On Seeing Ultramicroscopic Particles with the Naked Eye. J. TRAUBE and P. KLEIN. (*Physik. Z.*, April 15, 1922.)—When a beam of light passes through an optically empty liquid, its path there is invisible, though the places of entrance and of exit may be seen. In a colloidal solution, on the other hand, the path appears as a uniformly illuminated cloudy space. If any particle can be seen by itself, by the naked eye, within this space, it must be large enough to be seen in like manner elsewhere. The authors happened to notice that the addition of sodium carbonate to a solution of lead nitrate gave rise to a cloud space along the path of the light in which individual particles could be seen. The result was obtained upon adding two drops of a one-half normal sodium carbonate solution to 30 c.c. of a one-thirty thousandth normal solution of lead nitrate. When the path of light was observed with a lens there was seen for somewhat less than a minute a swarm of particles in violent but irregular motion. A minute later the unaided eye at a distance of five metres could see the same thing.

This effect is similar to the Brownian Movements. The particles concerned are of extremely small dimensions. In one instance where the effect was well seen no inhomogeneity of the liquid could be seen under a microscope of high magnification.

The effect can be obtained only with solutions of certain concentrations, though a number of different solutions may be used. Siedentopf of Jena explains it as a diffraction phenomenon connected with tiny needle-like crystals.

G. F. S.

Contamination of Air with Carbon Monoxide.—YANDELL HENDERSON and HOWARD W. HAGGARD, of Yale University (*Jour. Ind. Eng. Chem.*, 1922, xiv, 229–236), draw the following conclusions from their experiments in which the period of exposure was several hours. The time of exposure in hours is multiplied by the concentration of the carbon monoxide in parts per 10,000 of air. If the product equal 3, no perceptible physiological effect is noted; if it equal 6, the effect is just perceptible; if it equal 9, headache and nausea are produced; if it equal or exceed 15, conditions are dangerous to life. Exercise and physical work increase the rate of absorption of carbon monoxide from a contaminated atmosphere. Upon return to fresh air, the carbon monoxide which has been absorbed by the blood, is excreted through the lungs; from 30 to 60 per cent. of the absorbed carbon monoxide is excreted hourly. Carbon monoxide is the only toxic constituent of importance in the exhaust gas from gasoline. Illuminating gas and the exhaust gas from coal tar distillate contain other toxic constituents as well as carbon monoxide.

J. S. H.