it is implied that starch-accumulation is synonymous with photosynthesis. A paragraph on page 433 is headed "Etiolation," but this term is not referred to or defined in the paragraph nor elsewhere in the book, nor does it occur in the index.

At numerous places the literary style and the English are such as to suggest that the text might have been dictated and not subsequently revised with sufficient care. Thus we find "this element" (p. 195), without any element being previously referred to in the paragraph; "The strong flavor of radishes . . . are also modified" (p. 426); "It is not always possible to distinguish positively between the two types, or the movement may be the result of conjoint stimulus" (p. 495).

However, the fact that is was so easy to single out the above points only means that the book is one of conspicuous merit. Since Johnson's "How Crops Grow" and "How Crops Feed," nothing of similar nature has appeared, and Professor Duggar has rendered distinct service in bringing forward in concrete form, with a carefully worked out solution, the whole question of a suitable presentation of plant physiology to agricultural students. Especially has the author made a very happy choice in the topics selected and excluded, and the book cannot help but conduce to clearer thinking, and a more intelligent practice on the part of the student and reader.

The text has distinct vitality because so much of it comes direct from the author at first hand, the illustrations are apt, and the book is sure to meet with the wide and warm welcome which it justly merits.

C. Stuart Gager

TAYLOR'S REVIEW OF THE PHYTOGEOGRAPHIC SURVEY OF NORTH AMERICA: A REPLY

The long and detailed review of my recent book in Torreya covering ten pages of the September, 1911, number of the journal is a surprising one, because the mark of a true critic is to give the other man the benefit of a doubt. Some of the points taken by Taylor in his review are justly made, but many of them are

not. With reference to the omissions to which he alludes, I would call his attention to the text and editor's footnote on pages 38 and 39, where the following will be found: "The above historic summary does not claim to be complete. The most salient facts have been chosen, which illustrate the development of knowledge of the several phytogeographic regions of North America. . . . The attempt has not been made to furnish a complete synopsis of the literature dealing with the phytogeography of North America." Then he should read the statement in the footnote by Professor Drude: "Auf besonderen Wunsch der Herausgeber hat Prof. Harshberger die ursprünglich ausführlicher gehaltene Liste der floristischen und pflanzengeographischen Literatur noch beschränkt, wie es auch in den anderen Bänden der V. d. E. gebräuchlich ist." Originally the book was limited to 480 pages, later the publishers agreed to print 640 pages, while the actual number which they undertook to print reached 790 pages and 63 pages of the synopsis in German by Professor Drude, and yet much had to be omitted to keep the book within a convenient size. It was, therefore, impossible to notice the more important recent books and papers, because many of them appeared while the book was in press. Frequently it happened that the author would see the book while the paged proof was in hand, and if a footnote could be added, as for example, the one on page 669 about Wercklé and Costa Rican vegetation, it was added, but frequently it was impossible without entirely rearranging the printed page to make such additions. The editors and publishers were unusually kind to me about such changes.

To see such a bulky book through the press required a long time and the criticism of the reviewer on this score will be found to be unfortunate when I give the most important dates connected with its publication. The letter requesting me to write the volume was dated Berlin, October 4, 1901. The typewritten manuscript was expressed to Dresden on September 12, 1906, and the first proof sheet beginning Part I was received by the author on September 26, 1908. The galley proofs were returned as follows: Chapter I, Part II, on November 6, 1908; Chapter I,

Part III, on December 23, 1908; Chapter I, Part IV, on September 28, 1909, and the last sheet of the text on May 25, 1910. The last galley proof of the index was mailed to Dresden on February 8, 1911. The corrections, title page, table of contents and preface were received after the entire book had been printed, and this statement refutes one of the points of criticism made by Taylor. I received the first bound copy of the volume on June 8, 1911.

Taylor mentions the fact that *Hibiscus moscheutos* occurs at Spotswood, N. J., in the middle of the bed of Pensauken Sound (notice the spelling in two places Penausken) is not well taken, for the plant which I supposed followed the shore line of the ancient sound might well have spread to the middle of the sound as the waters gradually retreated. The note on page 197 of his review is misleading, if the text is read again more carefully. I do not say on page 372 of the book that *Drosera rotundifolia*, *Prunus pennsylvanica*, *Fragaria virginiana* are true alpine plants, but give them in a list of the alpine plants of Mt. Katahdin.

I am glad that Taylor has given his opinion of my volume of Die Vegetation der Erde, and I hope what he has said will invite botanists to buy and read a volume which I trust will take its place as a sound contribution to North American phytogeography.

John W. Harshberger

University of Pennsylvania

[That I did not take into consideration the time necessary for such a large work to go through the press is perfectly correct. The dates given above by Professor Harshberger fix the time when the book left his hands, information most welcome,—as there is no indication of these important dates in either the preface or title-page of the work.]

N. T.