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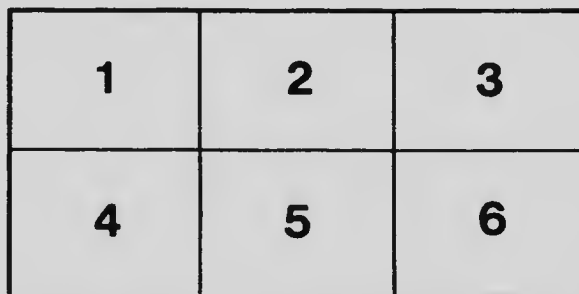
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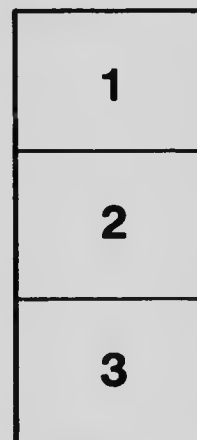
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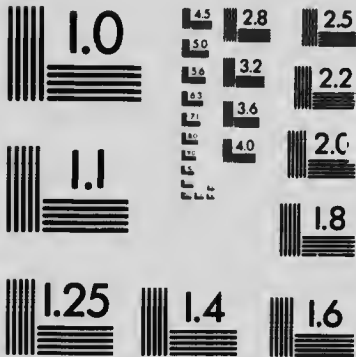
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REPORT

OF THE

COMMITTEE ON INSURANCE

Submitting for Consideration

A MODEL FIRE INSURANCE POLICY ACT

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REPORT OF THE COMMITTEE ON INSURANCE.

In 1916 your Committee presented a general report dealing with insurance from a number of points of view. It outlined the conflict which exists between Dominion and Provincial authority and referred to the contests which have arisen between these jurisdictions. The report ended with an appendix containing the Report made in 1876 by the Ontario Judges appointed to settle conditions of fire insurance policies.

It is too large a task in a second report to present for consideration a Standard Statute which will cover all phases of insurance.

Your Committee, therefore, proposes to commence where they left off in last year's report, and deal in this report with the subject of a Fire Policy Act.

The decisions of the Privy Council have fairly settled that the jurisdiction in reference to insurance contracts lies largely with the provinces.

It is probably because of these decisions that "The Insurance Act, 1917," is at the time of the preparation of this report before the Dominion House.

Other branches of insurance, such as life, personal, accident and guarantee require attention, and the companies devoting themselves to these branches are considering improvement in the law.

Our Committee hope at a later stage to assist them in working out their problems.

Statutory conditions were first adopted by the Province of Ontario in 1876, when they were placed in a separate Fire Policy Act. Statutes based closely on this were enacted as follows: In Manitoba in 1888, in Nova Scotia in 1889, in British Columbia in 1893, in the North-West Territories in 1900, in Quebec in 1908, and in New Brunswick in 1913. Prince Edward Island has no fire insurance statute. Ontario has always been very prodigal in producing insurance laws. In 1887 all at that date were consolidated in one Act of 44 pages. The next consolidation, in 1897 grew to 109 pages, and in 1910, to 125 pages. In the Ontario revision of 1912, a number of important changes were made in the Statutory Fire Conditions, and new sections were added to regulate the form of fire policies. This new Ontario law was adopted in Manitoba, Saskatchewan and Alberta in 1915, almost verbatim, so that the four provinces last mentioned are practically uniform on this branch of insurance law. The other provinces, except Prince Edward Island, have

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policies based on the earlier Ontario Statute. therefore, a field for progress in uniformity in this important branch of Provincial laws.

In 1886 the State of New York adopted a statutory form of fire policy. A very great deal of care and time were given to its preparation, and it was considered complete enough, so that companies were not allowed to make variations in the standard conditions. This form was adopted by other States of the American Union. Recently the United States National Convention of Insurance Commissioners has prepared a revised form, and this is to replace the earlier New York policy. The Insurance Commissioner at Albany has been good enough to furnish the Committee with a copy of it.

It is doubtful whether convenience is best served by placing in one Statute all matters relating to insurance. Some of the provinces have a general Statute, and separate Acts for fire, life, mutual and other branches of insurance. When analyzed in this way, it is found that British Columbia, Manitoba, Nova Scotia, and New Brunswick have separate Fire Policy Acts. In the other provinces all matters relating to fire insurance are placed in one general Statute. Ontario, Quebec, Saskatchewan and Alberta all have Omnibus Insurance Acts. It seems that the underwriters and some of the insurance departments favour a return to the separate Statutes. It is in deference to this expression of opinion that the Committee suggest a model Fire Insurance Policy Act to be complete in itself, except as to general matters which affect all companies and which will be found in a separate Act.

When the original Ontario conditions were prepared, provision was made for changes or additions or omissions, subject to the approval of the Courts. The companies took advantage of this and many alterations were made and passed upon by the Courts. The Revised Ontario Conditions now in force, and which have been copied by Manitoba, Saskatchewan and Alberta, are considered fair enough by many of the companies, and accordingly they now print their policies without any additions. Having in view the history of the New York policy and this action of Canadian Companies, your Committee suggest that Canadian conditions should now be made the last word. The Model Act appended is, therefore, drafted on the basis that no addition or variations will be allowed.

In preparing the Model Act submitted, your Committee has endeavoured to make the wording simple and clear, to place in one clause all matters relating to the same or similar subject, also to place in the conditions certain matters relating to procedure after a loss instead of leaving them as sections in the Act, and as far as possible to arrange the whole in a logical order. So that the draft may be properly understood, the fol-

following remarks are offered, taking the sections of the Act and the appended conditions in the order in which they appear. For the purpose of reference and comparison, the number of the corresponding Ontario condition is given.

M. H. LUDWIG,
Chairman.

REMARKS ON SECTIONS OF THE ACT.

Sec. 1. The words "Fire Insurance Policy Act" appear in several of the Provincial Statutes, and make a concise title for this Act.

Sec. 2. The wording of this section appears in several Provincial Statutes and outlines briefly in general terms the subject matter of fire insurance. Loss by lightning and explosion are here mentioned, but reference has to be made to new condition No. 2 for the exact hazard covered. *Ontario, sec. 191 (1).*

Sec. 3. It has become a custom in the business of fire insurance to allow fire insurance companies to cover the hazard which is caused by defective sprinklers, and this section gives authority for this practice. *Ontario, sec. 191 (1).*

Sec. 4. Here is repeated the provision found in several of the Provincial Statutes with regard to the term of the contract, and to the renewal of a policy by renewal receipt. It will probably be a matter of satisfaction to all concerned if provision can be made that no fire policy shall be for a longer term than three years, even in the case of mutual companies, where in the past four and five years policies have been written. *Ontario, sec. 192.*

Sec. 5. This was a new section drafted by the Ontario revisors in 1912, and since copied into Manitoba, Saskatchewan and Alberta. It specifies the wording which is to appear on the face of the policy, provides for a co-insurance clause and for other necessary stipulations or terms of the contract with the proviso that these are not to have any force or effect if held by a Court to be unreasonable.

Sec. 6. This is the section which provides for statutory conditions and is the wording of the Ontario section with the necessary changes. The new provision is that the conditions are not to be varied. Companies will still be allowed to pay claims which are wholly or in part void by reason of some technicality in the conditions. This seems a reasonable option. Provision is made that the conditions must be printed in type of a reasonable size. *Ontario, secs. 194 and 198.*

Sec. 7. This section is founded on the provision enacted in Ontario in 1874 when the Legislature appointed a commission

to prepare statutory conditions. It provided relief against forfeiture where the assured did not strictly follow the conditions relating to proof. The original section which is rather long appears now on the statute books of all the Provinces. The committee suggest that this provision might be very well extended so as to protect the assured in any case of forfeiture giving the Courts authority to administer equitable relief, as is done in all statutes founded on the English Judicature Act. It may be that in the suggested conditions, the simplification of the text may at first sight look to be a little hard on the assured, but this section, allowing relief from forfeiture, will provide adequate protection to an assured in any case where the loss has not been a dishonest one. *Ontario, sec. 199.*

Sec. 8. This is an Ontario provision which has been adopted in the other provinces, providing for an examination of the assured where the proofs are made by another party. *Ontario, sec. 201.*

REMARKS ON STATUTORY CONDITIONS.

Con. 1. This clause deals with misrepresentations and in it there is practically no change from the clause now in all the provinces. *Ontario, Number 1.*

Con. 2. This condition covers explosion and lightning hazards, and is the same in Ontario, Manitoba, Saskatchewan and Alberta, save that the words have been rearranged and somewhat simplified. *Ontario, Number 10.*

Con. 3. This enumerates the property which is not insured. The subjects mentioned are exactly the same throughout all the provinces. Prior to 1912 there was a condition which provided that such articles as clocks, musical instruments, paintings, plate glass, etc., were not to be insured unless mentioned in the policy. The Ontario revisers of 1912 considered it wise to eliminate this condition, and to allow the companies to make their exceptions on the face of the policy rather than in a condition. This provision has been dropped by Ontario, Manitoba, Saskatchewan, and Alberta, but still appears in British Columbia, Quebec, Nova Scotia and New Brunswick. *Ontario, Number 4.*

Con. 4. Here are set out hazards which are not covered. The new items in it are losses caused by the order of some civil authority or from theft. These suggestions are taken from the new American form and the British Columbia Statute. *Ontario, 6 (b), (c), (d).*

Con. 5. This is a composite condition and gathers under one heading all losses which are excepted unless the company gives

permission in writing endorsed on the policy. It enables the assured to see at a glance all matters about which he should consult his company.

Con. 5 (a) This deals with change of title, which has been held to mean a transfer of the whole interest. A mortgage on chattels has been added. This has always been considered a matter which should be notified to the company. The American policy has it. *Ontario, Number 3.*

Con. 5 (b). The wording relating to other insurance is taken from the new American form, and placed with it is a provision that when there is more than one policy all the companies interested must share in paying the loss. The early provision was that prior or subsequent insurance without notice voided the policy unless within 14 days after notice the company did not object. Manitoba changed this practice and permitted the assured by allowing him to collect only part of his loss if he had other insurance without permission. This was adopted in Ontario in 1912, and the proportion to be collected was made 60 per cent. As companies universally grant permission for concurrent insurance, the simpler form of the new condition seems desirable. The assured who has neglected to obtain permission can get all the protection he requires under section 7 if his loss is honest. If not honest, the company should have safeguard. *Ontario, Numbers 5 and 9.*

Con. 5 (c). Covering material changes this is a very important clause, and is here made quite simple. Under the old conditions, provision is made by the assured notifying the company of an increase in hazard, and following this, the company may do two things, it may cancel the policy on seven days' notice under the provision for cancellation, or it may demand an increased premium, and, if this is not paid immediately, the policy lapses immediately. These two courses are not consistent. The American form is followed. The relief provided in section 7 of the new statute amply protects an assured who does not take the trouble to obtain permission before making a material change. *Ontario, Number 2.*

Con. 5 (d). The Workmen's permit condition is taken from the American Form. *Ontario, Number 6 (e).*

Con. 5 (e). This condition dealing with dangerous substances is also taken from the new American form, and is a well worded clause. *Ontario 6 (f).*

Con. 5 (f). This regulates factory risks and is taken from the new American form. If there are to be no variations in the conditions, it seems reasonable to make the provision which is here given. (*New.*)

Con. 5 (g). This covers the risk when a building is left unoccupied for thirty days. Beyond this period, it seems only reasonable that the company's consent should be obtained. The Courts have held that such a provision is reasonable. (*New.*)

Con. 6. Making the contract follow the application is a well known Canadian condition. It does not appear in the American form. *Ontario, Number 8.*

Con. 7. The waiver condition is somewhat more extended than the old form, by reason of the conditions having no changes. It is to be read with section five. The new American form is drawn on for part of the wording. *Ontario, Number 13.*

Con. 8. The cancellation provisions are embodied in one clause. The wording is simplified and follows the new American form. The only addition is that if a company cancels a policy, it must give notice to any party to whom the loss is payable, such as a mortgagee, as well as to the assured. Both British Columbia and Saskatchewan have adopted such a provision in their insurance statutes. *Ontario, Numbers 11 and 12.*

Con. 9. This clause, dealing with agency is in substance the same as the present Canadian conditions. It makes the company accept the application so far as the quantum of the information is concerned when the agent fills it up. This provision is in the Quebec Condition Number 1. *Ontario, Number 14.*

Con. 10. This condition gathers in one paragraph all matters relating to notice, whether given to the company or to the assured. It obviates the necessity of specifying in other conditions the manner in which notice can be given. *Ontario, Numbers 7 and 15.*

Con. 11. The question of mortgage interests is now such an important one, and so closely associated with fire insurance, that it seems only reasonable that some condition should be put in the policy on the subject. The wording is taken from the new American conditions, with some slight modifications. It seems only reasonable that, if the holder of a policy has turned it over to a creditor, that the company should have some chance of dealing with the matter, and also that the creditor should have some protection as well, and be given an opportunity to insure with another company if the holding company does not want to continue the risk. (*New.*)

Con. 12. The requirements after loss, on the part of the assured, are practically the same as at present, except that under clause C., the assured must state his own interest in the property. This is not required at present. Prior to 1912, in Ontario, there was a sub-section of this condition which required the assured to produce a certificate from a magistrate or com-

missioner, that he had examined the circumstances attending the loss and certifying that he believed the loss was through misfortune and not from any evil practice. This clause was practically a deal letter and was left out by the Ontario Revisers, and does not now appear in Ontario, Manitoba, Saskatchewan or Alberta. It does appear, however, in British Columbia, Quebec, Nova Scotia, and New Brunswick. *Ontario, Number 19.*

Con. 13. This condition specifying the person who must make proof gathers in one clause the provisions now found in two. *Ontario, Numbers 17 and 19.*

