

occasionally, when especially requested, has selected their Chief Judges. Until lately, also, Englishmen at home continued to charge themselves with the defence and protection of Englishmen in the Colonies; but it has been understood for some few years, though great difficulty has been experienced in acting upon the principle, that the tax-payers in England would restrict themselves to warding off from their kinsmen such dangers as might threaten them in consequence of their association with the fortunes of Englishmen. We cannot but think that the bare statement of relations such as those must provoke reflection. Every one must see that they indicate a period of transition. There is no ground for surprise, still less for indignation, if it be asked whether it would not be better for both Englishmen and Australians if the independence the latter have, in fact, should receive a name. The Dominion of Canada is in all respects independent. It is fitted to become—it has the institutions of a great power. It is surely a fair subject for enquiry whether it might not assume its appropriate position. Although we do not forget our own warning against the use of metaphors, we must still ask whether the emancipation of the adult is not as desirable to complete the manhood of the son as it is necessary from the inability of the father to understand the peculiar circumstances of his son's life.

While protesting that the colonists in England appear, from their circular, to be filled with vain alarms, we do not underrate the importance of the change in our colonial policy which is in progress, nor are we disposed to question the propriety of summoning a conference for the coming spring. If the policy now pursued points, as the circular before us says, "to the severance of the connection between the Colonies and the Mother Country," it is well the end should be foreseen and provided for, so that it be not at last achieved hurriedly and in an unfriendly spirit. We may, indeed, be certain that whatever changes are imminent, Englishmen are not so careless of the continuity of national life as to forget the obligations springing from the past conduct of the Home Government. In the last session of Parliament an Act was passed guaranteeing the purchase money of the Hudson's Bay Territory, the sole justification of which was that Charles II. had granted an inalienable charter, which could not be withdrawn on other terms. It is also well that colonists should discuss such schemes of future union between Englishmen all over the globe as are glanced at in the circular of invitation to the Congress, even if the result of their discussions prove nothing but the impossibility of realizing them. A Federal Union of the North American Provinces has been accomplished, and it would, to all appearances, be at least as easy and as beneficial to its members if a similar union of the Australian Colonies were effected. We do not wish to prejudge the question, if we add that we see no reason to hope for or to desire much more than arrangements like this. Suppose it were possible that representatives of the Colonies could be admitted into the English Parliament what would be their specific function there when Parliament no more pretends to legislate for Canada and Australia than for the United States? The proposal to establish a Colonial Board in England analogous to the Indian Council appears in the same way groundless, for the simple reason that the Colonies are, unlike India, entirely self-governed. There is, indeed, a great fascinating idea, were it only practicable, involved in the suggestion of a Federal Council of all English communities, armed with a federal army and federal navy, and charged with the single duty of preserving the self-governed States of the Union in strict offensive and defensive alliance; but the very situation in which our colonial relations now stand precludes the possibility of contemplating this as feasible. The trifling difficulties that have lately arisen between England and some of the Colonies have sprung from the discussions on the terms of contribution towards the expenses incurred on their behalf, and if objections are raised to the suggestion that colonists should pay some share of the cost of their own defence, how can it be expected that they will assent to a scheme involving a taxation of each for the defence of all?

THE CANADIAN OIL TRADE.

THE following is a portion of an article which appeared in the Titusville Herald, the commercial editor of which lately visited the oil regions of Ontario. It will be found of general interest:—

"With the exception of the amounts produced at Bothwell and Oil Springs (12 barrels) the whole production is obtained at Petrolia. This village is situated about 17 miles east of Fort Snaria, from which it is approached by a fair wagon road, or by the Great Western Railway, through a flat, uninteresting country. The land rises gradually and almost imperceptibly from St. Clair river, until, at Petrolia, it is 60 feet above the water level of the river named, or that of Lake Huron. At Petrolia, the territory which is positively known to be productive is about one and a half miles in length and about the same in width; but at a point about two miles northwest of the most northerly wells on the territory embraced in the limits above specified, other wells were recently struck. These latter wells are paying, and one of them produces about 25 barrels a day. Between these wells and those at Petrolia, the territory has not been tested, but is considered to be of the producing order, as the developments at either end of it have shown nothing to the contrary. In fact the indications are that the producing district of Petrolia can be indefinitely extended in all directions, but particularly to the northwest and southeast. On the east side of Bear Creek, however, the development has not resulted so satisfactorily, as on the opposite side; still, a few good wells were found, and it is expected that, with improved machinery and experienced operators,

