

and can be sold at a reasonable price. The liquid pitch encloses any objectionable elements they may contain, and the result is that they are inodorous. Another material of value found among dust is paper. Immense quantities of this are collected, and can be used over again for the manufacture of common brown paper for wrapping parcels. After being dried to remove the dust, and passed through the beaters to reduce it to pulp, it becomes as clean and sweet as when it came home from the grocer's or draper's. Straw can be similarly utilized for straw boards.

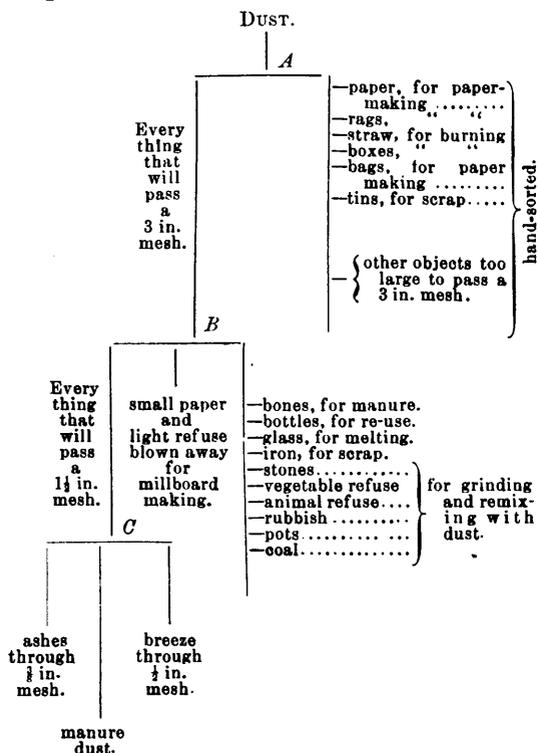
It is an important feature of the process that it is almost entirely mechanical, as nine-tenths of the material is never touched by hand. The dust as it arrives is tipped into a rotating cylindrical sieve; this runs on a horizontal axis, and is 12 feet in diameter by 12 feet long. The meshes are formed of bars 3 inches apart, and the progress of the tailings is regulated by an internal worm, which obliges them to make about three circuits of the screen before they can escape. A large exhaust-pipe, operated by a powerful fan, draws all the floating dust and small particles forward, and delivers them into the closed ashpit of a steam boiler. This screen is marked A on the diagram; the tailings, shown on the right, are mostly bulky articles; the paper, rags and straw usually roll into balls, although a good deal of small escapes through the meshes. Each thing that comes out is thrown on to its proper heap, while the rubbish for which no use can be found is sent to be ground under edge-runners, as will be explained presently. The articles that pass through the meshes are raised by an elevator, and delivered to a second rotating screen, B, 15 feet long, 6 feet in diameter, and 1½-inch mesh. The tailings from this are first

ing-table, 15 feet in diameter. A boy sits beside it and picks out everything of value as it passes him, such as bottles, glass, iron, bones, &c. The rubbish, such as animal and vegetable refuse and broken crockery, he allows to go past him to the grinding-mill. Here everything for which no use can be found is reduced to a dry powder, which appears able to absorb all the offensive elements and render them sweet. There are no heaps labelled "miscellaneous" in these works to distract the manager and breed a nuisance; everything that is doubtful goes into the mill, which is the pot au-feu of the establishment. When it comes out it is no longer recognizable; the mixture is carried back and put into the first screen (A) to be again sorted.

Everything that will pass through a 1½-inch mesh falls from the screen B on to a travelling band which delivers into a third screen C, 15 feet by 6 feet, covered with two meshes, ½ inch and ⅓ inch. What passes through the former is called ashes, and through the latter breeze. The tails go for steam generating. The ashes are used to mix with clay for brickmaking and the breeze for burning in the clamps, unless, as indicated above, they are pressed into briquettes, which, of course, fetch a better price. The ashes and breeze pass over a fine shaking screen, which takes out everything below ⅓ inch; this is valuable as manure, being the greater part of the animal and vegetable matter ground up in the mill.

Having traced the dust through its entire passage, we must return and notice some of the tailings. As we have already said, everything for which an immediate use cannot be found is destroyed. At present straw falls into the category, although the success of foreigners in the manufacture of straw boards leads to the hope that that manufacture may be eventually established here. The straw is all burnt with special precautions to render the smoke inoffensive. An externally-fired cylindrical boiler has two grates; on the larger of these the straw is burned, while on the smaller there is a breeze-fire through which the gases from the straw are passed to complete the combustion. The paper is remade on the premises. This seems a curious industry to carry on in Chelsea, but a well has been sunk into the gravel and an ample supply of water has been obtained to keep three beaters and one paper-machine at work. This is the most valuable by-product of all; the waste is worth 10s. to 1l. a ton, while the paper made from it is worth 7l. to 8l. a ton. The special value of the process is, however, that it enables the paper to be cleansed immediately, instead of being retained until a market can be found for it.

The works naturally consume a good deal of steam, particularly for the paper-making, and this accounts for much of the fine fuel. Indeed, it is conceivable that in any general extension of the system it might be worth while to use all the fuel on the premises in winter for the production of electric lighting currents. The total cost of handling would thus be avoided, and possibly a saving of the ratepayers' money effected. To prevent the evolution of smoke and any nuisance that might arise from the nature of the fuel, the five boilers of the works have their smoke drawn by an exhaust-fan through scrubbers, in which it is thoroughly washed before it is delivered into the air. The three locomotive boilers are worked with forced



subjected to a blast to take out light paper and straw, and are then dropped on to a revolving sort-