Con. 14. Fraud in a statutory declaration has the same cancelling effect on insurance in all the provinces. *Ontario, Number 20.*

Con. 15. This embodies a clause which is found in the Ontario and other Insurance Acts and deals with the duty of the assured to secure his property from damages and to make an inventory and to notify the company. It seems more logical to put in the conditions of the policy all matters which require action by the assured or give him rights so that he may be aware of his obligations and the benefit which comes to him. *Ontario Statute, section 200 (2).*

Con. 16. This clause dealing with a continuance of the insurance for a limited time on goods necessarily moved, also covers the obligations of the company to contribute to the expense of salvage. *Ontario, Number 16 part.*

Con. 17. The rights of the company to make entry on the damaged premises are at present in the statute and not in the conditions of the policy. These matters are now placed in a new condition and incorporated with them is the clause from another condition dealing with the question of abandonment. *Ontario, Statute section 200 (1) and part of Condition 16.*

Con. 18. The Canadian Statutory Conditions have always contained an arbitration clause, while the United States form provides for appraisal. It is rather significant that the Canadian Statutes give appraisal as an additional method which the parties may adopt, although it is not made compulsory. As a matter of fact, very few arbitrations take place. An arbitration is not a practical method of settling a fire loss. The damage can only be intelligently adjusted by those who go to the premises and inspect either the building or the goods. Arbitrators sitting hearing witnesses and listening to legal argument is too cumbersome as well as expensive and frequently too slow. In most cases of importance the dispute usually reaches a Judge who is perhaps better able to deal with it as a matter of legal procedure than are arbitrators. The committee therefore suggest an appraisal clause in lieu of arbitration. *Saskatchewan*

in 1917 enacted a statutory policy for Hail Insurance, taking the clauses largely from the fire conditions, and it is significant that they have substituted appraisal for arbitration. *Ontario, Number 20c (3) of the Statute.*

Con. 19.—This replacement clause is in substance the same as the present one. There is added the requirement that the company's notice must be in writing. *Ontario, Number 23.*

Con. 20. The condition providing for payment follows the present form except that the reference to a shorter period than sixty days is left out as unnecessary. *Ontario, Number 22.*

Con. 21. The condition regulating the commencement of legal proceedings is the same as the present condition. *Ontario, Number 24.*

Con. 22. The subrogation clause suggested is a new condition. It merely codifies in the conditions the present rights of the parties. It has always been in the United States Standard policy. The wording is taken from the revised American Conditions. (*New.*)

In Nova Scotia and New Brunswick a Statutory Condition provides that questions of materiality of representations in the application for insurance shall be decided by the Court and not by a jury. This is a question which should be regulated by a section in a general Act, and not in the policy. It is in section 156 (6) of the Ontario Act, but the rule in Ontario and other provinces is that materiality is a question of fact for a jury.

CHAPTER

An Act to Secure Uniform Conditions in Fire Insurance Policies.

Assented to

His Majesty, by and with the advice and consent of the Legislative Assembly of the province of _____, enacts as follows:

1. This Act may be cited as *The Fire Insurance Policy Act.*

SUBJECT OF INSURANCE.

2. Every company licensed and registered for the transaction of fire insurance may within the limits, and subject to the restrictions prescribed by the license and registry, insure or reinsure any property in this province or in transit therefrom or thereto, in which the assured has an insurable interest, against damage or loss by fire, lightning or explosion, whether the same happens by accident or any other means, except that of design on the part of the assured.

SPRINKLER RISKS.

3. When any mercantile or manufacturing risk is insured, the insurer either by the same or a separate contract may insure the same property against loss or damage arising from defects in, or injuries to sprinklers or other fire extinguishing appliances.

TERM OF CONTRACT.

4 (1) Contracts of fire insurance shall not exceed the term of three years, except that the insurance of mercantile or manufacturing risks shall be for a term not exceeding one year.

RENEWAL RECEIPT.

(2) Any contract may be renewed at the discretion of the insurer by renewal receipt instead of by a new policy.

WORDING OF POLICY.

5 (1) On the face of every fire insurance policy there shall appear the name of the insurer, the name of the assured, the name of the person or persons to whom the insurance money is payable, the premium or other consideration for the insurance, the subject matter of the insurance, the maximum amount or amounts which the insurer contracts to pay, the event on the happening of which payment is to be made and the term of the insurance.

CO-INSURANCE.

(2) A policy may contain on its face a co-insurance clause, in which event it shall have printed or stamped on its face in large type, and in red ink the words "This policy contains a co-insurance clause," and if these words do not so appear such clause shall not be binding on the assured.

OTHER TERMS.

(3) Subject to the provision for statutory conditions contained in paragraph 6 hereof, the policy may also contain on its face other necessary provisions and conditions, but each of these, including the co-insurance clause shall not have any force or effect if held by a Court or a Judge, before whom a question relating thereto is tried, to be not just and reasonable to be exacted by the insurer.

STATUTORY CONDITIONS.

6 (1) The conditions set forth in the schedule to this Act shall be deemed to be part of every fire insurance contract, and shall be printed without any other matter on a separate page of every policy in type not less in size than ten point with the heading *Statutory Conditions*, and no stipulation to the contrary or providing for any variation or omission therefrom or addition thereto shall have any force or effect.

WHEN WAIVER ALLOWED.

(2) It shall be optional with the insurer to pay or allow claims, wholly, or in part, which are void under any statutory condition.

RELIEF FROM FORFEITURE.

7. Where by reason of necessity, accident or mistake any statutory condition as to the proof to be given to the insurer has not been strictly complied with, or where for any other cause it is held to be inequitable that the insurance should be deemed void or forfeited, the Court shall have power to relieve against the forfeiture or voidance and in granting such relief to impose such terms as to damages, compensation, costs and expenses and all other matters as may be deemed just.

EXAMINATION OF ASSURED.

8. Where proofs of loss are made by any person other than the assured, the insurer shall be entitled to have the assured examined under oath touching the loss or damage before a Judge of the County or District Court of the County or District in which the assured resides, and the procedure shall be the same as that upon an examination for discovery in an action.

STATUTORY CONDITIONS.

1. *Misrepresentation.*—If any person insures property and causes the same to be described otherwise than as it really is to the prejudice of the company, or misrepresents or omits to communicate any circumstance which is material to be made known to the company, in order to enable it to judge of the risk it undertakes, such insurance shall be of no force in respect to the property in regard to which the misrepresentation or omission is made.

2. *Explosion and Lightning.*—The company will make good loss or damage caused by lightning or by the explosion of coal or natural gas in a building not forming part of gas works whether fire ensues therefrom or not; and loss or damage by fire caused by any other explosion; but if electrical appliances or devices are insured any loss or damage to them caused by lightning or other electrical currents is excluded and the company is liable only for such loss or damage to them as may occur from fire originating outside the articles themselves.

3. *Property not Insured.*—This policy shall not cover money, books of account, securities for money and evidences of debt or title; nor the property of any third person, unless the interest of the assured therein is stated on the policy.

4. *Hazards not Covered.*—The company is not liable for loss or damage caused by invasion, insurrection, riot, civil commotion, military or usurped power; or by order of any civil authority; or by theft; or for loss or damage to goods while undergoing any process by which the application of fire heat is necessary; or for loss or damage caused by the want of good and substantial brick, stone or cement chimneys; or if with the

knowledge or consent of the assured ashes or embers are deposited in wooden vessels; or if stoves or stovepipes are placed in an unsafe condition or improperly secured.

5. *Losses Excepted Unless Permission Given.*—Unless permission in writing is added to the policy, the company shall not be liable for loss or damage occurring:

(a) *Change of Title.*—If the property insured be assigned or being chattels, is mortgaged as to the part affected; but this does not apply to change of title by succession or by operation of law or by reason of death; or

(b) *Other Insurance.*—While the assured shall have any other contract of insurance whether valid or not on the property covered, in whole or in part by this policy, and in any event the company shall not be liable for a greater proportion of any loss or damage than the amount hereby insured shall bear to the whole insurance covering the property, whether valid or not; or

(c) *Material Change.*—When the hazard is increased by any change material to the risk within the control or knowledge of the assured; or

(d) *Workmen.*—While mechanics or other workmen are employed in building, altering or repairing the described premises beyond a period of fifteen days; or

(e) *Dangerous Substances.*—While illuminating gas or vapor is generated on the insured premises, or while there is kept, used or allowed on the described premises fireworks, Greek fire, phosphorus, explosives, benzine, gasoline, naphtha, or any other petroleum product of greater inflammability than kerosene oil, gun-powder exceeding 25 pounds or kerosene oil exceeding five gallons; or

(f) *Factories.*—If the subject of insurance be a manufacturing establishment, or its contents, while operated in whole or in part between the hours of ten p.m. and five a.m., or while it ceased to be operated beyond a period of thirty days; or

(g) *Vacancy.*—While a described building whether intended for occupancy by owner or tenant is vacant or unoccupied beyond a period of thirty days.

6. *Form of Contract.*—After application for insurance it shall be deemed that any contract sent to the assured is intended to be in accordance with the terms of the application unless the company points out in writing the particulars wherein the policy or other contract differs from the application.

7. *Waiver.*—No one shall have power to waive any provision or condition of this policy except such as by the terms of this policy may be the subject of agreement added hereto, nor shall

any such provision or condition be waived unless such waiver shall be in writing; nor shall any privilege or permission affecting the insurance hereunder exist or be claimed by the assured unless granted herein or by rider added hereto.

8. *Cancellation.*—The insurance may be terminated at any time at the written request of the assured in which case the company shall upon demand and surrender of this policy refund the excess of paid premium above the customary short rates for the expired time. The insurance may also be terminated at any time before loss by the company by giving to the assured seven days written notice of cancellation with an offer to refund the excess of paid premium above the pro rata premium for the expired time, which excess if not tendered shall be refunded on demand.

9. *Agency.*—Any officer or agent of the company who assumes on behalf of the company to complete an application form or to enter into any written agreement relating to any matter connected with insurance, shall be deemed *prima facie* to be the agent of the company for the purpose.

10. *Notice.*—Any written notice to the company may be delivered or sent by registered post to the chief agency or head office of the company in this province or to any authorized agent of the company therein. Any written notice to the assured may be by letter personally delivered to him, or sent to him by registered post at his last post office address notified to the company, or where no address is notified and the address is not known, addressed to him at the post office of the agency, if any, from which the application was received.

11. *Mortgage Interests.*—If this policy be assigned before loss to a mortgagee or other creditor the assignment shall have no force unless the company be notified thereof in writing, and this policy may be cancelled by giving to such mortgagee or creditor seven days' written notice of such cancellation. On payment to any mortgagee or creditor for any loss or damage hereunder the company shall claim that as to the mortgagor or owner no liability existed, it shall to the extent of such payment be subrogated to the rights of the mortgagee or creditor, but without impairing the rights of the mortgagee or creditor to sue; or it may pay the debt in full and require an assignment of the claim or security. Other provisions relating to the interests and obligations of such mortgagee or creditor may be added hereto by written agreement.

12. *Requirements after Loss.*—Any person entitled to make a claim under this policy shall—

(a) Forthwith after loss give written notice to the company.

(b) Deliver as soon thereafter as practical, as particular an account of the loss as the nature of the case permits.

(c) Furnish therewith a statutory declaration declaring—That the account is just and true—when and how the loss occurred, and if caused by fire, that the fire was not caused through any wilful act or neglect, or the procurement, means or contrivance of the assured; the amount of all other insurances; the interest of the assured and of all others in the property and all liens and encumbrances thereon; the place where moveable property was deposited at the time of the fire.

(d) If required, and if practical, produce books of account, warehouse receipts and stock lists and furnish invoices and other vouchers verified by a statutory declaration in support of his claim, and furnish copies of the written portion of all other policies.

13. Who shall make Proof.—Proof of loss must be made by the assured although the loss is payable to a third person, but in case of the absence or inability of the assured to make the same, proof may be made by his agent, such absence or inability being satisfactorily accounted for, or in the like case if the assured refuses to do so, by a person to whom any part of the insurance money is payable.

14. Fraud.—Any fraud or false statement in any statutory declaration in relation to the proof of loss shall void the claim of the person making the declaration.

15. Saving Goods, Inventory.—It shall be the duty of the assured, when and as soon as it is practicable, after any loss or damage, to secure the insured property from damage or from further damage, and to separate as far as reasonably may be, the damaged from the undamaged property, and to make or cause to be made an inventory of the destroyed, damaged and undamaged property, and to notify the company of the separation and inventory.

16. Insurance on Goods Moved.—If any of the insured property shall necessarily be removed for preservation from fire it shall for seven days be covered in its new location by that part of the insurance under this policy which is in excess of this company's share of the loss which has already occurred, and this company will contribute to the loss and expenses attending such act of salvage proportionately to the respective interests of the company or companies and the assured.

17. Entry, Control, Abandonment.—After any loss to insured property the company by an accredited agent shall have a right of entry and access first immediately to examine and survey and to make an estimate of the loss or damage, and second

after the assured has secured the property, to make an appraisal or particular estimate of the loss or damage. The company shall not be entitled to the control or possession of the insured property or the salvage thereof unless it undertakes reinstatement or elects to accept any part thereof as its agreed or appraised value, but unless with the consent of the company there can be no abandonment to it of any insured property.

18. *Appraisal.*—If any difference arise as to the value of the property insured, the property saved or the amount of the loss such value and amount and the proportion thereof (if any) to be paid by the company shall, whether the right to recover on the policy is disputed or not, and independently of all other questions, be submitted to the appraisal of some disinterested person to be chosen by both parties, or if they cannot agree on one person, then to two persons, one to be chosen by the assured and the other by the company. The appraiser shall first select a competent and disinterested umpire and failing for 15 days to agree upon such umpire, then on request of the assured, or the company, such umpire shall be appointed by a Judge of a Court of Record in the county or district in which the loss has happened, and the award in writing of any two shall, if the company is in other respects liable, be conclusive as to the amount of the loss and the proportion to be paid by the company; where the full amount of the claim is awarded the costs shall follow the event, and in other cases all questions of costs shall be in the discretion of the appraisers.