the territory can be made to produce largely. Along the outskirts in all other parts of the district there are good producing wells, and in no instance is the limit of producing lands well defined. The depth of the wells ranges from about 875 to 480 feet. The records of the wells show that, to the first lime rock, generally a depth of 80 feet, there is very little else than the toughest and heaviest blue clay. The first rock is found at a depth of about 90 feet below the surface of the territory on either side of Bear Creek, but in the wells sunk in the valley of that stream the same rock is found at a depth of 50 feet, showing a difference of about 40 feet in the elevations of the higher and bottom lands. After passing through the first rock, which is 25 to 40 feet in thickness, the drill passes through successive layers of shale or soapstone rock to the second lime rock, which is but 15 feet thick. Between the second and third lime rocks is found substantially the same sort of shale or soapstone rocks as between the first and second lime rocks. "The third or oil-bearing rock is found at a depth of about three hundred feet below the surface. The thickness of this rock is not definitely known, as the wells are scarcely ever sunk through it, but generally they are sunk into it somewhat less than 200 feet. The deepest well that has been drilled in the vicinity, was put down to the depth of about 1,000 feet, and was drilled through 400 feet of the third lime rock. Hence it is supposed that this rock, underlying the whole territory, is about four hundred feet thick. The rock is dark gray in color, soft and porous, and when the drill chippings of it are brought to the surface by the sand pump, they resemble coffee-grounds in size and color. The chippings from some of the wells can easily be reduced to powder by very slight pressure. The rock offers but a slight resistance to the drill, and very fast-time is made in drilling it. There are crevices in the rock, but so far as we have learned no mud or clay veins have been found. The crevices and the soft nature of the rock favor the "watered" state, and nearly all the wells pump more or less water. One part of the territory, known as the flowing well or Kink territory, is badly "watered." The wells on this territory, and in some other parts of the Petrolia district, are connected by crevices in the oil-bearing rock, and when pumping is suspended on one of them, the owners of the others have found it advantageous to suspend pumping their wells until all the "connected" wells are again in order, which in some cases is so long a time as to cause a serious loss to operators. But if the rock is of such nature as to favor extensive "watering," the same conditions as assist the "watering" also favor a more equal distribution of the oil in the rock. It is quite obvious that the more porous the rock is, and the more crevices there are in it, the better will be the distribution. The oil is not, however, the same in quantity at all the wells, as some of them occasionally produce as much as one hundred to one hundred and twenty-five barrels daily, while others produce but ten or twelve barrels. But "dry holes," in the popular acceptance of that term, are almost unknown, and, indeed, very few wells are found that produce less than five to eight barrels daily. Wells producing these quantities are not now pumped for any length of time, and no means other than pumping is resorted to to enlarge the yield. We are of the opinion that by the use of torpedoes of a force commensurate with the soft nature of the oil-bearing rock, the product of the five and eight barrel wells can be increased.

THE COST OF DRILLING AND PUMPING WELLS

Is necessarily less than in oil districts of Pennsylvania and West Virginia. On an average, the cost of sinking a well, including all necessary machinery, does not exceed \$3,000, gold. The wages of engineers is about \$1.50, gold, a day, and good second-hand sixteen horse-power engines are worth \$600 to \$700, gold. Fuel is cheap and abundant. At most of the wells the gas flowing from them is used to a considerable extent as fuel; but there are only a few from which the flow is sufficient to supply the amount of heat necessary to operate the engines. The drilling of about one-half of the wells now being sunk is done with pole tools, while on the others the drills and jars are attached to cables, as in other districts.

"IN DEVELOPMENT,

There is quite a revival at Petrolia and vicinity, there being about ten wells on which drilling has been actually commenced, and about fifteen or twenty more "rigs" are in process of erection. Besides the wells drilling, several of the old wells are being started up, and, altogether, the oil field presents an active appearance.

"THE PRODUCTION,

While we were at Petrolia, was somewhat than during the week previous, but still it was larger than at the same time in July. The total daily average was 800 to 900 barrels, while, during one of the days in the week ending August 21st, it was up to, probably, 1,000 barrels. The average, however, for the first three-fourths of this month was about 800 barrels daily. About sixty wells were being pumped. The largest yield from one well was reported to be 100 barrels daily, but the average from this well was somewhat less. No wells are being pumped that will yield less than ten barrels, and but five of the wells are worked on Sundays.

"With regard to the future product of the district, we have to say that, as in every other district, it will depend in a great measure on the price that it may command, and hence almost any estimate would be unreliable.

"The present product of Lubricating oil is slight.

"THE STOCK

At the wells, and, in fact, in Canada, has increased slightly since January 1st, and is now reliably estimated at 420,000 barrels Crude, of which 880,000 barrels are at the wells, and 40,000 at London and other places in the Dominion. There is, besides, a stock of 8,000 barrels of Refined. Of this stock, 8,000

barrels are at London, 2,000 at Montreal, 1,800 at Toronto, and 1,500 at other places. With the addition of the stock of Refined, the total stock in Canada is about 480,000 barrels of Crude, or its equivalent.

