

this admirable work and hope that more is in store for us.

We, who are about to be shelved, used to live in this country, peacefully under the constitution and we were quite happy in our simplicity. One day a man by the name of Einstein came along and mixed that constitution up. We were told that it had long been an antiquated document anyway. There were difficulties, but eventually we managed to fit in; for they had left us, at least, with the doctrine of energy. Now, I read that the classical law of the conservation of energy must also go, that at best it is only statistical like the second law of thermodynamics. Truly these young bloods are Balkanizing the whole of physics and our ancient constitution has gone the way of the mark.

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SCIENTIFIC BOOKS

Trees of Indiana. By CHARLES C. DEAM, State Forester of Indiana. First revised edition. 317 pages; 137 plates. Publication 13 of the Department of Conservation, State of Indiana. April, 1921.

THE forerunner of the present work, under the same title and by the same author, was issued in 1911. So great was the demand for that book that the edition of 10,000 copies lasted only three years, while a second edition, printed in 1919, was exhausted within five days of publication. The present "first revised edition" is fundamentally a new work, with new illustrations and completely rewritten text.

During the past decade numerous "tree books" have been issued by various state organizations, but it is doubtful if any of these contain more original matter than the present work. Certainly none of them contain more local color. The botanical descriptions are based on Indiana material, and the illustrations are photographed from Indiana specimens, while the distributional peculiarities in Indiana of the various species are treated in gratifying detail. It is in this latter particular, perhaps more than any other, that the book will prove of service to the general botanical

public. In the course of his studies of the flora of Indiana, the author, within the last ten years, has traveled more than 27,000 miles, by auto, and has visited every county and traversed practically every township in the state. As a result he is able to present, at first hand, a wealth of detail in regard to local tree distribution, not to mention various other observations which bespeak intimate familiarity with the tree flora of the state. The attention given to the ecological relations of the different species is especially worthy of note, and this feature alone will recommend the work to a wide circle of readers.

GEORGE E. NICHOLS

NOTES ON METEOROLOGY AND CLIMATOLOGY SKY BRIGHTNESS AND DAYLIGHT ILLUMINATION

What is the relation between sky brightness and the electric light load carried by the central lighting plant? How much sky-light will be cut off by a row of buildings on the opposite side of the street. These questions and many others may be solved by studies of the brightness of the sky and daylight illumination such as have been carried out by Dr. H. H. Kimball, of the Weather Bureau at Washington. The practical utility of such investigations is attested by the interest shown by illuminating engineers, architects and electrical engineers. A paper, recently appearing in the *Monthly Weather Review*,¹ summarizes with considerable detail a report submitted to the Illuminating Engineering Society, of whose committee on sky brightness Dr. Kimball is chairman.

The observational program which has been followed in making the measurements has been to make photometric readings with a Sharp-Millar photometer at elevations of 2°, 15°, 30°, 45°, 60°, 75° and 90° above the horizon on vertical circles at azimuth intervals of 45° beginning with the sun's vertical and proceeding half-way around the horizon. Only half the sky is measured because it is assumed that the

¹ Kimball, H. H., and Hand, I. R.: Sky brightness and daylight illumination measurements. Sept., 1921, pp. 481-488.