than the calcium carbonate. But, at the same time, the acid causes the stone to undergo a physical change, making it swell and become porous, friable and easily disintegrated; it also roughens polished surfaces, thus rendering them more liable to attack by acid, by moisture and by the weather. Dr. Angus Smith has found mortar to contain as high as 28.33 per cent. of sulphuric acid. This, acting upon the calcium carbonate, would form 48.16 per cent. of calcium sulphate.

The effect of the sulphuric acid on most metals is rather marked, and greater than the action of a like amount of acid in the rain-water or air. It would seem from observations taken in Pittsburgh, that the soot containing acid is made to adhere to the metal by means of its tar content, in which place it acts as the one pole which together with the metal and acid, form an electrolytic couple, making corrosion much more rapid. In the case of iron and aluminium, the oxide and basic sulphate are produced, at least in part, from the sulphate, and the acid is used over and over again. To verify these observations experimentally, duplicate sets of various metals were fastened to two boards. One set was protected from the soot in the air by means of cheese cloth, yet still exposed to the air and rain. The other set was left unprotected. The pieces of metal left unprotected from the soot show a much greater amount of corrosion than those which were protected.

The following figures obtained by Messrs. W. B. Worthington and A. Rattray, showing the corrosive effect of the acids in the air, are of interest. To quote from Cohen: "A number of rails were placed in suitable positions by the side of the line, and weighed at intervals, and the loss of weight recorded. The rails were of the ordinary railway section weighing 86 lbs. per yard. The annual loss of weight from corrosion was as follows:"

CORROSIVE ACTION OF ACIDS IN THE AIR

Average Annual Loss in Weight in lbs. per yard		No. of years Observations
1. In the centre of the town.....	1.04	17
2. In adjoining place in smoky tunnel ...	1.48	13
3. In a wet place in same tunnel	1.71	8
4. On the sea-coast amongst sand hills ..	0.18	17

Building Decorations and Smoke

In designing both interior and exterior decorations for buildings the smoke question must receive as much consideration from the architect as do the tastes of the owners of the buildings. Interior draperies and paper are soiled much more quickly in a smoky city than elsewhere. If light paper