

in the study of mineralogy and crystallography. It is clearly essential for the beginning student, and its relative completeness makes it valuable for the experienced professional.

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Science and Philosophy

The largest part of this volume, **The Foundation of Metaphysics in Science** (Humanities Press, New York, 1965. 512 pp., illus., \$10), by Errol E. Harris, is a summary of scientific theories in physics, biology, and psychology. Happily, that part can be recommended for its own sake. The purpose of its inclusion is to support a metaphysical view of a Leibnizian-Whiteheadian stock, which utterly failed to excite me. "Contemporary science of physics, biology, and psychology," the author claims, "all presume, with abundant empirical justification, continuity of gradation from the inorganic to the organic and from the physiological to the psychological" (p. 290). He admits that the situation is not yet entirely satisfactory and promises to fill one gap in our knowledge, to clear one of the remaining difficulties. If he could do that, he would be contributing to our scientific knowledge; even doing so by the use of a philosophical method would constitute a contribution which would make his exercise most exciting.

The author's own claim is not to add to but to use science. The science he uses he presents well, so that one can easily see that the author often rejects views presented by the majority of scientists—usually as oversimplifications—in favor of views advanced by scientists holding his own philosophical convictions. When such alternative views are not available, he may present a dream as if it were a fact. Thus, he says that there exists one single equation from which all equations of physics, micro or macro, follow logically (p. 145).

In my opinion both oversimplification (idealization) and unification (universality) are of equal importance, and the dialectic between them keeps science going. When the fashion, however, is in favor of oversimplification and overcompartmentalization, and even of hypostatizing such transient defects, it is refreshing to see an attempt, however

exaggerated in its claims, in the opposite direction.

The scientific parts of the book are uncommonly interesting, popular though high-level, and even up-to-date. The author's heterodox views do sometimes come in his way, but they also afford him a fresh look and a frequent new flash of imagination that may intrigue a reader and lead to further ideas. On the whole his survey is somewhat less ordinary than surveys which show no idiosyncrasy. It is delightful to see a list of criticisms of neo-Darwinism, for instance, whether these are answerable or not. One may complain that the author does not expand on his view that photosynthesis converts noise into a message. But one may take it as a suggestion, and work out a variety of criteria which may or may not include self-winding watches in the same class as chlorophyll, and possibly even make such mechanisms more efficient than chlorophyll.

All this may be useless fun. And, in any case, owing to the author's philosophical bias and wishful thinking, the book requires discrimination on the part of the reader. But it will be read, then, with one sort of profit or another. It may serve as a refresher for high-brow conversationalists. It may also serve as a source of, and a reference for, information for the more thoughtful. It may even help some to write better science surveys.

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Prehistoric Expedition Report

This volume, **Contributions to the Prehistory of Nubia** (Fort Burgwin Research Center and Southern Methodist University Press, Dallas, Texas, 1965. 200 pp., \$6.50), contains a series of preliminary reports on the prehistory and geology of lands bordering the Nile River in Sudanese and Egyptian Nubia, most of which have been, or will be, inundated by waters rising behind the New High Dam at Aswan. The papers were assembled by Fred Wendorf.

The research was accomplished by the Combined Prehistoric Expedition which included participants from Columbia University, the Museum of New Mexico, and Southern Methodist University. Egyptian, French, Belgian, Polish, and British scholars also have par-

ticipated in the investigations. This expedition is one of numerous scientific teams that have engaged in salvage archeology in an area where some of the most important developments in the cultural history of man have occurred, developments that extend from Early Paleolithic times to the Pharaonic and later historic periods of Egyptian civilization.

The report contains six articles: A summary of work during the field season 1963–1964 (by Wendorf, Shiner, and Marks) correlates archeological and geological sequences in Nubia from Early Paleolithic industries to Neolithic remains. Said and Issawy, in a paper on the geology and geomorphology of Lower Nubia, Egypt, attempt to account for the geological evolution of the Nile. De Heinzelin and Paepe present preliminary results of their analysis of the geological history of the Nile Valley in Sudanese Nubia. A statistical and typological study of the Early and Middle Paleolithic industries is presented by J. Guichard and G. Guichard. Waechter describes four sites that have complexes identified as epi-Levallois. Chmielewski reports on investigations aimed toward obtaining information on the formation of the Nile Valley.

Although it is stated in the volume that some of the interpretations in these preliminary papers need revision, it is unfortunate that such revisions were not made before publications. Discrepancies between articles and the inclusion of inferences based upon data obtained after certain articles were written are confusing. Obviously, divergent opinions among staff members of such a large endeavor are to be expected, but the reasoning behind some highly conflicting statements should be explained. For example, in one article it is related that investigations were made at "thirty-six sites where archaeological industries were found associated with pre-Nile deposits" (p. xv), and in another paper it is stated that "no industry is as old as the Pre-Nile System" (p. 55).

Publication of preliminary statements upon continuing research generally is appreciated, but such papers should be carefully scheduled and edited in order to present a clear, comprehensive account of the then current status of the program.

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