19. *Replacement.*—It shall be optional with the company, instead of making payment, to repair, rebuild or replace the property lost or damaged with other of like kind and quality within a reasonable time, giving written notice of its intention within fifteen days after the receipt of the proofs of loss herein required.

20. *When Loss Payable.*—The loss or damage shall be payable within sixty days after proof of loss, as herein provided, is received by the company.

21. *Action.*—Every action or proceeding against the company for the recovery of any claim under or by virtue of this policy shall be absolutely barred, unless commenced within one year next after the loss or damage occurs.

22. *Subrogation.*—The company may require from the assured an assignment of all right of recovery against any other party for loss or damage to the extent that payment therefor is made by the company.

Hong Kong, in Australia, and the Isles of the Sea, we catch brief, prophetic glimpses of that commercial greatness which the Pacific is just beginning to waft to our shores.

Some one once, in derision, called British Columbia "a sea of mountains," and it is true we have not our share of the rolling prairies of the great Northwest. Nature with prodigal hand has given us treasure: in the forest wealth of the earth's surface, in the wondrous fish-life of the ocean and the inland water-ways; but a third, a greater treasure, is hidden deep in earth's bosom. It is from her mines more than from aught else, that British Columbia will derive her material wealth as a great nation. Let us accept as a bountiful gift from the hands of generous Nature our mountains: they give us scenery majestic and unrivalled, they are nurseries of great rivers which pour their tribute into three oceans, and in their rocky embrace they hold a mineral wealth second to none in the world.

In a measure the mountains separate us from the rest of the Dominion, that rocky rampart would seem to declare that North and South and West rather than to the East should our future commerce be sought. Seaward was our trade in the old days, to the California goldfields, to the frozen mines of Russian-America, and to sungirt Honolulu. So seaward to-day Destiny calls us.

Our commercial future would seem to be inwrought with that of Alaska and Mexico, with Imperial Japan and the hungry hordes of the Orient.

Inexhaustible, as yet hardly guessed-at, are our resources. British Columbia's coal deposits are big enough to fill the world's wants for centuries; we have the greatest compact area of merchantable timber in America; our mines have produced a quarter of a billion dollars, and as yet the surface only of the metalliferous measures has been scratched; the fisheries add to the world's wealth a yearly tale of six millions, and as yet of our three-score of food fishes the salmon only has been taken in earnest. Agriculture and fruit return annually to the farmer over six millions, and one tithe only of the land is settled upon, and not one-tenth of that is under cultivation. We have, unexploited, millions of acres of pulp-wood running down to ice-free winter harbours. Petroleum deposits, magnetite and hematite iron of the highest quality, pyrites, asbestos, plumbago, mica in 28-inch sheets, large deposits of gypsum, native silver amalgam, ores of manganese, chromic iron ore, all these await development.

Building materials of unequalled quality—lime, fire-clay, cement, marble, granite and sandstone, like the Douglas fir and the pulp-woods, run down obligingly to the sea:

And in the sea swims untouched all up the scale of Nature from sardine to cachelot whale, economic wealth that would enrich an empire.

With this plethora of potential wealth, "are we sharing rateably in the general prosperity of Canada?"

Perhaps not.



the permanent well-being of every man and woman in British Columbia?"

We have enumerated the multiform factors of the economic wealth of this Province, but the greatness of a country in the last analysis does not depend upon its material resources, it depends upon the character of its people. History is mankind's message delivered to every man, history is looking backward that we may intelligently look forward. Ever national character has been built up through struggles and poverty and harshness of conditions. Not once or twice but many times have we seen nations out of their very fatness decay. Per head of population, the trade of British Columbia to-day is the largest in the world, amounting to close upon \$300. Should the development of our natural resources and the intrusion of thousands of new people increase that trade to \$600 or \$1,200 per capita, would that wealth without concomitant mental awakening and character development spell "well-being" for British Columbia?

I think not. Mr. Flimmerfelt's demands strike at the roots of things and touch the verities of life. If the object of existence and the end of education is merely to teach men to make a living, then let us rest as we are. There are no poor in British Columbia, and we can jog along in comparative comfort as it is, three meals a day for us all, and for the luxurious, "a long lie and a tea-breakfast" on Sunday.

The hope of British Columbia lies in her children. These, more than coal measures or seines of lordly salmon or heaven-lifting Douglas firs, are her richest asset. The most perplexing questions of to-day will be in the hands of our children for solution after we are dust and our good swords rust. In their training to a full, sweet womanhood, a virile manhood, is our hope as a nation.

Great is the power of environment. In her giant mountains, lone lakes, deep rushing rivers and lush valleys, Nature intended this Pacific Province to cradle a people big and broad and unselfish. To this end we want an educational system, freed from politics; we want as teachers men and women big enough to know their power and their high privilege, strongly possessed of the truth that dollars do not spell "well-being," that this sorry scheme of things embraces more than making a living, that we are here for a deeper purpose—to live a life. They must teach our boys and girls that in the deepest and truest sense each of us is our brother's keeper, that in the final analysis nothing that is selfish can survive, be that selfishness national or individual, and that all questions must be settled not by self-interest, but by justice, by merciful considerations and not mercenary ones.

We want in British Columbia an aroused public opinion, and we want our broadest-minded and deepest thinking men to forego personal ease and take hold of the helm.

Our hope is in the homes and in the schools. Here and not in the bank clearings and customs returns our national destiny is even now being wrought out. If ever a new country had an opportunity of evolving a school system to meet its own needs, British Columbia is that country. A people somewhat apart, we can afford to slough off from our school-programmes some of the dry bones of the valley, and from the very beginnings let our children realize that they move in a live world. Let the message we bring them from a mile-stone farther on be one of good cheer, and remember that it is the feet of Him who brought glad tidings that are beautiful. Nine times out of ten if you make a child happy you have made him good. All the grand beauty of this favoured land is lost to the children if we cannot contrive to let them live near to Nature's heart. I often think a child gets more moral uplift from the six weeks in summer when he wanders at will, than during the forty-six weeks when we ostensibly "educate" him within walls. Blessings on that rare teacher (may the tribe increase!) who takes the little flock into the fields and teaches them to name and love every British Columbia bird and flower.

We should make our children realise that Destiny has not intended them to

"House close in a wayside inn,
Or drowse by a dying fire."

They come of a race of workers, and to whom much is given, of them is much required. As British subjects, they belong to the greatest commercial nation of the world; Anglo-Saxons, they are of the dominant race; Canadians, they are essentially a self-governing people, a free people—they will be called upon to make the laws under which, and protected by which, they will live. Tell them of their inheritance, not alone the inheritance of rich mine and fertile field and fortune-holding forest. Let them realize into what a glorious brotherhood they are born, they truly are sprung from earth's noblest—the good King Alfred; de Montford, the Father of the commons; John Hampden; Latimer and Ridley; Nelson and the Iron Duke; the gallant Sidney, on Zutphen's field dying in agony that another's thirst might be quenched; silver-haired Caxton, in the old Almonry bending over the clumsy types of our first printing press; Wilberforce, who made of slaves free men; Florence Nightingale and John Howard, bringing life and hope and courage to the dying and the soul-sick—heroes on the battlefield, martyrs for the faith!

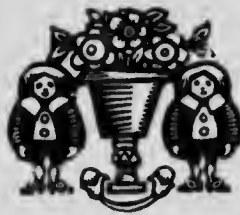
With them as we look on the scroll of the past unrolled, we are very proud, as we look forward to the road we are opening up for the children we are very humble.

If Commerce is enterprising enough to build a million-dollar hotel on Victoria's mud-flats, and if Politics ensconces itself in a stone-palace of equal cost, even now somewhere amid the oak-groves of Victoria should be building the walls of the British Columbia

University, a new, vital, growing institution dedicated to the making of men and women, and full of the mellow juice of life. We have talked University and written University, and in the Temple of the Rulers has been debated University for more than one decade. When we really want it, we will simply start to build it.

Mr. Flumerfelt said the object of his letter was "to make men and women think." When we do this,

"There shall come from out this noise of strife and groaning
A broader and a juster brotherhood,
A deep equality of aim postponing
All selfish seeking to the general good;
There shall come a time when knowledge wide extended
Stinks each man's pleasure in the general health,
And all shall hold irrevocably blended
The individual and the commonwealth."



TIMBER RESOURCES OF BRITISH COLUMBIA

By GEORGE ELLEY

THE Province of British Columbia is endowed with greater natural resources than falls to the lot of most countries, and this is especially true in respect to her timber wealth, the whole Province consisting of an almost unbroken stretch of forest, extending from the forty-ninth parallel to Alaska, and comprising the largest and most compact body of timber on the American continent. Along the seaboard the country is, generally speaking, very heavily wooded, underbrush and vines of all descriptions growing in riotous confusion among the standing timber, and rendering progress through it impossible in places. In the interior, however, the trees are smaller and more scattered, with an entire absence of undergrowth, their park-like appearance being a pleasing contrast to the almost impenetrable tangle of tree life found in the coast forest.

In dealing with the various forms of timber growth common to the Province, Douglas fir (or Oregon pine, as it is sometimes termed) ranks first in importance. This tree has been known to attain a height of three hundred feet, ranging from six to eight feet in diameter at the butt, its only rival in size being the Redwood of California.

Fir forms about sixty per cent. of our marketable timber, and although confined to no particular belt, attains its greatest sizes in the valleys of those rivers emptying into the Gulf of Georgia, and on the eastern part of Vancouver Island—the latter being the most densely wooded area in British Columbia.

The age of a full-grown fir averages about five hundred years, but specimens six and even seven hundred years old are not rare. In the early stages of the tree's growth the foliage is very thick, branches spreading out from the trunk in all directions; these gradually disappear, however, until nothing remains but a few stunted limbs at the top, the lower portions being comparatively free from knots. The bark growth is heavy, of a reddish appearance, and extensively used for tanning purposes.

The commercial value of this wood is too well known to merit extensive mention. For general all-round purposes it has no equal, especially in heavy construction work, owing to its ability to withstand enormous strains; and in this respect is equal if not superior to oak, which wood it is rapidly displacing, especially in the building of cars. Tests have recently been made by railway engineers on

several of the large systems, with a view to comparing the relative strength of the two woods, and in most instances their reports have been favourable to fir, particularly where long timbers are required. In one instance ten pieces of each wood were selected and a lift made until they broke, with the result that the fir withstood some six hundred pounds greater strain than oak, conclusively proving its superiority in this regard, not to mention its advantage in lightness. Fir is also well adapted for house construction, being used in every portion of the building. Mention should also be made of the excellent spars and masts procured from this tree.

Next in commercial importance, as well as size, comes the red cedar. Although indigenous to all parts of the Province, this tree does not thrive as well in the interior as along the coast, where it attains an enormous growth, almost equal to that of the fir, especially at the butt, which has a tendency to spread and is generally hollow. The interior, or mountain cedar, as it is often termed, is much closer grained and considered superior in grade to the coast product.

Cedar is noted for its lightness and the ease with which it can be worked, rendering it in great demand for all classes of interior finish and factory work. In the manufacture of shingles, however, this wood excels, the British Columbia shingle enjoying a reputation second to none on the continent. Owing to its lasting qualities underground, cedar is much used for fence posts and foundations.

Hemlock grows in abundance along the coast, but is not so common in the interior, except where the rainfall is heavy. Hitherto, owing to the great prejudice existing against it, the product of this tree has not been extensively used. For a great many purposes, however, it is equally as serviceable as fir (which it closely resembles), and is beginning to be more generally called for, chiefly as a substitute for the latter wood.

Spruce, in several varieties, grows in all parts of the Province, but its principal habitat lies along the coast. To the south it is found interspersed among the other trees, but farther north the greater portion of the timber consists almost entirely of this wood. In the interior the valley of the Columbia River also contains large tracts of first-class spruce. When manufactured into lumber, it is extensively used for house construction purposes, the commoner grades being worked up into box material, for which they are admirably adapted owing to the extreme lightness of the wood and the fact that it is almost odorless.

Neither hemlock nor spruce attain such large proportions as fir or cedar, their average height ranging from seventy-five to one hundred feet.

The above-mentioned form the bulk of our timber, but do not by any means complete the list. Yellow cedar (or yellow cypress) belongs to the same family as red cedar, its dimensions and appearance being similar to the former. It grows chiefly along the northern coast and on islands adjacent thereto. For interior finish this cedar is unequalled. It is also said to be impervious to the

attacks of the teredo, and lasts well underground. Oak occurs in small quantities on the southern end of Vancouver Island, but the trees are stunted and of little value as lumber. Alder and poplar are common all over the southern part of the Province, where they thrive best in low-lying ground and along the banks of streams. Owing to the softness of these woods they have not so far been considered worthy of attention from a manufacturing standpoint. There are several varieties of maple, the principal being what is known as "broad leaf," on account of its large, spreading leaves, making it an excellent shade tree. Owing to the curly appearance of the wood when cut, it is also in great demand for panel work. White pine of a very fine quality also occurs in small quantities. There are numerous other species of tree growth, but as they do not at present possess any commercial value, further reference to them is unnecessary.

Canada takes first place in the list of the world's timber areas, the total forest land of the Dominion being estimated at about 1,700,000,000 acres. European Russia and the United States come next with approximately 500,000,000 acres each; while British Columbia alone contains something like 183,000,000 acres, and a comparison of the above figures will show the prominent position occupied by the Province in relation to the world's timber supply. The growth here is much more dense than in other portions of the Dominion, the average yield per acre along the coast and on Vancouver Island being about forty-five thousand feet, while in the interior it would probably run from twenty to twenty-five thousand feet.

