

A CLEAN MILL.

BY W. T. BATES IN ENGLISH "MILLER"

CLEANLINESS is said to be next to godliness, and in milling is supposed by some people to be synonymous with the manufacture of good flour and financial success. Cleanliness may be a virtue deserving a non-variation equal with godliness; but I greatly fear that many a canonized saint too often lacked the lesser virtue, and if Eastern "saints" are at all a pattern of the exalted departed, I should not be surprised to learn that uncleanliness in some cases was "accounted for godliness." I have also a strong impression that all the best flour is not made in all the cleanest mills, but in saying this I do not wish to appear as advocating either ungodliness or uncleanliness. As a matter of fact, all of us know of commercially successful mills, which are not models of orderliness, or alambros of delight; and we know also of carefully kept establishments which are unable to hold their own. I am not attempting in any way to state cause and effect in these cases, but relate them as matters of fact in order to disprove the connection, if any was supposed to exist.

There are untidy people who are never satisfied without they are up to their necks in dirt, and it may be true, as some assert, that a dirty man is never a good workman, his untidiness being the best evidence of his qualification—his character, in fact. While, however, admitting that some men are beyond redemption in this respect it would be quite unfair to generalise and condemn all men as dirty who happen to be connected with an untidy mill. Neither is it fair to blame the management for this state of affairs, and give the mill or system the credit of the financial success. We ought rather to reverse the order of this, and say that the condition of the mill is the fault of the builder, and its success due to the management.

It may be that the old style of milling has something to do with the slovenly and untidy habits of some men. The mill was considered to be clean if it was swept once a day and cobbed twice a year, the sweepings being left under the stairs and picked up about once a month; but as the old race of millers is dying out, and the breach between the old and new is ever widening, this reproach cannot long remain.

Our old race of so-called "rule of thumb," but really practical men, is being replaced by what we may with more truthfulness call knights of the broom. The age of millstone milling produced practical, self-reliant, all-round capable men. Their place is not being filled. The working of the mill depends now upon one man. The era of roller milling is the era of brooms and brushes, and of a race of housemaids, whose duty chiefly is to sweep, sweep, sweep, from morning until night. Cleanliness, now, in some mills, takes precedence of milling in its proper sense, except officially. The use of the broom becomes a painful monotony, or, as Mr. Mantellini would express it, "One horrid dem'd grind."

Some mills are dusty because it is impossible to keep them free from dust, owing to inherent defects; for no sooner has a man got to the end, say of a line of rolls, with his dusting, than he has to begin afresh and repeat the process. On the other hand, there are mills which scarcely need sweeping up once a day. But pray don't blame or credit the men or management in either case, for these extremes represent the difference between good and bad arrangement and environment. Only those who have had experience of this sort of thing can understand or appreciate the misery which unpreventable dust and untidiness induces, or the gratification arising from successful endeavors to overcome it.

Having experienced the two extremes, I will give my opinion of what I consider to be the chief causes of dust, dirt and trouble.

First and foremost amongst them all I place the absence of a good exhaust, especially where damp wheat is used. A good exhaust under the rolls ventilates the whole mill; for by drawing the hot air from the rolls the elevators and all dressing machines connected therewith are ventilated. The effect of this is that everything works better, the flour dresses freer, chokes are avoided, dust prevented, and general comfort promoted throughout the mill. This is not a fancy picture; without an exhaust, when milling damp wheat, and especially with dull rolls, sweating takes place, the spouts become

charged with damp moist air, and quickly fill up with a green fungous substance. Chokes inevitably follow, and chokes are the most fruitful cause of untidiness and unsatisfactory work. Besides this the spouts and elevators become rotten, and general discomfort is the supreme result. This state of affairs must also be prejudicial to the health of the workmen, as it assuredly must be to their tempers. We have probably learnt enough about roller milling—costly lessons too—to avoid these failures in our more recent constructions, but that will not cover past follies. In a mill that comes under our cognizance this trouble is so great that a weekly clearing out of elevator bottoms and spouts takes place regularly. Of course, there is always the remedy of applying a proper exhaust, but then everyone does not know its advantages; let us hope that this paper may assist them in this respect.

Another cause of dust, but not now very prevalent, is blowing elevators. Through going too fast generally, but sometimes through faulty construction, a portion of the load is thrown back, and falling to the bottom causes a rush of air and dust from spouts, or even from the roll case itself. This is a trouble sometimes difficult to cure, for it may arise from the elevator being overloaded, and the mischief of it is that every bit thrown back increases the load, but this overloading may be more apparent than real, for sometimes the buckets get clogged—partly filled with an accumulation of sticky dust—and this prevents them carrying their proper quantity. Spouts too upright may also prove a cause of dust by "blowing" in the same way as elevators. A flap valve or two put in a long spout will sometimes entirely overcome this defect, but it is best always to put the spouts at a fair angle, as anything hard will be greatly damaged by heavy falls. I have seen semolina thrown from an elevator down a long spout which not only wore a hole through the spout in a few months, but caused such a rush of wind that it lifted the lid from the purifier hopper. I should call that a fault of construction, although other people might put another construction upon it when they saw the trouble and mess it caused. We must, however, admit that millers and mill builders do not always admit the same construction!

