearing upon the ultimate nature of any such association makes our need for a more precise understanding of that process of evolution all the more urgent.

Over the years, Western scholarship in the social and cultural sciences has built up an impressive body of findings on Asia. Especially in this country, there has been until very recently no comparable concern with studies of Africa. This was largely due to the fact that, virtually until World War II, Africa's social and political problems were seen primarily from the point of view of the colonial powers and their holdings. With the passing of the old order in Africa, American policy makers and American scholarship have become aware of the African challenge. At an incredible pace, a new African society is coming to life, amid explosive political upheavals, with the advent of newly self-governing communities and with the growing realization, both in Africa and elsewhere, that peoples in widely separated areas of the continent are developing a sense of interdependence and kinship—a process that is stimulating the growth of a new and vigorous African leadership, of which Kwame Nkrumah of Ghana is a good example.

Hodgkin's book, a sample of British scholarship in this field, is a searching study of the new nationalism found throughout colonial and recently colonial Africa. The author does not fail to recognize the problems of terminology in this context—(what *is* an African nation?) and concludes that for his purpose nationalism can be suitably defined as the explicit assertion by any group "of the rights, claim or aspiration of a given African society . . . in opposition to European authority, whatever its institutional form and objective." Equipped with a broad grasp of realities, the author starts out by presenting a significant comparative analysis of the policies of the three principal colonial systems which have largely fashioned the matrix of modern Africa. Despite the characteristic differences between the several colonial environments, the national movements throughout Africa have, in Hodgkin's view, a great deal in common. His examination of certain focal aspects of contemporary African life very effectively demonstrates the value of his hypothesis. His analysis of the new urban communities brings out their function as the cradle of a new African middle class. The formation of a broad variety of new African organizations is shown to be a way of blending new experiences with the older traditions. Attention is given to the role of Christian sects, illustrative of the general religious life, and to the connection of these sects with nationalist attitudes, as well as to the generally moderating influence of trade unionism and the growth of political organizations among Africans. Specialists and general readers alike will be stimulated by a chapter devoted to the search for effective myths and symbols with which the new nationalists, like their Western precursors, seek to invest themselves.

Hodgkin concludes that the rapid tempo which has marked the growth of African nationalism is unlikely to diminish, since the factors responsible for this growth (urbanization, educational advances, and so forth) continue to operate. Whether these movements will employ violence or nonviolence—revolutionary or constitutional methods—will, in his opinion, largely depend on "the attitudes of the colonial regimes, the flexibility of their policies, their willingness to make substantial political concessions." The book, originally published in England in 1956, has lost nothing of its value in the interim. It impresses me as being one of the most balanced and most illuminating studies yet made of this complex political process and its social setting. It may even persuade the skeptic of the possibility of meaningful generalization in this area.

WOLFGANG H. KRAUS
School of Government,
George Washington University

Plant Nematodes. Their bionomics and control. Jesse R. Christie. Agricultural Experiment Stations, University of Florida, Gainesville, 1959. xi + 256 pp. $3.75.

Among the subdivisions of modern biology, plant nematology casts a feeble, though increasingly strong, light. Although nematodes have been known to zoologists for some years—especially to parasitologists, who have studied nematodes of man and domestic animals—most zoologists neglect the study of marine and soil nematodes. Prior to 1940 a handful of workers had succeeded in convincing only a few agriculturists of the importance of these pests. But once a practical method of killing eelworms in field soil had been developed and it had been demonstrated that remarkable increments of crop growth follow such

treatments, many growers were convinced that soil-inhabiting nematodes are an important burden to plants.

Small groups of plant nematologists are active in various parts of the world, the largest number being in the United States. California has the only university department of nematology, so termed, at the graduate level, but a growing number of universities include specialists in nematology in their plant pathology and entomology departments. Publication of the first American book devoted exclusively to plant nematodes is therefore an event.

Christie is the dean of experimental agricultural nematology in the United States. His book discusses each of the known plant-parasitic nematodes in turn, presenting a well-illustrated and careful compilation of information useful to a wide audience. The book includes no taxonomic keys; it strongly emphasizes life history, injury to plants, and methods of control. The literature citations are adequate.

