the country as a whole with respect to a wide range of cultural traits, and some work directed to this end has been and is being done elsewhere. One does not, of course, imply censure of the authors for not adding another prodigious feat to their present one. It is worth emphasizing, however, that this book is not a study of rural Japan as a whole which, to some mild degree, it appears to be; such a study could have been, and still must be, written to complement *Village Japan*.

The final comment is even more simply a lament for what the authors, with their great resources, might have done. The book is fundamentally a thoroughly conventional ethnography, raised to an undoubtedly high level, but still conventional. The consequence that most grieves me is that it leaves one with the curious sense that there were no human individuals in the village. There is excellent generalization of behavior and institutions, but biographies, the delineation of individual motivational situations, or those other vehicles that might have carried to us the sight and sound of the villagers themselves are virtually excluded. A sheaf of good pictures showing normally lively-looking Japanese going about their lives merely compounds the sense of deprivation. More seriously, one gathers that the authors object to culture and personality or national character approaches. It is certainly true, as they assert, that rural social norms severely limit individualism. It may also be true that the villagers in question exhibit, even for rural Japan, a peculiar sense of propriety toward these norms. It may even be true, as is stated in the foreword, that foreigners never become "members of the (small rural) community" in Japan, with the implication that the observers were thus excluded from many intimacies. Nevertheless, unlike many other students of Japan, the authors did not live in the community (a technically debatable procedure), and it is patent that elsewhere many Americans and Japanese have taken one another about as far as possible into their individual lives. It is, after all, the individuals of Niiike who would have enriched the work, didactically as well as empathically. It is scarcely inventive to remind ourselves that much of the efficient logic of culture lies in the interaction of standards and the native individual. Moreover, one can argue that a peculiarly central problem in the study of Japanese culture is the dialectic between social

Kumagai Motoichi. Dolls are arrayed on shelves for Girls' Day. [From *Village Japan*]

norms that are among the world's most rigidly collectivistic and human norms that are among the world's more highly expressive. It is this tension that has overwhelmingly animated a great artistic and literary tradition, yesterday as it continues to do now, at the popular and at the sophisticated level. If the villagers of Niiike do not, in fact, engage strenuously in this dialogue, then one wants proof and discussion of their alienation from the great tradition. This is admittedly gratuitous advice. If Hamlet has been left out of the play which we know is so peculiarly appropriate to him, it is because we are here observing a different dramatization. The public interested in Japan, as well as orientalists and a host of other specialists, will be in deep debt to the authors and their sponsoring Center, for years to come.

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From Galaxies to Man. John Pfeiffer. Random House, New York, 1959. 184 pp. $3.95.

Probably no one has tackled a larger subject since Humboldt started to write his *Cosmos*. Pfeiffer's subject is no less than the history of the entire universe from the beginning into the future. The theme runs through the origins of galaxies, of stars, of the elements, of planetary systems, of life and of man, and on into a final chapter titled "Futures in space." The drama has a cast of billions; it is truly supercolossal.

In so great an undertaking, even a modest success would be praiseworthy. Pfeiffer's success may not be complete, but it is better than modest. He has summarized this vast story in words that anyone can understand; he has conveyed a sense, at times almost breathless, of the excitement of it all; and he has fallen into practically no positive errors. That is indeed a remarkable accomplishment, and one that can be highly recommended.

Such a success has its price, or its qualifications that may be discussed more in commiseration with the author than in criticism of him. For one thing, the logical start is with those awesome words "In the beginning"—and we (as scientists) do not know what was in the beginning, or even whether there was a beginning. Each great segment of the history starts with mystery, with ignorance, with (to be frank) wild guessing. Pfeiffer does not evade this issue or mislead the reader. He stresses, even at times overstresses, the provisional character of hypotheses about origins. He exploits the fascination of beginnings and pays the price that much of the book, therefore, admittedly lacks a solid foundation.

The style of writing also contributes to the success of the book, and also at a certain cost. It is rhetorical (in a good sense), often poetic, sometimes deeply moving. Few books on science are written so well or are more likely to convey humanistic values. The balance and the price may be indicated by two random quotations.

"Particles dart and swerve and bounce off one another, and sometimes stick together. They form shapes and fragments of shapes, Tinker Toy lattices and crosses and branching structures and unclassified patterns resembling the forms in some modern paintings." Something exciting is going on here, but what? In this and many other passages there seems to be more action than information.

"The earliest naked genes may not have been particularly good at making images of themselves. They must have erred frequently. After all, they were new hands at a difficult job. . . ." That is a vivid introduction to what could be a dull topic. Is it, perhaps, just a bit *too* vivid? The stylistic trick of personalization, if overworked, comes close to animism.

Those remarks add up to no more than saying that this is one kind of

popularization of science and not another kind. It is a good kind: nondidactic, indulgent of admitted flights of fancy, highly eloquent, and at the same time, conscientiously based on current professional consensuses. Scientists are fortunate to have such an interpreter, and the book deserves wide lay notice.

