

GEOLOGICAL AND NATURAL HISTORY SURVEY OF CANADA

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OBSERVATIONS

ON

MINING LAWS AND MINING

IN CANADA.

WITH SUGGESTION FOR THE BETTER DEVELOPMENT OF THE  
MINERAL RESOURCES OF THE DOMINION.

BY

EUGÈNE COSTE, M.E.



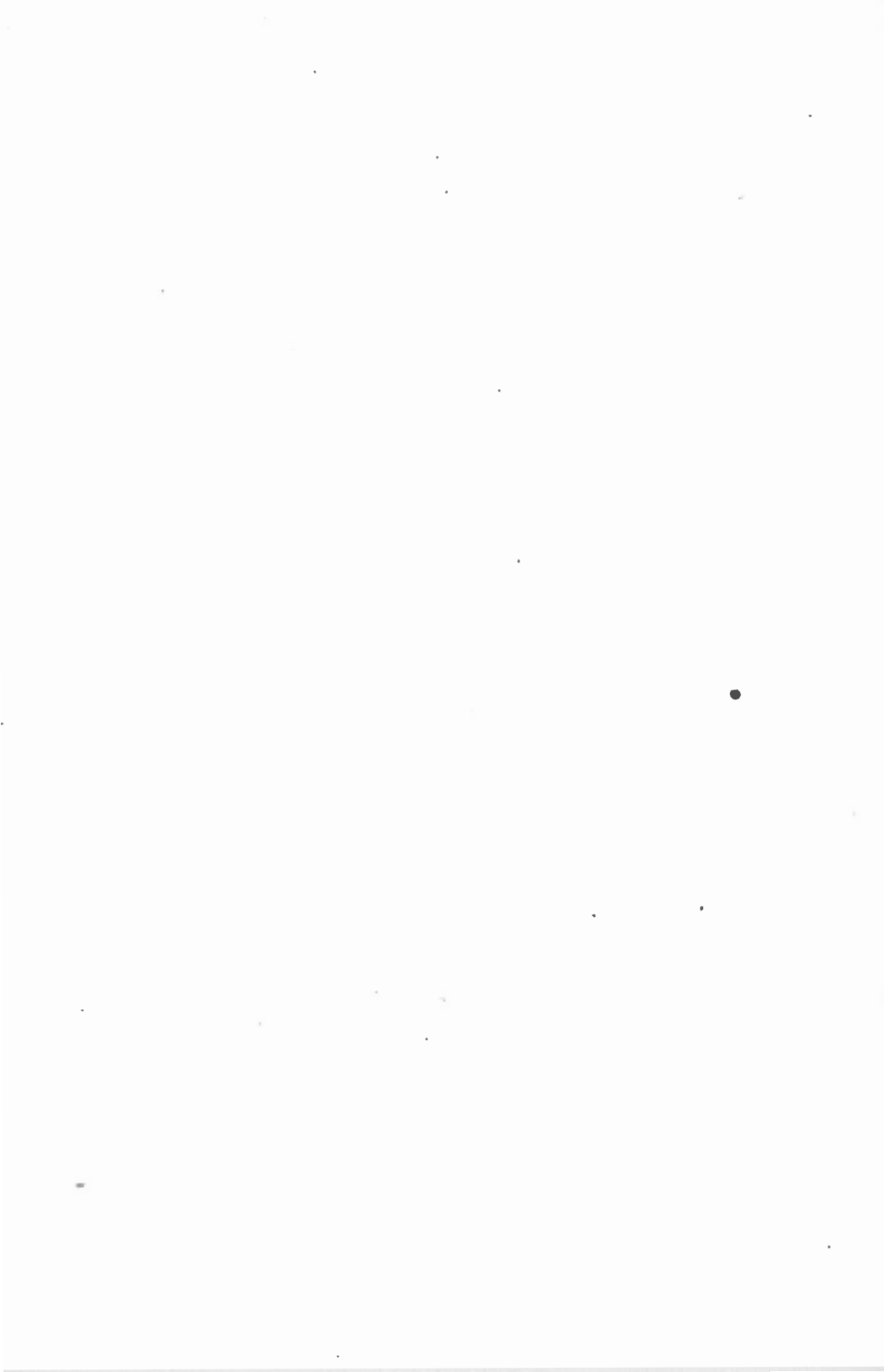
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TO ALFRED R. C. SELWYN, ESQ., LL.D., F.R.S., F.G.S.  
*Director of the Geological Survey of Canada.*

SIR,—The following observations on Mining Laws and Mining development, in Canada, are submitted in the interest of our national mining industry.

