about, are discussed. II. The Colloidal State. It is appropriate that the book should begin with this topic, since it is essential for an understanding of the chemistry of cell protoplasm; but this is the least comprehensive and complete of any of the chapters. The two fundamental types of colloidal solutions, suspensoids and emulsoids, are treated and their characteristic properties illustrated. III. Enzyme Action. The underlying principles of enzyme action are briefly discussed and the behavior of different enzymes illustrated by those contained in yeast. The discussion of other enzymes follows in connection with those chapters dealing with the respective substrates. IV. Carbon Assimilation. It is emphasized that chlorophyll is perhaps the most important factor in plant metabolism. V. Carbohydrates and their Hydrolyzing Enzymes. Of all the subjects in plant chemistry which deserve careful treatment it is that of carbohydrates, and to it the author has devoted more space than to any other. There is a careful consideration of the properties and characteristics of the various carbohydrates, their synthesis and relationships in the plant. The monosaccharides, disaccharides and trisaccharides are most thoroughly treated, the latter under the following topics: pentosans, starches, dextrins, inulin, mannans, galactans, gums, mucilages, pectic substances and celluloses. VI. The Fats and Lipases. VII. Aromatic Compounds and Oxidizing Enzymes. The more widely distributed aromatic plant products are grouped: the phenols and their derivatives; the aromatic alcohols and acids including the tannins; the flavone, flavonol and xanthone pigments; and the anthocyanin pigments. The greater portion of the chapter is devoted to the plant pigments and oxidizing enzymes. VIII. Proteins and Proteases. The properties and chemical reactions by means of which the proteins can be detected are studied, and experiments follow which illustrate the method of extraction of the proteins from characteristic grains and seeds. IX. Glucosides and Glucoside-splitting Enzymes. Besides the glucosides of the pigments previously discussed the cyanophoric glucosides receive chief attention. X. The Plant Bases.

In the preface the author states that the book presents an aspect of plant biochemistry which up to the present time has received very little consideration in teaching. This is not entirely true in America, for at the University of Minnesota there have been offered for several years courses in phytochemistry and biochemical laboratory methods with particular reference to plant products. It is rather a coincidence that the subject matter of our courses should be similar, beginning with the colloidal state of matter and following with the classes of compounds found in plants. These courses through lectures and laboratory have presented to the student the same viewpoint for which this book was designed. Mrs. Onslow is to be commended for her pioneer work in the publication of a text on this important subject. From the mechanical standpoint the book is up to the usual standard of the publications of the Cambridge University Press. It is to be regretted, however, that in all probability the price will prevent it being used in many cases where it could profitably be employed.

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Anthropometry. By ALEŠ HRDLIČKA. Wistar Institute of Anatomy and Biology, Philadelphia. Pp. 163.

Anthropologists and all other workers who have occasion to make use of anthropometry have long been handicapped by the lack of any adequate and up-to-date manual of anthropometry. Now, at length, they have at their disposal a compact and comprehensive treatise on the subject written by one of the most experienced and competent investigators in the field, Dr. Aleš Hrdlička, curator of the Division of Physical Anthropology, U. S. National Museum. As a laboratory manual in physical anthropology and as a handbook for the use of field investigators of physical characters in man, this book should prove invaluable.

The work very properly begins with an annotated translation of the Monaco and Geneva Agreements for the Unification of Anthropometric Measurements. There follows a concise treatment of the preliminaries of the subject, such as preparation, instruments, landmarks, recording grouping of subjects, estimation of age, admixture of blood, pathological conditions, etc. The various topics are handled with clarity and include much original data in regard to general methods. There is a sane appraisal of the various anthropometric instruments and accessories employed in investigations.

The section on the anthropometry of the living deals with a selected list of the most important measurements and observations as determined by the experience of the author. The directions given are very clear and include many practical suggestions tending to promote facility of observation and accuracy of result.

The anthropometry of the skeleton is satisfactorily treated and includes a description of the invaluable system of visual observations elaborated by the author. In the opinion of the reviewer this standardization of morphological observations constitutes a contribution to anthropometric method of first importance, and the section dealing with it might advantageously be expanded. It is to be hoped that Dr. Hrdlička may find time to publish elsewhere a series of articles illustrating the normal or medium development of the various morphological characters and the extremes of their variations. Such illustrations, together with a discussion of the extent and significance of variations, would provide a standard basis for judging the degree of development of immensurable characters. At the present time the value of such observations is dependent upon the accuracy and experience of the individual investigator. It is becoming apparent to physical anthropologists that morphological differences of detail that do not lend themselves to measurement are of primary importance in distinguishing races. Many important functional adaptations belong also to this category of features which must be described rather than measured.

Perhaps it may be said that the greatest value of this work on anthropometry lies in the fact that it represents the perfected methods of one of the most skilled and best qualified practitioners of the science. Experts may differ as to the value of this or that measurement, or may prefer their own technique in individual cases, but this book is in general reliable and conclusive. A careful follower of its methods can not fail to secure completely adequate physical data in any general anthropometric investigation.

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SPECIAL ARTICLES

SUBEPITHELIAL GLYCOGEN CELLS IN EMBRYO AND RECENTLY HATCHED FISH

In April, 1912, while studying the development of the yellow perch (*Perca flavescens*) I discovered numerous cells filled with glycogen located just below the flat epithelium covering the surface of the embryo. The embryos in which I demonstrated these cells had been developing in the laboratory for twelve days. Upon the addition of a few drops of tincture of iodine to the water in the saucer in which the embryos were contained it was noticed, upon microscopical examination, that there were many round or oval cells, stained a reddish brown, scattered over the surface of the embryo, and especially marked in the fins. I have repeatedly studied these cells in the yellow perch and some other species of fish since I first observed them, and I have found them so interesting that I wish to make a record of some of my findings.

The embryos of the yellow perch are especially well adapted for microscopic examination, as they are exceedingly transparent, and retain their transparency to an advanced stage of development. The development of the eggs takes place rapidly at the ordinary temperature of the laboratory. At the end of the fourth or the beginning of the fifth day after the first division of the egg the embryo begins to make spontaneous movements of its body,