Plant nematology is at an exciting moment in its history. Study of the subject is gradually gaining support, both from government and in universities. The great complexity of the relations between host and parasite makes it imperative that we employ the full resources of modern biology to achieve the necessary understanding for manipulating these relationships. Christie's book shows the tremendous variety of the nematodes parasitic on plants; it will ease the task of all who seek to become acquainted with these forms.

VICTOR H. DROPKIN
Nematode Research Laboratory,
U.S. Department of Agriculture,
Seaford, Long Island, New York

A Method of Anatomy. Descriptive and deductive. J. C. Boileau Grant. Williams and Wilkins, Baltimore, Md., ed. 6, 1958. xxv + 879 pp. Illus. $11.

Since its original publication in 1937, this book has enjoyed great popularity, and countless numbers of beginning medical students have found it helpful in gaining some understanding of human gross anatomy. The body is considered by regions, rather than by systems as in the larger, standard texts; hence this book in some degree combines the functions of a simplified text and a dissecting manual. It is intended to be, in the words of the author, "a working instrument designed to make Anatomy rational, interesting and of direct application to the problems of medicine and surgery."

The text of this newest, sixth edition has been considerably revised, and this involved deletions as well as additions. However, the character of the book has not been altered. The most striking change is in the use of the new international anatomical nomenclature, or N.A.P. (Nomina Anatomica Parisiensia), which was accepted by the sixth International Congress of Anatomists at Paris in 1955. Happily, however, where the newer terminology differs substantially from that previously in general use, the older B.N.A. (Basle Nomina Anatomica) or B.R. (Birmingham Revision) terms are also given in brackets. Parenthetically, it is to be hoped that international adoption of the N.A.P., even though the new nomenclature may be inadequate in some respects, will put an end to the unprofitable tinkering with anatomical terminology that has plagued anatomists during the past quarter-century.

The illustrations, all in black-and-white, number 862; of these, 34 are new. Many of the figures are clever diagrams which are quite useful to the student. In general, however, the illustrations are so simplified or even schematic that the book can be most profitably used only in connection with an anatomical atlas.

A useful list of nearly 200 references is appended. This has been kept up to date: 71 are of the last decade, and 36 have been published since the previous edition—hence, since 1952. Regrettably, however, all save four are references to books or papers written in English, and of these, two are cross-references to translations of French publications. Admittedly, the American medical student (and, evidently, his Canadian counterpart as well) shrinks from contact with anything written in a foreign language. Yet it may be questioned whether the anatomist, of all people, with the roots of his science extending back into antiquity, should wittingly acquiesce in and even contribute to the increasing debasement of the humanistic aspects of medicine.

No book can be entirely satisfactory to everyone. In any event, this book is one of the best of the shorter gross-anatomy texts now available in the English language. Its continued popularity seems assured, particularly in view of the current trend toward drastic curtailment of the time devoted to anatomy in the medical curriculum. Under these conditions, a shorter text of this sort is especially valuable.

WILLIAM L. STRAUS, JR.
Department of Anatomy,
Johns Hopkins University
School of Medicine

The Chemistry and Physics of Clays and Other Ceramic Materials. Alfred B. Searle and Rex W. Grimshaw. Interscience, New York, ed. 3, 1959. 942 pp. Illus. $16.25.

The appearance, after 25 years, of a third edition of this standard reference volume on the composition and properties of clays will be welcomed enthusiastically by everyone who has any interest in clays and soils. As stated in the preface of the second edition, the object of the authors was to select and coordinate all important facts that appertain to the chemistry and physics of clays and allied materials. It would be impossible for anyone to attain completely such an objective, but the authors are to be congratulated on having come very close to it.

The first chapters in the volume are concerned with the atomic structure of the components of clay materials and with methods of identifying and analyzing these components. These are followed by many chapters which are concerned with the physical properties of clay materials, and the authors are especially concerned with the theories that have been advanced to explain these properties. Throughout the book consideration is given to the occurrence of various types of clay materials, and a brief historical discussion of ceramics is presented at the beginning of the volume. The book is very clearly written and remarkably free from errors. There is a considerable amount of repetition—for example, in the consideration of the characteristics of clay-water systems—but this is perhaps unavoidable in a volume of this kind.

In a volume of this magnitude every serious student of clays is bound to find some statements with which he disagrees. Thus, I am not in accord with all the statements made concerning bentonite, chert, and ball clays.

The volume could have been substantially shortened if many of the trivia