I have the honor to be,

Sir,

Your obedient servant,

E. COSTE, M. E.

March 24, 1885.



# OBSERVATIONS

ON

## MINING LAWS AND MINING IN CANADA,\*

WITH SUGGESTIONS FOR THE BETTER DEVELOPMENT OF THE  
MINERAL RESOURCES OF THE DOMINION,

BY

E. COSTE, M.E.

While engaged during the last two seasons, on behalf of the Geological Survey of Canada, in the examination of several mining districts in different parts of the Dominion, I have been impressed by the unsatisfactory state of the mining industry in these districts, the unbusiness like way in which the work is carried on at most of the few mines that are being developed, the consequent immense loss to the country, and the apparent want of laws and regulations for the encouragement of real mining and the development of our great mineral wealth.

Unsatisfactory  
state of the  
mining  
industry.

As these things forced themselves upon my attention day after day in the course of my inspection, the following questions suggested themselves: Why so little mining activity in this country so rich in mineral resources, and in which so many mining regions have long since been discovered? Why so few real mines and so meagre a production of ore? Why have so many mining schemes failed, and why, in several parts of Canada, have good mines been abandoned, which will eventually be worked again with profit? How explain that several mining districts, where splendid discoveries were made years ago, are yet comparatively unexplored, and that the true value of these districts is still unknown?

In trying to answer these questions, which concern one of the great sources of wealth for our young Dominion, I am led to the following conclusions: If our ore production is so meagre and if we have so few real mines, it is because, in the provinces of Ontario and Quebec and in the North-west, territory where the districts which I visited are

Sale of "Mineral Lands."

\* These observations apply to every Province of Canada, though hereinafter the Provinces of Ontario and Quebec and the North-West Territory only, are specially mentioned.

situated, the laws allow speculators to purchase very cheaply large tracts of "mineral lands" which they are not compelled to work and which they hold, against the interest of the mining industry and of the country, awaiting fabulous prices for them and so preventing *bona fide* working companies from developing them. This is evidently the reason why so many mining schemes have failed: they were only schemes of speculators trying to make a show, and with that object in view, instead of first opening the ground to ascertain its value, as a really good practical miner would have done, they have built handsome residences and villages in the woods and have done no mining for fear the indications would "play out." It is also the reason why many companies having bought, at very high figures, from these speculators, entirely unprospected mining locations, are deceived as to the value of the property, or, in case the property happens to be good, are nevertheless too poor to work it profitably after so great an outlay of capital to purchase it from the speculators. It is because these owners of "mineral lands" put extravagant values on them, and are, in consequence afraid of the truth and fear the results of complete investigations, that our mining districts remain unprospected, on the surface as well as underground, and that we cannot arrive at a knowledge of their real value.

Scope of remarks.

I shall confine my remarks to the Dominion lands and the Provinces of Ontario and Quebec, where the mining districts I have visited are situated, and shall first endeavour to demonstrate how fatal to the mining industry is the system in force under existing laws and how necessary it is to abandon the custom of selling mining properties or the mining rights if the speedy development of the already known as well as the yet unknown mineral resources of the Dominion is desired. I shall further endeavour to indicate the principles which should be borne in mind in framing laws and regulations for the disposal of mineral deposits and the encouragement of mining in new countries.

A *résumé* of the laws now in force, over the Dominion lands and in the provinces of Ontario and Quebec, or at least of as much of these as concern the acquisition of the mining rights is here indispensable.

#### DOMINION LANDS.

The following are the mining regulations which govern the disposal of "mineral lands" other than coal lands:

—Any person may explore vacant Dominion lands, either by surface or subterranean prospecting.

—A mining location, except for iron, shall not exceed 40 acres, the

length not being more than three times the breadth; the boundaries beneath the surface being the vertical planes in which its surface boundaries lie.

—For the mining of iron, the Minister of the Interior may grant a location of 160 acres.

—Having marked the location, the occupant, on paying \$5 in registering the claim, shall have the mineral right for one year.

—During that year, at any time, he can purchase at the rate of \$5 per acre, cash, if he proves he has expended \$500 in actual mining operations on the claim, and if he makes a \$50 deposit, with the agent of the Government, for the survey of the claim.

—For “placer” mining (gold alluvial digging) every person, holding a receipt renewable every year, can take up only one claim of about 100 feet square in the same locality, and this claim must not remain unworked more than 72 hours at a time.