At present there are about two hundred mills in operation throughout the Province, ranging from the one-saw portable affair to large plants equipped with every modern saw-mill device. Roughly speaking, the capital invested in the industry, exclusive of timber limits, would be about \$10,000,000, with a monthly payroll well over the million dollar mark.

The greatest activities in the manufacture of lumber are naturally centred around those points where proper transportation can be had for marketing the products, and yet not too far distant from the bases of timber supply. For this reason nearly all the large concerns are located at the coast, where they have the advantage of both rail and water connection, combined with their proximity to the larger timber areas. But it must not be implied from the above that the industry is confined to this portion of the Province alone—mills are established all through the interior, principally along the line of the Canadian Pacific Railway and its branches. The North-west Provinces are the chief market for the output of these interior mills, and the heavy demand from this source during the last few years has resulted in a marked development of the lumber business throughout this district, where the manufacturer is in a more favoured position in catering to the wants of the prairie market, especially as regards freight rates.

No less noticeable, however, has been the development in the older established centres on the coast, the demand being far in excess of what the mills were able to handle, notwithstanding the fact that over three million dollars have been invested during the last twelve months in the installation of new plants and additions to those already doing business.

The total cut for 1905 has been estimated at about 500,000,000 feet, and last year's would probably exceed this by at least twenty per cent., making the amount of timber milled throughout the Province during 1906 approximately 600,000,000 feet. The shingle market has also been brisk, and prices well maintained. This branch of the industry offers great opportunities for the capitalist of small means. A great many of these plants are of the portable variety, and as soon as the supply of raw material is exhausted in one district the outfit is moved to another.

The principal markets of the British Columbia mills in disposing of their timber are the North-west Provinces and Manitoba, which use at least forty per cent. of the output on the coast, and practically the entire cut of the mountain mills, or about sixty per cent. of all the lumber produced in the Province. In fact, these markets are the key to the industry, as with the exception of the local trade they are the only source which absorbs the commoner grades, unsaleable in other directions.

Owing to our disadvantage in the matter of freight rates, and the strong competition from the southern pine districts, the Eastern Canadian trade is not very extensive, except in shingles and heavy timbers, but gives great promise for the future.

The foreign business (by which is meant the cargo trade) ranks next in importance, the principal markets being the United Kingdom, west coast of South America, the Orient and Australia, although shipments find their way to all parts of the globe and enjoy a high reputation wherever sold. This branch of the trade is carried on extensively by several of the coast mills, who make a specialty of catering to it almost exclusively. Up to the present the bulk of the foreign business has been handled by sailing vessels, and this has been something of a drawback owing to the length of time required in delivery; but steam freighters are now becoming more numerous, and their freight rates reasonable enough to permit of the lumber being shipped in this way, thus obviating the necessity of having to rely on the slower and uncertain means of transportation afforded by "sailers." One hundred million feet may be taken as a fair estimate of the cargo business done during 1906.

The balance of the cut, about 120,000,000 feet, is represented by the demands of the local market, and with the gradual development of the Province the major portion of our output will eventually be absorbed for home consumption.

So far nothing has been done towards utilising the tremendous amount of material now wasted in the production of lumber, the greater part of it being either burnt or thrown away as refuse. This waste, representing as it does millions of feet every year, could all

be used to advantage in the production of any number of marketable commodities. In other lumber centres, with the vision of an ever-diminishing supply in the raw product before them, they have learned its true value and are seeking to make the most of their opportunities while they last.

Take the production of wood alcohol, for instance. This is a flourishing industry in itself in places, and yet there is not a single plant in operation in this Province. The same remarks apply to turpentine, which some of our woods contain a good percentage of.

Another opportunity for the utilisation of our lumber by-products is presented in the manufacture of all classes of woodenware and furniture, for in this way a vast quantity of first-class short material, now consigned to the fire or woodpile, could be worked up into saleable articles of every description. Just what to do with this short lumber is one of the most aggravating problems which the millman has to contend with. The local market alone would justify the establishment of such a plant, to say nothing of its possibilities in other directions. A glance at the factories on the Ottawa River—Hull in particular—will show what can be accomplished in this line.

Sawdust, once considered of no use whatever, except as fuel, is now manufactured into imitation marble and sold at a price in excess of the lumber, in the manufacture of which it was created. Several plants of this kind are in operation elsewhere, and pay high dividends.

In fact, there is no portion of the log which cannot be put to some profitable use. A large portion of our small timber, now considered worthless, is capable of being utilised—poplar, for instance, a tree said to be highly adapted for the manufacture of excelsior packing.

The great fault out here in British Columbia is that we have an overabundance of timber wealth, and these apparently small items are lost sight of. It has been stated on good authority that the amount of material thrown away or burnt up as refuse during the last quarter of a century, in the United States alone, if available to-day could be worked up into saleable commodities valued at five hundred million dollars. This goes to show what the apparently small leaks mean. British Columbia is considered one of the world's great gold-producing areas, but the amount of material annually wasted in the production of lumber will more than counterbalance the value of the gold mined during the same period.

Mention should also be made of the great possibilities for the manufacture of pulp. Both fir and spruce, especially the latter, are admirably adapted for the production of this article, and as these woods are found in all parts of the Province, the supply of raw material is unlimited, especially along the coast and on Vancouver Island. In the southern part fir is the predominating wood, but farther north the growth of spruce is most abundant—and on account of the nearness of the timber to waterways the problem of transportation is in a great measure simplified.

It is not likely that the industry will assume very large proportions in the interior for some considerable time, owing to its disadvantage in the matter of transportation.

Although active operations have not as yet been commenced, the Province bids fair to eventually become the chief centre for the manufacture of this article. The available supply of raw material is being rapidly depleted in the Eastern American States, and even now they are forced to secure the bulk of their wood supply from the Provinces of Ontario and Quebec. When these sources are exhausted the paper manufacturer must look elsewhere, and British Columbia will be his only resort.

The principal markets which could be supplied are Japan and Australia, both of which countries are large pulp buyers. This trade is now controlled by the British and American mills, but there is no reason why concerns established here could not compete for the business. The cost of labour may be higher, but the British Columbia manufacturer would have the advantage of cheaper power, as there are numerous sites along the coast where excellent water power is available. The time and money represented in transportation across the continent would also be saved, a lever which would go a long way towards enabling him to control these markets. Several companies have been formed and timber limits acquired in anticipation of these conditions.

In the past, large portions of the forest area have been swept by fire, especially in the interior. Along the coast the ravages have not been so extensive, owing to the heavier rainfall and the closer growth of the timber. However, no part of the Province is immune, particularly during the summer months. Although in instances due to natural causes, these fires are more often the result of carelessness; sometimes it is the settler in the clearing of his land, or the prospector and camper who neglect to take proper precautions in the lighting of fires in the timber. Sparks from passing locomotives, and donkey engines engaged in logging operations, are also responsible for serious conflagrations.

Lately more stringent regulations have been adopted and fire wardens appointed in the settled districts, but although fully alive to its duties the force is inadequate, and provision should be made for its establishment on a basis which will permit of the proper policing of the entire timber area.

With a seemingly inexhaustible supply of timber to draw from, and a population comparatively few in numbers, but little consideration has been given to the all-important subject of forest conservation, and owing to the very limited demand for our lumber, early logging operations were conducted on a most extravagant scale. The upper grades of fir and cedar alone were saleable, practically all spruce and hemlock, which often represented the greater portion of the forest, being passed over as worthless. The felling of the trees

was also conducted in a wasteful manner, cutting being made as high as fifteen and twenty feet from the butt. Many of these claims have been worked over again since, and yielded handsome returns.

Although reforestation has been carried on in various portions of the globe for a number of years now, and its practicability proven, but little attention was paid to the subject in America. However, the rapid depletion of the principal timber areas has resulted in a realisation of its true value as a means of providing a supply of timber for future generations, and in the United States particularly enormous tracts of land have been set aside for the purpose of conducting experiments along the line of tree culture, with a view to its establishment on a permanent basis.

For the carrying out of this work on a large scale, no portion of the continent is better adapted than our own Province. Owing to its mountainous nature there are huge tracts of land unfit for farming, which, however, cannot be excelled for tree-growing. Our native woods are very hardy and will thrive where other forms of vegetable growth could not exist. The climate, too, is peculiarly suited for the purpose, it being possible to successfully grow almost every form of tree common to the temperate zone.

Reforestation is bound to play an important part in the future of the Province. It offers the only practical solution of the problem presented in rendering these vast areas (a large portion of which is now covered with timber) revenue-producing, for after being cut over they will again revert to the Crown, and no other alternative remains but their gradual reforestation under the supervision of the Government—the same as is now done in Norway and Germany. There all the timber is state-owned, the cutting and culture of the trees being under its direct control. The handsome profits derived from this source are the best evidence which can be adduced to support the system.

Fir and spruce are the woods most suitable for cultivation, these trees being available for the manufacture of lumber after a growth of about fifty years, and for pulp much earlier. With proper supervision, a yield of from forty to fifty thousand feet per acre is quite possible in that time. Cedar could also be grown to advantage.

The first step necessary for the carrying out of any reforestation scheme would be the clearing off of all timber lands already cut over, in order to permit of the new trees being planted. Owing to the methods employed in logging, most of these areas are covered with fallen timber of every description, and as the growth of underbrush is very rapid these lands would have to be burnt over thoroughly before they would be fit to receive the tree seeds, which could then be sown in the ashes.

It is only a matter of time when we must face a timber shortage, unless some scheme, such as outlined above, has

been adopted in the meantime. It is to be hoped, however, that, profiting by the mistakes of others, our statesmen will have been far-seeing enough to provide for such a contingency, and not wait until the forests are a thing of the past before taking definite action. At the present rate of consumption, to say nothing of what will take place when the industry reaches its zenith, the supply will be exhausted before the close of the century. With the adoption of proper reforestation methods, however, there is no reason why our forest wealth could not be perpetuated for all time. Timber is and must continue to be a necessity in the manufacturing world, and while for some purposes a suitable substitute may be found, its field of usefulness is bound to increase.



FISHERY WEALTH OF BRITISH COLUMBIA

By J. B. CLEARHUE

THE fisheries of British Columbia, both sea and inland, are the most prolific and valuable not only in the Dominion of Canada but in the whole world. Situated as it is in the warm Japan Current, with its innumerable inlets, rivers, and protected waters alive with almost every known variety of marketable fish, British Columbia cannot remain long in the rear. In 1905 the fishing industry of this Province headed the Dominion; in a few years it will head the world. The possibilities of the industry in British Columbia are unlimited. The following table shews the value of the productions of all kinds of fish in the Province from 1895 to 1905:

1895.....	\$4,401,350
1896.....	4,183,999
1897.....	6,138,865
1898.....	3,713,101
1899.....	5,214,074
1900.....	4,878,320
1901.....	4,401,354
1902.....	5,284,824
1903.....	4,748,365
1904.....	5,219,107
1905.....	9,850,216

The production was valued in 1895 at \$4,401,354; in 1905 it was \$9,850,216. What will it be ten years hence?

The salmon industry is the most important of all, and includes sockeyes, red springs, white springs, steelheads, cohoes, humpbacks, and dog salmon.

The spring salmon are the largest and richest. They often reach the weight of sixty and seventy pounds. Principally on account of their colour they will not sell as well as the sockeye, and so are usually "mild cured," being packed in salt in large barrels and sent to Germany, where a ready market is found. The former is a new process which has only been tried in British Columbia in the last few years and proved very successful and profitable.

The sockeye salmon is the reddest in color, the firmest, and most plentiful of all the varieties, and has the preference for canning. As summer approaches they make their way in large schools toward the rivers in order to spawn. It

is at this time that they are taken and canned. About seventy canneries are now in operation along the coast, notably on the Fraser, the Skeena, Rivers Inlet and Naas River, and also Lowe Inlet, Namu, Alert Bay, and Clayoquot, on Vancouver Island. In order to preserve this industry strict rules are enforced, and only drift or gill-nets of a certain mesh, and purse and drag seines are permitted in the rivers. From Victoria along the shore of Vancouver Island fish traps have been introduced during the last two years, but with only very moderate results. This year so far as sockeyes are concerned they have been an utter failure.

On reaching the cannery the fish are at once cleaned, washed, cut up by machinery and packed into the cans. The cans are then washed, weighed, capped, and soldered up by machinery, the process taking hardly a minute from the time the can enters the "line," till it comes out ready to be steamed and cooked. The cans then pass through two retorts. In the first they are heated for half an hour, which causes the air to expand; and on being taken out a hole is punched in each tin, which is soldered up immediately and the can becomes perfectly air-tight and capable of keeping for years. In the second retort in which they are cooked under a high pressure of steam for about an hour, the process is completed, and the tins are stacked until the end of the season, when they are lacquered, labelled and put on the market.

Recently improved machinery has been adopted, which does the work without the use of handling, and so insures the absolute purity of the contents.

The cohoes and occasionally humpbacks are also canned, but being of a lighter colour and softer do not sell as well.

Offal from the canneries is converted into oil and guano at factories established for this purpose.

The dog-salmon are a coarser species of salmon, and until late years have been little used. Lately a Japanese firm has started a station on the Queen Charlotte Islands, for curing this variety, a ready market being found in Japan.

About a year ago a commission was appointed by the Dominion Government to report on the fisheries of British Columbia, and the evidence taken by them goes to shew that the very important industry of salmon canning is decreasing, notwithstanding the greatly improved fishing methods of to-day; and that this decrease is due to the failure of the salmon to reach their spawning grounds in the upper rivers. This industry can yet be saved and even increased if radical changes are wrought in the Fisheries Act, limiting the number of fishing licences, the size and use of nets, the fishing limits and by increasing the hatcheries and the closed season by a few hours each week. Large quantities of fish enter the small streams on the West Coast of Vancouver Island and along the Mainland, where little or no fishing takes place. If hatcheries were placed here the increase would be at once felt.

