

people of all classes and conditions of life. Woollen clothing is absolutely necessary in Canada, if we wish to preserve health, during the extremes of summer heat and winter cold. We venture to say that not only would the average duration of human life in Canada and the United States be lengthened by the universal use of woollen wearing apparel, but there would also be a vast diminution in the suffering entailed on a large part of the population by rheumatism, neuralgia, and a host of kindred ailments, which can frequently be directly traced to unsuitable clothing, manufactured from cotton, and the neglect of woollen wearing apparel.

Messrs. Barber & Brothers, of Georgetown and Streetsville, have long been known in the Province as most enterprising woollen manufacturers and paper makers, and more recently as having so successfully introduced the manufacture of wall papers, specimens of which attracted well deserved attention at the recent Exhibition at Kingston.

It will be in the recollection of our readers that the Messrs. Barber's mill was burned down in June, 1862; but it is not generally known that on the morning after the fire, gangs of men might be seen wending their way to the pine forests on the Credit, to cut timber for the reconstruction of the mill; and two days after the destruction of their property, involving a loss of \$90,000, one member of the firm was on his way to the New England States to purchase machinery for the new mill about to rise from the ashes of the old one. So energetic and untiring in their labour were these enterprising men, that the present establishment, commenced in June 1862, was completed in October of the same year.

It is divided into four stories, in each of which the different operations of picking, carding, spinning, weaving and finishing are carried on, by machinery of the best description. The dyeing operations are effected in a building adjoining the mill. We purpose to accompany our readers through the different departments of this establishment, and endeavour to give a general outline of the operations and processes (omitting details) which the wool of Canadian sheep undergoes, until it appears in the form of Canadian cloths, tweeds, flannels and blankets.

The first operation, after washing, is to dye the wool of the required colour. All the dye stuffs are imported, and a field is open for practical men in the preparation of certain dyeing materials which are much used in woollen manufactures; such as prussiate of potash, for the manufacture of Prussian blue, &c., of which abundance of materials suitable for its preparation are allowed to go to waste in many different manufacturing

establishments. We hope, too, that the day may yet arrive when the chromic iron ores, noticed in page 232 of this journal, may be used for the manufacture of bichromate of potash, for home use, notwithstanding the announcement recently made in an English journal, that the manufacture of this valuable substance is diminishing, on account of the discovery and general adoption of the new aniline colours, which have yet to prove their worth as stable and persistent rivals of the well-known and beautiful chrome dyes.

The dyed wool is first picked, and then oiled, before it is subjected to further manipulation. This is an important process; olive oil is used, and in a large manufactory it forms an expensive item. Harsh wools require one-seventeenth of their weight of oil, others no more than one-fortieth. Until very recently, in Europe as well as in America, the oil has been scattered in drops over the wool by hand. The result has been that the oil was unevenly distributed, in some places the wool being clotted, in others escaping the oil altogether. As inequality in oiling produces inequality in the yarn, the defects of the present process are discernable in many parts of the manufacture. It is now proposed, by the invention of a simple and very appropriate instrument, to oil the wool with the aid of machinery, in a perfectly uniform manner. The invention of the apparatus is due to Mr. Leach, of the Britannia Mills, Leeds, and is noticed on page 285 of this journal. As the wool passes along the feed-sheet of the preparing machine, the oil is scattered over it in the form of a spray or mist. The quantity of oil can be varied at pleasure; and not only is there a great saving of labour, but also of oil—an important item in Canada.

The oiled wool is now submitted to the carding process, on the third story, by which the filaments are laid parallel to one another, the short wool and accidental impurities combed out, and the wool prepared for spinning. Messrs. Barber & Brothers keep 2,000 spindles in operation, one workman attending to 250 spindles. These occupy the second story. The first story is devoted to weaving, and here the manufacture of cloths, tweeds, shirtings, &c., is carried on. In August of this present year, 18,964 yards of cloth were manufactured at this establishment, employing on the whole ninety hands, whose wages amount to \$1,600 a month. After the cloth is wove, it passes through the fulling mill, on the ground floor, and is thence carried to the drying room. This operation is technically called tentering, and the cloth suffers during its passage through the fulling mill a shrinkage of nearly one quarter. When sufficiently dried, it is brought back to the