—A royalty of  $2\frac{1}{2}$  per cent is reserved to the crown on the sales of the products of all mines.

As regards coal mining lands :

—They are periodically offered for sale by tender or public auction Coal. —the lands within the “Cascade coal district” at an upset price of \$20 per acre cash, and the lands within all the other coal districts at an upset price of \$10 per acre, cash.

—Not more than 320 acres shall be sold to one applicant.

—Competition is invited when there is more than one applicant for the same location.

The regulations do not refer to the mining rights under lands already appropriated, or under lands which may be sold in the future not as “mineral lands,” but under which mines may at any time be discovered, the mining right in these cases it is to be presumed belongs to the owner of the soil.

#### ONTARIO.

In the Province of Ontario we have the “General Mining Act” (Rev. Stat. 1877, ch. 29), of which the following is a *résumé*.

—Any person may explore on any crown lands not occupied.

—Crown lands supposed to contain mines or minerals may be sold as mining locations, or may, when situated within any mining division, be occupied and worked as “mining claims” under “miner’s licences.”

—The dimensions of the mining locations are 320, 160 or 80 acres. The price to purchase them is \$1.00 an acre in the territory north or north-west of the river Mattawa, lake Nipissing and the French River.

The price for the other parts of the province is not stated in the Mining Act but is, I am informed, practically the same.

—The “ mining claims ” have an area of about one acre.

—Any person possessing a “ miner’s licence,” renewable annually for a fee of \$5, can occupy and mine one claim only at a time, on condition that it is worked within three months after the registration, and thereafter does not remain more than 15 days unworked.

—The discoverer of any new mine shall be entitled to two mining claims.

#### QUEBEC.

In the Province of Quebec the mining rights are dealt with in the “ Quebec general Mining Act of 1880 ” amended in 1881, 1882 and 1884.

The following is a *résumé* of the parts of this act relating to the acquisition of mining properties or mineral rights :

—A licence renewable annually (fee \$2) is necessary to prospect on the vacant lands of the province.

—The mining rights under all the lands of the province belong to the crown, even for the lands appropriated before the passing of the act, except when the “ lettres patentes ” give in full the mining right.

—The mining locations are 400 acres or less, but the Lieutenant-Governor in council may increase the limit to 800 acres.

—The prices are, surface and mining rights inclusive, \$1 per acre for all minerals except gold, silver and phosphate (apatite), and for these \$2 per acre.

—Every person working a gold or silver mining location must take a licence costing \$2 every three months (even if he has bought that mining location).

—The owner of the surface, who desires to purchase the right of working a mine under his land, must pay per acre the difference between the rate he has already paid and the rate fixed for mineral lands and as stated above.

—In case of gold and silver the “ lettres patentes ” will only be given after the sum of \$200 has been expended in working the mine; two years are allowed to do this; but, after that time, if the \$200 are not expended the location may be deemed forfeited.

—The Lieutenant-Governor in council may claim a royalty of 2½ per cent on all gold and silver obtained and of 50 cts. per ton for phosphate.

—The right to mine, for gold and silver, can also be acquired by licences allowing every person to take up one claim only at a time. These licences are of three kinds, *viz* :—



1. To work under appropriated lands: cost \$1 per month per miner.
2. To work under public lands: cost \$2 per month per miner.
3. To work under mining locations, granted and not being worked, or not granted: cost \$2 per three months.

—The dimensions of these “claims” are: for alluvial mines about 100 feet square, and for quartz mining about one acre. They must be worked within four weeks after registration and must not thereafter remain unworked for more than 15 days at a time.

—A discoverer has a right to a free licence in force for twelve months and to a claim of the largest size.

The amendments of last year (1884, ch. 22) have recognized the principle of underground rights being entirely separated from the surface rights. They state that underground right may be bought or leased or that they may be acquired by a licence, (the owner of the surface having the first right to acquire); but, the price, the shape and the dimensions of these underground mining locations are not stated. These are to be decided by the Lieutenant-Governor in council.

In considering with attention these *résumés*, it will readily be seen that these laws give the three following results: I. A surface owner possesses or can buy first the mineral rights and is not compelled to work the mine. II. Very large tracts of “mineral lands” can be bought from the Crown lands without any obligations to develop these “mineral lands.” In Quebec, however, when these lands are unworked, the Government may grant small claims over them, in the case of gold and silver, but without forfeiting for that the “deeds” of the owner. III. Rights to mine under small claims can also be acquired in certain cases by a licence.

