

is used in papering the rooms, it must be cleaned every six months and new paper put on every year to keep it looking even half as well as one would wish. The acid in the soot attacks draperies, rendering them useless in a short time. The extra wear of cleaning also shortens their life markedly.

On interior painting the effect is not as marked because cleaning is done oftener. But the problems of interior decoration, and of keeping the outside of a building clean in smoky places, are exceedingly difficult to solve. The statement has been made by a number of painters that they have done jobs which looked as bad after two or three days' exposure as they did before the painting was done. Soot certainly destroys the æsthetic value of paint very quickly. The time which it takes to accomplish the pollution is, of course, dependent upon the amount of soot in the air, the colour of the paint, and the tar content of the soot. The number of paintings needed to keep the same building as presentable as in a smoke-free city will naturally vary greatly. Cases can be cited where it is necessary to paint three or four times as often as would be required for protective purposes only. In the majority of cases, in smoky cities, the number of paintings required is probably doubled. Sometimes it is necessary to remove the soot and tar and to wash the building before applying the new coat of paint. This washing also removes the paint, often making two coats necessary in place of one for a proper covering. After the wood has received ten or twelve coats it is customary to burn off the paint. This is an additional expense and likewise increases the fire risk. The action of soot on the wearing qualities of the paint also depends on many factors involving the chemical composition of the paint and soot. The soot may be acid, neutral or even slightly alkaline. Places are known where the soot seems to act as a protective coating, while in others it corrodes the painted surface, destroying the gloss and rendering it much more easily weathered. The latter is probably true in those cases where the coal burned contains a lot of sulphur and the soot is consequently quite acid.

#### SMOKE AND THE WEATHER.

From a preliminary study of available data and a perusal of the literature concerning the meteorological branch of our work we have arrived at the following conclusions:

(1). That city fogs are more persistent than country fogs, principally because of the increased density due to the smoke which accumulates in them.