

stant stream of salt water and oil is discharged, equal to it is estimated, 1,200 barrels per day; and of this yield, about one per cent., or 12 barrels per day, is found to be petroleum.

There are at the present time a great number of refineries in the neighbourhood of the springs; I had no means of ascertaining the exact number, but I was told that, reckoning large and small they could not number much fewer than one hundred. The capacity of these refineries is estimated to be equal to 1,500 barrels of crude oil per day, whilst the total yield of the springs is said to be not much more than four hundred barrels.

The "oil-men," although discouraged, are not without hope; they think that, as in Pennsylvania, an increased supply of Petroleum will be found, by sinking wells to a greater depth; and accordingly, they are making arrangements, if they have not already commenced, to sink a test well, to the great depth of one thousand feet under the surface.

I was informed, that although only about 150,000 barrels of Petroleum have been shipped, a total quantity of 300,000 barrels must have been discharged, up to this date, from all the wells; about half of the total yield having been allowed to run to waste. To give some idea of the capacity of the hidden reservoirs in which the Petroleum has been stored, I may mention that 300,000 barrels are equal to nearly 2,000,000 cubic feet; and that if brought into one place, the crude oil discharged from the wells of Eniskillen would be sufficient to cover an area of five acres of land to a depth of ten feet!—*From the Canadian Journal.*

ON MAIZE PAPER.*

"Where shall we in future get our paper from?" is at the present time a stereotype question among paper-makers. And they have indeed reason to ask the question, for it is a well known fact that the consumption of paper is enormously increasing in all civilised States. The explanation of this is not only the increased productive activity of literature in general, and the periodical press especially, but also the quicker pulsation of public and private commercial life, caused by the freer institutions of States, the stimulus of competition, increased communication, &c. A great quantity of paper is also now used for other purposes than for printing and writing on, such as for paper hangings, cartridge, packing paper, &c.

The consequences of this enormous paper consumption are felt more and more, because the paper manufacturers meet every day with greater difficulties in procuring a sufficient supply of the raw material necessary for the working of their factories. The rags which are mostly used for the paper pulp cannot be produced at will, like other raw material; the supply is, as well in regard to quality as quantity, to a certain limit influenced by the activity of the rag gatherers.

It is therefore evident, that the moment must come, sooner or later, when it will be absolutely impossible for the paper manufacturers to keep pace with the paper consumption—if they should

not succeed in discovering a suitable substitute for rags. To this end their exertions have been directed for years, and experiments tried with different degrees of success have proved the existence of many substances containing fibre which might serve as a substitute for rags. Few, however, are adapted for manufacturing purposes, either because they are too costly, or because they cannot be obtained in sufficient quantity. Culture or food plants are those which are produced in the greatest quantity, and of these the maize plant seems one of the best adapted for paper-making. This fact was ascertained long ago, and hence it has been tried on several occasions. According to Dr. Schaeffers "Sammtliche Papierversuche" (Regensburg, 1772), two maize straw paper factories existed in Italy in the last century. But the process in use by the makers seems to have been lost with the decay of the paper mills. A certain Montz Diamant from Bohemia, recently again drew attention to the maize plant as a substitute for linen rags, and indicated a process for the transformation of maize fibre into paper pulp. He submitted in 1856 to Baron Bruck, the Austrian Minister of Finance, a project with regard to it. The Imperial paper manufactory at Schlogelmühle, near Gloggnitz, was consequently authorised to make, under Diamant's direction, paper out of a certain quantity of maize straw. The paper so produced was not satisfactory in regard to quality, and the cost of making it also proved to be much higher than that of rag paper. The Minister of Finance therefore gave orders to stop further experiments.

In consequence of a recommendation from experienced men whose opinions had been taken, Baron Bruck consented to have a second trial made in the Imperial paper mill, under Diamant's direction. The mill was at that time under my superintendence, and I interested myself very warmly in the experiments. Different kinds of paper, writing and printing, were manufactured, which were not entirely satisfactory as far as quality was concerned. The cost of producing the paper was still, in spite of all exertions to reduce the manufacturing expenses, considerably higher than that of rag paper, consequently the director of the Imperial paper mill could not recommend the manufacture of maize paper on a large scale.

As the bulk of the expenditure arose from the great distance of transport of the raw material, it was proposed to undertake the manufacture in a locality where maize was raised in sufficient quantity to have the straw at hand available. It was further resolved to erect an experimental factory for reducing it into half stuff, so that instead of the bulky straw only the compressed substance adapted for manufacturing paper should be delivered at the paper mills.

The half stuff factory was erected at Roman Szt-Mitaaly, near Temesvar, where the maize cultivation is extensive, and on the 6th March, 1860, it commenced to work under Diamant's provisional direction. The restricted time for experiments was one year. Diamant promised to manufacture in that period 4,500 cwt. of half stuff out of maize straw, but not the seventh part of this quantity was reached.

The half stuff made was also so poor that further experiments, and the working of the factory were

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