III. The few following remarks may be offered in reference to the system of granting these small claims: it only retards the acquisition of many mines by good companies; it is the cause of a number of disputes on the question of possession of property; and, in some cases, it might cause also the entire spoiling of a good mine. These claims are very much too small and the working of the mines in these cases, being on too small a scale, is never satisfactory. There is nothing really practical in this: and it is only as applied to placer mines that it is good and useful, as this is the only case in which an individual miner can work a mine and make it pay.

I & II. But, it is desired especially, in this report to direct attention to the two first results indicated above of our existing mining laws. The backwardness of our mining industry has been a natural sequence of the recognition by the laws of these systems of giving mining rights to surface owners and of selling “mineral lands;” that alone impedes

and even prevents entirely in certain districts the development of the mineral resources; and, until the mining laws are changed and another and entirely different system adopted for the acquisition of mineral deposits, we shall have, as we have to day, but few mines working.

Prospecting is discouraged.

First, indeed, prospecting is discouraged. It is evident enough that the buying up of large tracts of "mineral lands" brings that result, because prospectors are not to be found who will search on granted lands in a vast new country like ours. Surface owners, having mining rights or having first right to acquire, also discourage prospecting, because then, when a mine is found under granted lands, it does not belong to the explorer, to the man who has discovered it, but to a settler who has been working his soil for a long time perhaps, without having ever had any knowledge of the existence of this mine, or to a speculator who, as a rule, has never put his foot on the land. Nevertheless, what right, in justice, have these people to this new property which they did nothing to find and which an explorer brings to light by his exertions after long, patient and very often in this country, tedious researches? Suppose it is for instance a vein 2,000 feet long with an average width of about 3 feet 4 inches, dipping at a regular angle of 45°, and that the specific gravity of the ore averages 3.5. In these conditions, a simple calculation shows that the vein, being worked to the depth of 1,000 feet and under 23 acres of the surface (2,000 feet on the length of the vein, by a width of 1,000 feet on the side of the dip), will give about 1,000,000 tons of ore. If then a profit of say \$1 per ton can be made on the ore coming from that mine, it is seen that the profit to be made or the real value of the portion of the mine above the depth of 1,000 feet is \$1,000,000. Such is the fortune an explorer has discovered, that he alone indicates and creates, you may say, after perhaps many months or years of arduous tramping. Surely he ought to have some right to a portion at least of that fortune; and yet, the surface owner deprives him of it.

Rights of surface owners.

But, if by natural right and law, this property should not belong to the surface owner, it much more ought not to belong to him for political and economic reasons, and for the same reasons, the selling of "mineral lands" ought not to be authorized by our laws. Because, if it tends to lessen the number of discoveries, it also, as second result, prevents the development of the mines once discovered.

Political and economic reasons.

A vein, indeed, being discovered on the surface, one must make sure that it keeps going down, that it does not narrow until it becomes unworkable, as is often the case, that the percentage of good ore remains large enough in the vein, that the difficulties of working, due to water or other causes, will not be too great, etc., etc. All this must be known before it can be said that a good mine exists, and to ascertain

this, the vein must be explored underground by shafts and levels. This is expensive work, much more so than is generally known, and it may cost many thousands of dollars, always several thousands. It is also a very difficult work, often exceedingly so, and even the best scientific and trained mining engineers sometimes make mistakes, and every mistake costs a great deal of money. Is not then an incompetent man almost certain to make a failure of it? Who is going to do that work of testing the ground? Evidently not the settler, for if he has the misfortune to try it, he will spend every year more money on small excavations sunk in all directions, than the cultivation of his land can yield him, and he never will know how to do the work, and at what results he has arrived, if he arrives at any. The district of North Hastings (Ontario) is pierced everywhere by small excavations such as I have mentioned, sunk by settlers under their lots. I have visited many of these excavations and in most of them I failed to find a trace of ore, though they represent a large amount of time and money lost, and, many farmers neglect their farms on that account. If the farmer tries to have the work done for him, it will always be on too small scale and is in consequence doomed to failure. He will probably give the work to a so called "old miner" just arrived from California, Australia or Cornwall. This man knows it all; he will tell the farmer every night that he has done excellent work during the day, that no doubt it is a wonderful mine, that he sees an immense treasure ahead of him in the level or in the shaft, that, true, the expense has been great and nothing has yet been found, but wait, next day he will strike the lead and show him the treasure; and this goes on from day to day until the poor settler is compelled to give it up. And yet, he still believes in his wonderful mine!

