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Penetrating Radiation Associated with the X-rays.

As the following investigation is made with the aid of nuclei, certain of their properties bearing on the present subject will first have to be specified. Exhaustions are preferably made at a pressure difference ($\delta p$) just below the point (to be called fog limit) at which dust-free non-energized saturated air condenses without foreign nuclei. $\delta p$ depends on the particular apparatus used.

1. Fleeting Nuclei.—Let the X-radiation to which the dust-free air is exposed be relatively weak, so that the density of ionization may remain below a certain critical value. The nuclei observed on condensation are then very small and they require a high order of exhaustion, approaching the fog-limit of non-energized air. They are usually instantaneously generated (within a second) by the radiation, so that their number is definite independent of the time of exposure. They decay in a few seconds after the radiation ceases; i.e., roughly to one half their number in two seconds, to one fifth in twenty seconds in the usual exponential way. I fancy that these nuclei are what most physicists would call ions; but nevertheless the particles are not of a
Editor's Summary

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