



SORTING ROOM.

machinery where it is torn up in very small pieces, into very shreds, and put through continued processes of cleaning. Immense steam boilers are waiting to receive it next, where it is boiled, and boiled, and boiled, till the old cotton and linen rags, or the old railway tickets grow into a curious substance like porridge. Sometimes strong chemicals are put into this mixture to help to clear out the colour and the hard fibres that won't be boiled down for anybody—not even for the Manager.

The pulp is then sent into very ingenious wash-tubs, with broad flat pans that move slowly round. Enormous quantities of washing are necessary, and enormous quantities of water. These tubs are so arranged that a broad flat layer of pulp is kept constantly moving around, while a fresh supply of water is kept as constantly flowing in, and the impure water as constantly flowing out. In certain cases chemicals are, here too, used to help the bleaching, when, of course, more water is needed to wash out every vestige of bleaching liquid or powder. The pulp, which may have once been put into these tubs of a deep-brown colour, gradually gets clearer and clearer, and eventually comes out a white and inviting mass of soft spongy substance.

So far the various materials go through a somewhat similar process, although the bleaching may be carried on longer in the finer and whiter papers. Now the scientific mixing takes place, and the mixing is a very scientific one, and a process in which I saw there lay evident scope for originality and invention. Pulp made from different sources, that is, from cotton, linen, jute, etc., when mixed in certain proportions, produce the varieties of paper to which we have grown so accustomed, that if a week goes by without a new brand on the market to tempt us, we consider

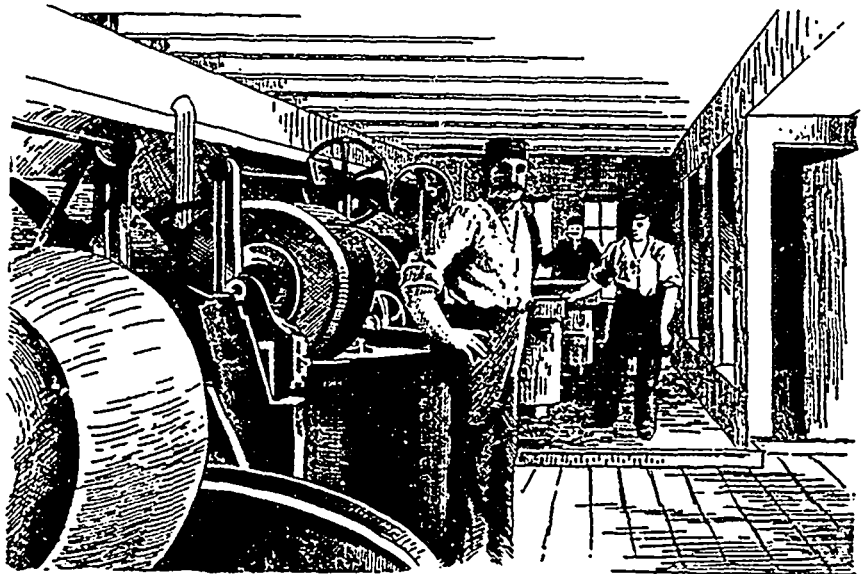
ourselves neglected by the paper-makers. They are wool-gathering, and not paper-making.

Until the introduction of the present improved machines the processes were largely carried on by hand. Indeed, the hand still holds its own against the best machine. You have all seen on the pretty packages of note-paper in the shops, such marks as "cream-laid" and "cream-wove." That does not mean that one has been woven and the other not. It means that one has been put on a frame that has had its wires "laid" from side to side, while the other has been consigned to a frame that has had its wires "woven" across each other. Hold a sheet of "laid" paper up between you and the light, and you will see the marks of the wires which the paper has main-

tained all through the machines and processes which it had to pass through after.

The pulp has now been mixed. The proper length of fibre has been secured. Some "size" has been added, and perhaps a little colour if necessary. The material has been prepared. Now it is to be made into paper. We are now ready to see what to me was one of the most wonderful and ingenious pictures I had ever enjoyed, something that came nearer the human than much that is human—a long machine, or rather a house with a succession of machines, where the pulp was fed in at one end, and the paper was carried out in long white rolls at the other. A second and a third time I went back to this as the "pièce de resistance" of the manufacture; cool, wet, soaking, dripping, at one end, and hot, dry, crisp, at the other. How I wish you had all been with me—every one.

At one end were great tubs of pulp—that is, of water with the merest suggestion of white in it, the fibres from the cotton and linen rags so broken up and so purified that you could hardly have seen them in the water. If you had taken a cup full of water in your hand, you would have said it was water in a cup where there had



PULPING ROOM.