

A WALK THROUGH A BRUSH FACTORY.



“If you care to see how brushes are made, I will show you.” So ran my friend’s message, and as I knew the writer thereof was a chief proprietor of one of the largest and best-appointed brush factories in the United Kingdom—if not in the world—and as I plead guilty to being of a somewhat curious and inquisitive disposition, I at once accepted the invitation.

A bright spring day, and some other business in the quaint provincial town, which for the occasion shall be styled Brushborough, gave me the awaited opportunity. Riding into the streets, I learned that trade was now fairly brisk. After a period of depression the happy rebound promised at length to arrive. This was a cheering piece of intelligence, and calculated to put one in a good humour from sympathy.

“You will see our people and our place just in their every-day condition,” remarked my guide. “Even the laziest of them is busy at work now, for the end of the week is approaching.”

“That is precisely what I should desire—to witness the actual, regular method of procedure,” I replied. “So you, too, know something of the keeping of Saint Monday and the annoyances it entails?”

“A little—less, perhaps, than an outsider would imagine. Our brush hands are fairly steady, on the whole.”

“I am glad to hear it.”

We were now at the gates, and the pile of gaunt, many-windowed buildings rose like a huge prison-house in front. A brush factory situate as this is, amidst green meadows and flower-gardens, in the centre of some of the loveliest sylvan scenery in England, strikes the imagination as a wonderful example of nature and art face to face.

A large timber-stocked yard has to be passed through before reaching the hive proper. Here, in all

shapes and sizes and conditions, in stacks under sheds and in rows upon the open ground, is timber. Here are woods from several climes, woods of varied kinds: huge giants of the glade and park, uprooted by the fierce storms of winter, and straight, barely-matured trunks, the deliberate prey of axe and trolley. The quantity used for brush-backs and handles in the course of a year would justify Dominie Sampson’s favourite exclamation of “Pro-digious!” American birch and Spanish chestnut are highly esteemed; and the more costly rosewood arrives here in dark, dull-looking logs, to supply materials by-and-by for finely-polished veneering.

Entering the wide doors, we find ourselves first in the saw-room, or, as it might be untechnically termed, the splitting department. All around is the turmoil and din of steam-driven machinery. Circular bands of jagged steel are revolving in every direction. A crane hoists a ponderous trunk on to a sliding frame, and before our eyes, in two or three minutes, the tree falls apart, clean cut down the centre. The labour saved in this department alone by the appliances of modern engineering is immense. Division and subdivision go on, until the whole log is resolved into narrow slips, of the exact and uniform size required for any particular brush. The guiding, in the last case of all, looks to an outsider a somewhat perilous operation. The slip to be cut has to be kept in a perfectly straight line to face the saw, and for this purpose the workman



uses either a short stick or his bare hand. A very little carelessness might have grave results; so it is well, from this point of view, that a brush employé should be sober and steady. As a matter of fact, in this factory, accidents are of rare occurrence. I inquired whether the band-saws—so narrow and lithe, and revolving at so high a speed—did not occasionally fly.

"It would be exceedingly dangerous if they did," was the answer. "No one instance has happened here yet, and we hope the immunity may continue."

The backs of the brushes thus roughly prepared, the next step is the boring. This also is done by machine. It is a somewhat singular fact that only machine-bored brushes can be finished or have their edges trimmed by the same. The explanation lies in the fact that hand-work is never quite uniform. The holes vary a little; to the untrained eye this may be only the difference of an insignificant fraction, a rivalry between tweedle-dum and tweedle-dec, but for the purposes of the machine-worker it is amply sufficient. His apparatus demands an exact conformity to theoretical lines, and will be content with nothing less.

It is very interesting to watch the plain sections of wood brought rapidly up in succession against the swiftly revolving gouges, to hear the sharp *whirr!* of the entering tools, and note the tiny curl of shaving after shaving flutter to the ground. The holes thus drilled vary, of course, according to the requirements of the proposed brushes, in size, in arrangement, and in position. The slightest flaw, or collapse of one of the generally narrow intervening spaces, leads to the tossing aside of the strip. If suffered to go out, disaster would surely commence, with use, at that weak point. For the good repute of the firm any such contingency is very carefully guarded against.

It may be remarked here that machinery, as applied to the more intricate needs of the brush manufacturer, is at the present time only in its infancy. It is a lusty child, though, and some of its latest manifestations are highly instructive. Naturally a vast amount of ingenuity and caution is exercised by each successful inventor in protecting himself against piracy. To this end, the patent laws as they stand are of small use, for one sufficient reason: they sternly repress the unauthorised vending of registered

articles, but not the private manufacture of the same. Hence the brush engineer who turns out a contrivance to largely increase the speed of some special operation, if he patents it, gives rivals in the trade the chance to construct and themselves use a similar one. Obviously his wisest course is secrecy. Retaining the knowledge, he retains also the immediate pecuniary advantages. One fortunate inventor is said to keep a machine of this kind (for simplifying work) so strictly under lock and key as to allow not even a subordinate to see or touch it. He manipulates it himself, and it is impossible to blame him.

