one senses in Dockstader's remarks an implication that "true" anthropological endeavor in museum settings has been subverted by the insidious forces of social science as localized in universities. Perhaps, however, museums should put their own houses in order and reassess their own failings before attributing their loss of centrality in the anthropological establishment to outside forces. Statements such as "a student who studies anthropology without access to material culture is like a chemistry student who has never been in a laboratory" are not apt to gain Dockstader many converts.

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Lectures by Scientists

Science in Progress. Sixteenth Series. WALLACE R. BRODE, Ed. Yale University Press, New Haven, Conn., 1967. xiv + 390 pp., illus. $10. Sigma Xi National Lectures, 1964–1966.

In a brief preface the editor announces the decision of the executive committee of Sigma Xi to discontinue publication of this series, a step that has long seemed overdue. In spite of the fact that all the articles in each volume have been outstanding, the volumes have lacked unity and purpose as books, and since the lecturers are conspicuous contributors to their fields of research, the material they present in their Sigma Xi lectures has as a rule already been published elsewhere. The decision to discontinue publication serves, however, to single out the present volume as the swan song of the series, and it acquits itself nobly of this distinction.

Of vital interest to all scientists regardless of specialization are the articles by J. Bronowski and René Dubos. Bronowski's essay on the limitations of logic and the nature of the mind is even more keenly challenging than his *The Identity of Man,* upon which it is largely based. The essay by Dubos, though addressed directly to biologists, is fully its equal in incisiveness and depth. Together the two essays hold up a mirror to man in which he may see himself better as he seeks to understand his own quest for knowledge of the external environment and himself. Both essays deal essentially with human biology—or specifically, with the nature of that aspect of the human organism's behavior which we call mental. In the field of straightforward biology, Norman H. Cromwell's article on carcinogenesis, Ernest C. Pollard's on genic action in plants, and Talbot H. Waterman's sophisticated discussion of orientational aspects of visual interactions in invertebrates constitute as good a segment of the advancing front of modern biology as one could hope to find.

The same excellence obtains, of course, in the sampling of the physical sciences and technology, though the items presented comprise a far smaller and hence less dramatic and less representative selection of the period's lectures. The essays offered consist of Lyle B. Borst's review of the unique properties of liquid helium, C. J. Phillips' exhaustive discussion of brittle materials, and C. M. Sliepcevich's account of the history and potential uses of liquefied natural gas. The lone venture into psychology or something akin to it by Alphonse Chapanis merely serves to add diversity.

Of general interest also are the opening essay by Hugh Taylor and the closing one by W. H. Pickering. Both are addresses delivered when their authors were awarded Procter Prizes, in 1964 and 1965, respectively. Taylor's essay is packed with valuable information on the wonderful cooperation between industry and free scientific research that a democratic or nontotalitarian society is capable of. Pickering gives an equally rich and lucid account of cooperation between government, engineering, and research in carrying out the space program in the United States. Clearly, this volume is one which any library of science would much benefit in having.

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Chemical Physics

Intermolecular Forces. JOSEPH O. HIRSCHFELDER, Ed. Interscience (Wiley), New York, 1967. xii + 643 pp., illus. $22.50. Advances in Chemical Physics, vol. 12.

Recent advances in both experimental methods and theory related to intermolecular forces are excellently presented in this volume to readers already generally familiar with the subject. This is not an introduction; it is addressed to those who have command of the fundamental theory and older experiments but have not kept up with the journal articles in the last few years. As in any volume made up of contributed chapters, the quality is uneven and there is some overlap.

Particularly masterly is the chapter by Hirschfelder and Meath on the quantum theory of intermolecular forces, in which particular attention is given to very simple cases such as two hydrogen atoms. For a time it was thought that dispersion (or London) forces could be treated as additive pairwise even in dense gases, liquids, or solids; but it is now realized that three-body interactions are significant, and Sinanoglu presents an excellent summary of this theory and its application in condensed states. On the experimental side, molecular beam experiments have been very fruitful, and these are reviewed by Bernstein and Muckerman. In all there are six chapters on theory and four on experimental methods, and each is important for some aspect of this subject. This volume is a valuable addition to the literature on chemical physics.

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The Sun

Solar Activity. EINAR TANDBERG-HANSSEN. Blaisdell (Ginn), Waltham, Mass., 1967. xvi + 464 pp., illus. $16.50. Pure and Applied Sciences series.

Solar activity in general concerns the sun's outer layers, the photosphere, chromosphere, and corona, where magnetic fields undoubtedly play a vital role in most of the observed phenomena. The sources of these fields may well lie deep within the sun, but their influences extend to the orbit of the earth and beyond. As the nearest star, the sun should be an example for astronomers of how complicated things can be nearby that seem straightforward from afar. This book illustrates the point effectively.

Tandberg-Hanssen advocates application of the physics of plasmas to solar problems. A little like being for mother, country, and God! Everyone can praise these objectives. The book organizes itself from the point of view of the solar atmosphere as a natural example of a multicomponent, magnetic plasma. The problems that present themselves, difficult physically, and horrible analytically, are nevertheless the obstacles in the path of deductive solar physics. Progress has been slow and therefore welcome even in tiny