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Medical Biology and Etruscan Origins. Ciba Foundation symposium. G. E. W. Wolstenholme and Cecila M. O'Connor. Little, Brown, Boston, Mass., 1959. xii + 255 pp. Illus. $9.50.

This volume is one of a series published by the Ciba Foundation to promote international cooperation in medical and chemical research. The 50th Ciba symposium departed from the narrower range of previous conferences and chose as its subject "The recent contributions of medical biology to ethnology; with special reference to the origin of the Etruscans." This book contains the papers read as well as the discussions which followed and spans the gap between science and the humanities, a bridge that archeology bitterly needs.

The choice of title was not very felicitous since it seems to promise more results achieved by medical science in the study of Etruscan origins than the book provides. Half the book deals with special phases of Etruscan archeology—for example, cities, origin of the culture, oriental characteristics of the religion, relationship of Etruscans to Villanovans and Umbrians—by outstanding scholars from Europe and America. The second half, however, is largely devoted to medical and anthropological investigations in ancient fields, written from a general point of view—for example, "The evaluation of metrical data in the comparison of ancient and modern bones" (N. A. Barnicot and D. R. Brothwell), "The use of genetical characters as indices of population distribution" (A. E. Mourant), "Blood groups and haematological data as a source of ethnic information" (R. Ceppellini)—with a minimum of data on the ancient Etruscans. The papers on the various topics are most illuminating and the discussions most interesting, but the results in terms of Etruscology are disappointing.

The difficulty of recognizing the ancient Etruscans in Italy, a difficulty enhanced by the lack of scientific digging in the early excavations, is clearly expressed. The further difficulty of identifying Etruscans in the mixed populations of ancient Cyprus, Syria, and Anatolia is scarcely touched upon. The development of the Etruscan culture in Italy and its relation to that of Central Europe is emphasized; the origins of the culture (art, techniques, language, and so forth) in the orient, except for the religion, is neglected. There emerges, however, the strong hope that great progress in the solution of the Etruscan problem may be attained if careful digging is combined with medical research and physical anthropology.

The papers are ably written, the archeology is admirably illustrated, and the book is excellently published. The price for the scholar, however, is high. The Ciba Foundation may be congratulated on taking a bold, forward step and in pointing the way to new fields of investigation.

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Group Theory. And its application to the quantum mechanics of atomic spectra. Eugene P. Wigner. Translated from the German by J. J. Griffin. Academic Press, New York, expanded and improved edition, 1959. xi + 372 pp. $8.80.

This volume is essentially a direct translation into English of the classic 1931 edition that was published in Geman. It includes, in addition to the original content, three new chapters; chapter 24, "Racah coefficients," chapter 26, "Time inversion," and chapter 27, "Physical interpretation and classical limits of representation coefficients, three- and six-*j* symbols." Much that is contained in these new chapters has not previously appeared elsewhere in print.

When the book was first published in 1931, and for a number of years after, many physicists were reluctant to accept group theory as an essential tool of theoretical physics. Just a few physicists, including Wigner, recognized that the theory of representations of symmetry groups provides a systematic method for obtaining those properties of the solutions of the Schrödinger equation which follow from the symmetry of the physical problem. Furthermore, almost every exact statement concerning solutions (exact or approximate) of the Schrödinger equation is a direct consequence of a general symmetry property. The importance of this point of view is now widely recognized among physicists not only in connection with the Schrödinger equation, but also in connection with relativisitic theories. Although group theory is not widely accepted as an essential part of the standard graduate course in quantum mechanics, it should be studied, at least by the prospective theorist, as supplementary material.

Wigner's *Group Theory* provides an excellent introduction to the subject for the physicist. It is very explicit in its handling of the theory of representations, as well as in its physical applications. A number of specific examples are treated in detail. The domain of physics encompassed by the examples is not very great; applications are limited (with one or two exceptions) to problems in atomic structure. The treatment of abstract group theory is purposely minimal. Therefore the book is probably more suitable for use as a supplementary rather than a primary source for study of the purely mathematical aspects of the subject. The basic ideas of quantum mechanics are reviewed, but, again, the book would not serve as a primary text of quantum mechanics. To reap the greatest value from this book, the student should already have a substantial knowledge of this subject. However, the sections devoted to quantum mechanics are well worth reading, for they provide an excellent and concise statement of the physical interpretation, and they give Wigner's perspective, which always has new and enlightening facets.

The rotation-inversion group in three dimensions along with some of its subgroups and the symmetric (permutation) group are treated in detail. The discussion of the representations of the symmetric group is limited to those irreducible representations which are significant in atomic structure; this does not include the complete set. Young's symmetry operators are not mentioned. This is unfortunate since, as Wigner was the first to show in his important 1937 papers on the symmetric Hamiltonian, some of the other representa-