

# SCIENCE

VOL. 80

FRIDAY, SEPTEMBER 21, 1934

No. 2073

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SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. McKEEN CATTELL and published every Friday by

## THE SCIENCE PRESS

New York City: Grand Central Terminal  
Lancaster, Pa.                                  Garrison, N. Y.  
Annual Subscription, \$6.00                  Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C.

# SOME ASPECTS OF FOREST BIOLOGY<sup>1</sup>

By Professor A. W. BORTHWICK

UNIVERSITY OF ABERDEEN

In forestry the long period which must elapse between the establishment of a crop and its final harvesting at maturity makes it imperative that we should use every endeavor to secure the best types of trees suitable for the concrete conditions of the localities in which they are to be grown. If a wrong species is chosen at the start—that is, a species unsuited to the soil or climate—and in mixed woods, if a wrong combination of species is adopted in their formation, then no amount of skill, care and attention on the part of the forester can remedy the defect or make full use of the productivity or growth factors of the locality. In cultivating his crops the forester must always keep in mind that the ultimate success of his efforts is determined by rate of growth com-

<sup>1</sup> From the address of the president of the Section of Botany, British Association for the Advancement of Science, Aberdeen, 1934.

bined with the usefulness and volume of the timber produced. This again brings him into close contact with the botanist. Among species of trees, apart from varieties and sports or mutations, no two individuals are absolutely identical, in spite of all outward resemblance. There are differences in rate of growth; commencement and duration and finish up of seasonal vegetation; flower, fruit and seed production. All these may vary in time from a few days up to as much as one or two weeks. These differences may occur in all soils and in all climates. In both the artificial and the primeval forest it can be detected among trees of the same species, growing side by side on the same soil and sprung from seed of the same parent tree. Individuals from the same seed may show differences in stem quality, branch formation and crown balance, due to some internal

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