

proportion to his expenditure, and in some respect in proportion to his means; but they are difficult and troublesome to work out. The specific duty selected for coal is the worst possible, on the ground which makes it generally the best; for when the poor man's coal was dearer, it would make it still dearer. It is uncertain how far the change to *ad valorem* duties will prevail when the bill takes its final form.

Some time ago a law was passed by the legislature of the State of New York prohibiting the use of nets and seines in certain parts of Lake Ontario. Nets used contrary to this law have been seized and destroyed. The law restricted fishing in these parts of the lake to rod and line. The constitutionality of this legislation was called in question, with the result that the Supreme Court of the United States upholds the law. Certain Canadian fishermen, who ply their calling on the lakes, claim, on our side, the destructive privileges exercised by Americans on their side. Will they be equally ready to copy this American restriction? At a recent convention of Canadian lake fishermen the fact was pointed to that Americans on the upper lakes catch more fish than Canadians do; the public being expected to infer that the cause of the disparity was the difference in the fishing laws. But surely 65,000,000 of people are likely to do more in any line, if they set themselves about it, than 5,000,000. It may be worth consideration whether this New York restriction has in it nothing that Canadians may reasonably copy.

THE OVERLAND EXPLORATION TO CHESTERFIELD INLET.

The overland voyage of the Tyrrell brothers, J. W. and J. B., from Lake Athabaska to Chesterfield Inlet, is one of surpassing interest. It lay for the most part over a vast stretch of "barren lands," on which, however, wild flowers and moss were found to grow. They had the good luck to strike the river which empties into Hudson's Bay through Chesterfield Inlet, and on that river, never before explored by white men, they journeyed 800 miles.

The object of the voyage was geological exploration. Sir William Logan used to remark upon the difficulty of the geological survey in Canada, that it was often necessary to make geographical explorations, in addition to the proper work of the survey; but here the explorations had to be made in an unknown country. Mr. David Thompson, in the last decade of the eighteenth century, made the passage from Fort Churchill to Athabaska, but not by the route of the Tyrrells. It is remarkable that both these voyages were made with the slenderest assistance in men, Thompson having as companions only one Irishman and one Indian, and the Tyrrells only three Indians. As often happens on such occasions, the timid Indian guide of the Tyrrells, hearing stories of dangers ahead, deserted at an early stage in the journey.

Until the official report of this expedition is published, we shall hear but little of the geological discoveries made. The general

fact, however, is known that gold-bearing quartz was found near Baker Lake, at the western end of Chesterfield Inlet, which is within navigable distance of Hudson Bay. If the country is to be penetrated, the west coast of Hudson Bay will probably be a better starting point than from the direction which the Tyrrells travelled. Hudson Bay is open at least four months in the year, and the necessary supplies can be obtained more readily by water than overland.

One of the most surprising discoveries of this voyage is the fact that millions of reindeer roam over these "barren lands." Herds of hundreds of thousands, if not millions, were met with, and their tameness was, if not "shocking," something of a surprise. The lands which support millions of deer cannot be wholly barren. These animals, it is true, feed largely upon moss, which some travellers have represented as possessing peculiar heat-producing qualities. The enormous herds seen could not long support life in the vast aggregations witnessed. Most of the time they must be dispersed over a vast region. The reason of their being in such large herds probably was that they were preparing to reach their winter quarters further south. Their migration southwards in millions can be traced back to the time of the French possession, before the treaty of Utrecht. The last French governor of Fort Bourbon (Nelson) observed them, and Thompson noticed the same migration in force in 1796. When they wintered to the south, the latter was unable to learn, and the fact was not then known to the officers of the Hudson Bay Company, in which he was serving. The existence of these great herds of deer in the northeast of the Great Lone Land had of late years been entirely lost sight of, and the meeting with them by the Tyrrells is like a new discovery. An effort ought to be made by the Parliament of Canada to preserve them from destruction. To the Esquimaux, whose home is on the shores of Hudson Bay and the Arctic Ocean, they furnish useful and indeed necessary supplies of food; to the Chipewyans, the nearest neighbors of the Esquimaux, they cannot be unknown. To whatever cause their preservation be owing, it seems little short of a miracle. It will be difficult, perhaps impossible, to preserve them from destruction; but it is not less the bounden duty of the Dominion Government to make the attempt. The buffalo which once roamed the Western wilds in countless millions is now all but extinct; but its haunts were much more easily accessible than those of the reindeer of the north-east; the seclusion of the haunts of the latter has aided in their preservation. The northernmost limits of the buffalo was seldom very far beyond the woody region of the Athabaska, and it roamed far to the south, where it first encountered the attacks of the white man. It is still difficult for hunters to reach the limits of the reindeer in the north-east. But if these herds still go south, as they probably do, there is a danger that they may be found and slaughtered while there. It is not at all certain

that some of them may not come so far as to cross the line into Ontario; and on the supposition that they do, the Government and the Legislature of Ontario would have the same duties of protection as belong to the Dominion put upon them. Migratory animals will in vain be protected in one region, if they are permitted to be slaughtered in another. The barren lands of the north-east will never be subdued to agriculture; the lands across the Ontario line may some day be, but if so, that day is distant. The duty of the present is to protect these animals not less in Ontario than on the barren lands of the north-east. If it could prove lastingly effective, considerable supplies of food and fur might be drawn from these animals. The chances are, however, that the powers of destruction will prove stronger than any law that may be passed. The nearest Indians of the south-west, learning of the existence of vast numbers of these animals, will be likely to be tempted into the new pasture. The Chipewyans are sure to demand a share, and it will be new in Indian history if, in pursuit of abundant supplies of game, the tribes do not come into hostile collision. The Chipewyans could, next to the Esquimaux, best stand the cold climate of the barren lands; but if the reindeer do not winter there, but go farther south, there the Indians would be sure to follow. To this circumstance we may possibly owe future Indian wars in the north-eastern part of Ontario.

This barren region is geographically to Canada what Siberia is to Russia. But it is the counterpart of a Siberia entirely undeveloped. It will not always remain so. The working of the mines, if workable at a profit, may be far off. On this point, it would not be safe to predict. Probably the greatest source of wealth in this Siberia of ours lies to the west of the region we have been considering, and consists of prodigious stores of petroleum, which will some day play a great part in the various uses to which petroleum can be put.

The Tyrrells, on this perilous journey, had a narrow escape with their lives, suffering everything short of actual death. If these discoveries are to be followed up, the danger may in future be greatly reduced. One discovery facilitates another. If it had been known that the Tyrrells would with certainty reach Chesterfield Inlet, at or about a given date, it would have been easy to have sent from Churchill timely supplies for their use. If journeys of this kind be repeated, the risks must be lessened in some such way as this. It is painful to think of the hardships suffered and the danger encountered by these brave men. The expedition was not one which could bear no fruit; its motive was not like so many of the Arctic voyages, one of mere curiosity; it was one of necessary geographical and geological exploration, and may not impossibly bear practical fruits of real value.

It is admitted that there are farther west of the region of which we have been treating fur bearing animals which need protection to prevent their speedy extinction by Indians, and that the Minister of the In-