intraspecific diversity is one of the core areas of inquiry. Yet despite the interest and importance of the subject, scholarly books on race in man are usually aseptic and tedious—even wit and style cannot overcome a crippling absence of scientific insight and a convincing body of experimental evidence. Our fascination with the larger issues—like hereditary differences in cognitive function, or the meaning of phenotypic adaptation for health and well-being—is met by dry concern with the relation between nose form and climate or with the possibility of sexual selection's influencing the evolution of Hottentot buttocks.

Hiernaux's book is a very good one, but it is firmly in this tradition. Roughly the first half is devoted to background of various sorts, the geography of Africa, the hominid fossils, and a brief overview of evolution, population genetics, and the meaning of classification. These are all very good if very general outlines. The evolution is the "new synthesis" of the '50's, which remains codified as the staple "theory" in physical anthropology if not in other fields of biology. Classification is treated simply as a convenient way of arranging chapters.

The second half of the book is a description of the living peoples of Africa. The approach is to regard today's variation as the product of ongoing adaptation to the local physical environment, together with migration and intermixture with different peoples. Whenever possible Upper Pleistocene fossils are discussed for the information they contain on the history of morphological characteristics in a region. This way of understanding and presenting diversity should be preferable to a typological approach, but the lack of adequate evidence for the many postulated microevolutionary phenomena leads to a vague and unsatisfying narrative. An earlier generation of physical anthropologists assumed that they could see in any population a blend of pure strains. This book would see in the morphology of any population a blend of different kinds of selection, some genetic drift, and some admixture. But the one approach is as sterile as the other, since both are arbitrary catalogs of possibilities rather than stringent applications of scientific method.

This book is potentially a useful adjunct to a course on the anthropology of Africa, it is a useful reference, and it is a rich source of ideas and hypotheses, but it is not a convincing model of scientific procedure and understanding.

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Chemistry of Amino Acids

Peptides 1974. Proceedings of a symposium, Kiryat Anavim, Israel, Apr. 1974. YECHESKEL WOLMAN, Ed. Halsted (Wiley), New York, and Israel Universities Press, Jerusalem, 1975. xx, 434 pp., illus. $32.50.

This volume covers a range of topics in the chemistry and biology of peptides, with special emphasis on synthesis. It includes sections on classical and nonclassical methods of peptide synthesis, photochemistry, analytical control of peptide synthesis, and interactions between peptides and macromolecules.

The paper by Ugi and a large number of collaborators on the four-component condensation method is a particularly interesting and valuable review of 15 years of concentrated effort on this novel approach to peptide synthesis. The objectives, problems, and accomplishments of both the fragment synthesis and fragment coupling modes of this remarkable method are discussed. In addition, two possible extensions of the four-component technique to solid-phase peptide synthesis are proposed. Several other developments in solid-phase synthesis are also discussed in the book. Descriptions of the use of polyamide supports and of two different solid supports for the simultaneous preparation of two peptide analogs are notable, as is the evaluation by Tregear of the products from solid-phase syntheses. New variations on supported syntheses include a solid-phase fragment method, solid-phase synthesis in aqueous media, and liquid-phase peptide synthesis.

Several new reagents, reactions, and side reactions in peptide chemistry are described, including acylphosphonium coupling reagents, the alkali labile β-methylsulfonylethoxycarbonyl group for nitrogen protection, the *t*-butyl group for sulfur protection of cysteine, oxidative modification of threonine and serine peptides leading to isotopically labeled and C^{α}-alkyl derivatives, the use of α,β-unsaturated amino acids in peptide synthesis, the mechanism of the carbodiimide coupling reaction, and a side reaction of dicyclohexylcarbodiimide with histidine.

Total syntheses of naturally occurring biologically active peptides or their analogs are reported for malformin, substance P, motilin, and secretin, and partial syntheses of cytochrome c (residues 67 through 108), human growth hormone (residues 95 through 124), staphylococcal nuclease (residues 36 through 47), ribonuclease (residues 1 through 15), and parathyroid hormone (residues 1 through 34) are also described. These accomplishments indicate the range and complexity of the peptides that can now be prepared and studied. No synthesis of a complete protein is reported. Synthetic depsipeptide- and *N*-methyl- analogs of eledoisin are cleverly used to deduce the interactions of this peptide with its receptor, and an extensive series of synthetic substrates allows the active site of porcine elastase to be mapped.

A round table discussion of the application of high-speed liquid chromatography to amino acid and peptide analysis is particularly timely, but the data presented are of rather limited scope. Similarly the printed papers on photochemistry are much too brief, although they make it clear that this branch of peptide chemistry will be of growing importance.

This book is not a general review of peptide chemistry, but rather a description of what was new in the field in April 1974. It is intended for the specialist but will be of value to those in many peripheral fields. The book has been eagerly awaited and will be read with interest.

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Geology of the Sierra Nevada. Mary Hill. Maps by Adrienne E. Morgan. Drawings by Alex Eng and others. University of California Press, Berkeley, 1975. viii, 232 pp. + plates. Paper, $3.25. California Natural History Guides, 37.

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