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### THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

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to January 2, 1924

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### THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE THE PERMANENT SECRETARY'S REPORT ON THE CINCINNATI MEETING. II

SECTION G (BOTANICAL SCIENCES)  
(Continued)

*The Physiological Section, B. S. A.*

*Chairman, Lewis Knudson.*

*Secretary-treasurer, R. B. Harvey, University Farm, St. Paul, Minn.*

(Report by Charles H. Shull)

The physiological section held independent sessions Thursday afternoon, Saturday forenoon and afternoon and Monday forenoon. Friday forenoon there was a joint session of the section with the Ecological Society of America, devoted to a symposium on water relations. All but the last session were well attended; too many botanists had returned home before Monday. At the first session a number of papers were presented dealing with the influences of hydrogen-ion concentration on growth and metabolism, especially of fungi. One of the main contributions dealt with the isoelectric points of plant tissues. Dr. W. J. Robbins showed that plant tissues in buffer solutions of different hydrogen-ion concentration behave similar to proteins, with definite isoelectric points. Others presented evidence of changes in the hydrogen-ion concentration from one developmental stage to another in wheat, and of diurnal acidity changes in the leaves of Bryophyllum. The closing paper on the program, by W. B. Davis, traced black-heart of the potato to high respiratory activity in cases where high temperature is the environmental condition inducing the breakdown.

In the symposium on "Water relations," the history of some aspects of research in this field was sketched by Dr. B. E. Livingston, from the time of Bellani to the present, with special emphasis on the development of atmometry, and of instruments for the study of water delivery by soils. The part that imbibition plays in plant life was discussed by Dr. Charles A. Shull, who considered the problems of molecular physics involved in evaporation of water and in the

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