

Should the alkaline solvent be too strong, the vegetable fibre is destroyed, and, instead of pulp, a thick liquid, in which no trace of fibre can be discovered, is the result, and the boiling is spoiled. If the temperature in the boiler be not sufficiently high (the temperature being dependent on the pressure), or the alkaline liquor not sufficiently strong, a five hour's boiling will not suffice to abstract all the silica, and the paper will be brittle and consequently fragile. It will occur to the reader that however careful the manipulators may be in testing the strength of their alkaline liquor, and in the temperature or pressure to which they submit the comminuted straw in the boiling process, yet the samples of paper produced under apparently the same conditions, will differ very widely in their properties, some being more brittle than others; this arises from the character of the straw employed, and it is a point to which we think too little attention is given. Wheat straw grown upon different soils varies very considerably in the amount of silica it contains, and it would, we think, be a matter of true economy, if the manufacturer would make a point of keeping separate the straw obtained from different localities where soils vary. It is clear that the same process which succeeds in converting into available pulp a straw poor in silica, will produce a brittle and comparatively worthless paper from straw rich in that element. It may be that some apparently inexplicable failures in particular "boilings" have resulted from a want of attention to the siliceous character of the straw. A little practice would soon enable a manipulator to determine whether a straw was rich or poor in silica, and the time during which it is submitted to the boiling process, and the strength of the alkali, should depend upon the relative quantity of silica in the material operated upon.

After the pulp has been well washed to withdraw all the soluble alkaline silicates, it is submitted to the bleaching process. The bleaching agent being the common chloride of lime or bleaching powder.

In practice it is found that notwithstanding the winnowing process, knots and fragments of weeds are found mingled with the pulp, which resist not only the boiling in alkali—the action of the bleach—but also that of the beating or grinding machine, through which the pulp is subsequently passed. These impurities, although unsightly, do not materially affect the sale of the straw paper for newspaper purposes, but if a superior article for books or writing paper is required, they constitute an insuperable objection. This difficulty may be in a great measure remedied by filtering the pulp through a sieve composed of fine slits, and so

adjusted that the air beneath may be exhausted; the thin pulp passes through the slits, but leaves the impurities behind. This process is used in the best machines, and is found effective. The pulp being obtained by the manipulations described, is passed through the ordinary paper-making machine, calendered, and then cut to the requisite size. Pearl hardening is not used, as far as we are aware, in this establishment.

In the neighbourhood of Messrs. Barber's paper mills there may now be seen five immense stacks, each of which contains about eighty tons, or in the aggregate four hundred tons of wheat straw. It is well worth notice and reflection that, by the energy and intelligence of these gentlemen, the crude mass which so many passing eyes look upon without speculation in them, will probably, by the spring of next year, have circulated throughout the length and breadth of Canada, in the form of printed paper, thus becoming the means of conveying intelligence from day to day to millions of thinking creatures. Some of it will have been distributed in narrow streams throughout the United States, other portions will cross the Atlantic, and may meet the eye of "the Thunderer," who will learn his lessons on Canadian politics, and endeavour to see which way the wind blows by gazing at a few straws properly manipulated from Messrs. Barber's huge stacks of eighty tons each.

We do not doubt that paper can be manufactured from straw so as to present as even and uniform a surface as the paper made from rags. But it would perhaps be necessary to adopt the tinting processes and pearl-hardening now so common in Europe, and which cover such a multitude of imperfections. Any one who examines the "Illustrated London News" paper will see that it is delicately tinted. The introduction of certain colours into the pulp possesses many advantages, as far as the appearance of the paper is concerned, and there can be no doubt that by a proper exhausting filtering apparatus to remove knots, and a judicious admixture of particular colouring minerals, so introduced that the paper shall be uniformly tinted, straw paper with a very small admixture of rags could be, and shortly will be, made suitable for books and paper of every description in common use.

BARBER & BROTHERS' WOOLLEN MILLS AT STREETSVILLE.

The manufacture of woollen fabrics of all descriptions is a branch of home industry which deserves all the encouragement the country can afford. Not only is it of special importance to the farmer, but in this climate it becomes a home question to