to his purpose, *i. e.*, filling a given space with ornament pleasing to the eye.

Decorative art is limited by space, material, etc., and its interest often consists in the artist's effort to use these limitations; while the comparative freedom of pictorial art often causes it to degenerate into imitation —which, of course, is not art at all.

As the technic of art is properly a science, these remarks may not be entirely out of place.

MARGARET ARMSTRONG

THE PRESERVATION OF RECORDS

TO THE EDITOR OF SCIENCE: On reading the article on "Our Duty to the Future," by Professor C. E. Vail, in the December number of the *Scientific Monthly*, it occurred to me that we have at hand, available without special expense, better means of leaving permanent records for the future than any of our predecessors. Practically all printing is done from electrotypes; these electrotypes are made of metals that are not readily corroded by atmospheric action and under proper storage conditions would be very permanent.

In the production of practically all great books, or other records, engravings, etc., electrotypes are used. After serving their purpose in printing the edition many times they are but slightly worn and could be stored compactly in fire-proof and earthquake-proof, dry vaults. Sets of electrotypes, such as those employed in printing the Encyclopedia Britannica, and other reference works, would provide for future generations a considerable knowledge of almost everything of importance pertaining to this era.

Generally speaking, the preservation of records in this way would cost no more than the bullion price of the metal involved in the plates, as otherwise the plates would be remelted and the metal used over.

JOHN S. WRIGHT

SCIENTIFIC BOOKS

How to know the Mosses. By ELIZABETH MARIE DUNHAM. Boston: Houghton, Mifflin Co., 1916. 287 pages, illustrated. $1.25.

This little book is intended as "a popular guide to the mosses of the Northeastern United States" according to its subtitle or, as the cover states, "This handbook of mosses—the first intended for use without a microscope —throws open a new and fascinating field of study to the amateur botanist and nature lover. Keys to 80 genera and descriptions of over 150 species are given." In view of the limitations, and considering how difficult it is to really know the mosses thoroughly, Mrs. Dunham's conscientious effort to introduce a few of our most abundant and easily recognized genera and species to a wider acquaintance will certainly lengthen the season of out-door pleasures and interests for those who love nature at all times of the year! For "the mosses and lichens love the damp shade and the wet frosty season when other plants fade." To acquire even a bowing acquaintance with 80 out of the 200 genera represented in our flora and grow to recognize 150 species out of nearly 3,000, is to learn to have eyes that see and appreciate the subtler beauties of form and color.

The drawings in the text and the full-page illustrations will be found helpful and with the exception of a few indispensable technical terms the book is free from pedantry and unnecessary verbiage. E. G. BRITTON

NEW YORK BOTANICAL GARDEN

SPECIAL ARTICLES

THE EFFECT OF FINENESS OF DIVISION OF PULVERIZED LIMESTONE ON THE YIELD OF CRIMSON CLOVER AND LIME REQUIREMENT OF SOILS

THE practical significance which attaches to studies in the application of lime to soils is responsible for experimentation with pulverized limestone of varying degrees of fineness. Frear[1] cites, together with his own experiments, the comparatively few investigations pertaining to this problem. It has been stated by some authorities that limestone passing a 10-mesh sieve is satisfactory for field practise, while others have advocated material passing a 60-mesh sieve, some claiming that even finer pulverization is to be preferred. The following experiments were planned in 1914 to throw

[1] Frear, W., "Sour Soils and Liming," Dept. Agr. Penn. Bul. 261, 1915.