The salmon industries of the Fraser River and Puget Sound are so closely bound together, that the non-enforcement of closing laws in one would injure the other. Last year the Dominion Fisheries Commission conferred with the American authorities and, as a result, a uniformity of closing periods and better enforcement of all laws are expected to improve the industry.

At present there are eight hatcheries in operation in British Columbia, situated at Harrison Lake, Birkenhead River, Seton Lake, Granite Creek, Skeena River, Rivers Inlet, Nimpkish, and Fraser River. The Harrison Lake Hatchery is the largest and best-equipped institution in Canada, having a capacity of about thirty million eggs. The Dominion Government is now arranging to build three new hatcheries in British Columbia, at Babine Lake, Stuart Lake, and on the west coast of Vancouver Island. When these are in operation the hatchery capacity will be about 127,000,000 eggs a year. A fishing company, under its contract, will also build a new hatchery on the Cowichan River. In order to preserve this industry hatcheries should be erected in every available spot, and the Government will be well repaid for the expense. During the coming year great improvement towards the preservation of the salmon industry are hoped for from the Government.

The following table shows the total number of cases of salmon canned in British Columbia from 1896 to 1906:

1896.....	601,570 cases
1897.....	1,015,477 cases
1898.....	484,161 cases
1899.....	702,437 cases
1900.....	585,413 cases
1901.....	1,236,156 cases
1902.....	625,982 cases
1903.....	473,547 cases
1904.....	465,804 cases
1905.....	1,167,460 cases
1906.....	629,640 cases

It will be seen that the run of sockeyes on the Fraser River is large every fourth year and small the other three; but as little is known about their habits while in the sea, this rule cannot be vouched for as absolutely certain. Occasionally it has happened that a large run has appeared during the three "off" years.

Next to the salmon fisheries come that of the halibut. They are quite as white and as firm as the North Sea species and are of a finer quality. This fish is found in all the coast waters of British Columbia, but is especially plentiful around the Queen Charlotte Islands in the Hecate and Dixon Straits, and on the west coast of Vancouver Island. Though the halibut has almost been "fished out" in the waters off Cape Flattery, still a number of American ships operate there profitably.

As the halibut is found in deep water, nets cannot be used, and so lines baited with herring are utilized. These are operated from steam trawlers, which make regular trips to the fishing grounds. The New England Company does the largest business in the halibut trade in British Columbia, and operates a large fleet of steamers. All fish caught by this company are shipped to the United States. A number of small Canadian companies are also operating. Many large catches have been reported, one reaching 170,000 pounds of fish in one trip. From September to March the principal fishing period lasts. This industry is one that is steadily increasing, without any very noticeable decrease in the number of fish. Up to the present time American firms have been the quickest to prosecute the industry.

In 1905 the total production was 40,000,000 pounds, of which approximately 9,000,000 was landed in British Columbia and 31,000,000 in the U. S. A. ports of Seattle and Tacoma. The value of the British Columbia product was \$445,070. This shews that Canadian firms are not taking in hand this industry as they should do; and the Government should give them encouragement by immediately defining which are Canadian waters and which are open, and by placing sufficient patrol boats to guard against poaching. British Columbia is not getting its legitimate share of the profits from the halibut fisheries. A good market for fresh halibut is opening up east of the Rocky Mountains, and the ever-increasing demand must soon increase the already growing industry. Halibut and cod-fish are now being canned and smoked in Seattle, and it cannot be long before this industry must open up in British Columbia also.

The herring industry is new to British Columbia. Although for many years herring have been taken, not till the last few years has the industry been developed to any greater extent than being used for oil, guano, and bait for the halibut and cod fisheries. The herring are found in all the coast waters of British Columbia, but especially thrive around Nanaimo, where they appear in large schools about November. The Scottish method of curing them has been introduced, and shipments have proved them to be equal to the best European fish. Until now the fishermen have been content to wait till the herring come in shore to take them with nets, but it cannot be long before the operations will be extended and the fish taken out in the Straits. Nanaimo is the chief centre of this industry, where the herring are cured as bloaters and kippers, or pickled and salted. Large quantities are frozen, and shipped to the American side as bait.

When Captain Balcom of Victoria first announced his intention of catching whales off Vancouver Island, the wise men shook their heads. But after one year's trial the Pacific Whaling Company has shewn that whales are not only found off British Columbia, but abound in such quantities that before many years the whaling industry will be leading that of the world. The operations now carried on in British Columbia may be described as

"off-shore whaling," in which the products are brought to the shore, the oil extracted, and what is left turned into guano. Different to this type of whaling is that wasteful method in which the blubber is taken from the whale while yet at sea, and the carcass is left afloat for the sharks to devour.

At present there are two stations on the west coast of Vancouver Island, at Sechart and Kyoquot, but another is about to be installed near Nanaimo. That at Kyoquot is only starting this summer. Two vessels, the St. Lawrence and the Orion, operate from Sechart, and bring in whales of several varieties, finbacks, humpbacks, sulphur-bottoms, and occasionally a sperm whale. Whales exceeding one hundred feet in length have been taken.

After they are caught by the whalers they are drawn alongside, pumped up to make them buoyant, and towed to shore. The whale is immediately "flensed," i. e., the blubber is removed. Certain parts of the flesh is considered a delicacy in Japan, and in the future a trade in this flesh will produce extra profit. After all oil is removed from the blubber and flesh, the remainder is turned into fertilizer. Certain parts of the tail are removed and salted for shipment to Japan. The whalebone (though what is secured here is of an inferior quality) and spermaceti from the sperm whale also add to the value of the products. About one hundred men are employed at a station, which produces five hundred barrels of oil a week and one hundred and fifty to two hundred tons of fertilizer a month. The operations may be carried on all year if the weather permitted, but the West Coast is usually too rough, and the company is now seeking to establish a station for the winter months in the Gulf of Georgia.

Several other companies have recognised the value of these fisheries and are now seeking locations for their stations.

The sealing operations can hardly be classed as exclusively that of British Columbia, as the schooners operate all along the coast, from California to Behring Sea, outside the three-mile limit.

Both the hair and the fur seals abound in the waters along the Pacific coast. The hair seal hardly pays the trouble of capturing it, and so it is practically unmolested. The skin of fur seals, though, brings from \$15 to \$25, and is much sought after. The open season is from February to the last of April for coast sealing, and from August 1st to November 1st in Behring Sea. Very strict laws for the preservation of the industry have been enforced, and patrol boats are used by both the United States and Canada to see that they are carried out.

At present about twenty sealing vessels are operating from Victoria, and are making an average catch to a schooner of from five hundred to six hundred skins a season. Although the catch is somewhat small of late years, the seals are not decreasing, but are about holding their own.

The black cod abounds in the northern waters, especially around Queen Charlotte Island. When pickled by a special process, it is most delicious, and should become a valuable product of British Columbia.

The sturgeon has been one of the leading and most valuable of British Columbia fish, but in the last few years they have been almost exterminated. They grow to an immense size, and lie near the bottom of the rivers, which they ascend in search of smaller fish. With the present protective laws the sturgeon should shortly be restored to our waters. From the sturgeon is secured caviar, isinglass, oil, and leather from the skin; the flesh is of fine quality.

All along the coast thrive many species of small fish, one of which are the oulachans, which are found in such enormous schools that the Indians catch their supply by merely drawing a pole covered with spikes through the water. They are much prized by the natives for their oil, and might prove very profitable, as the oil when refined would command a high price. The present process of canning is not very satisfactory with the oulachan, but no doubt some better method will be soon found.

Another industry, which at present has only a small local market, is that of the smelt. This could also be expanded, and should equal that of the Atlantic coast. The present annual value is only about \$20,000. Dried smelts are in great demand in the Orient.

Besides these fish the waters abound with various kinds of cod, bass, whiting, soles, pilchard, shad and other small fish. These fish find a local market, and in the future should prove a profitable product to British Columbia.

Dogfish, ratfish, sharks, etc., have been turned into oil by the "oileries" at Skidegate, Queen Charlotte Islands, for a number of years. Projects are now on foot to further extend the industry and manufacture oil, guano, fish glue, etc.

Not only are the seas supplied with valuable fish, but the streams, lakes and rivers of British Columbia abound in trout of all kinds which delight the angler. Cowichan River and Lake, on Vancouver Island, have become famous as angling resorts.

Crabs, clams, mussels, oysters, etc., are plentiful along the coast. Clams are now being profitably canned, and quite a thriving industry has been opened at Sidney, Vancouver Island. Olympic oysters, which thrive around Vancouver Island, are small but very valuable. This year there is a movement to plant the Atlantic oyster at Esquimalt, and so far the experiments have proved successful. In a few years quite a thriving business is expected to result.

The total products of the fisheries of British Columbia for 1905 will give a good idea of the magnitude and value of the productions of our seas:

	Quantity.	Value.
Salmon canned (cases)	1,167,822	\$6,621,942 00
Salmon, fresh, smoked and dry salted (lbs.)	24,397,560	1,056,571 00
Salmon, salted (lbs.)	555,220	52,200 00
Kalibut (lbs.)	8,901,400	445,070 00
Herring, fresh, salted and smoked (lbs.) ..	4,079,150	243,140 00
Oulachans, fresh and smoked (lbs.) ..	519,900	26,450 00
Oulachans, salted (bbls.)	2,350	23,500 00
Smelts, Trout, Cod, Shad, (lbs.)	1,543,800	104,300 00
Sturgeon (lbs.)	20,000	2,000 00
Mixed fish (lbs.)	538,000	26,900 00
Fish roe (lbs.)	30,000	1,500 00
Clams, preserved (cans)	19,200	1,920 00
Clams and Oysters (125-lb. sacks)	9,479	14,615 00
Fish and Whale Oil (galls.)	184,370	63,096 00
Fish and Whale Guano (tons)	872	20,160 00
Fur Seal Skins	13,798	331,152 00
Hair Seal Skins	5,684	3,364 00
Mussels, Crabs, Shrimps and Prawns..	5,737 00
Estimate of fish not mentioned.....	200,000 00

Total value of products for 1905.....\$9,850,216 00

In every branch of the industry the greatest development and extension is possible. Almost every fishery is new, and with wise protective laws and better patrol service the fisheries of British Columbia will be a permanent source of wealth, and develop into the first in the world. A Government survey of the waters and liberal bounties would go a long way in making British Columbia celebrated.



MINING AND SMELTING IN — THE PROVINCE —

By ROSALIND WATSON YOUNG

1906, \$25,000,000.

NEVER before did British Columbia reach such a high and valuable record of production. The past year all but touched the twenty-five million mark—falling by less than twenty thousand dollars. This shews an increase of two and a half million dollars over 1905, and of six million dollars over 1904.

Such wonderful strides have been made in copper mining since the industry began in 1894 that one-third of the total production was derived from copper.

The igneous rock which underlies the greater portion of the Province affords unmistakable evidence that violent volcanic action disturbed British Columbia in bygone times. To the infiltrating waters which accompanied this disturbance no doubt the deposit of minerals is due. Ore bodies occur along the contact of coast granite from Windy Arm to Similkameen. The Rossland deposits are on the edge of an extinct volcano, and the Phoenix mines, which have raised the copper output to its present large proportions, are impregnations of volcanic tuffs.

The sedimentary rocks are mainly confined to the cretaceous period. In these lie the coal beds of Vancouver Island, Crow's Nest Pass, Nicola, Similkameen, Ashcroft, Kamloops, North Trompson, Peace River, Tooya, Telqua and Queen Charlotte Islands.

The most important minerals may be subdivided into:

Metalliferous—Gold, silver, copper, iron, lead, zinc, platinum and osmiridium.

Non-metalliferous—Coal, coke, building stone, brick clay, lime, petroleum, magnesite and mica—the last three only slightly developed.

Of these the most widely distributed is gold, occurring as it does in pre-glacial and post-glacial gravels, and associated in lodes with quartz or copper.

The total production to date of these minerals follows in order of importance:

Gold (placer)	\$ 68,721,103
Gold (lode)	41,015,697
Coal	72,815,423
Copper	35,546,578
Silver	25,586,008
Lead	17,625,739
Coke	6,519,375
Others	5,813,799

Total\$273,643,722

At least one-fifth of the total population of British Columbia is directly dependent upon mining. Reckoning the miners employed at 12,000, if we multiply by three—not five as is ordinarily the case in census-taking, because so many miners are nomadic and unmarried—we have 36,000 people out of a total population of 178,000 depending for their livelihood upon this most important industry.

A description of coal and mineral areas according to districts, and an account of the work now proceeding, follows:

For mining purposes the Province is divided into mineral divisions, which are arranged from time to time as circumstances warrant. At present there are thirty-seven such divisions. These we shall group into the well-known, though somewhat arbitrarily selected, districts of Cariboo, Cassiar, Coast, Kootenay East, Kootenay West, Lillooet, Yale.

CARIBOO DISTRICT.

Including Omineca, Cariboo and Quesnel divisions. Total output, \$405,400.

The Cariboo goldfields were the first great attraction that British Columbia dangled before the eyes of the world. For almost half a century Cariboo has been contributing towards the placer output of the Province, and shews no signs of exhaustion.

As a rule the early miners worked only the shallow deposits to a depth of thirty or forty feet, and these gravels of post-glacial age were in places exceedingly rich.

In later days it has been discovered by boring that beneath the surface deposits is a stratum of clay, seventy or more feet thick; and below the clay, gold-bearing gravels which must be of pre-glacial origin. To mine these deep gravels is the problem of present-day miners in the neighbourhood of Barkerville.

QUESNEL DIVISION.

Production, 1,980 ounces of gold, \$39,600.

The decreased output of this division is due to the fact that the mine of the Consolidated Cariboo Hydraulic Mining Co., Ltd., situated at Bullion, was not operated.

