

diagrams and examples of the application of locus diagrams. The book is amply illustrated by more than a hundred diagrams. Everything is concise and to the point, and the student who *works* through its pages will find himself equipped with a valuable weapon of research.

*THE RECONSTRUCTIONAL ANATOMY OF
THE KIDNEY.*

Untersuchungen über Bau und Entwicklung der Niere. Edited by Prof. Karl Peter. Erstes Heft. Inhalt I., Karl Peter, Die Nierenkanälchen des Menschen und einiger Säugetiere. II., Michio Inouye, Die Nierenkanälchen des Rindes und des Tümmlers. Pp. viii+447. (Jena: Gustav Fischer, 1909.) Price 30 marks.

THE editor of this monograph holds with Koelliker that a knowledge of the morphological characteristics of the renal tubules is an important groundwork for the study of the physiology and diseases of the kidney. This ground plan he has laid down in a bulky volume, profusely illustrated by numerous and well-executed drawings. By means of maceration with concentrated hydrochloric acid and subsequent isolation of the urinary tubules, as well as by reconstruction models and serial microscopic sections, he has studied, along with his pupil, Michio Inouye, the structure of the kidney in various mammalian families in great detail. For the benefit of those who desire to ascertain his results without reading the whole of the text, he condenses a summary of his work into seventy-five pages of this volume.

Prof. Peter has worked out the structure of the kidney of the mouse, rabbit, sheep, cat, man, and pig, while Inouye has studied the organ in the seal and ox. They have given a minute description, perhaps too minute, of the organ in the various animals without adding, to any great extent, to our knowledge of the subject.

As a result of his study, Prof. Peter divides the medulla of the kidney into an inner and an outer zone, and the latter into an inner and an outer area. The cortex he divides into a *pars convoluta* and a *pars radiata*. These, to some extent, can be recognised with the unaided eye or by means of a lens, and each is composed of certain definite parts of the tubules, each zone or area being composed of the same parts in the same species. In fact, with some slight exceptions they are composed of the same parts throughout the whole of the mammalia. A summary of the zones and their contents is given.

These researches of Prof. Peter—minute and accurate as they are—have particularly little in them that will interest those who seek to elucidate the functions and diseases of the kidneys. The author himself states that as regards the significance of the Malpighian bodies his investigations have produced nothing new. Concerning the first convoluted and zigzag tubules which he includes under the name of the "Hauptstück," certain observations have been recorded with regard to variations in the amount of fat contained in the cells, and from the fact that these vary in their affinity for eosin in different parts of

the convoluted tubule, the deduction is made that the functions of the latter are not the same throughout its length. The facts adduced by these investigations have very little bearing on the two rival theories of the manner in which the kidney removes the urine from the blood—whether by a process of secretion or one of filtration.

The function of the narrow, clear part of the loop of Henle is concluded to be the resorption of the water which has been thrown out of the glomerulus. This is deduced from a ratio which Prof. Peter has found to exist between the relative length of this part of the tubule and the specific gravity of the urine in various mammalia with the exception of some of the smaller ruminants. In this matter his observations support the experiments of Ribbert and H. Marger, and of Hausmann. These experimenters removed the whole of one kidney and the medulla of the second in a rabbit, with the result that the urine was doubled or trebled in amount. As the narrow, clear part of the loop of Henle is contained in the medulla, it is inferred that the increase in the amount of urine is due to the removal of the resorbing part of the tubule. So many factors have to be considered in a case like this that the author's deductions must be regarded with a certain amount of reserve. While one must admire the industry and accuracy manifested by this work, it must also be admitted that even those specially interested will find it very tedious reading, and it is to be hoped that it may be possible to confine the other promised volumes within a more modest compass.

R. D. K.

GREEKS AND HITTITES.

Ionia and the East. Six Lectures delivered before the University of London by D. G. Hogarth. Pp. 117. (Oxford: Clarendon Press, 1909.) Price 3s. 6d. net.

THE author of this book aims at solving the interesting problem of the origin of Hellenic civilisation in the Grecian colony of Ionia, in western Asia Minor. He utilises, in a masterly manner, the results of the extensive archæological researches that have been carried out within the last thirty years in south-eastern Europe. The excavations of Schliemann, Evans, and numerous other workers in this field have completely revolutionised our ideas about the origin of that early Grecian culture to which modern European civilisation owes so much.

Mr. Hogarth's conclusions are, that in Attica the home country of the Ionians, the population, before the migration to Asia Minor, was mainly Ægean, but mixed with a northern element of invaders from the Danubian area. At this date there survived in Attica a vigorous bloom of Ægean culture affected to an unusual degree by some eastern influence, so that the colonists who settled on the west coast of Asia Minor in the early centuries of the first millennium B.C. were by no means barbarians. In Ionia the Greek settlers came in contact with a highly developed Asiatic civilisation—namely, that of the Hittites—and one of the most original features of Mr. Hogarth's book is the demonstration which he gives of the powerful influence of the Hittite civilisation in the develop-