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A Science Service Feature

? WHY THE WEATHER ? Mailed May 7, 1928

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CLIMATES MADE TO ORDER .

In order to study the effects of climate and weather on plants, the Boyce Thompson Institute for Plant Research, at Yonkers, N.Y., has installed elaborate apparatus for growing plants under controlled conditions of temperature, light, humidity and carbon dioxide supply. Each of these conditions can be varied at will in order to note the results. The experiments have already revealed many facts that are of practical value in agriculture and horticulture. Especially interesting results have been obtained by varying the length of "day" in growing plants. Natural daylight is supplemented in some of the experiments by a battery of 48 1,000-watt electric lamps carried on a gantry crane, which is moved over a Greenhouse at night and taken away during the day, so that it may not obstruct the passage of daylight.

Plants of different kinds show different degrees of tolerance and response to light. Some, such as red clover, buckwheat and many of the grains, grow well under continuous illumination. The tomato, on the other hand, requires a rest period of about 6 hours in each 24. Many plants, especially annuals, can be grown from seed to flower in a relatively short time if given additional light, a high temperature and extra amounts of carbon dioxide.

Spring wheat, oats and barley were grown from seed to ripening in about 45 days, as compared with three or four months required under natural conditions. A crop of red clover hay, which normally requires two seasons' growth, was raised from seed in 60 days.

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