In everything but water supply this property has been well off. It has ten miles of auriferous channel, a face over three hundred feet high, which has averaged twenty-five cents per cubic yard, and

the south fork of the Quesnel River, near at hand, as a dumping ground. The one thing lacking was water. Though Polley, Bootjack and Moorehead Lakes contributed their supply, it was not sufficient in those years when the precipitation was slight.

With a view to increasing the water supply, Spanish Lake has been dammed during the past year, and a ditch partly excavated for conveying the water, which will be syphoned across the South Fork.

Another important work undertaken at the same time was a rock sluice-tunnel, rendered necessary in order to procure grade for sluicing the stratum of gravel next to bedrock. So while 1906 has been a year poor in output for the Bullion camp, it has been important in the improvements undertaken.

Work on Keithley, Snowshoe and adjacent creeks was hampered on account of lack of water; and nothing was done in the Horsefly.

CARIBOO DIVISION.

Production, 17,790 ounces gold, \$355,800.

This is the largest output in five years. The principal producer was the La Fontaine mine of the Cariboo Consolidated Company, situated on Lightning Creek. From 6,828 cubic yards of gravel, 1,451 ounces of gold, value \$26,697, was derived. Forty-eight men were employed.

At Slough Creek and Willow River attempts have been made for upwards of fifteen years to work deep gravels. Millions of dollars have been spent. The supreme difficulty is proper drainage. Whenever "pay" gravel is approached, such an inflow of water occurs as to suspend work. In the past year the Willow River Company is reported to have taken twenty to thirty ounces from a ten-foot set, and to have closed an option on adjacent property. These things would indicate that the tide has "ebbed" on Willow River. But it is still flowing on Slough Creek, where new machinery is being installed in the endeavor to unwater the mine.

On Williams, China, Cunningham and Grouse Creeks, small companies have worked with satisfactory results.

When the white miners came from California in fifty-nine, Chinese accompanied them; and ever since Cariboo has been their stronghold. Not only do they mine the river bars profitably, but they have their hydraulics, building their own flumes and trestles.

OMINECA DIVISION.

Anticipation of railway development has resulted in the location of diggings, said to be rich, on the Peace, Pine and Parsnip Rivers. The year's output was small, amounting to five hundred ounces, or \$10,000.

CASSIAR DISTRICT.

Including Atlin, Liard, Stikine and Skeena divisions. Output, \$555,599.

ATLIN DIVISION.

While rotten sluice boxes and old caches indicate that Atlin was not overlooked by the early miner of the seventies, he evidently

did not find the rich spots. It was in 1898, during the Klondike excitement, that Atlin became known through the discovery of gold on Pine Creek. Subsequent work has demonstrated that the discovery was made on the richest portion of Pine, where the pay-streak extends into the benches for an undetermined distance.

The tributaries of Pine, also, are auriferous. To the north are Birch, Boulder and Ruby; to the south Wright, Otter, Gold Run and Spruce Creeks. Other productive watersheds are O'Donnel and McKee. Only a small area has been thoroughly prospected. From a pan of dirt taken from any creek colours can be obtained.

Though the number of individual operators is decreasing, the output remains about the same, because strong companies occupy the field. Phenomenal values have not been discovered, but wide paystreaks of good average value. This cause, together with a heavy overburden and insufficient water supply, tends to require capital. Fortunately, Atlin is possessed of one fine natural reservoir in Surprise Lake, fifteen miles long by two-thirds of a mile wide. In 1906 this was dammed, and the water conserved, as had not previously been done.

While the mineral product so far has been placer gold, deposits of copper, lead and gold-bearing quartz have been located. In the rear of the town of Atlin is a unique deposit of hydro-magnesite, snow-white, of an unknown depth, and extending for acres. A sample shipment was marketed in San Francisco, but high freight rates, coupled with excessive moisture, arrested development.

The Pine Creek Power Company operated two pits in 1906 and employed twenty-five men throughout the season, which lasted from May to the middle of November. The gold occurs in a yellow gravel on serpentine bedrock. The method of mining pursued is to explode bank-blasts of two thousand five hundred to three thousand pounds of seventy-five per cent. powder. Tunnels and cross-cuts are run so that the powder is placed every twenty-five feet. Such a blast so thoroughly disintegrates the gravel that it is easily hydrauliced. Three giants, with seven-inch nozzles, are employed in a pit. Two streams work on the gravel from opposite directions, and the third drives the muddy stream into the sluice. Sometimes a fourth stream is used to trim the tailings pile. The gravel averages thirty-five cents per cubic yard. Over \$70,000 was recovered.

Adjoining the above company is the steam shovel plant of the Atlin Consolidated Mining Company. The seventy-ton Bucyrus one-and-three-quarter-yard dipper steam shovel began digging in the middle of July. In spite of delays incidental to the newness of the plant, the shovel fulfilled expectations. Tramming and washing facilities were commensurate with the digging capacity of the shovel, a car a minute being delivered into the sluice.

The height of the face on which the shovel worked was eighteen feet. The gravel averaged fifty cents per cubic yard, and one thousand five hundred yards was the daily delivery. The returns for the season were upwards of \$25,000.

It would seem that the steam shovel is well adapted for handling Arlin gravels. Its chief drawback is the fuel consumed, viz., five to six cords of wood daily.

These two companies are of special interest: one because its output was the largest in the camp, the other because of its new and successful method of operation.

LIARD DIVISION.

The principal work done was by the Berry Creek Mining Company, which owns ten leases, with fifteen thousand feet frontage on Thibet Creek. In one hundred and fifty days this company cleaned up \$63,000. The gold is both coarse and fine. Assorted with it is some osmiridium.

A plant has been installed by the Rosella Hydraulic Mining & Development Company on McDame Creek.

The Liard is almost an unknown region, portions of it never having been traversed by a white man.

STIKINE DIVISION.

Assessment work is about all that has been done on any of the claims in the Stikine division. Along the Tooya River extensive seams of coal outcrop, one seam being twenty-nine feet thick. These are valueless, however, in their present isolation.

SKEENA DIVISION.

Along the Portland Canal there has been keen prospecting, with the result that many promising claims have been located, some of which have reached the shipping stage.

The principal mine is at Maple Bay, and is a copper proposition, the property of the Brown-Alaska Company. Wharf and bunkers are on the beach, to which aerial tramways transmit the ore from the mine. The ore is taken in hulks to the company's smelter at Hadley, Prince of Wales Island. Five thousand three hundred and ninety tons were shipped; sixty-eight men employed.

The Queen Charlotte Islands embrace an archipelago of one hundred and fifty islands, of which Graham and Moresby are the largest. Although it has been known for fifty years that one of the largest coalfields on the coast is situated near Skidegate, Graham Island, mining has not been successful. The coal is of anthracite variety, and in places is much shattered by dyke intrusions. The isolated position of these islands has retarded development, but the growth of Prince Rupert, with its prospective transcontinental railway and ocean line of steamships, has stimulated interest in Queen Charlotte, so that much staking has been done. In addition to coal, iron, copper and gold occur.

COAST DISTRICT.

Including Victoria, Alberni, Clayoquot, Quatsino, Nanaimo, New Westminster and Bella Coola divisions. Production, \$5,388,146.

The excellent shewing made by this district is due to the coal mines, and to the Marble Bay, Britannia and Tyee copper mines.

Though there are indications of coal elsewhere, the chief measures fringe the east side of Vancouver Island. These are divided into the Comox and Nanaimo areas, from which the Pacific coast has been largely supplied for fifty years.

The coal is of high-grade bituminous variety. The seams are two to eight feet thick, though owing to faults and orethrusts they may thicken to fifteen or twenty feet.

The mining of the coal is in the hands of the Wellington Colliery Company and the Western Fuel Company. The former operates a mine at Cumberland, of which the shipping port is Union, and also the Extension mine near Ladysmith. The latter has its mine at Nanaimo. Shaftheads, wharves and bunkers are located both at Nanaimo and on Protection Island, for the coal seam runs under Nanaimo harbour. Mining is carried on by pillar-and-stall and by long wall methods. Facilities for loading coal are most modern.

Of the 1,178,627 tons of coal mined at the Island collieries, about half was sold for home consumption and half for export. An ever-increasing market is found in Alaska.

Coke amounting to 22,851 tons was manufactured by the Wellington Colliery Company at Union. Owing to the growth of smelting, it seems likely that the coke industry will be extended.

In the Strait of Georgia, opposite the Comox area, lies Texada Island, forty miles long and five miles wide. Only the northern portion of the island has been prospected, but it is wonderfully rich in base and precious metals.

No mine in British Columbia has a better record to present than the Marble Bay, owned by the Tacoma Steel Company. It has paid its purchase price, \$150,000 worth of development and equipment, and over \$200,000 in dividends. The ore, averaging \$15 per ton, consists of bornite and chalcopyrite, and occurs associated with zoroite (the colourless hornblende), garnet, actinolite, serpentine and other alteration products. Sinking to the seven hundred-foot level has proved the ore body continuous. One hundred and four thousand seven hundred and forty-two tons of ore were mined and treated at the Ladysmith smelter; sixty-three men were employed.

About half a mile distant are the Van Anda mines, which might have had as fine a record as the Marble Bay, had there not been mismanagement and over-capitalisation. After some idle years, the mines have been re-opened. Twenty-five men were engaged at the Cornell, and one hundred tons of ore shipped.

On the west side of the island is an enormous deposit of iron—three hills of magnetite, which can be mined by quarrying. Occasional shipments have been made for twenty-five years to the charcoal iron smelter at Irondale, Washington. Veins of gold-bearing quartz occur, but these seem pockety. There is also a limestone quarry, worked by the Tacoma Steel Company, and the limestone is calcined in kilns of which the capacity is one hundred and twenty barrels per day.

The Britannia mine, on Howe Sound, is an immense body of low-grade ore. The holdings comprise seven claims, which aggregate three hundred acres and cover nine thousand feet of ledge on the strike. Width of ore body is three hundred to six hundred feet. The ore is copper and iron pyrites with silicious gangue, and is worked by tunnelling. The present workings are three thousand five hundred feet above sea level, and four miles by trail from the beach.

The ore is sorted at the mine into first-class, second-class and waste, then run by aerial tramway a length of seventeen thousand feet to the beach, at a rate of one hundred tons per hour. First-class ore is run direct to wharf bins; second-class is crushed and concentrated, then placed in storage bins ready for shipment to the company's smelter at Crofton. In 1906, 88,800 tons of ore were shipped. The men employed equalled one hundred and seventy-five.

The Crofton smelter, originally built for treating Lenora ore, Mount Sicker, was idle two years prior to its purchase by the Britannia Smelting Company, Limited. After some changes had been made, the chief being the addition of a briqueting plant, the smelter was blown in January 4th, 1906. Its present capacity is five hundred tons. The plant consists of eighteen ore bins, each capable of holding three hundred tons, a furnace building containing three furnaces, briqueting and converter buildings, power-house and boiler-rooms, machine shop, assay and business offices. The capacity of the briqueting plant is sixty thousand bricks a day, the bricks being made out of fines, concentrates and flue dust. The combination of Britannia and Prince of Wales ore makes a good smelter mixture.

The Tyee mine, situated on Mount Sicker, has endured trying times in the endeavour to locate its ore body at depth.

The ore is copper and iron pyrites, in a gangue composed of barite, silica and calcite. Schist forms the country rock. There is no doubt that it is due to faulting that the ore body was lost sight of below the three hundred-foot level. In expectation of finding it again, the shaft was sunk to the thousand-foot level, but the zone was barren. Indications, however, improved at one thousand feet. Stringers of barite, which in upper levels accompany ore, appeared. So sinking to the twelve hundred-foot level is in progress. During this development work ore has been obtained from the hitherto unworked portions of the upper levels to the amount of 23,833 tons. This ore was treated in the company's smelter at Ladysmith, mixed with custom ore from Texada, Alaska and Yukon. It is transmitted from the mine by aerial tramway to the E. & N. Railway, which delivers it at the smelter. The cost of mining and delivering is \$3.19 per ton.

EAST KOOTENAY DISTRICT.

Including Fort Steele, Windermere and Golden divisions. Output \$5,171,024.

The deposits worked to any extent are confined to the Fort Steele division. They are chiefly coal and galena.

The coal beds at the Crow's Nest Pass aggregate two hundred feet in thickness, and extend over an area estimated at two hundred and thirty square miles. Like the Vancouver Island measures, they are cretaceous in age and bituminous in quality.

The Crow's Nest Pass Coal Company operates collieries at Coal Creek, Michel and Morrissey—at the last-mentioned for only part of the year. The coal mined amounted to 720,449 tons, of which about half was sold as coal and half made into coke at the Fernie ovens.

The St. Eugene mine at Moyie is the largest silver-lead mine in Canada, and the second largest on the American continent. During the past year 152,827 tons of ore were mined, and three hundred and twenty-five men employed. The ore body is very extensive. It outcrops on the mountain top, and again is tapped by a shaft sunk at the edge of Moyie Lake. Eight miles of underground work have been done.

In 1902 this mine was shut down, except for a little development work that was carried on. The concentrating plant lay rusting. But the bounty on lead accorded by the Dominion stimulated the St. Eugene into activity. Its concentrates are shipped to the Trail smelter, which belongs to the same company—the Consolidated Mining & Smelting Company of Canada.

The Sullivan mine, situated two and one-half miles north of Kimberley, shipped 24,385 tons of galena to the Marysville smelter, which has a daily capacity of one hundred and twenty-five tons. Forty-one men were employed. Profits amounted to about \$100,000.

The North Star mine was worked to the comparatively limited extent of 2,824 tons. Twelve men employed.

In addition to coal and galena are the copper deposits of St. Mary's district, iron at Bull River and petroleum in the Flathead.

