A Science Service Feature

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? WHY THE WEATHER ? Mailed December 14, 1931

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LIBRARY AIR

With the advent of modern methods of air-conditioning and air-cleaning, civilized man has made the somewhat belated discovery that, as he spends much the greater part of his life indoors, the weather prevailing inside buildings, which he has now learned how to control, is of much more importance to him than the uncontrollable weather prevailing outdoors. Thus many special studies of indoor atmospheric conditions and their effects have recently been undertaken.

One of these, lately carried out by the U.S. Bureau of Standards, relates to the air of libraries and its effects on books. As early as 1881 A. Girard pointed out that cellulose, the principal constituent of paper, is readily attacked by acids and that the resulting product is further impaired by contact with air. Later research has revealed the following external agents to be of importance in relation to paper preservation:

Light, particularly sunlight, attacks both the paper fibers and the sizing material, causing the paper to become yellow and brittle.

The adsorption (Printer: Adsorption, not absorption) of moisture containing sulphurous and sulphuric acids resulting from the combustion of present-day fuels produces marked deterioration.

Successive changes in atmospheric temperature and relative humidity seem to exert marked deteriorative effects; the phenomenon most frequently observed being that of brittling following prolonged storage in warm, dry places.

Insects, worms, molds and fungi are likely to attack books in the absence of proper cleaning and ventilation.

The remedies for these evils are the exclusion of daylight from bookstacks, the air-conditioning and air-cooling plant, the oil filter to eliminate dust, and alkaline-water scrubbing of the incoming air to neutralize acids.

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