

synthesize with the law of contract those parts of the "living law" which are not absolutely incompatible with it. As a model of such analysis, Northrop cites Kluckhohn's study of the basic postulates of Navaho culture, and it is in this general connection that his "philosophical anthropology"—a kind of cross-cultural epistemology—comes to the fore. Philosophical anthropologists are needed, therefore, not only in the councils of these countries but also in our State Department if the United States is to be able effectively to help the new nations reach their goals. It should be noted that Northrop is dealing here with a particularly subtle aspect of the whole issue of congruities and incongruities in cultural contact, and anthropologists, many of whom have dealt with the matter rather fuzzily, may very well find his approach to it a stimulating one.

The foregoing is an attempt to synthesize what seem to me to be the issues of greatest concern to Northrop in his book. It is not, however, the author's over-all summary, for in fact there is none. This, in a book which is so discursive as to be worthy of Toynbee unabridged, is an unfortunate omission. Opening with a statement related largely to item 7 above, Northrop then introduces his other points and proceeds in the rest of the book to put them through a sort of leapfrog exercise in which all of them reappear more than once. While this may seem repetitious to some readers, it serves a useful purpose, for Northrop's ideas generally need to be restated in different contexts in order that they may be fully grasped. Thus, there are some partial summaries and syntheses.

One suspects that this organization is a result less of deliberate planning than of the nature of the component parts of the book. There are 19 chapters, arranged in three parts, of which seven are reprints of articles which were published individually in the 1950's. These are concentrated in part 2; the composition of parts 1 and 3 would, generally speaking, appear to have been later. While cross references to chapters have been inserted, there is a disconcerting patchwork quality to the whole.

Part 1 consists largely of formal philosophical and logical expositions and proofs of the author's major points. Most of this part consists of some truly formidable prose, and one can fairly derive some wry amusement from the fact that it might well be a literal

translation of that "cumbersome and wordy German philosophical prose" which Northrop, in part 3, disapprovingly associates with Immanuel Kant, saying that he should have used symbolic logic instead. If Northrop wishes his part 1 to be fully appreciated by readers who have not been trained to cope with formal philosophy, he will need to revise it someday. As matters stand, however, such readers will not go too far astray if they commence their reading with the beginning of part 2; those chapters are a series of applications of the author's ideas concerning such areas as political evolution in various parts of Latin America, the ideological failure of technical assistance in Ceylon, and the philosophical-anthropological reasons for the rapid transformations in Communist China, to name but three. From the point of view of an anthropological reader such as I am, part 2 is the best part of the book, for in it the author not only states his basic ideas in simpler terms than in part 1, but he also sets them in specific cultural contexts. There is good anthropology per se in part 2, and the reader may make excursions into part 1, as Northrop suggests at several points, for rigorous philosophical support, if he so chooses.

Part 3 has but three chapters, the first being a reprint which includes an eloquent statement of the pejorative image of itself which the United States has exported. The remainder concerns itself primarily with the necessity, and with suggestions of the means, for working toward the cultural syntheses which have been indicated earlier. The possibility that the democratic and Communist bloc nations may achieve, through philosophical-anthropological diplomacy, a mutual rejection of the Aristotelian-Hobbesian presupposition is discussed.

It is easy to find fault with a book which takes the whole contemporary world, several disparate courses of history, and the findings of half a dozen academic disciplines as its province and attempts a systematization of such knowledge. It can hardly be easy, however, to write such a book even when many years of reflection have preceded its composition. And so, while we may question whether all the social concepts which are subsidiary to the law of contract are actually so imageless as Northrop seems to suppose, we can also recognize with appreciation his point that concepts, of whatever epistemological derivation, are behaviorally signifi-

cant. We can also appreciate that while Northrop proposes an epistemological dichotomy, he does not force it into becoming a generally cultural dichotomy. For instance, he recognizes that the law of status cannot be neatly and exclusively associated with primitive or nonindustrial cultures, nor is it "ancient" in contrast to any supposed modernity of the law of contract. Though he indulges in some irritating phraseologies of his own, he assiduously avoids the trite and misleading contrast between "East" and "West," and so these expressions, used for convenience only, are put in quotes in this review. While his personal predilection seems to be for concepts by postulation and the law of contract, he does not disown the contribution of concepts by immediate sensory intuition, particularly with respect to the esthetics of the Far East—this, of course, being a legacy from his earlier book, *The Meeting of East and West*.

*Philosophical Anthropology and Practical Politics* communicates a number of valuable insights to scholars and to "practical" laymen. It is unfortunate that it often says these things in a more abstruse manner than would seem to be necessary. However, the fact that Northrop forthrightly climbs out onto a number of limbs commands our respect, and the probability that many readers will attempt to cut off or severely to prune those limbs bespeaks the book's importance.

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#### **A Collection of Mathematical Problems.**

S. M. Ulam. Interscience, New York, 1960. xiii + 150 pp. \$5.

The unsolved problems in mathematics can be divided broadly into two classes. There are problems such as appear in number theory which are very easy to formulate and which require almost no mathematical background to understand. These "easy" problems usually turn out to be very difficult to solve. On the other hand, there are problems like those in this collection, which require the reader to have a good background in the subject matter in order to understand what they are about. While such problems are also difficult to solve, their difficulties are relatively easier to surmount. Thus,

several problems included here were solved in the interval between the writing and the publishing of the work.

