have higher respiration at 20 c.c. C., but this is not the case at 10° C. and 30° C. The above observations on tomato, together with confirmatory data on turnips and radishes, emphasize the importance of determining the proper C: N ratios for all our economic plants.

Vanillyl acyl amides: E. K. Nelson. (By title.) Following the demonstration of the structure of capsaicin, the pungent principle of red pepper, which proved to be a condensation compound of vanillyl amine (4-hydroxy-3-methoxy benzylamine) with a decenoic acid, a number of analogous derivatives of vanillyl amine were prepared by the interaction of that substance with acyl chlorides. Derivatives of the following acids were obtained: acetic, propionic, butyric, isobutyric, n-hexoic, n-heptoic, n-octoic, n-nonoic, n-decoic, n-undecoic, n-dodecoic, crotonoic, undecenoic and benzoic. As the molecular weights of these substances rise, the solubility in water decreases, while that in ether increases. Pungency, first noticeable in the propionyl compound, increases to a maximum in vanillyl octoyl amide, which is almost as pungent as capsaicin. One eight-thousandth of a milligram of this substance causes a distinct burning on the tongue. The crotonyl compound is slightly, the undecenoyl compound extremely, and vanillyl benzoyl amide very slightly pungent.

On a phenol produced by growing aspergillus tamari: J. F. Brewster. (By title.)

Climatic control in relation to plant growth: W. E. Tottingham. (By title.) Consideration of the profound effects of climate upon the growth and composition of plants, together with the difficulties of interpretation of these effects imposed by fluctuations of climatic factors, makes evident the desirability of experimental control over the latter. A fair degree of success has been realized in the installation of a small plant culture chamber for climatic control within a greenhouse. The atmosphere is conditioned for this chamber by forcing it through a humidifying chamber moistened by wet towelling, the latter being wet by water of controlled temperature. Before entering the culture chamber the air is heated somewhat, to bring both its temperature and degree of saturation with water vapor to desired values. The conditioned air enters the culture chamber beneath the flanged surface of a rotating table, which distributes it about the chamber, and escapes through orifices at the top. The rotating table also serves to equalize climatic differences for the different plant cultures carried by it. With the limited capacity of such an apparatus, it is necessary to maintain a considerable degree of control over illumination, temperature and humidity of the surrounding greenhouse, in order to realize a reasonable degree of control over climatic conditions within the culture chamber.

Studies in the translocation of nitrogenous and carbohydrate material into the wheat kernel: G. A. Olson. (By title.)

Physical and chemical studies of wheat gluten: G. A. Olson and Charles H. Hunt. (By title.)

Charles L. Parsons,
Secretary

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

SECTION B—PHYSICS

Section B was in session, in affiliation with the American Physical Society, at St. Louis, December 30, and 31, 1919, and January 1, 1920. The program of papers presented through the American Physical Society are elsewhere announced and abstracted by the society. On the afternoon of December 31 occurred the annual session of Section B, the retiring vice-presidential address of Dr. Gordon F. Hull and a Symposium on "Phenomena in the Ultra-violet Spectrum, including X-rays," the papers of which will be abstracted elsewhere in Science under the above title. Dr. Hull's address on the subject, "Some Aspects of Physics in War and Peace," was printed in the issue of Science for February 5.

The Sectional Committee nominated as chairman of the Section, Professor J. C. McLennan, of the University of Toronto.

G. W. Stewart,
Secretary

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