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THE RADIO CORPORATION OF AMERICA

THE DEDICATION OF THE LABORATORIES AT PRINCETON, N. J.

THE new RCA Laboratories built by the Radio Corporation of America at Princeton, New Jersey, a modern center of radio and electronic research, were dedicated on September 27.

Lieutenant General James G. Harbord, chairman of the board of Radio Corporation of America, presided and introduced the speakers: Major General Dawson Olmstead, chief signal officer of the Army; Colonel David Sarnoff, U. S. Army Signal Corps, and Otto S. Schairer, vice-president in charge of RCA Laboratories.

General Harbord pointed out that the RCA Laboratories assemble under one roof kindred activities which have hitherto been performed by individuals widely separated by time and space. "The Laboratories give our future scientific work the advantage of collective effort—the advantage in our attack on our problems of delivering a blow with a clenched fist instead of with open fingers. They promise much for the future of the radio industry, now so closely tied in with our war effort. And when the lights are once more turned on in this darkened world, we shall take off from here for a brilliant future of which we can now dream but can not measure."

Ground was broken for the laboratories on August 8, 1941. On November 15 of that year the cornerstone was laid, dedicating the project to increase in the usefulness of radio and electronics to the nation.

A tour of the laboratories reveals their size, magnificence, efficiency and promise. It is not only a radio laboratory, but many laboratories which reveal that modern radio is a science spreading into many fields—electronics, sound-acoustics, chemistry, physics,

thrombin index within 3–12 hours. In 4 cases menstruation occurred while AP was being administered and the prothrombin index was 20, but no excessive bleeding was noted. Two pregnant women in the 5th and 9th months, respectively, were successfully treated for thrombophlebitis. Lactating women excrete AP in their milk, as indicated by the lowering of the prothrombin level in the children. The drug can be administered with sulfathiazole, barbiturates and morphine and can be given to patients with tuberculosis and pneumonia.

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THE MINERAL PATTERN OF STEMS FROM VEGETATIVE AND FLOWERING PLANTS AS DETERMINED BY MICRO-INCINERATION[1]

THE ashing of thin sections of plant material was described more than a hundred years ago.[2] Since then investigations of this type have been conducted with both plant and animal tissues. However, considerable difficulty has been encountered when dealing with plant sections, since there is a marked tendency for the thick cell walls to shrink and become displaced during incineration.

Previous investigations have shown that the anatomical structure of a flowering stem is different from that of a vegetative stem.[3, 4] Sections of the fourth internode of stems of vegetative and flowering plants were incinerated to observe the mineral pattern in these two types of stems. When observing minerals on a microscopical scale it is necessary to retain as much of the mineral substance after incineration as was present in the living plant. Therefore attention was given to the selection of a fixative which would not dissolve the mineral substance and which would not add mineral substances to the ash. Little or no difference in the amount or distribution of the ash could be detected in the samples fixed in four liquids: absolute alcohol, nine parts of absolute alcohol and one part of formalin, cellosolve and dioxan. Dioxan, however, seemed to have a shrinking effect upon the stem material. The alcohol-formalin mixture was used for further sampling. The material for sectioning was dehydrated in absolute alcohol and cleared in cedarwood oil. After embedding in paraffin, transverse and longitudinal sections 15 μ in thickness were cut on a rotary microtome.

Several substances were tested for their adhesive qualities in an attempt to prevent shrinkage and displacement of the heavy walled cells of the secondary tissue during the incineration process. These adhesives were applied after the paraffin was removed from the sections with xylol. Of the several tried, "Nevillite 123,"[5] which is practically ash free, proved to be the most satisfactory when dissolved one part to two to four parts of xylol depending upon the hardness of the tissue. Photographing of the sections before and after ashing disclosed no change in the position of the crystalline inclusions and wall-impregnating substances during incineration. With this adhesive a more accurate mineral pattern of the thick-walled plant tissue may now be secured.

The amount and pattern of the ash in the vegetative and flowering stems was found to be different. In the plants examined, such as *Cosmos,* poinsettia, *Xanthium* and Wealthy apple, the greater ash residue was present in the flowering stem, particularly in the thick-walled tissues of the vascular cylinder and the outer layers of the cortex.

Samples were also taken of the internodes beginning at the second from the stem-tip through the twelfth inclusive to observe the mineral pattern at different levels of the stem. The greatest difference in the amount of ash in vegetative and flowering stems was in the internodes closer to the stem-tip. Beyond the seventh internode the quantity of ash, although still less in the vegetative stem, was not as different from that of the flowering stem as it was in the higher internodes.

Plants of *Salvia, Cosmos* and *Xanthium* were placed in short days, an environment in which flower primordia are initiated. There was more ash in the stems of plants in the short-day treatment than in those remaining vegetative in long days after 8, 7 and 6 days, respectively.

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[1] Published with the permission of the director of the Agricultural Experiment Station.

[2] F. V. Raspial, Paris. Bailliére, 1833.

[3] O. Christine Wilton and R. H. Roberts, *Bot. Gaz.,* 98: 45–64, 1936.

[4] B. Esther Struckmeyer, *Bot. Gaz.,* 103: 182–191, 1941.

[5] Secured from the Neville Company, Neville Island, Pittsburgh, Pa.

BOOKS RECEIVED

ALEXANDER, FRANZ. *Our Age of Unreason.* Pp. 371. J. B. Lippincott Company. $3.00.

GRAY, DWIGHT E. *Man and His Physical World.* Illustrated. Pp. xii + 665. D. Van Nostrand Company, Inc. $3.75.

NEBLETTE, C. B. *Photography: Principles and Practice.* Fourth edition. Illustrated. Pp. xii + 865. D. Van Nostrand Company, Inc. $7.50.

Proceedings of the Eighth American Scientific Congress. Vol. IV: Geological Sciences. Department of State, Washington, D. C.

WAYMAN, DOROTHY G. *Edward Sylvester Morse.* Illustrated. Pp. xvi + 457. Harvard University Press. $4.50.