the lead nitrate solution in gelatine may be less than that of the potassium chromate solution led to a measurement of the rates of diffusion of several solutions, in pure gelatine. Well-washed gelatine was placed on glass plates, allowed to set, and drops of different reagents of different strengths were placed upon them. The reagents diffused outwards. In some cases, e. g. silver nitrate, lead nitrate, ferric chloride, and sodium hydroxide, the diffusing solution had a clearly visible outline in the gelatine, which is susceptible of measurement. The measurements were made as before, by means of a millimeter scale, estimating to tenths of a millimeter, taking care to eliminate parallax. The diameter of the drop was taken and the diameter of the circle of diffusion (in the case of the precipitates above, to the outer limits of the precipitates). Subtracting the diameter of the drop from the total diameters of diffusion, and dividing by two the radius of diffusion is obtained. It is the rate of elongation of this radius which has been measured and plotted, and which is called the radius of diffusion here. The chromate solutions did not give a diffusing front which was clearly visible and susceptible of easy measurement. The yellow color due to the chromat-ions became gradually fainter away from the drop, coming to an indistinct and diffuse margin. Therefore, in the curves given in fig. 9 those for the chromate solutions are dotted, since they are not as reliable as the other curves.

The curves (see figs. 9, 10, 11) show that a strong solution of any reagent diffuses at a greater rate than a weaker solution of the same. They show that silver nitrate diffuses more rapidly than potassium chromate solutions of the same molecular concentrations. (The crossing of the silver and chromate curves cannot be regarded as established, for the reason stated above. Also the apparent straight lines of the chromate curves cannot be considered final determinations. The sudden stoppage appears to be correct, though this may be due to invisibility of the chromat-ion below a certain dilution.) It is certain that the lead nitrate solutions diffuse more slowly than the potassium chromate solutions of equal molecular strengths.

It was considered that this pair of reagents, the lead in outward, the chromate in inward diffusion, offered a good chance of testing the theory that with such a couple bands of precipitate might be formed which would become closer together outwards, instead of farther apart. Several different strengths of these reagents were tried against each other, the precipitates formed being apparently continuous to the naked eye. In the case of normal lead nitrate against N/200 potassium chromate an apparently continuous precipitate was formed. The hand lens showed no banding, but under the microscope the desired