

up separately with respect to their permeability to various substances.

In the section dealing with extracellular factors on cellular activity, the author discusses the influence of inorganic ions on hydration and dehydration of cell colloids, on fiber and cell potentials. This leads into selective ion-permeability and bioelectric membrane potentials. One chapter discusses the influence of ions on cell potentials in plants, and is an excellent summary of the work of Brooks' and Osterhout's groups. The chapter on narcotics again brings up the concept of the plasma membrane as lipid in nature with a sieve structure.

The last section deals with a favorite field of the author's extensive research activities. Here the author distinguishes between passive penetration and active transfer, the latter appearing to be "enforced" by energy ordinarily derived from cell metabolism and indispensable for the process. Good chapters follow on intestinal absorption, the formation of urine, and the elaboration of digestive juices. Passive and active transfer are also discussed in relation to the body surface of aquatic animals and of plant cells. The last chapter is an excellent discussion of the energetics of active transfer and possible mechanisms in the localization of enzymes constituting a chemical organization comparable to the morphological organization of cell structure.

In many places the author gives free play to his imaginative genius and makes us wish he had greatly expanded his part of the book for us to profit more by the broad background of his knowledge and the wealth of his own contributions. This is a book which should be in the hands of all students of fundamental problems in physiology. One would wish that, for books such as this, funds were available to subsidize their publication so as to bring the price within the range of the usual scientific worker.

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