The problems in this book come from various branches of mathematics—for example, set theory, algebra, topology, analysis, and mathematical physics. The presentation of the problems varies. In some cases there is a rather lengthy discussion of the problem and its motivation, with partial results and implications resulting from its solution. In other cases there is only a dry listing of problems and conjectures. And sometimes no particular problem is discussed; instead an entire area of research is suggested. Thus, the chapter on computing machines as a heuristic aid gives the author's ideas on the subject of man-machine cooperation in solving some outstanding problems in mathematics and mathematical physics.

Although the range of topics is wide, there seem to be several unifying concepts, the principal one being that of transformation. There are also several scattered problems whose formulation is simple. However, the overwhelming majority of the problems are difficult both to formulate and to solve; they should provide Ph.D. advisers with sufficient material to offer to their aspiring young mathematicians.

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**Search for the Past.** An introduction to paleontology. James R. Beerbower. Prentice-Hall, Englewood Cliffs, N.J., 1960. xiii + 562 pp. Illus. \$7.50.

**Invertebrate Paleontology.** W. H. Easton. Harper, New York, 1960. xii + 701 pp. Illus. \$10.

At a time marked by an ever increasing volume of textbooks in geology and related sciences, *Search for the Past* is one of few that is really new both in content and presentation. Unlike the standard paleontology texts, this book does not specially emphasize identification and classification but is, instead, a series of broad discussions dealing with basic zoologic and paleontologic principles. Although intended as an introductory college text, the book has a fresh, readable style that should make it pleasant, informative reading for amateur and professional scientists alike. The text is direct, nondogmatic, and last-minute modern. The chapter and

topic headings represent high good humor and add zest to the main theme.

Approximately the first third of the volume is devoted to the direct development of fundamental principles, problems, and methods of modern paleontologic research. Such topics as "The shapes of animals," "The diversity of species," "Patterns of evolution," "Fossils and stratigraphy" are well chosen and carefully developed. Beerbower's chapter, "The species," is notable in that it approaches the subject from the viewpoint of population and covers such subjects as the genetics, morphology, and ecology of populations—subjects not ordinarily found in invertebrate paleontology texts. In keeping with his portrayal of paleontology as a developing science, the author includes examples of statistical and model techniques that are only now receiving widespread application in the profession. Unfortunately, in presenting such statistical methods, Beerbower is not at his best.

The latter two-thirds of the book, chapters 8 through 21, are devoted to the major fossil groups, including vertebrates, with special emphasis on their living relatives. The morphology, adaptation, evolutionary history, and paleoecology of each are presented in brief, general discussions. These do not attempt to cover every group in a comprehensive manner but are used to emphasize and illustrate principles of evolution and adaptation. Chapters are interrelated in such a manner that they unfold a story of progressive evolution of the animal groups. A brief glossary of morphologic terms and a simplified classification table are included for each group. Only the most important references are included in the chapter bibliographies, but annotation increases their usefulness.

As an author's first book, *Search for the Past* has relatively few faults. The most critical is lack of adequate illustration. The drawings are not well planned and are of an entirely different order of competence than the text. Many are cluttered and difficult to interpret; few are attractive. The tables and their explanations have not been positioned well by the editors, and some tables do not have adequate explanations. Nevertheless, the book is a lively, readable introduction to basic principles, with emphasis on biology rather than stratigraphy, and well suited to fill the long-standing need for teaching paleontologic principles. The author, a young

college teacher, is to be congratulated for recognizing and meeting the challenge. Such an auspicious beginning bodes well for future editions of this well-planned and teachable text.

William Easton's *Invertebrate Paleontology*, like Beerbower's *Search for the Past*, represents an author's first effort in the textbook field. However, unlike Beerbower's text, which is fundamentally a book on principles, *Invertebrate Paleontology* is devoted mainly to morphology and classification. As such, it is intended for use in intermediate college courses where emphasis is on training the student to recognize the principal fossil groups and to collect and prepare specimens intelligently for identification and evaluation by specialists.

Even though these goals are modest, it is disappointing to find a 1960 textbook that devotes only a single chapter to general discussions of such fundamental subjects as classification, nomenclature, methods in paleontology, evolution, correlation, and environment. Some of these deficiencies are compensated for in subsequent chapters by discussions which illustrate topics of special significance, but the very incomplete table of contents precludes the discovery of these topics except by thumbing through the text.

With the exception of the first chapter, the volume is devoted entirely to a systematic series of discussions of animal groups arranged in biological order. Protozoans, sponges, brachiopods, gastropods, and cephalopods are allotted one chapter each. Coelenterates, echinoderms, and arthropods receive two chapters each. The bryozoans and phoronids; worms and conodonts; and chitins, pelecypods, and scaphopods are covered in single chapters. Most of the animal discussions consist of three main parts: (i) consideration of soft- and hard-part morphology, (ii) discussion of classification, and (iii) summary of geologic distribution. The morphology and classification sections for each group are generally comprehensive and well illustrated. Classification, which occupies the major portion of each chapter, contains brief but commonly awkward descriptions of every major taxon. Short tabular keys to the classification of each group are exceedingly useful. The geologic summaries have been reduced to briefest terms, but they are accompanied by effective, simplified range charts.

Throughout the group discussions, several devices are used to make the