

A Science Service Feature

Released on receipt
but intended for use
June 21, 1929.

? WHY THE WEATHER ?

Mailed June 14, 1929.

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ATMOSPHERIC DUST

Widely different figures have been published concerning the number of dust particles per unit volume of air found in typical localities, the chief reason for the diversity being that some devices for counting dust reveal only the rather coarse particles while others give data concerning particles down almost or quite to molecular size. The Aitken dust-counter, which shows, for example, 50,000,000 particles to the cubic inch in ordinary town air, counts particles that are far beyond the power of the microscope. The Owens dust-counter, which has been adopted as an international standard instrument, counts particles having a diameter as small as 0.000008 inch, and reveals anywhere from 100,000 to 500,000 or more particles per cubic inch in the air of large cities. The Hill dust-counter, which the United States Weather Bureau is now using in its dust counts of a dozen American cities, gives much smaller figures, as it shows only the coarser dust.

The average diameter of dust particles found in the open country is about 0.00002 inch; that of suburban dust about twice as great, and that of city dust about three times as great. Measurements of dust recently made in the Times Square district of New York City lead to the conclusion that, under average conditions, the air over the entire city contains about 2,200 tons of solid matter. Of this total 65 per cent. is carbon dust, 15 per cent. mineral and ash, and 20 per cent. germs and septic matter. The carbon dust consists of unconsumed coal, gasoline, motor oil and other fuels, and the amount of it is estimated to be sufficient to operate the city's electric light and power plants for six hours out of every twenty-four.

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21st and B Sts.,
Washington, D.C.