are definitely desirable. The volume will undoubtedly be helpful to many people working in the laser field, and most scientific libraries and reading rooms will want to have it available.

On the other hand, this first volume also points up some of the difficulties involved in choosing the articles to be covered. About 15 reports on work carried out for the Defense Department are included, and my personal feeling is that these abstracts could have been omitted without limiting the value of the book. Abstracts published in the *Bulletin* of the American Physical Society were abstracted, which is probably desirable. The few favorable comments made in the abstracts should have been omitted, since favorable comments were not made about the most important papers in the field. The problem of achieving uniform quality in the abstracts is obvious in several cases where the abstract is an almost exact paraphrase of the title. A somewhat more comprehensive foreword in which the author stated his criteria for inclusion of abstracts and the period covered by the volume would have been helpful.

P. L. BENDER
Joint Institute for Laboratory Astrophysics, Boulder, Colorado

Economic Geography

The Geography of Modern Africa. William A. Hance. Columbia University Press, New York, 1964. xiv + 633 pp. Illus. $12.

Although racial and social problems are still major factors in the pattern of Africa's rapid political change, the most important problems in the newly independent African countries are invariably economic. Are the smaller states economically viable, and what are the chief resource problems? How many of the states have adequate capital, labor, and technical equipment to develop their potential and raise standards of living?

William A. Hance is well qualified for the task of presenting Africa's economic situation, as professor of economic geography at Columbia University, as a frequent visitor to Africa, as a keen student of problems of economic development, and as the author of a notable study, *African Economic Development* (Harper, New York, 1958) and several major articles. *The Geography of Modern Africa* is essentially an up-to-date survey of the main features of the economic geography of Africa, arranged according to seven major regions. In its enormous scope this book is remarkably accurate. Considerable care must have been taken to check the sources of information. The publishers deserve especial congratulation for the speed with which they produced this text, for the extremely attractive format, and for the high quality of print and of reproduction of maps and diagrams. Only five chapters are devoted to generalities. The whole emphasis is on regional aspects, and each region is treated differently. Thus, while in West Africa land use, including the agriculture, receives immediate treatment after the introduction, in South Africa, agriculture follows consideration of racial problems and of mining. Although the regional coverage of the continent is complete, particular attention is paid to tropical Africa (the largest single section is that given to West Africa), and there is a marked emphasis on current and future problems, leading, for example, to unexpectedly large subsections on industrialization. Problems of overpopulation and of population distribution receive considerable treatment, and attention is firmly focused on areal aspects. This is not a study of African economics but of economic geography. As such, it contains the best general appraisal of Africa's resources, and of her regional economic problems, yet produced.

Having acknowledged Hance's skill and authority in economic geography, one must, however, offer some criticism of his generalizations with regard to the biological and physical background. These are, in any case, very limited in scope, although of major importance in the consideration of Africa's economic future. For example, it is claimed that "latosolic soils provide the main reason for the dominance of shifting agriculture in tropical rainy and savanna areas . . ." (p. 16 and similarly on p. 202). Admittedly, latosolic soils can be fragile and pessimism has been expressed by numerous authorities. But some attention must be paid to the views of Vine ("Is the lack of fertility of tropical soils exaggerated?" in *Proceedings*, 2nd Inter-African Soils Conference, Leopoldville, 1954, **1**, pp. 389–412), among others, and to the quite different views on shifting agriculture which regard it as limited not so much by soils, as by problems of capital, tradition, pasture, difficulties of livestock integration, and availability of fertilizers. If rainforest plots are abandoned after 2 to 5 years of use, should we blame the soil or the almost continuous cultivation with long rainy seasons and without use of fertilizers? Longer periods of cultivation in some savanna areas may be related to the annual rest given the soil during the dry season. Minor blemishes include uncritical acceptance of such terminology as "savanna climate type" (p. 15), which misleads the student by begging the question of vegetation-climate relationships; claims that much of the more favorable land from the climatic standpoint "falls in the highland climatic regions" (p. 15), when the criteria for judging "favorability" are not provided and the greatest productivity in commercial agriculture is in the lower, hotter, and more humid areas; and the suggestion that formerly Africans were "of low average stamina" (p. 6), when, despite the possible correctness of the suggestion, the evidence is so controversial and when it is known that African porters performed remarkable feats of load carrying and endurance. Why, incidentally, is sea fishing included in the discussion of land use (p. 194)?

These criticisms are, however, small and are intended in no way to detract from this remarkably well-written and well-presented study which should be accepted as the standard reference work on the subject in English, and in which the attention to detail has set a remarkably high standard for all other similar studies to follow.

W. B. MORGAN
Department of Geography, University of Birmingham, Birmingham, England

Tools and Techniques

Physical Acoustics. Principles and methods. vol. 1, part A. Warren P. Mason, Ed. Academic Press, New York, 1964. xvi + 515 pp. Illus. $18.

Within the past few years the field of physical acoustics has become fashionable and exciting. The ability to generate, propagate, and detect elastic waves (phonons) in the microwave region, and their use in the study of thermal, electronic, magnetic, and mechanical properties of solids, are only the most striking of the new