of social reality by the entire structure of language and conceptualization. When the bloody struggle to register Blacks in the South becomes the frictionless "extension" of the franchise, a mechanical way of viewing *all* social change is implicitly communicated.

The myth-consecrating impulse among some sociologists has recently found its ideological justification in an article, published elsewhere, by Talcott Parsons and Charles Ackerman, where we are told: "The 'facts' of science are myths. This is not a new thought. It is, however, one whose implications for theory-building have not always been recognized; we believe that they must be." Perhaps this formulation is a sign that Parsons has lately become aware of the mythological character of his own work. In any event, the rest of us should. As if much in the body of this work were not enough to lend disturbing substance to Nicolaus' charge that many sociologists are propagandists for the American *status quo*, Parsons adds a certain literalness to this in his preface (p. xviii) by explaining that "The chapters of this book stem from materials prepared for the *Forum* series of the Voice of America."

ALVIN W. GOULDNER
Washington University,
St. Louis, Missouri

Mechanics of Support and Motion

Animal Locomotion. JAMES GRAY. Norton, New York, 1968. xiv + 479 pp., illus. $15. The World Naturalist.

Most of the research ever done on animal locomotion has come from Britain, most British research on locomotion has been done at Cambridge, and no one anywhere has contributed as much to the field as Sir James Gray of Kings College. Now, in an active retirement, Gray has written a major book which will long be a valued reference.

A background is assumed in systematics and anatomy (particularly of vertebrates and arthropods), algebra and trigonometry, and basic mechanics, particularly of resolution and components of forces, torque, and fluids in motion. A short introductory chapter presents Newton's laws and then, skipping the relation of muscle force to gross and fine structure, comments on power, energy, and efficiency. Six chapters on aspects of the locomotion of fishes and amphibians—Gray's principal research materials—are excellent presentations of both experimental and theoretical work. The chapter on reptiles stresses snakes. That on birds is one of several that are in part difficult to follow. The long chapter on mammals, a class not studied at Cambridge, is perhaps least satisfactory. Too much is covered too superficially for the discussion to be entirely accurate or to provide continuity and insight. The treatment of gaits is limited to the classic, but now dated, books by Muybridge and Howell. In one chapter on terrestrial arthropods Gray relates waves of limb movements to displacement, forces, and footfalls; in another, S. M. Manton herself writes a summary of her many outstanding contributions to the description, analysis, and functional interpretation of arthropod locomotion. Other chapters are about annelids, nemerteans, and mollusks, but even the locomotion of fibroblasts is included.

Understandably, emphasis is given to the author's own contributions and to those of his associates: R. Bainbridge, O. R. Barclay, R. H. J. Brown, J. E. Harris, A. V. Hill, H. W. Lissman, and others. Specialists will recognize that the book weaves together papers previously published. Gray disclaims thorough, even, or inclusive coverage of his vast subject; "Studies in Animal Locomotion" might have been a more apt title. Climbing per se, digging (except by some arthropods), insect flight, and locomotion in most invertebrate taxa are omitted.

The book suffers from organization along systematic instead of functional lines. Thus, gliding amphibians, flying reptiles, bats, and birds are treated in separate chapters, and several modes of swimming appear again and again. Forces between whole animals and their environments are stressed, with frequent attention to posture and equilibrium. Consequences of the inertia of oscillating systems are mentioned but not emphasized; levers are usually presented as weightless. Similarities among animals are noted repeatedly (for example, the myopodia of nemerteans and the coils of the sidewinder, and undulations of sperm, snake, and eel). The overall impression is of a progression of exercises based on the mathematical description of representative situations. Gray largely leaves to the reader the task of relating his subject to evolution and to the fine points of structural and functional adaptation.

The bibliography of 312 titles will be of great value to all who study animal locomotion. Unfortunately it omits several papers cited in text and includes incomplete citations. Some omissions are puzzling: despite Gray's studies in the mechanics of support, E. J. Slijper's pioneering monograph on the spine, B. Kummer's contributions, and principles developed in these papers are neglected. The 17 papers on animal locomotion by P. Magna de la Croix are not credited.

One must be impressed by the scope and scholarship of this book. Gray notes the great demands placed on the sensory apparatus, makes notable contributions to the understanding of the complex neurocontrol mechanism, and impresses the reader that coordination of the response system is intricate almost beyond belief. In this able summary of the major part of a distinguished career, it would have been welcome had he let a sense of awe and wonder subtly show now and again among the formulas.

MILTON HILDEBRAND
Department of Zoology,
University of California, Davis

A Disposition of Objects

The Rays Are Not Coloured. Essays on the Science of Vision and Colour. W. D. WRIGHT. Elsevier, New York, 1968. x + 154 pp., illus. $5.95.

Newton first understood, more than 200 years ago, that "the Rays to speak properly are not coloured," and "Colours in the Object are nothing but a Disposition to reflect this or that sort of Rays more copiously than the rest . . . ." Yet color seems so compellingly to be a property of an object that few among us doubt the obvious. Indeed, the insights of Newton, supported by two centuries of scientific elaboration, are not fully appreciated even by the practitioners of color, such as the artist and the paint manufacturer, let alone the man in the street.

W. D. Wright is a physicist and one of the fathers of the CIE (Commission Internationale de l'Éclairage) system of color specification. Despite the proven usefulness of this system, Wright admits (pp. 126–27) that it "does not give precise information about the spectral composition of the light [or] any