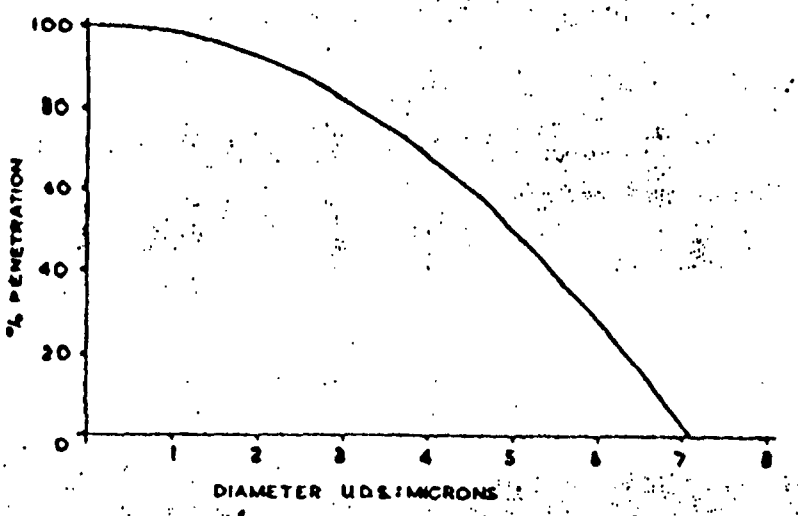

FIGURE 2. Size selection characteristic of horizontal elutriator.

elutriator was used. The design size selective characteristic of the elutriator is shown in FIGURE 2. The free-falling speed of a particle is dependent on its size, shape, and density and is conveniently expressed in terms of the sphere of unit density having the same falling speed. Particles with falling speeds greater than that of a 7.1 micron unit density sphere would fail to penetrate the elutriator and so were excluded from the collected sample. A previous experiment with an airborne cloud of glass spheres had shown that particles larger than this are very rarely found in the rat lung (Cartwright & Skidmore, 1964). The sampler was placed immediately below the vacant cage compartment and sampled continuously during each exposure period. A few samples were also obtained in each inhalation chamber with a Long Running Thermal Precipitator, which incorporates a similar elutriator, to determine the particle length distributions.

Duration of Exposure and Survival

The rats were exposed to the dust clouds for 7½ hours per day, on 5 days of each week over a period of 6 weeks. At the end of each day's exposure the rats were transferred from the inhalation chambers to larger cages in a clean atmosphere keeping the rats exposed to each dust cloud separated from the others. One day after the last day of exposure randomly [illegible] groups of 4 male and 4 female rats exposed to each dust cloud

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