"The stock of Lubricating oil is about 7,000 barrels, and is included in the stock of Crude.

"THE TANKAGE.

"At Petrolia the total capacity of tankage is about 500,000 barrels. Of this tankage a capacity equal to 35,000 barrels is iron. There is, too, a considerable capacity of wooden tankage, but most of the stock is held in ground tanks. The blue clay, which extends to the first lime rock, and which is very dense, is admirably adapted to hold oil, and tanks of from 8,000 to 5,000 barrels capacity are dug in it, and rendered perfectly tight, at a cost of 25 cents [gold] per barrel. These tanks are fully as safe as if they were made of iron, and will last as long as there is any necessity for tankage.

"REFINING AND DEODORIZING

Is now carried on for export to the extent of 8,000 barrels of Refined oil a week, which is the present outside limit of the producing capacity [for export] of the Canadian refineries. There are, however, many small refineries that are not now in operation, but that hitherto produced an inferior oil; and there are a few others that now produce an inferior oil for home use. The stills lately erected for distilling for export is very large, and one at Petrolia is of 3,500 barrels capacity. Within the next six weeks, the capacity for producing Refined, for export, will be enlarged to 6,000 barrels a week.

"The quality of the oil as now produced by at least three of the refineries is, so far as color and odor are concerned, considered fully equal to the American oil, while in density and fire test is much better. There are four or five treatment processes, which have all been more or less successful in deodorizing the oil, but they have been kept secret, and their application has been so recent that the reports with regard to the measure of success which has attended the application are conflicting. The product of the best refineries is being exported, and commands about the same price as American oil of the same color.

"The crude oil is all under forty degrees gravity. The oil which has been stored for a year or longer will yield sixty-five to seventy per cent. of burning oil, while the crude, as it comes from the wells, yields only fifty to fifty-five per cent. Owing to the density of the oil, the process of distillation is slow. The cost of treating for export by these processes has not been made public, but it is said to be but little in excess of treating American oil.

"THE PRICE.

"Early in the week there were sales, of Crude, from the wells, at \$1.40, gold, per barrel of forty gallons. The offerings were light; and there was a strong upward tendency. For stored Crude a slight advance on the above price could have been obtained.

"Refined, of inferior quality, for home use, is quoted at 20 and 21 cents, gold.

"The market at Petrolia, for Crude, is in a somewhat mixed state. Nearly all the stock is out of the market, at the present figures, and only the production is being sold or delivered. The Crude Oil Association, which controls all but about 200 barrels of the daily product is "short" 60,000 barrels, at \$1.25, gold, and is now asking that price, although it is not offering oil at it.

"FREIGHT CHARGES,

From Petrolia to New York per barrel by the Great Western, New York Central and Hudson River Railroads, are now 60 cents gold, from Petrolia to Suspension Bridge, and \$1 currency from the bridge to New York. The charges are the same on either Crude or Refined.

"THE CONSUMPTION

In the Dominion in 1869 is estimated at 100,000 barrels Crude, or 70,000 barrels Refined.

"THE CONDITION OF THE TRADE

Is good. The demand is now in excess of the production, and as soon as the capacity of refiners for export is increased, and the demand for home consumption begins, a large amount of the stock will be necessarily taken to supply the demand. The price now obtained is moderately remunerative, and the only things necessary to place the Canadian trade in a flourishing condition are a fair export demand for the oil, and a reciprocity treaty with the United States. The duty now imposed on exports to the United States is 20 cents per gallon, which, under the existing state of affairs, is, as it was intended to be, prohibitory. The duty on Refined, for consumption in Canada, is five cents per gallon and twenty cents excise [inspector's fee] per barrel.

"Operations at Petrolia are carried on principally by Americans, and American capital is largely represented in the Refining business."

Some of the Louisiana papers are presenting strong arguments in favour of northern immigration to that State. The State has 20,000 miles of river, lake and bayou navigation. Cotton, rice and sugar are abundantly produced. Oranges are profitable. The crop on six acres was sold on the trees last year for \$7,000. Sugar lands can be bought at from \$5 to \$75 per acre, according to their situation and condition; cotton land is at from \$3 to \$30 per acre. Many sugar planters realised last year, a profit of more than \$150 per acre; many also realised a net profit of from \$1,000 to \$1,500 per hand. On many plantations, 2,500 pounds of sugar were produced to the acre; on some, 8,000 pounds. Many labourers, working for a share of the crop, realised \$1,000, and in some instances considerably more.