

## Ultraviolet Windows Tested by U. S.

How to let the ultraviolet rays of the sunlight through the window into home and schoolroom was discussed by Dr. W. W. Coblenz, physicist of the U. S. Bureau of Standards at Washington, in a report to the Illuminating Engineering Society. He reported his tests upon various window glasses and other materials and suggested that for effective results the material should not transmit less than 45 to 50 per cent. of the ultraviolet rays in the sunlight.

If only small amounts of the ultraviolet rays penetrate the windows they can not be relied upon to effect cures of rickets, which are possible with large doses of ultraviolet rays as well as with sources of vitamin D. Dr. Coblenz quoted clinical reports that indicated that exposures of five to seven hours each day with light through glass with 25 per cent. transmission would be necessary merely to prevent rickets in a normal, properly fed child, and in view of the fact that such exposures of such lengths are not practicable, he believes that at least 45 to 50 per cent. transmission must be required in specifications. Even with this degree of transmission, the effect would be preventive only and in no sense curative.

## Smoke and Ultraviolet Light

Loss of health-giving ultraviolet light in cities is an important problem which present methods of smoke control do not solve, members of the American Public Health Association were told by Dr. Fred C. Tonney of the Chicago Health Department, who reported on studies made by himself and his associates, Gerald L. Hoeft and Paul P. Somers.

Using a new method of measurement, these scientists measured the amount of ultraviolet light in the atmosphere of Chicago at street level at various points in the city and compared it with similar measurements made in the nearby country. Some measurements were also made from the top of one of the city's buildings. The readings were made simultaneously at the "clear points" and at the points within the city. The study was carried out over a period of more than two years, readings being made twice or more monthly.

Much of the ultraviolet light intensity available at the clear points was lost at all the urban points tested at all seasons of the year, the inves-

Various commercial makes of glasses, after being stabilized by exposure to sunlight, ranged from only one-half of one per cent. to 59 per cent. transmission, with four out of nine greater than 40 per cent. Dr. Coblenz used a wave length of 302 millimicrons as a division point between the ultraviolet rays and the rest of the sunlight.

Tracing cloth, which has been suggested for window material because of a supposed transparency to ultraviolet rays, was found to be actually no more transparent than other fabrics such as nainsook, batiste or balloon cloth. Other studies of fabrics showed that those made of silk and wool yarns compared favorably in transmission of ultraviolet light with cotton, linen and rayon.

Feathers have a fairly high transmission, apparently nature's provision for assuring chickens and other birds their supply of these vital rays. Unlacquered surfaces of metals, aluminum, nickel and chromium, are good reflectors of ultraviolet radiation. Linseed oil and nitro-cellulose lacquer, especially after drying, are highly opaque to ultraviolet radiation.

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tigators found. From a health standpoint the most serious obscuring effects were observed in the late fall and early spring months.

"The doubtful potentialities of ultimate effectiveness of smoke control methods in conserving ultraviolet light are to be seen in the warmer season when combustion of fuel for heating purposes is at its minimum," declared Dr. Tonney. "The material loss of ultraviolet light occurring during this season of minimum smoke production suggests the likelihood of probable failure of smoke abatement as applied to present combustion processes, insofar as conservation of ultraviolet light is concerned.

"The emission of particles of burned or unburned fuel is apparently an inherent property of the combustion devices at present generally available. Considering the importance of sunshine to health, are we not justified in advocating the ultimate electrification of heating processes as the final solution of the smoke problem of cities?" asked Dr. Tonney.

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District of Columbia—ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared Watson Davis, who, having been duly sworn according to law, deposes and says that he is the editor of the SCIENCE NEWS-LETTER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411. Postal Laws and Regulations, printed on the reverse of this form, to wit:

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WATSON DAVIS,  
Editor.

Sworn to and subscribed before me this 1st day of October, 1929.

CHARLES L. WADE,  
Notary Public.

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