In the Flathead, fifteen seepages are known to exist, and oil indications are visible along the creeks. The oil is of a high grade, and free from sulphur. Roads are being built, and drilling machinery and a portable sawmill are being set up. In boring, care must be taken to avoid the overthrust of Cambrian or cretaceous stratum, which forms a thickness of five to six thousand feet.

WEST KOOTENAY DISTRICT.

Including Ainsworth, Slocan, Slocan City, Nelson, Trail Creek, Arrow Lake, Trout Lake, Lardeau and Revelstoke divisions. Output \$4,548,253.

In the Ainsworth camp good progress was made, the output being two and a half times greater than last year. The largest producer was the Blue Bell, which shipped 9,128 tons. Until August, shipments were made to the Pilot Bay concentrator. Then these were suspended in contemplation of the erection of a concentrator at the mine. Twenty-nine men were employed.

The Cork mine worked thirty men and shipped 7,970 tons of silver-lead ore.

Mining in the Slocan was inactive. Neither the bounty on lead nor the high market prices of lead and silver sufficed to stimulate the industry when a duty was imposed upon zinc going into the United States.

The ores of the Slocan occur either as galena in a slate formation or as argentiferous quartz veins in a granite formation.

Of the sixteen mines shipping over one hundred tons of ore the largest producer was the Payne, which shipped 8,650 tons. The Payne, as well as many of the other mines, is successfully worked under the lease system.

A discovery of stibnite, running sixty-five per cent. antimony, was made. The ore is to be sent to Scotland for treatment.

The Hall Mining & Smelting Company's smelter at Nelson, originally built for the treatment of Slocan ores, in 1906 showed a deficit, though the volume of business transacted had increased. Notwithstanding this, the plant has been improved by the installation of the Huntington-Heberlein process for desulphurising galena ores, and smelter charges have been reduced from fifteen to twelve dollars per ton.

In the Lardeau, the Eva produced 9,028 tons of free-milling ore, with which it supplied its ten-stamp mill.

ROSSLAND CAMP.

The principal mines on Red Mountain are Le Roi, Le Roi No. 2, Centre Star and War Eagle.

The Le Roi, with a force of two hundred and forty-seven men, produced 127,161 tons of ore from the different levels to a depth of 1,350 feet. In February, 1906, the first dividend in five years was declared.

In Le Roi No. 2, a continuous ore-shoot has been proved twelve hundred feet in length. The value of the ore is \$40 per ton, and mining expenses \$4.22 per ton.

The War Eagle, Centre Star and Iron Mask are the property of the Consolidated Mining & Smelting Company of Canada, Limited, which also operates the St. Eugene and lesser mines and the Trail smelter. At the Centre Star the shaft is one thousand eight hundred feet deep. Here a new and powerful hoist has been installed for handling not only the ore of the Centre Star, but also of the War Eagle and Iron Mask. Underground development work aggregates fourteen miles. The total production of these mines since 1894 has been 342,684 tons, valued at \$12,831,033. In 1906 they produced 114,853 tons, with a force of three hundred and fifty-five men.

The Trail smelter possesses a complete smelting, refining and industrial plant. It consists of six copper furnaces, two lead stacks, a lead refinery, gold and silver refinery, a copper sulphate manufactory, and lead pipe works. So the products are pure lead, pig-lead, lead pipe, copperas, antimony and refined gold and silver. Large quantities of lead are shipped to Montreal to be corroded into paint lead of a high order. In 1906, 257,000 tons of ore were smelted.

LILLOOET DISTRICT.

Including Lillooet and Clinton divisions. Output \$20,314.

The output, consisting of eight hundred and forty ounces of placer gold and one hundred and seventy ounces lode gold, shows a decrease of \$12,000 over last year. This is accounted for by the cessation of the Iowa-Lillooet Dredging Company, which closed down on account of internal trouble and litigation, and is now in liquidation.

YALE DISTRICT.

Including Grand Forks, Greenwood, Osoyoos, Similkameen, Yale, Nicola, Kamloops and Ashcroft divisions. Output \$8,674,710.

Yale district stands first in the Province, both in tonnage and values. This success is due to the Boundary, where 1,182,517 tons of ore produced \$8,593,409.

The Boundary ores usually occur in irregular masses, being impregnations of volcanic rocks by vapors and mineral solutions. The walls are usually ill-defined, except when the ore body is in contact with limestone. Average ores contain about twenty-six pounds of copper to the ton of rock, and gold and silver values amounting to \$1.50. Of that amount the smelters recover twenty-one to twenty-three pounds of copper, and practically all the gold and silver. Diamond drills are largely used in prospecting.

The most powerful companies are the Granby Consolidated Mining, Smelting & Power Company, the British Columbia Copper Company, and the Denora Copper Company. Each of these has its own smelter.

The Granby Company had a most successful year, being enabled to pay a twelve per cent. dividend in four instalments of \$405,000 each.

The mines are situated at Phoenix and the smelter at Grand Forks, about fifteen miles apart. Two railways, Canadian Pacific and Great Northern, are the ore-carriers. At the mines 801,406 tons of ore were mined and four hundred and seventy-five men employed. The principal working shaft, the Victoria, is down four hundred feet. The smelter contains eight furnaces, and has a capacity of two thousand seven hundred tons per day.

The British Columbia Copper Company works the Mother Lode group of mines in the Deadwood camp. The main working shaft, of four compartments, is four hundred and seventy-five feet deep.

From the Mother Lode mine 101,173 tons of ore were mined and one hundred and forty-one men were employed. Value of ore \$4.50 to \$6 per ton. The Emma produced 12,304 tons; thirty men employed. The B. C. and Oro Denora together produced 10,468 tons; twenty-four men employed.

The smelter of this company is at Greenwood. During the year it has been completely remodelled. The old furnaces were discarded and replaced by three new furnaces, which have a com-

lined capacity for treating about two thousand tons of ore daily. In the converter building matte is blown into blister copper, ninety-eight per cent. fine. Electric power is derived from Bonnington Falls.

The Dominion Copper Company derives most of its ore from its Phoenix mines—Brooklyn, Stemwinder and Idaho. These contributed 142,970 tons; one hundred and fifty-five men employed.

It also worked the Rawhide mine in the Wellington camp; output 25,508 tons; men, forty-five. And the Sunset mine in Deadwood camp; output 41,112 tons; men, twenty-three.

The Boundary Falls smelter, owned by this company, has been improved and its capacity increased to about one thousand five hundred tons. Mines and smelter are run by electricity.

In Nicola, two coal companies were getting their plants in readiness. One of these, the Nicola Valley Coal & Coke Company, is ready for shipping.

DETAIL PRODUCTION.

Total value of production\$24,980,546

PRODUCTION ACCORDING TO MINERALS.

Minerals.	Quantity	Value.
Copper (lbs.)	42,990,488	\$ 8,288,565
Gold, placer	948,400
Gold, lode (oz.)	224,027	4,630,639
Coal (tons)	1,517,303	4,551,909
Lead (lbs.)	52,408,217	2,667,578
Silver (oz.)	2,990,262	1,897,320
Coke (tons)	199,227	996,135
Other materials	1,000,000

\$24,980,546

PRODUCTION ACCORDING TO DISTRICTS.

Yale	\$ 8,779,711
Coast	5,388,146
East Kootenay	5,171,024
West Kootenay	4,660,352
Cassiar	555,599
Cariboo	405,400
Lillooet	20,314

\$24,980,546

NUMBER OF MEN EMPLOYED.

Placer Mining (approximate)	1,500
Coal	4,805
Lode	3,983
Smelting	1,400

Total tonnage, including coal 3,862,948 tons

MINES SHIPPING OVER 5,000 TONS.

District.	Mining Division.	Name of Mine.	Tons.	Men Em- ployed.
Cassiar	Skeena	Maple Bay	5,390	68
Coast	Nanaimo	Marble Bay	104,742	63
"	Victoria	Tyce	23,833	122
"	N. Westminster.	Britannia	83,880	175
E. Kootenay ..	Fort Steele	Sullivan	24,385	41
"	"	St. Eugene	152,827	325
W. Kootenay ..	Trail	Le Roi	127,161	247
"	"	Le Roi No. 2	32,361	95
"	"	Centre Star, War Eagle	114,853	355
"	Lardeau	Eva	7,950	28
"	Musworth	Blue Bell	9,028	20
"	"	Cork	7,970	30
"	Nelson	La Plata	8,875	65
"	"	2nd Relief	7,000	30
"	"	Queen	7,035	21
"	"	Ymir	15,000	70
"	Slocan	Payne	8,650	21
Yale	Grand Forks ..	Granby	801,406	475
"	Greenwood	Rawhide	25,568	45
"	and Osoyoos ..	Idaho, Stenwinder and Brooklyn ..	142,970	155
"	"	Sunset	41,112	23
"	"	Snowshoe	6,360	50
"	"	Emma	12,304	30
"	"	Mother Lode	101,173	141
"	"	Oro Denoro	8,980	12

APPROXIMATE AMOUNT OF ORE SMELTED IN EACH SMELTER.

	Tons.
Granby	840,000
Trail	257,500
Boundary Falls	218,811
British Columbia Copper Company.....	121,031

ALASKAN ORES.

Crofton	65,000
Nelson	37,767
Tyce	20,110
Marysville	25,000

COAL AND COKE OUTPUT.

	Vanc. I.	Crow's Nest.	Total.
Coal sold in Canada	531,106	150,793	681,899
Coal exported	448,966	230,863	679,829
Totals	980,072	381,656	1,361,728

COAL AND COKE OUTPUT. — Continued.

	Yam. I.	Crow's Nest	Coal
Coke sold in Canada	14,547	134,040	149,103
Coke exported	8,304	53,400	61,704
Totals	22,851	188,040	210,807

PRACTICAL SUGGESTIONS FOR DEVELOPING AND IN-
CREASING THE INDUSTRY.

No one doubts that British Columbia is possessed of valuable mineral deposits; but, to be worth anything, these must be located and developed.

The success of the mining industry depends, then, upon three factors: prospectors, capital and labour. Intelligent prospectors are needed to find the outcrops, and capital is required to work them. But before capital will become interested, it must be satisfied not only with the value of the prospect, but that sufficient labour can be obtained.

To advance the mineral industry is tantamount to increasing immigration. For a greater number of people in British Columbia will mean more of those who instinctively take to the mountains and woods, abhorring city life; more provincial wealth to be invested—and there is no capital so desirable; more labourers, and an increased home market.

Constant advertising promotes success in the business world—then why not in British Columbia immigration? No better advertisement can be found than the present flourishing state of the mining industry. But people of other countries cannot know of this unless means are taken to place information before them.

Mining bulletins, pleasingly illustrated, and containing few but striking facts regarding mining, would be as welcome received as the recent fruit bulletin published by the Bureau of Information. Such bulletins should be distributed throughout the mining districts of England, Wales, Scotland, and the United States.

A BONUS ON DISCOVERIES.

Every encouragement should be given the prospector. His path at best is hard. The Government, even in its own interest, should make things as easy as possible for him.

If a man discovers gold in a creek, under the Placer Act, all he may get out of it is one claim, five hundred feet up and down stream. Suppose that creek produces half a million or a million dollars, is it not right that the discoverer should receive a certain commission?

Likewise in mineral locations. Under the Mineral Act, if a man makes a discovery he may stake a claim one thousand five hundred feet square. Those who follow in his steps may have just as much. If the Government would give the discoverer, who by virtue of his discovery gives rise to a new mineral camp, a free claim for

making his discovery, such a generous policy would soon have the effect of increasing exploration.

Prospectors may also be encouraged by the cutting of trails and building of roads.

When a discovery giving promise of future stakings is made, the Government should immediately run a traverse along the principal valley or stream, to serve as a base line for subsequent surveys. Thus would much litigation be obviated.

CROWN GRANTS.

According to the Mineral Act, claims upon which \$500 worth of assessment work has been recorded may be Crown-granted, upon payment of \$25. The Crown grant gives an absolute and perpetual title.

As no proviso is contained therein for forfeiture in case of non-development, mining lands may be cheaply locked up for an indefinite time. Such should not be.

In every Crown grant issued by the Government there should be a provision of forfeiture at the end of five years, unless a bona fide development had taken place.

Miners commonly make the mistake of holding too many claims. They do a little scratching on them sufficient for assessment purposes, and that is all. Instead, if they would select one or two of the most promising claims and concentrate their energy in developing them, they would stand a better chance of disposing of them to advantage.

It is desirable that more British capital should be introduced. The British Columbia mines boom of 1896 frightened the English market, and time is needed for it to become reassured.

In the meantime, American investors are taking up the likely prospects. Amongst the heaviest of these are the Messrs. Guggenheim and associates, who have unlimited capital at their disposal, and who have invested largely in the Boundary, Cariboo and Atlin. These Americans deal in mining properties on a business—not a speculative—basis. Before making any purchase they send their experts, the keenest of mining engineers, to make an examination of the property. The experts are unhampered in the amount of money they spend in prospecting, and may examine fifty claims before they make a purchase. But when they do buy, they get full value for their money. If the same course were followed by Old Country capitalists there would be few bad investments, and we should hear less of the "wild-cats" of British Columbia.

Economical management has been the source of success of the Granby Company. It is absolutely essential if mines are to pay dividends. Especially in the case of foreign companies, there are more men on the pay-roll than are necessary. Officers are overstocked with friends of directors. Unless all leaks are stopped, mining cannot be expected to succeed.

Over-capitalisation has been the millstone round the neck of too many companies. Something should be done to restrict it, and

keep the capitalisation proportionate to the money invested. There are many properties that would pay interest on the money actually expended, but are losing propositions when stocked at inordinate values.

Too often men expect bountiful interest on the money they invest in mines, interest far in excess of that with which they would be satisfied in any other line of business.

Railways are much needed in some sections, especially Cariboo, where machinery has to be freighted in at seven cents a pound.

