

THE EXTENT, INSTITUTIONS, AND RESOURCES of Canada, which the Exhibitions of 1851 and 1855 served to dispel for a time among the more enlightened classes who visited those splendid collections of human art and wisdom, and among the masses whose attention was for the time awakened to what was meant by the word CANADA. "The light thus momentarily afforded was soon obscured," and but a dim and confused impression remained in the minds of the working classes in the United Kingdom until the visit of the Prince of Wales restored recollections, stimulated enquiry, and turned public attention to this country to a far greater extent than at any previous period. The great Exhibition of 1862 may render this interest permanent if energetic steps are taken to represent the country, and to place in the hands of the influential people in the United Kingdom, the means of distributing information which will no doubt be again eagerly sought after by many desirous of trusting their fortune beyond the seas.

It does not require a very familiar acquaintance with the social condition of the people of the United Kingdom, to know that the masses are influenced to an extraordinary degree by those occupying positions of authority and power. The country gentlemen are the oracles to whom the labouring farm classes look for advice and guidance. This is the class which should be made acquainted with "the extent, institutions, and resources of Canada," and through them the information will be conveyed to the intending emigrant, and from them only will such information be received with reliance, and acted upon in confidence and hope. A broadcast distribution of pamphlets and maps is comparatively useless. Information, ample, practical and illustrated, must be placed in the hands of COUNTRY AUTHORITIES and COUNTRY GENTLEMEN, in connection with a full representation of our progress at the Exhibition of 1862, before we can expect a healthy return of that tide of emigration which poverty and distress contributed to swell in by-gone years, but which for the future should be the natural result of the advantages which Canada can offer to the industrious man, of winning a position of independence and security for himself and his children.

PETROLEUM, OR ROCK OIL.

No. II.

"The immense importance which "Rock Oils" are now assuming, from the discovery of new sources of supply, coupled with the doubts which hang over the real origin of this important substance, give interest and value to every kind of information upon which reliance can be placed. Some fresh discoveries of Petroleum have recently been made in Ohio,

and in the Township of Dereham, C. W., which appear to show that the area over which we may expect to meet with this substance in remunerative quantities, is considerably greater than was but very recently supposed. Mr. J. S. Newberry, in a paper on "the Rock Oils of Ohio," published in the *American Gaslight Journal*, (January 15, 1861,) expresses an opinion respecting the source of the Rock Oils of Ohio, which if borne out by facts, will materially extend the area in Western Canada, over which productive springs may be searched for with success. Mr. Newberry says:—

"I have said that the Waverly series or the Chemung and Portage rocks—are the oil rocks of Ohio. By this I mean that they are the principal repositories of oil—the source from which we are mainly to derive the millions of gallons which will be annually used in, or exported from the State—the geological level along which we must look for new discoveries of petroleum.

"That the oil originates in this group of strata is, however by no means certain. On the contrary, it seems more probable that it merely accumulates in them, as a convenient reservoir, when flowing from another source. These rocks are mechanical sediments, and are, in Ohio, generally destitute of organic remains, whether animals or plants. They are, however, often quite porous, and strong currents of water flow through them. The Hamilton Shales, on which they rest, contain an amount of carbonaceous matter probably equal to all that included in the coal measures. Here, I suspect, most of the oil originates. From this bituminous mass, as distilled by nature's processes, it would rise through every fissure by the pressure of the incumbent rocks, or water, which is specifically heavier. A few layers of the Waverly series are highly charged with the debris of vegetables and marine shells; and these may generate some oil; but for the most part what they contain is of foreign origin. The source to which I have referred it is so entirely sufficient, both as regards its position and character, that it seems unnecessary to look farther.* Over nearly all the northern part of the State, where the Portage and Chemung rocks are exposed, petroleum may be found exuding from them in greater or less abundance; but it is only at comparatively few points that it is found in a "paying" quantity.

"The Oil Creek region of Pennsylvania is one of these series of oil centres. There the wells are sunk from 70 to over 300 feet—often to, and sometimes apparently through the Portage group. The oil occurs at all depths. It is frequently found saturating the surface deposits, and the deepest bore has not reached beyond it. It flows in fissures with water, and that from neighboring wells differs much in quality; all of which facts seem to indicate that it is derived from a somewhat remote source below. The oil of Titusville is very thin, varying shades of brown in color, and has a specific gravity of 35° to 40° Beaume.

"Not very far distant from the Oil Creek district is that of Mecca, Trumbull county, Ohio. Here some 200 wells are being bored, and a dozen or more have been successfully pumped. The geological level of the Mecca wells is the same as that of Titusville, but they are generally less deep; varying from 30 to 200 feet, while

* In confirmation of the view that the oil of the Portage and Chemung rocks for the most part rises from the Hamilton Shales, it may be said that at Titusville, Mecca, Gratton, &c., the oil is found exuding from cracks in the surface rocks, coming up from below, and saturating the soil; and that in boring, the most abundant flow of oil is also obtained from vertical crevices at very unequal depths, in holes closely approximated.