

ing rags, secondly, the ability to read, and the power of purchasing new-papers, books, &c., are so universal, that the demand for paper is much greater than can be met by any possible internal supply of rags. I could wish the European nations were similarly situated, and should be willing to risk the probable effects on the price of paper.

From the best estimate I can form, I think we shall not err in setting down the cost at which manufacturers now produce the 177,633,009 lbs. weight of paper, which it may be assumed will be made this year, at £1,000,000 more than the same weight would have cost in 1852. In 1832 only 64,935,655 lbs. of paper were manufactured in Great Britain, so that in twenty years the manufacture has nearly trebled its production, in 1853 the quantity being 177,633,009 lbs.

If the manufacture should keep at its present point only, the high price of material is likely to be permanent, but as the demand for paper will probably go on increasing, it will become the Society of Arts to prospect, if I may use the expression, for raw materials for this commodity. That the supply of paper will ever fail I have no fear, inasmuch as nearly a century ago paper was experimentally made from upwards of thirty different materials, and more recently attempts have been made, not without some success, to manufacture it on a large scale from plantain fibre, peat, wood shavings, hop-bines, straw, &c. Some specimens made a year or two ago from plantain fibre, were undistinguishable from good printing paper made from rags, I am not aware of the cause of suspension of operations. Experiments are still going on, I believe under a recent patent for the manufacture of wood paper. A patent has also been recently taken out for the manufacture of paper from hop-bines. I fear the cost of reducing several of these substances to pulp will be found too great to allow of the preparation being remunerative, even at the present high price of rags.

According to the views propounded on Wednesday evening, Dr. Royle and the speakers generally seemed to regard the various fibres then described as sources of ample supply for the paper-makers. In quantity and quality I will not for a moment dispute the point, but, with every desire to see the price of paper materials low, and, in my opinion, it is second to "cheap bread" only in importance, I am certain we shall not accomplish the object by self-deception on any one important fact; and neither hopes, wishes nor experiments can overcome market price; and on this ground I venture to express my doubts of the present availableness of the substances so ably pleaded for by Dr. Royle.

I find on inquiry this day, that the present market price of Manila hemp is from 70s. to 76s.; jute, 27s. to 32s.; per cwt.; for plantain fibre I could not obtain the quotation. Now the best white-English and foreign cotton and linen rags, suitable for making writing paper, do not range above 34s. per cwt., and these suggested raw fibres would require much more chemical treatment than the rags of the same price. The rags have been brought into a textile condition from original fibrous state at a certain cost, which has been defrayed by the use to which rags were applied whilst in the state of garments, &c.; if, therefore, the substances mentioned on Wednesday could be used in lieu of the best rags it would only be a case of substitution—no advantage in price would be gained. The greatest rise, be it observed, has occurred in the lower quality of paper materials, and it is additional supplies of this description which are needed. If these new fibres be introduced for this purpose the case is still worse, manufacturers would be using a 32s. article for the production of paper, the ordinary materials for which are now only 10s. per cwt. It is not the original cost of fibre merely which must be considered, but also waste in manufacture, chemical cost of power, wear and tear and replacement of machinery, wages, duty, and profit, truly a formidable list of obstacles to cheapness.

Having offered these remarks on the various propositions which have been brought forward for removing the difficulty, I may be allowed to direct attention to what I conceive to be the true source of relief. I had hoped to have celebrated the repeal of the duty long ere this, but under present circumstances this happy event must be considered as indefinitely postponed; the repeal, however, come when it may, will be equivalent to an average reduction in price of about 20 per cent. The repeal of the duty, although it would to a certain extent lower the actual price of paper would, I have no doubt, have a tendency to raise the price of materials by increasing the demand for the manufactured articles. I should not, however, trouble you with these remarks, if I depended principally upon the repeal of the

duty for a reduction in price, but I am of opinion that an unlimited supply of a cheap and a suitable material exists in our own country. I refer to straw. The sheet upon which I write is made entirely from straw, and leaves little to be desired for ordinary uses, and for many purposes it is preferable to paper made from rags. Moreover, less power is required to prepare the materials, the process being more chemical than mechanical, an important matter, when the high price of coals in some parts of the country is considered. Why, then, has this manufacture been comparatively neglected? Solely, I believe, from the circumstance that the large quantity of alkali required to prepare straw for pulp, by combining with its resinous and silicious matters, causes that article, the alkali, to become a more important element of cost in the manufacture than the straw itself. To reduce the cost by recovering a portion of the alkali, an expensive mode of evaporation has been hitherto adopted. It has long been my decided conviction that this alkaline solution could be used as the raw material of some other manufactures, such as soap making, or for common glass, probably both, thus saving, at any rate partly, the expense of evaporation; and the great point I wish to bring before the Society is the desirableness of ascertaining to what uses this residuum can be profitably applied. If the expense of evaporation could be saved, the manufacture of paper from straw would be rendered more profitable, and a large supply would be the result, the rag market particularly for the inferior description of goods suitable for the manufacture of printing paper, be kept low, and the desired object would be thus accomplished. The proprietors of the following straw-paper mills, I believe all at present in existence, would, I have no doubt, supply some of their "black liquor" to any soapmaker, glass manufacturer, or chemist who might be disposed to try experiments with it, viz:—Tovil Mills, Maidstone, Kent; Quenington Mills, Fairford, Gloucestershire; Burnside Mills, Kendal, Westmorland; Golden Bridge Mills, near Dublin. I understand Mr. Simson, of Maidstone, has patented some process connected with this subject, but with the particulars I am not acquainted.

#### Irish Peat Company.

At a meeting of the shareholders of the Irish Peat Company, (July 1. 1854,) the following report of Mr. Powell, the temporary manager was read:—

In compliance with your request, I forward a short report on the working of the factory at Kilberry, from the period that the furnaces were lighted up to the present period.

**TURF CONSUMED.**—The turf consumed in the furnaces since the 18th March, the day on which the furnaces were first lighted, up to this day, amounted to 19,67½ wagon loads, such as are used in charging the furnaces. Six of these wagon loads average 1 ton, giving the total amount of turf consumed as 3279 tons.

**TAR PRODUCED.**—The quantity of tar collected up to the present time amounts to a little more than 70 tons, in addition to which there is now in the various tanks about 10 tons not yet collected, giving a total of 80 tons, or, as near as possible, 2½ per cent. on the amount of turf consumed.

**TAR DISTILLED.**—47,518 lbs. of tar have now been distilled, which has yielded 730 gallons of rough oil, and 21,950 lbs. of rough paraffine and oil mixed, the whole of which is in course of separation and purification.

**NAPHTHA.**—From the ammoniacal liquor has been distilled, up to the present time, 223 gallons of rough naphtha, averaging more than 45 degrees above proof, and which, when re-distilled, and reduced to 37½ degrees, the usual marketable strength, will yield more than the same amount of rectified spirit.

**SULPHATE OF AMMONIA.**—We have further obtained from the ammoniacal liquor distilled 1½ ton of sulphate of ammonia, fit for market, and about ½ ton more in course of draining and evaporation: 6000 gallons of ammoniacal liquor yield, on an average, 10 gallons of naphtha and 200 lbs. of sulphate of ammonia, and we have at present about 30,000 gallons not yet distilled. These are the simple statistical facts relative to the products obtained from the turf hitherto consumed, but I do not consider that they are a fair criterion of what we have a right to expect from the same amount of