Although there are valuable deposits of iron at Texada, Port Rupert, Barclay and Quatsino Sounds, they have not been worked because there was no home market, and competition with the Eastern product at Sault Ste. Marie or Sydney, N. S., was out of the question. But the Federal bounty of \$2.10 per ton on pig iron manufactured from Canadian ore by the process of electrical smelting, and the export duty of \$2 per ton which the British Columbia Government has intimated is its intention to place on crude iron ore, should have a desirable effect.

The further Federal bounty of \$1.65 per ton on steel ingots, together with the market for steel rails created by railway development, should lead to the establishment of steel works and rolling mills on the British Columbia coast.

The establishment of a Provincial School of Mines would have a far-reaching effect. A well-equipped institution, presided over by the most clever and practical mining experts, could do more than anything else towards uplifting the industry and developing an intelligent body of prospectors and mine men.

How could it be brought within the reach of miners? By arranging for night classes and short courses. By the Government, mine-owners, labour unions and private individuals offering scholarships throughout the Province. These scholarships might be of a moderate cash value, with free tuition at the School of Mines. Not only would successful candidates be enabled to take a course in mining, but the competitors who fell short of the mark would be sufficiently interested to make an effort to continue their studies at their own expense. Many a man would be glad to exchange his Correspondence Course of study, through which he is trying to improve himself, for practical instruction in a British Columbia mining school.

The research work done by the professors in holiday time would be of inestimable advantage. To appreciate this, consider how much was done for the Province by the late Dr. G. M. Dawson. Truly he was a pathfinder!



THE PROBLEM OF CAPITAL —AND LABOUR—

By L. V. MAKOVSKI

TO attempt in a limited number of words to clearly answer these questions, each of which covers a vast field of social, economical and political study, would necessitate an heroic suppression of all theoretical matter and a stern adherence to technical detail. Yet entire suppression of theory would leave the answers mere skeletons, with which to demonstrate to an expectant audience the very slight foundation upon which so much social legislation is based. The bones of the skeleton might be named, their measurements given and their various portions fitted, but to cover them with flesh and endow them with life is seemingly as yet beyond the scope of practical politics and confined to the philosopher and dreamer.

What practical course can be adopted to harmonise Labour and Capital? In the answer to that question lies the solution of the great social and economic problem of the twentieth century. To adopt a practical course, a system of detailed investigation into the conditions governing each separate combination of those interests would have to be undertaken, and each combination would require a distinct and separate method. Therein lies the difficulty of solution. For not only are the interests of one often antagonistic to those of another—"What is one man's food is another man's poison" being as true of industrial as of human life—but in British Columbia, owing to the lack of permanent and trained Government officials whose departments are entirely free from political issues, such an investigation is, under present circumstances, impossible, and would merely serve to fill up the time of a few well-intentioned gentlemen, whose labours when completed would probably be consigned to the pigeon holes of oblivion. But that labour and capital should work harmoniously together, so that each may perform their true functions and give of their best to the good of the world, is, after all, only carrying out the rules of Nature. They are dependent on and necessary to each other, and yet throughout the world are either at war with or in a state of armed neutrality to each other. That they should give up their squabbling and settle down to domestic felicity is the desire of all, except those who immediately profit by their infelicity. But, unfortunately, labour is the easiest victim to that insidious and dangerous poison, the theory of "complete equality." God in His wisdom never made two people alike, or endowed them with exactly the same character or gifts; and it is because this fact is lost sight of that in striving after the

betterment of conditions governing labour, unionism has to a great extent become an ally of socialism. For dream and theorise as we will, it must be confessed that the equality of all, when applied to labour, be it that of the agriculturist, artisan or clerk, is misleading and, worse still, enervating. A fair wage is a very different thing to an equal wage, and though no man can deny the good work unionism of labour has accomplished, capital, when it stands face to face with the problem of having to pay a high wage to good and bad workmen alike, must either refuse rights it would be willing to grant to those whose work it is profitable to employ, or else seek some less speculative investment.

Another difficulty in harmonising capital and labour lies in the fact that a great deal of labour is casual; that is, it drifts from one form of work to another, seeking the best wage. The capitalist or employer of casual labour is always in a predicament, as he has to take and pay for what labour he can get, and it seems to be the avowed intention of labour leaders, especially in British Columbia, to as far as lies within their power to keep the labour market in a condition of starvation.

To harmonise two despotic influences, which, though dependent on each other, are nevertheless continually at war, some new diplomacy must be sought. That labour as an organised body is capable of extreme despotism is no more to be denied than that capital, unfettered by law, can be, in the hands of unscrupulous men, a terrible tyranny. That they should work together, each for the good of the other, is only possible when each recognises the fair demands of the other. Labour, unfortunately, does not distinguish between the different circumstances surrounding different commercial enterprises. Because one mine can give shorter hours than another, owing to better facilities for its work, it is not necessary to conclude that all mines can profitably give such hours. The refusal of labour to recognise such circumstances, and the attempts to keep the supply of labour far below the demand, is a fruitful cause for the cold shoulder the large industrial investors turn to propositions emanating from British Columbia. Therefore the only practical course that is open to harmonise these two interests is by educating labour to the needs of capital, just as capital has been educated to the needs of labour. Perhaps the best lines on which such education can be given is that adopted by the National Cash Register Company, who have an annual conference of their employees, at which all questions relating to the well-being of the company can be discussed. Most industrial undertakings would find it advantageous to hold such meetings, at which all questions relating to their industry could be amicably discussed. The employer could frankly state the conditions under which his business was being carried on, point to competitive prices, and give reasons for any actions on his part which had affected his employees since their last meeting. This would at once lead to a better understanding between the capitalist and his labour. At present, when trouble threatens between employer and employed, the union steps in and

sends a delegate to the employer. This delegate is often a man of no education, and yet is entrusted with a mission requiring high diplomacy. Is it to be wondered that the employer resents such interference, and determines only to yield the demands made if forced to do so? Whereas if his employees requested that a meeting might be held to discuss the position, and from that meeting a committee of employers and employee could be formed to find a satisfactory solution of the difficulty, the employer would feel that he was being fairly treated and the employees would realise that their interests were in safe hands.

Such a course is perfectly practicable, but it would require a great deal of education to convince labour that it is so. In the first place, it would do away with the labour delegate's occupation and strike a blow at the power of unionism. For once the employee recognises that his employer is directly approachable, he himself would be the first to resent interference from the outside.

This leads naturally to the second question. Is co-operation feasible?

The very fact of mutual interests being amicably discussed would lead insensibly to co-operation. From the employee feeling he had a practical interest, it would be but a short step to wishing for a monetary interest in his employer's business. The more interest his employees shewed in his business the more interest the employer would be likely to give them. Co-operation is not a very difficult problem to solve where the employee looks on his "job" as a permanence, but where casual labour is employed, as, for instance, stevedoring, it is infinitely more difficult. But even in stevedoring it is not an impossibility. Imagine for one moment a ship being loaded by men who were co-operating in the profits resulting therefrom, and whose scale of wages was arranged, not by an arbitrary decision of either employer or employed, but according to the actual cost of loading, plus a percentage of the profit, that percentage to be increased or decreased in proportion to the profit. What would be the result? Is it not obvious that it would be to every man's interest to work harmoniously together, and to get the work done as soon as possible, so as to increase the proportion of their profits? It might seem complicated at first, but a little calculation would make it a simple matter. Co-operation would undoubtedly solve much of the present labour difficulty. It gives a man a stake in his work. It could be supplied in varying forms to almost any trade. A system of bonuses is not at all on the same level as true co-operation, unless the bonuses given are in direct ratio to the profits earned. Perhaps the finest example of co-operation and its effects is shown by the South Metropolitan Gas Company, in London, England, where the workmen not only have a direct share in the profits earned, but are represented on the board by directors selected from among themselves. It would take too much space in a brief paper such as this to go into the details of this system, but it was brought into being by Sir George Livesay to settle a great strike, and has proved most successful. Sir George Livesay published a detailed pamphlet

on co-operation, which should be carefully studied by anyone interested in its working.

As it has been pointed out, each separate trade or business would necessitate a different scheme of co-operation. It would appear a great problem to introduce a system of co-operation in a lumber mill, for instance. But such a problem, though difficult, would not be impossible of solution. It might take a considerable time to work it out successfully, but the increased efficiency of the mill, and the immunity it would enjoy from labour complications, would amply repay the time and trouble taken. It is a matter of study and patience on the part of the employer, and of an honest effort on the part of the employee. Let labour as an organised body turn its attention towards this problem of co-operation, and a great deal of the bitterness at present apparent between labour and capital would disappear naturally. Broadly speaking, co-operation should be based on:

1. A certain percentage of the net profits earned by the business.
2. The sum thus set aside should be divided among the employees.
 - (a) In ratio to the wages earned by each employee.
 - (b) Plus an extra percentage according to the length of service.
3. The direct representation of the employees in the management of the business.

With co-operation fairly established in a business, such questions as insurance (life, accident or sickness, as in Germany) might be left to the judgment of the employees themselves. The funds now subscribed to unions might be diverted to the more profitable form of insurance, the percentage of subscription to each being a matter of choice. That some form of insurance is advantageous is undeniable, especially life or sickness (accident is generally looked after by the employer, his liability being strictly defined by law), and with the disappearance of the present strained relations between labour and capital anything tending to increase the safety and general well-being of the life of labour would naturally be well received by the men, because of the knowledge that their well-being was assured, and by the corporations, because of the increased efficiency of their labour.

Many things have contributed toward the great unrest and the strained relations now existing between labour and capital on the American continent, and the difficulty is that it is impossible to place a finger on any special act and diagnose the disease which has caused the irritation. It has been a succession of small ailments which have poisoned the health of the whole body. But at the same time it might be possible to suggest the reasons which have led naturally to the existing suspicions and distrust between labour and capital.

In the first place, it must be remembered that thousands of emigrants with only the rudiments of education, and dreaming of a land of less work and pay than that to them under their home conditions seems a fortune, are pouring into the continent every year. Their political education has largely been the mere clap-trap of socialism. A rude awakening comes to them when they find that the increase in their cost of living is in proportion to the increased wages, and that immense aggregations of capital are making it impossible to set up small independent businesses of their own. They find that instead of a political tyranny they are faced with a financial despotism. The very law of the land is the law of the dollar, the whole of society is based on the possession of wealth, and their crude education and the tenets of socialism with which their minds are permeated, render them particularly susceptible to the "yellow" and degraded newspapers. The natural result is that their outlook on social or economic conditions is twisted, and they become a poison circulating through the whole of the body of labour on the continent.

Secondly, the exposures in the magazines and papers of the criminal means by which enormous wealth has been seized by the few at the expense of the nation as a whole, and the immunity from punishment of the real criminals. The feeling that because a man can command millions he can defy the law. A revolution of this order of things may be taking place, but there is no doubt that the very exposure aggravates the sore.

Thirdly, the prostitution of politics. The system of patronage, whereby any one man can appoint to Government positions his own proteges. The lack of permanent officials in all Government departments. The dependence of every man on his political sponsor, the uncertainty of the tenure of his position rendering it incumbent on him to make hay while the sun shines, and the consequent disrespect of both labour and capital for the Government of the country.

Fourthly, the manner in which the necessaries of life are in the hands of combinations of capital, or subject to wild speculation.

Fifthly, the knowledge of power in the hands of men unused to it, and the desire to shew the same. This cause on being closely analysed would prove to be one of the most important factors in the situation.

Sixthly, the possession of immense wealth by individuals who have no conception of its responsibilities and the publicity given to their every movement. The continued display of this lack of responsibility, and its very publicity, tars every capitalist with the same brush.

Seventhly, the undeniable feeling that both capital and labour are each trying to take advantage of the other, instead of attempting to work harmoniously.

Eighthly, labour receiving no share in the wealth its toil produces.

The various sores might thus be endlessly exposed to view, but enough has been said to shew that the causes of the unrest and

strained relations between capital and labour are worthy of united consideration.

Having dealt broadly with the questions propounded and endeavored to show how harmony might be introduced:

1. By giving employees more personal interest in their work by consulting with them regularly;
2. By co-operation;
3. By capital recognising its moral responsibilities, the lack of which is the foundation for much of the present unrest;
4. By the establishment of a permanent civil service rendering it impossible for the capitalist with money gained by the prostitution of politics to prostitute the public service;
5. By establishing a higher moral standard than that of gold.

A brief glance must be taken at the problem in British Columbia.

Everything that has been said above applies to this Province as much as to the American continent, except that being in its infancy it has a better chance to profit by the experience of others. One particular phase has not been touched on, viz., that of alien labour, as the questions propounded have no actual bearing on the subject. Nevertheless as the industry of British Columbia is more specially brought to notice under other headings than that of capital and labour, it is impossible to close this paper without a brief reference to this phase.

It is needless here to enter into all the arguments for and against the Chinese Exclusion Act, the point is whether it is possible for capital to favourably consider investments in industrial undertakings in British Columbia under present labour conditions. Railways must be built, land must be cleared and cultivated, roads made and produce marketed. The wealth of the Province lies in its raw material. Cheaper labour must be to the advantage of the Province. The cost of living must be kept at a normal level.

To insure this, would it not be possible to employ cheaper labour in certain industries and allow such labour free entry so long as it were employed in those industries and only in those industries? If the Chinaman is making and saving sufficient money to send \$3,000,000 annually to China, the employment of that labour must be able to pay \$3,000,000 annually as interest on the capital employed. In other words, there must be at least \$30,000,000 employed profitably in the country. And consequently the more the Chinaman sends to China the more capital is being employed profitably. Might not a solution of the problem be worked out somewhat on these lines?

British Columbia is pregnant with magnificent opportunities. British Columbians have an opportunity to shew the world what labour working hand-in-hand with capital can do. Will they rise to the opportunity, or will they drift on the tide of present prosperity to a shore strewn with the wrecks of stillborn industries?