Testing the ground.

It is with the same result generally that the speculator tries to work his lot, his object being only to develop it sufficiently to affect a sale.

Mining engineers and mining men supported by capitalists alone are able to take up these works of newly discovered veins underground exploring. They alone can develop that fortune discovered by the explorer. Why then are these new discoveries allowed to be or to become the property of persons who acquire them either by accident or only for speculative purposes?

Mining men alone are able to do it.

If mining is a difficult matter requiring specially trained men; if it is an expensive work requiring a great deal of capital; if it is also, so long as a thorough underground prospecting has not been made, a very uncertain business to go into especially in a new country where there is no comparison with neighbouring mines to be made. Mining men know that, they know that a good vein may pass at any moment to a bad one, and in consequence they will never pay, on the evidence

Hindered by exorbitant demands of owners.

merely of the outcrop of a vein, the enormous sums of money asked by the owners of soil. They are willing to run the chances if they have not to pay too high a price for the property; but under the present conditions, they will not try it. They will leave mining districts disheartened, not that they find the district worth nothing, on the contrary, they see there brilliant prospects, but what can they do? They find all the properties bought, all the mining rights acquired and everybody asking them enormous sums, cash, before being allowed even to explore the mine by shafts and levels. And yet this district is very little worked, and though good and discovered many years ago, nothing is to be seen there except shafts full of water and abandoned excavations, remains of the meagre efforts made by the owners of the soil and the speculators to develop their deposits just enough to make a show in order to sell the property.

Necessity of permanent leases which should be terminated only by non-fulfilment of conditions.

I may say then, in conclusion, that it is quite necessary in the interests of our country, in the interest of our mining industry which once developed will perhaps give us the millions that our neighbours of the United States have taken out of their mines and on which is based much of their prosperity, that the mining properties should be held as national property regulated by good laws and leased permanently and directly to *bona fide* mining men, on conditions including forfeiture when sufficient work on them is not being annually done.

Why not, indeed, prevent a farmer or a speculator from imposing a heavy charge on a mining company willing to run the risks of exploring and working a mine? Why, for what purpose, should the laws place between the government and the real miner, this surface owner, who, with his often primitive and exaggerated ideas of mines, does not consider the enormous expenses and the uncertainty attending the work of underground mineral exploration nor the large capital required for the subsequent regular working of a mine, and will always add to that a formidable demand for money before even allowing explorations to be made on his property; this property having been bought from the Government at \$1.00 an acre and on which he did nothing himself to discover the mine? I say a formidable sum, because I know of many instances where twenty, thirty and even one hundred thousand dollars have been refused by such owners of the surface.

The Canadian government protects many industries, often bonuses are given, the development of our agricultural resources is encouraged: why not also protect our mining industry? To day, before sale, surface rights and mining rights are the property of the country, and the country, in the interest of our mining industry, instead of giving away these rights for a few dollars an acre, should carefully guard the mining right by good legislation, because good mines are rare golden

eggs which a nation must protect with great care. A large country like ours, indeed, has so many millions of acres of good lands that land speculation, though very prejudicial, can be overlooked; but, as regards mining, it is very different. Such a thing as "mineral lands" extending over large tracts of country does not really exist; and nature has been more parsimonious with mineral deposits than speculators suppose when they buy thousands of acres in a district thinking they have a mine under every lot. No! good mines, even in a very large country, are always scarce, for geological reasons (mineral deposits geologically being only accidents), for technical reasons (many deposits not being valuable because of the great difficulties of mining them or of treating the ore), for economic reasons (mineral substances being often found too far from market, or from a railway, or being in too small quantity), etc.; then, once a good mine is discovered, its permanent working by a good company should be encouraged and assured. To attain this end, the country must keep the mineral rights in its hands so as to be free, when a mineral deposit is found anywhere, to give the right to mine it to a good company, and if this right is given without charge of any sort before profit is made, it will assure those going to work every possible chance of success and it will encourage capitalists to try and develop every place where the surface indications are good, because the only money to risk will be the necessary money to test the ground. It is but just, however, that the laws should oblige these capitalists, from the day they make a profit, to suitably remunerate the original discoverer. In that way, instead of having thousands and thousands of acres of so called "mineral lands" bought\* and lying for years and years unprospected, unworked and in no way profitable to anybody, we shall see on the contrary, here and there, some mines actively worked expending vast amounts in the country, bringing workmen in, creating around them villages and towns; and every one of these mines will be more benefit to the Government and to the country than thousands of granted mining locations undeveloped and not only totally useless from a mining point of view, but doing much damage to the other interests of the country and often to the speculators themselves.

