laart proposes that we are here dealing with the religious or priestly quarter of the town consisting of the houses of the priests and the "shrines" which they tended. Presumably other specialized quarters of the town connected with other economic activities remain to be excavated. Thus, contrary to accepted ideas of the chronology of urban evolution, Çatal Hüyük seems to present full-time specialization of labor formalized in the settlement pattern by special groupings of buildings, with religion already partially institutionalized within a tradition of architecture and art all its own. All these developments formerly had been reserved to the so-called "Chalcolithic" period over a millennium later. More and more we are faced not only with an ever earlier development of many social innovations in the Near East, but also with an increasingly uneven tempo of development in different parts of that region. If careful analysis and further excavation support some of these new hypotheses, a number of the neat concepts of cultural evolution heretofore held about the Near East will have to be revised, and with them our understanding of the long-range mechanics of cultural change. Mellaart's book provides much provocative questioning along these lines by implication as well as by overt statement. Although the evidence must still be accepted as tentative pending careful study and full publication, this preliminary publication of the results of excavations at Çatal Hüyük opens up new lines of investigation and thought. In a refreshing way, the new data redress a balance and turn our attention from an overworked interest in the ecology of the ancient Near East back to the more central archeological themes of social organization and cultural content, a subject worthy of more intensive study than it has received in recent years.

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Igneous Limestones

The Geology of Carbonatites. E. W. HEINRICH. Rand McNally, Chicago, 1967. 601 pp., illus. $10.

Carbonatites. O. F. TUTTLE and J. GITTINS, Eds. Interscience (Wiley), New York, 1967. 611 pp., illus. $22.50.

The first published account of calcite-rich rocks occurring in the form of igneous intrusions was given by the Swedish geologist Högbom (1895) in his survey of Alnö Island on the Baltic coast of Sweden. These observations made little impact on petrologic thought at the time, and not until nearly three decades later, with the publication of Brøgger's now classic memoir (1921) on the Fen district of Norway, did the concept of magmatic carbonate rocks gain some recognition. Opponents of the concept were not wanting; Bowen (1924) attributed the origin of the Fen occurrences to hydrothermal replacement, and Shand, basing his opinion on a wider survey, advocated, as late as 1950, solid flow as a mechanism for carbonatite emplacement. In the years since Brøgger's memoir was published carbonatites—a term introduced by Brøgger himself—have been discovered in all the continents with the exceptions of Australia and Antarctica. Today no fewer than 320 distinct localities have been described or listed, the number recorded having been increased tenfold in the last decade. Africa provides the most, not only in number (120) but in total exposed area.

Despite its widespread occurrence it has been estimated that the total area of known exposed carbonatite is of the order of 200 square miles only, and carbonatites form only a small fraction of the alkali rocks with which they are associated. The small volume they represent clearly has a bearing on any theory of their origin.

Carbonatites are the repository of significant concentrations of phosphorus, niobium, the rare earths, and thorium and uranium, and the relatively recent rapid increase in the listing of carbonatite occurrences stems in part from the extensive and intensive mineral search for radioactive ores, particularly uranium, in the period 1950–1956. In the course of this exploration many new carbonatite complexes were disclosed, the rate of discovery being accelerated further by the use of the techniques of aero surveys for radioactive and magnetic anomalies and detailed scrutiny of aerial photographs for the characteristic ring pattern associated with alkali rock-carbonatite complexes. The two volumes now under review come as a response to the need for an up-to-date summary of the results achieved in the intensive study of these fascinating rocks and their genesis.

The Geology of Carbonatites is divided into two parts. The first (329 pp.) is an account of the geology, mineralogy, petrology, and geochemistry of carbonatites, with a closing chapter presenting a well-balanced review of the hypotheses of origin. The economic geology and classification of the mineral deposits of these rocks are given separate treatment, whereas the results of experimental synthesis and the bearing of isotopic studies are discussed as criteria of carbonatite genesis. The second part (223 pp.) is a summary description of the carbonatites of the world.

The author can speak with added authority in that he has had opportunity of studying in the field many of the occurrences he details. African deposits hold first place in this record; Russian occurrences rank next in number, but information made available on many of these is still limited. The book, well illustrated with both line drawings and photographs, provides a well-founded and thorough survey of the subject in all its aspects.

Carbonatites has a different framework. The volume contains 17 chapters by 22 authors chosen on the basis of their recent contributions to the subject and their special knowledge of specific aspects of carbonatite geology. The editors have provided an introduction with a historical review of carbonatite studies and also extensive summaries and bibliographies of carbonatite complexes (Gittins, 154 pp.). Two chapters are devoted to experimental studies by Wyllie and by Kuellmer, Visocky, and Tuttle on synthetic carbonate melts and on mixed silicate-carbonate melts. The experimental results are regarded as confirming that many features observed in carbonatite complexes are explicable in terms of carbonatite magmas. Many of the contributors present deductions on carbonatite genesis based on their own field studies, and it is to be regretted that the editors did not summarize the expressed hypotheses and attempt an assessment of these findings.

