

withdrawal of water the solution inside the muscle becomes more concentrated and assumes a higher osmotic pressure than that of a $m/8$ NaCl solution. Hence if such a muscle is surrounded by a $m/8$ NaCl solution the difference in osmotic pressure of the solution inside and outside the muscle must lead to a diffusion of water into the muscle.

The *direct* driving force for the exchange of water between muscle and surrounding solution is, therefore, again the osmotic pressure.

3. These ideas are so self-evident that their publication would seem superfluous were it not for the fact that Wolfgang Ostwald and other colloid chemists deny the existence of semipermeable membranes in the muscle on account of the fact that acid causes proteins to undergo imbibition. It seemed, therefore, of some importance to point out that the imbibition of the proteins of a muscle under the influence of acid formed inside contradicts neither the existence of a semipermeable membrane around the striped muscle nor the paramount rôle of osmotic pressure in the exchange of water between such a muscle and its surrounding solution.

JACQUES LOEB

THE ROCKEFELLER INSTITUTE
FOR MEDICAL RESEARCH,
NEW YORK

SOCIETIES AND ACADEMIES

THE KANSAS ACADEMY OF SCIENCE

THE forty-eighth annual meeting was held in Memorial Hall at Topeka, Kansas, January 14 and 15, 1916. The following, among other papers, were read:

"Civilized Europe: a Chapter in Anthropology," by A. A. Graham.

"Botanical Notes," by L. C. Wooster.

"Some Experiments with *Bacillus coli communis*," by L. C. Wooster.

"Observations on Jupiter at Opposition in 1915," by Edison Pettit.

"A Universal Helio-stat," by Edison Pettit.

"Additions to Kansas Coleoptra, to 1916," by W. Knaus.

"Some Life History Notes on *Phytonomus eximius*," by W. Knaus.

"Rare Coleoptra from the Sand Hill Region of Reno County," by W. Knaus.

"The Clan System of Wyandot Indians," by William E. Connelley.

"Echinacea and its Use," by J. M. McWharf.
Presidential Address—"American Highways," by J. A. G. Shirk.

"Properties of Kansas Clays," by Paul Teetor.

"Notes on the Comanchian of Kansas," by W. H. Twenhofel.

"Relative Toxicity of Aromatic Oils and Inorganic Compounds on Fungi," by L. J. Reiser.

"The Gorship Indians of Utah," by A. B. Reagan.

"Some Nutritional Characteristics of Corn," by J. T. Willard.

"The New Public Health," by J. C. Crumrine.

"A Study of Foods for Infants," by Leon A. Congdon.

"Stramonium," by L. D. Havenhill.

"The Chemical Products of Physical Fatigue and their Possible Relation to Mental Efficiency," by F. C. Dockeray.

"A Method for the Determination of Salicylic Acid in Aspirin," by G. N. Watson.

"Isolation of the Toxic Principles of Coffee and Determination of their Toxicity," by L. E. Sayre.

"Calcium Metabolism," by C. F. Nelson.

"Differentiation within the Acid-fast Group of Organisms," by N. F. Sherwood.

"Breeding Habits of some Annelids," by W. J. Baumgartner.

"Eugenic Studies in Kansas," by W. R. B. Robertson.

"Effect of Environment upon the Germ Cells," by B. M. Allen.

"Population Changes and Industrial Development," by P. F. Walker.

"Explosions in Kansas Coal Mines: Their Cause and Prevention," by A. C. Terrill.

"More about Kaw Lake," by J. E. Todd.

"Eolian Loess," by J. E. Todd.

"On the Occurrence of Starch in some Green Fruit Products used for Jelly-making," by E. H. S. Bailey and W. S. Long.

"The Chemical Characteristics of Ground Water," by F. W. Bruckmiller.

"Experimental Modifications in the Development of the Germ Glands of the Frog," by W. W. Swingle.

The officers elected were as follows: J. E. Todd, *President*; F. G. Agrelius and L. D. Havenhill, *Vice-presidents*; W. W. Swingle, *Secretary*; and Wm. A. Harshbarger, *Treasurer*.