As will be seen from the following suggestions which I venture to make in conclusion, nothing could be easier than to change entirely the old system of selling "mining lands" and to attain the results just stated. The national mining property would then be submitted, in its general

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\* See "Plan of part of the North shore of Lake Superior showing Thunder and Black bays, etc.," published Toronto, 1st August, 1883, (department of Crown Lands), and showing how much "mineral lands" is taken up in that region.

outlines, to the same kind of administration that has been adopted: in France by the mining law of the 21st April, 1810; in Austria by that of the 23d May, 1854; in Italy, except in the southern provinces, by the royal warrant of 29th November, 1859; in Prussia by the general mining law of 24th June, 1865; in Bavaria by the law of 20th March, 1869; in Spain by the laws of 6th July 1859 and 13th July 1867; in Turkey by the regulations of 3rd April, 1869; and in Greece by the laws of 1861, 1867 and 1877.

PRINCIPLES WHICH SHOULD BE FOLLOWED IN DETERMINING THE CONDITIONS UNDER WHICH MINING RIGHTS SHOULD BE ACQUIRED AND MAINTAINED.

1. Encouragement of explorations:

Explorations encouraged by giving rights to the discoverer.

By recognizing and giving a right to the explorer on the mineral deposit that he discovers. This right should be in proportion to the value of that mineral deposit and consist in consequence in a certain annual royalty on the profits made out of the mine (say 5 per cent of these profits). This rent or royalty will be due every year in which profits are made by the lessee and until the death of the discoverer.

By further giving to the discoverer, if he wish, time to organize a company himself to lease and work the mine—say six months or nine months after the registration of his discovery.

Prevention of speculation.

2. Prevention of mere speculating and encouragement for the formation of *bona fide* working mining companies. For that purpose the mining right must be declared entirely independent of the surface right, and this mining right must not be sold, as to do so allows speculators to buy at very low figures large tracts of "mineral lands" which they retain without working them and which they sell only at very high prices; thus delaying the development of our mining industry and hindering the surface and underground explorations; and, the value of our mining districts remains unknown, which is very damaging in an immense new country like ours where the discovery of very rich mining districts may be anticipated every day.

By giving to every one offering sufficient guarantee, when a discovery has been made and when he is first to apply for it, a permanent lease (disposable and transferable as in the case of any other property) of the mining right under the area of land asked for by him, subject however to the following conditions: \*

Conditions.

(a). The lessee shall pay to the discoverer the royalty stated above

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\* That would place a lessee exactly on the same footing as an owner in fee simply would be, excepting the condition of working the property necessary to prevent speculation.

except if they can agree upon a fixed sum to be paid in the first year of the lease.

(b). To prevent the monopoly of mining rights on too large an extent of lands, larger than can be worked actively to the best interest of the country, that is to say, so as to restrict the areas under which mining rights will be leased to companies within reasonable limits, and to prevent companies from acquiring mining leases simply with the idea of speculating in or selling them at a given time, which would, like the system of to day, ruin the mining industry:

The lessee, commencing 6 months after the day of the granting of the lease, shall pay an annual penalty of \$100 per acre of land under which the mineral substance shall not have been during that year sufficiently worked. Every acre will be considered as insufficiently worked for which an annual average sum of \$100 shall not have been expended. This annual average expenditure will be arrived at in taking into account in the total all expenditure in any work connected with the mine; this total divided by 100 will give the number of acres of the lease sufficiently worked.

Every person having a lease will be permitted to relinquish it on demand, but so long as he retains it he will be subject to the above conditions.

If this penalty (b) is not paid within six months after becoming due the lease shall be considered forfeited.

(c). The lessee shall be entitled and obliged to buy a sufficient area of land necessary for the surface requirements of the mine (plant, offices, dumping grounds, etc.); but, no more than is absolutely necessary if the owner of the soil has any objection; the prices being the ordinary price of the Crown Lands department if on public lands, or being fixed by arbitration, at the ordinary prices of lands in that locality, if on appropriated lands.

(d). All mines shall be subject to inspection by duly appointed officers of the government so as to assure the proper working of the mine according to the conditions of the lease, the preservation of the surface—always endangered by subterranean works;—and also, the safety of mining workmen and the due enforcement of the laws and regulations respecting mines and minerals.