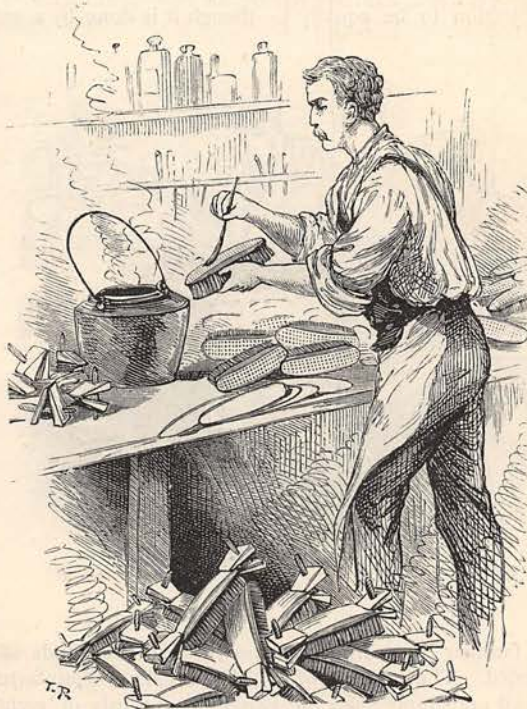
After this important business of boring, on which many hands are constantly engaged, comes the planing. A great deal of the rough and unsatisfactory appearance of the future brush now vanishes.

The drawing forms the next step. This is the operation upon which the large majority of the female workers are employed. In the factory under description the girls number a hundred to some fifty men, or are in the proportion of about two to one.

But fresh materials, as well as new toilers, here come upon the scene. Sundry, so to speak, side operations have meanwhile been going on, and have concerned the bristles. Like the varying woods, these are the spoils of many lands. France, Germany, Russia, America, even India and China, have all been laid under contribution. It is a task

of considerable delicacy to assort and sift out the colours. This is necessary to give uniformity of tint to the "rows" in the completed brushes. In huge bunches the bristles are then levelled, and divided once again according to length. They are afterwards cut, and arranged in convenient bundles for the "drawer."

The drawing—to take the familiar nail-brush as an example—is contrived in this way. The girl works at a small bench fitted with a screw, or vice, into which the bored brush-back is fastened according to the varying requirements of each "row." A tiny wisp of the bristles is then doubled under a band of brass wire and pulled smartly into its place. The wire reappears through the next hole, receives a second supply of bristles, and is again drawn tightly in. So the process continues until the last bore of the last row is reached, and the wire can be tied off. A small comb to



clear and straighten the bristles before use, and a pair of stout shears to clip them to one exact level after drawing, complete the list of the "drawer's" chief tools. The wire, as has been mentioned, is largely of brass. Iron, however, is coming into use. It is remarkably fine and flexible, and yet strong. A nail-brush takes from ten minutes to a quarter of an hour to advance this stage on its journey to perfection. It is quite possible to carry on this operation outside the factory walls, and, as a matter of fact, many married women once engaged therein take out work and employ themselves at it in their own homes. The cost of fitting up a bench is very small, and the increase of the family income by this use of trained fingers is often considerable. That there is monotony in the task cannot be denied; but that is an objection to be equally lodged against a thousand and one other occupations. It is at least a healthy branch of woman's work, and so, commendable.

The succeeding link in our chain of brush-development is the gluing. An outer back has, of course, to be put on to the more material and important one. The traces of the wiring-in are thus entirely hidden, and, moreover, the strands themselves are protected from accident or the action of damp. This final back is in the first instance glued on.

One room in the factory is devoted to the manufacture of the coarse, familiar bass-brooms. Wire is here altogether superseded. The bunches of harsh, unpleasant-looking material are simply stuck as firmly as possible in the holes prepared for them. The operation and its surroundings constitute a striking and somewhat amusing picture. In the centre of the apartment is a huge and ever-steaming pitch-pot, reminding one of nothing so much as of a fabled witch's cauldron. Around it, in attire purposely unspoilable and with quaint paper caps on their heads, sit some half-dozen adult men. Each holds a brush-back duly bored, and each is plentifully supplied with bass. A bunch of the latter is dipped into the pitch-pot, bound with twine, dipped again, whisked quickly into its destined place, and by-and-by, when its companions are about it, left to dry. It is not exactly a savoury apartment, and one would imagine that of all the phases of brush-making this is probably the one least conducive to health in the establishment. On a hot summer's day, at any rate, the heat

must be well-nigh insupportable, rivalling that of a London bakehouse.

To return to more elaborate brushes, the aristocracy of the tribe. After gluing comes what is technically known as "the finishing." It is not meant by this that the brush is now completed: far from it. This finishing is just a trimming of edges. The double brush-back is now put into a special machine and expeditiously and prettily curved into shape. It has lost for ever any appearance of crudeness which could connect it, in the imagination, with the band-saws on the lower floor.

In the case of better-class brushes the pricking follows. This is to give to the gluing the further security of nail fastenings. With it is distinctly allied—though it is done by a separate hand—the brading.

Here is a further point of divergence between qualities. The very best brushes are braded with brass, commoner ones with steel or iron.

Sand-papering—finally to smooth the back and prepare for polishing—follows. The polishing and the wrapping in paper conclude the list of operations. Subdivision of labour is necessarily in this industry carried to a very minute scale, and the example which we have chosen—by name a nail-brush—before leaving the factory for the warehouse, would



pass through the hands of some thirteen workers.

The brushes manufactured by this firm alone comprise upwards of eighty different varieties. As certain others—for instance, the largest machine brushes—are only turned out in the North of England (where chiefly needed), it is evident the trade is an intricate one. In character they range from carpet brooms to brewers' brushes; from oil brushes to jewelers'; from hair and hat brushes to the noteworthy tool of his ebony highness the chimney-sweep. Luxury, the science of health, business, and stern every-day use, are all represented. Large and small, fanciful and plain, cheap and high-priced, they are to be seen in the store-rooms in rich abundance. The quantity sold per annum averages many thousands of gross.

My walk through a brush factory had proved both a longer and more interesting one than was even expected. It only remained to express gratitude and say adieu.

W. J. L.