and when sufficient data to show the effect of these conditions on the health of workers has been accumulated, we are prepared to study air dustiness and to say whether a given condition is relatively safe or harmful.

Now that an empirical method of determination of relative number concentration has been selected as most practical, a method for collecting the sample must be devised. The fact that dusts are dispersions of solid particles, varying greatly in size and composition, renders the collection of a sample extremely difficult. Gases are readily collected by bubbling through a suitable sampling liquid, but with a solid, the liquid must be absorbed upon the solid surface before wetting can occur. Only a few per cent of a fine dust can be removed from suspension in air by bubbling through a liquid. Many ideas have been put forward for collecting dust samples from air or for determining the amount of dust in suspensions without collection, but most of them have been dropped for one reason or another. To better understand the problem, it will help to discuss a few of these methods very briefly, and point out some of their disadvantages.

Perhaps the simplest method of studying dust conditions is by observation of the amount deposited as on rafters or beams over a given period, or by simple observation of the dust in air as illuminated by a beam of light. This gives a rough idea of whether the location is dusty or not but practically no quantitative information.

The next step, the sedimentation sampler, is based upon the same idea. A container with removable ends is opened at the sampling location and flushed out by moving through the air. It is then closed and allowed to stand in a place free of drafts or temperature changes until all the particles, or at least all that can be seen with a microscope are settled. Then a slide which had been placed upon the