

at the factory is to sort it, that is to select from the different parts of the fleece those qualities or grades suitable for the purposes assigned to them. We have known wool sorters who had never seen a filament of wool in a microscope, but who could tell the moment they touched it all the manufacturer required to know concerning it. Where many varieties of cloth are made, great discrimination is required, and the practiced touch of the wool sorter is seldom at fault.

FRAZER & CRASHAW'S ONTARIO WOOLLEN MILLS.

We have recently had the privilege of visiting these mills, and of being shown through the principal departments by the gentlemanly and enterprising proprietors.

This manufactory, we believe, is the largest and one of the best of the kind in Canada. It is situated on Hama's Creek, in the town of Cobourg, county of Northumberland, C. W., and was established by Mr. McKechney about fifteen years ago, as a satinet factory, in which character it came into the possession of the present proprietors. The main building is a five-story brick structure, 50 by 100 feet, with a large frame wing and several detached buildings. Most of the old machinery has been replaced by that which is more appropriate to the present business, which is altogether of a superior kind. The annual consumption of wool here is about 200,000 lbs., two-thirds of which is Canadian, and the remainder Michigan and Ohio Merino. The former is worked into five grades, and the latter into four.

The first process proper through which the wool passes is scouring. This is done in hot alkaline liquor, and afterwards rinsed in a cistern close at hand, by directing upon it a very powerful stream of water. The wool that has been washed before shearing requires much less scouring, and takes a better dye: wherever manufacturers can do so, they ought, for their own sakes, to insist upon this as a necessity. In experiments upon wool that had been removed from the skin after death by the liming process, Dr. Calvert found that by steeping the wool for twenty-four hours in lime water, and then passing it through weak hydrochloric acid, not *after* but *before* scouring, the bad effects were removed. The wool we have seen scoured and *well rinsed* is fit for the dye. Messrs. Frazer and Crashaw some time ago kept a French dyer, and introduced the new aniline colours. At present they have an experienced dyer, from a very large establishment in Scotland. This firm is doing all they can to produce good colours in Canada, and

they will find it pay. We sincerely hope, for the credit of our woollen manufacturers, that their example will be followed by others.

We now follow the wool up to the fifth story, where it is dried, and then to the "tucker," called indiscriminately by the names Willey, winnow, picker, wool-mill and devil. It is a formidable instrument, having a cylinder, about two feet in diameter and thirty inches long, studded over the surface with hooked teeth—spikes about two inches long. The wool is fed in on an endless apron to two feed rollers, which present it to the hooked spikes whilst the cylinder is going at a high velocity. The wool which went in in tangled locks, comes out at the other end in the shape, but not always the color, of a highly magnified snow-storm. It has now parted with a great deal of dust, and some other foreign matter. Formerly the attendant wore a cloth over his mouth and nose, as a precaution against inhaling the flying dust; but now the mouth of the machine opens, and throws the wool into another apartment; the dust is disposed of in a different way. The wool is now to be oiled, to make it work better, and again passed through the machine, the better to mix the oil, or it may be to mix different colors of wool. The original intention was to open up these tangled locks of wool, as a preparation for the scribbling, and it should pass through several times. The machine here is as good, perhaps better than many others of the kind; but we are satisfied that the truncated conical wool-mill, invented by Mr. Lilly, of Manchester, is infinitely better. If manufacturers would pay a little more attention to this preparatory operation, and carefully examine their wool before it enters the first scribbler, and then again observe the imperfect state in which it leaves that engine, they would agree with us that a better wool-mill is required. At present the delicate card wires are taxed beyond their strength, to do that which could be done more effectually and far cheaper by a stronger machine. We have not space to describe Mr. Lilly's machine, nor could we do full justice to it without a woodcut. The shape of the cylinder is that of a truncated cone, armed with four rows of strong teeth; the cylinder revolves within a concentric case, armed also with teeth, which are arranged so as to allow those in the revolving cylinder to pass between them. The wool is fed in on an endless apron, on the same principle as the old machine, but the apron extends only about one-third the length of the machine, and is placed near the summit or small end of the cone. Revolving about five hundred times a minute, the wool here receives the minimum impulsion, but by virtue of centrifugal force it is whirled with accelerated velocity up to