in the other end of the hall and furnished a considerable amount of sound-absorption. The effect would doubtless have been improved by more absorbing material in the portion occupied by the audience, but further experiments are desired to determine more closely the optimum conditions for these special conditions.

Other applications suggest themselves. A small music studio in a home should have one end reverberant for piano or other instruments, but the other end of the room should be deadened for listening. Possibly the listeners would find a better effect in adjacent rooms connected with the studio by an open door. It seems likely that broadcasting studios can be adjusted in the same manner, thus allowing musicians freer expression than at present, while the sound absorbent present in the room will tend to reduce any objectionable reverberation for broadcasting.

F. R. WATSON

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SPECIAL ARTICLES

THE ATTENUATION OF PLANT VIRUSES AND THE INACTIVATING INFLUENCE OF OXYGEN[1]

THE possibility of the attenuation of viruses has received comparatively little attention in plant virus studies. Carsner[2] has reported attenuation in the case of curly-top of sugar beets, by passage through resistant plants. The writer has reported changing virulence in the viruses secured from apparently healthy potatoes.[3] Recently the writer has been able to attenuate the virus of tobacco mosaic and of other mosaics affecting tobacco by the use of heat. Plants soon after inoculation are placed in constant temperature chambers at a temperature between 35° to 37° C. for ten or more days. At this temperature the symptoms are wholly or partially masked. Transfers of the virus from such plants in comparison with that from plants unexposed to heat shows that a very decided attenuation has occurred. The attenuated virus usually gives only mild mottling and little or no malformation as compared with the marked symptoms of tobacco mosaic. Apparently this attenuation can be obtained in varying degrees, depending upon the temperature exposure within certain limits.

[1] Published with the approval of the director of the Wisconsin Agricultural Experiment Station and the chief of the Bureau of Plant Industry, United States Department of Agriculture, Washington, D. C.

[2] Carsner, E., "Attenuation of the Virus of Sugar Beet Curly-top." *Phytopath.*, 15: 745–756, 1925.

[3] Johnson, James, "The Transmission of Viruses from Apparently Healthy Potatoes." Wis. Agr. Exp. Sta. Research Bul., 63, pp. 1–12, 1925.

This attenuated virus can be repeatedly transferred serially through tobacco plants without apparently altering the attenuated condition.

The virus of tobacco mosaic may retain its vitality in soil for several months, but it is destroyed much more rapidly in some soils than in others. The longevity is much shorter in sand or sandy soils than in soils heavier in clay or organic matter. Preliminary experiments indicate that this variation is largely determined by oxygen relations. Evidently the virus of tobacco mosaic, remarkably resistant to various injurious conditions, is quite sensitive to the inactivating influence of oxygen when properly exposed to it in the moist condition.

JAMES JOHNSON

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THE NEBRASKA ACADEMY OF SCIENCE

THE thirty-sixth annual meeting of the Nebraska Academy of Science was held at Cotner College, Bethany, Nebraska, Thursday, Friday and Saturday, April 29, 30 and May 1, 1926. The meeting consisted of three general sessions, two business sessions and two periods for sectional meetings.

The first general session was occupied by a very interesting illustrated lecture by Dr. B. S. Hopkins, of the University of Illinois, on "The New Member of the Rare Earth Group." An illustrated lecture on "Morrill Hall," the new museum being built by the University of Nebraska, was given by Dr. E. H. Barbour, of the University of Nebraska. Dr. Paul B. Sears, of the University of Nebraska, delivered the past-president's address on the subject "Some Recent Comments on Science." This interesting address will appear in a later edition of SCIENCE. W. H. Pahl, engineer of the C. B. & Q. R. R., under the auspices of the Engineers Section, gave an illustrated lecture on "The World's Greatest Suspension Bridge," at the last general session.

At the business sessions the usual routine of business was carried on and the following officers elected for the next year:

President, Dr. G. L. Peltier, University of Nebraska
Vice-president, H. J. Wing, Doane College, Crete, Nebraska
Secretary, M. P. Brunig, University of Nebraska
Treasurer, P. K. Slaymaker, University of Nebraska
Councillor for three years, M. G. Gabā, University of Nebraska

M. P. BRUNIG,
Secretary