There is no gainsaying the fact that all modern dustless purifiers may be made excellent dust distributors unless the feed is thoroughly dusted beforehand, which is often not the case owing to changes in the condition of the wheat. Arrangements which will dust middlings from dry hard wheat are very inadequate for damp wheat, and unfortunately we cannot always ensure one condition of wheat, even with our modern washing and mangling outfits; hence we find some "dustless" mills very dusty indeed, but, *le. us* also add, some are very free from dust, and also, that this defect is, wherever it may exist, a miller's and not a mill builder's fault. I question the wisdom of close dusting, but I give full credit to the dustlessness of the modern purifier when properly fed.

Mills should always be so constructed that the dirty dust of one department cannot be drawn in to contaminate the pure products in the other. For that reason the wheat cleaning department should be entirely separated from the mill. If dust is once set free in the air, we never know its destination. It may be our lungs, and it may be the pure products of our purifiers, for wherever fans are drawing breath, the impurities in suspension will accompany it. In badly arranged buildings this dirty dust can be seen sticking to the underside of the purifiers, and also covering main drives in out-of-the-way places in the mill. Depend upon it these are not the only places where it settles; the mill is generally affected thereby, and it can be seen in the color of the dust swept from the tops of machines and other places.

In a case I have in mind the dust catchers for the entire mill were placed under the roller floor. As every one knows, nearly all of these machines fail to catch fine dust, and the effect upon all the roller belts and the roller floor can be easily imagined. Fine dust is like smoke, following every current and eddy until it finds a resting-place. Its effects upon the inside of a belt is most disastrous, for no belt can obtain a proper grip when covered with dust. Slipping belts mean trouble, and where the cause is widely distributed, as in this case, the trouble is sure to be correspondingly great.

I should call that a fault of arrangement, and I should not blame the miller for it. If it became a question for compensation, I fancy the sum in question would be large, for I know the trouble is incalculable, and there is small credit given to those who have to battle with it.

Perhaps the greatest difficulty with which a conscientious man has to contend in his endeavors to maintain a clean mill is the general habit of untidiness in workmen. Plenty of men will go carefully through all their machines, polish bearings and brighten shafts, and yet have the mill littered and untidy. It may be an empty sack in a window sill, some waste left in a corner something between the elevators, some grease or oil left upon the floor, even something hanging upon the wall, all of which seem to neutralise or spoil the effect of their otherwise successful labours. Again, with regard to partially filled sacks. I remember going to take charge of a mill and found scores of these little bits of stuff littering up the place. Against every pillar were piled up half-a-dozen, and in every possible corner an even greater number. Everybody had done something to add to the number and yet it was nobody's business, and nobody knew what they were. This is a trouble that wants keeping well underhand or it grows to an awful nuisance.

I think that in some cases a mill cannot be kept clean because it is undermined. I should like to see a distinction made between millers and housemaids. We imbue our men's minds so thoroughly with this eternal cleaning business that I think they sometimes forget they have anything else to attend to. They are "broom knights" first and millers afterwards, a condition which I must say is not very creditable. We ought also, I think, to do all in our power to reduce this sweeping business to the lowest limit by doing everything possible to overcome its necessity.

Some complain of the waste in dirty mills. There is waste undoubtedly, but waste arises more from chokes; remove this trouble and the other disappears, as showing the difference under different conditions. A mill in which I was engaged worked under the worst conditions above enumerated, the result may be imagined, and imagination could not color the real truth, it was bad enough in all conscience. I now have the pleasure of working under the exact opposite—that is, the most favorable conditions; we have no choking, no waste, and to receive visitors is a pleasure.

The best way to dispose of sweepings, where there is a large quantity made—and badly constructed mills do manage to make a large quantity—is to have a mixer on each floor of the mill. All sweepings are put into these which feed into a short reel, where they are sifted and sent into sharp; or they may be divided and sent partly to sharps and partly to bran. This disposes of them as they are made, and prevents an awkward accumulation, difficult to dispose of.

Of course mills are sometimes dirty through sheer carelessness. A worm lid is left off from day to day, or a spout lid in like manner. A leak may remain unstopped, and yet, for all this, every day the man goes round and sweeps up the deposited dust, leaving the cause as before. It may be too much to expect our "broom knight" to become thoughtful, but until that consummation is arrived at I fear there is little hope for the realization of our dream of purity and light, an absolutely clean mill.



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