Both volumes make evident that the origin of carbonatites is intimately interwoven with that of alkali igneous rocks. The ultimate origin of carbonatite magmas remains the outstanding

problem. Among currently held hypotheses the alternatives that they were primary magmas or that they were derivatives of an alkali ultramafic parent ascending from the mantle find repeated expression in both books. The publication of the books at this time should stimulate continuing research on the challenging genetic problems these rocks present. *The Geology of Carbonatites* with its straightforward, systematic treatment of the subject will doubtless appeal more especially to the student, while *Carbonatites*, as a symposium study, is likely to find particular favor with the specialists. All students of the subject should have ready access to both volumes.

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Endocrine Tissue

The Adrenal Cortex. ALBERT B. EISENSTEIN, Ed. Little, Brown, Boston, 1967. 701 pp., illus. $22.50.

It is some time since a comprehensive examination of the status of knowledge of the adrenal cortex has been published. This new text is highly informative while, in most chapters, appropriately indicative of the large deficiencies in present knowledge. As Gregory Pincus notes in the foreword, four major fields are dealt with: (i) the nature and control of corticosteroid biogenesis and metabolism; (ii) corticosteroid secretion and transport; (iii) the biological action of the adrenocorticosteroids and synthetic analogues; and (iv) clinical investigation of adrenocortical function in health and disease. There are 26 contributors, and the level of presentation ranges from highly specialized analysis and viewpoint of interest to the physiological and biochemical investigator to practical guidelines for the clinician.

It is not quite clear how long the book was in the press but it seems to have been rather a long time. Despite undoubted efforts of the authors to be up to date at zero time, there are some topics in which the scene has already shifted significantly. As for scope, the editorial net was cast wide, but, although one does not envy the editor his problems of selection, perhaps not wide enough. There is an interesting section on electron microscopy, but, as the preface notes, there are no chapters on anatomy and histology; thus the volume might be usefully considered as a companion to *The Adrenal Cortical Hormones* (Springer-Verlag, Berlin, 1962), which has extensive coverage of histology by Deane. However, a chapter on adrenal androgens was an evident omission at this point in time. In turn this may have led to the lack of exposition of contemporary thinking and theory on steroid dynamics, particularly in relation to peripherally interconverting compounds which have their origin in the adrenal cortex. The biosynthesis of the adrenal androgens is covered, and their role in the adrenogenital syndrome is well presented. Yates's discussion of feedback in cortisol control is very interesting.

Since the stated aim was a comprehensive coverage of current knowledge on the adrenal cortex, the reader with general biological as well as clinical interests will be aware that the overall orientation is weak in comparative physiology, notwithstanding a few chapters such as the one on biosynthesis. Similarly, a section on ecology, population dynamics, and the adrenal could have highlighted endocrine interrelations, a subject of rapidly growing interest. The editor has been tolerant of the differing emphasis in the chapters, which range from historical record with scholarly review to presentation, sometimes including new data, in which the authors' own researches are pivotal. The diversity makes for stimulating reading. Overall, the editor and authors have provided a valuable integration for all with endocrinological interests.

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The Families of Mammals

Recent Mammals of the World. A Synopsis of Families. SYDNEY ANDERSON and J. KNOX JONES, JR., Eds. Ronald, New York, 1967. 461 pp., illus. $12.50.

Our literature is replete with checklists and general monographic works on mammals, with field guides and manuals on the species of many states, and with treatises on orders and genera of Recent and fossil forms. Still lacking has been a comprehensive survey of the intermediate taxonomic groups throughout the world. This need was recognized by graduate students in mammalogy. In 1950, a group of about 16 at the University of Michigan assembled extensive synoptic material on the families of mammals, together with distribution maps. Other groups with the same purpose, in 1953 and again in 1959, met at the University of Kansas; this book, sponsored by the American Society of Mammalogists, is an outgrowth of the materials they organized. The 18 contributors include nine of the participants in these meetings, among them the two editors who supervised the expansion and standardization of the copy and saw it through the press. Readers of Cockrum's *Introduction to Mammalogy* (also the Ronald Press, 1962) will note a similarity to this volume; the two had the same derivation, but the present work is far more complete and carefully prepared.

This book contains "a concise summary of each of the 20 orders and 122 families of living or recently extinct mammals." An introduction reviews the traits of mammals in general, comments on their distribution, and explains the organization employed in the book. The second chapter is a careful sketch of the fossil history of mammals. Thereafter, each chapter is devoted to one or more orders or parts thereof, with "information on form, function, distribution, numbers of species, and history." Written in telegraphic style, the book contains a vast amount of useful and often obscure information on structure, habits, habitat, and relationships. Listed are the subfamilies and their genera; some, of course, will quarrel over the inclusion or omission of certain ones. Considerable pains are taken (pp. 89, 102) to explain the relationships of the lipotyphlan and menotyphlan insectivores. At the other end of the scale, we read (p. 177) that "Men consider themselves important, both individually and collectively, and this has been reflected in an excessive number of names proposed for fossil hominoids, in an excessive volume of literature devoted to dubious interpretations and based on inadequate scraps of fossils or even less, and in an excess of emotional involvement in interpretations of evidence."

There are minor differences, mostly well established, from usage elsewhere —Didelphidae for Didelphiidae, Pteropodidae for Pteropidae, and Desmodontidae for Desmodidae, for example. The cetaceans are split into three orders,