

SCIENCE

A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE, PUBLISHING THE
OFFICIAL NOTICES AND PROCEEDINGS OF THE AMERICAN ASSOCIATION
FOR THE ADVANCEMENT OF SCIENCE.

FRIDAY, JUNE 23, 1905.

PLANT PHYSIOLOGY—PRESENT
PROBLEMS.*

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son-on-Hudson, N. Y.

To the very year one century has elapsed since Theodore de Saussure published his remarkable investigations relating to the nutrition of plants and to the influences upon plants of certain well-known physical forces. Although preceded by the publications of Duhamel, Hales, Ingenhous and Senebier, as well as by those in a somewhat different line, by Konrad Sprengel and others, we may look upon the work of de Saussure as a wonderful production for his time and as strikingly indicative of the status of plant physiological problems a century ago. His paper may be regarded in a sense as the original charter or constitution of plant physiology. Fortunately, it is assigned to an eminent and experienced botanical historian to recite the amendments which mark the wonderful growth of this historic instrument. There remains, therefore, the task of suggesting some directions of future growth.

No distinction need here be made between those problems which are readily seen to involve the closest work in such other sciences as physics and chemistry and those which do not show a relationship so close. There is certainly much in physiology which must be based upon physics and chemistry, but when dealing with the causes of the activities of living organisms, it is in relatively few cases that explanations may ever be offered in terms of

* Address read before Section C, Plant Physiology, International Congress of Arts and Sciences, St. Louis, September 22, 1904.

Science

21 (547)

Science 21 (547), 937-968.

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