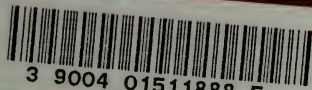
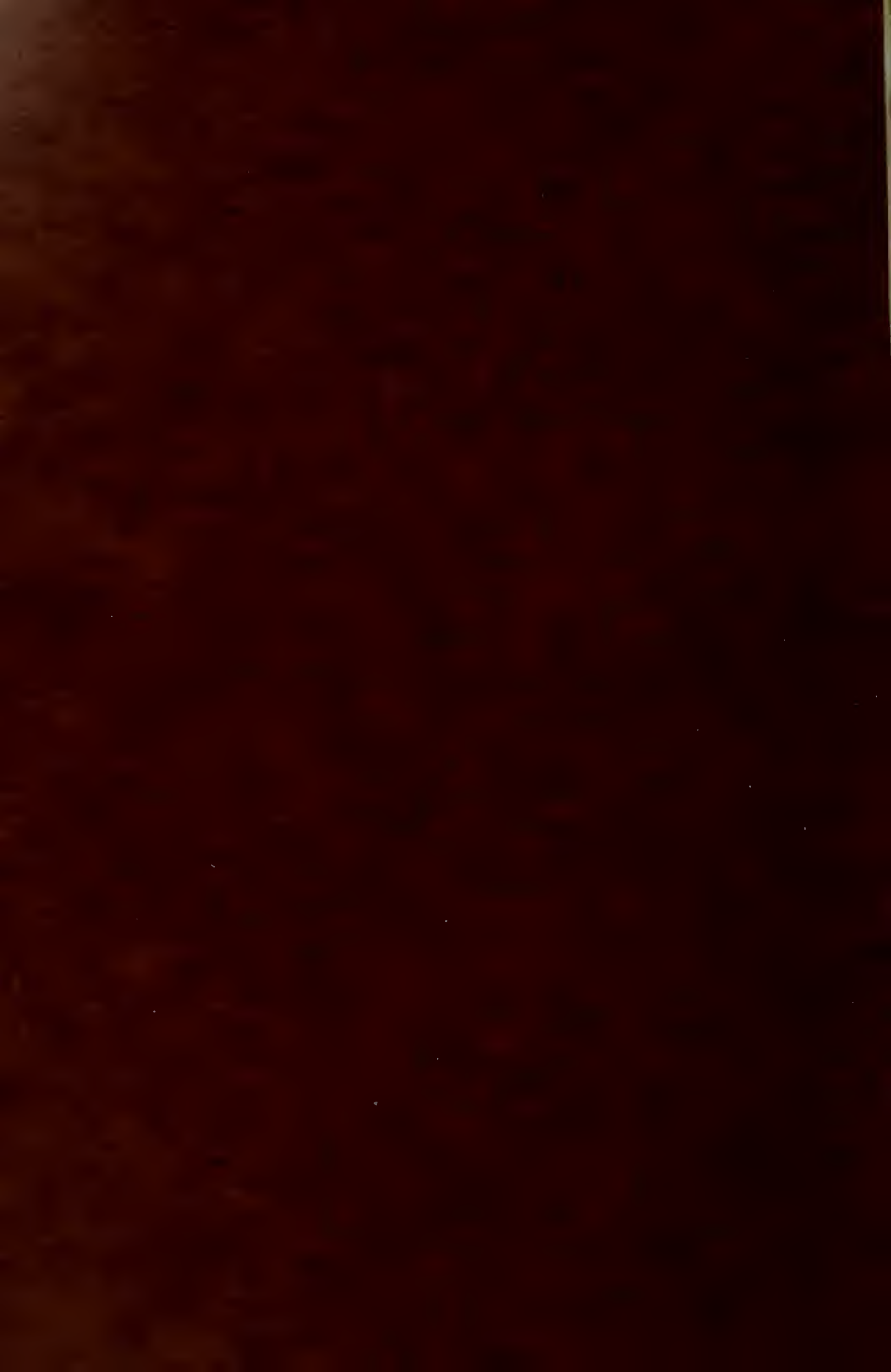


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OBSERVATIONS
RELATING TO
THE HARD WOODS OF CANADA
SUITABLE FOR
CARRIAGE BUILDING IN ENGLAND.

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THE HARD WOODS OF CANADA

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CARRIAGE BUILDING IN ENGLAND.

MR. GEORGE NORGATE HOOPER, F.R.G.S., F.S.S.,

PRESIDENT OF THE INSTITUTE OF BRITISH CARRIAGE MANUFACTURERS, AND ITS
REPRESENTATIVE IN THE COUNCIL OF THE LONDON CHAMBER OF COMMERCE,

113 VICTORIA, ST., LONDON, ENGLAND, 1886.

SIR,—It may be asked what induced me to make a journey to Canada when I might have enjoyed a quiet holiday with change of scene, a pleasant rest, and far less fatigue in some nearer country. To such a question I would reply, the motives were somewhat mixed. I had this year made the acquaintance of many colonists through the medium of the Colonial and Indian Exhibition, as also through the congresses, conferences and entertainments of the London Chamber of Commerce; I had besides promised one of my sons an opportunity of visiting Canada before he settled down in England as a Land Agent, and so had opened up a sort of sympathy with the colony and its people. I had also received many invitations from Americans to visit them, and in addition, believed that I might acquire some useful knowledge and perhaps be able in some slight degree to assist in promoting a friendly intercourse, and developing trade between the Mother Country and her nearest large colony. Having these views, hopes, and intentions, I left England for a few weeks with a definite plan sketched out, but at the same time one which would have to be enlarged, curtailed or altered according to circumstances.

Provided with letters of introduction from Sir Charles Tupper, High Commissioner of Canada in London, England, to Professor Saunders, of London, Canada, from Professor Macoun to H. B. Small, Esqre., of Ottawa, and from the London Chamber of Commerce to the Secretaries of the Boards of Trade at Toronto, Ottawa, Montreal, Quebec and Halifax, I was afforded opportunities of procuring information under a variety of heads.

My time, however, being limited, others moving about besides myself, some being away, and in one case too distant, and entirely out of reach under the conditions of my journey, and again the time of my calling being in some cases inopportune, my credentials were not of such assistance, as under more favourable conditions they might have been.

It did not fall to my lot to see many large trees, such as I had been in the habit of seeing in England, except in the public square of the pretty town of New Haven in the United States. I ought not to say that I was disappointed, as in the States and Canada, for many years past, the settlers and farmers have looked upon timber trees as their natural enemies, and have got rid of them by every means in their power. This wholesale destruction has been carried on to such an extent that good timber trees of commercial value can now only be found in places remote from civilization; that is to say in the primeval forests of the Dominion. Woods that we now import from our colonies and many foreign countries are really from wild or naturally grown trees that have matured without care or cultivation. Much of the timber I have seen growing in European and Canadian forests is of so inferior a quality as to be fit only for fuel, for which purpose a large proportion of it is really grown in various parts of Europe. Some of our British timber trees are partially cultivated and cared for; nowhere have I seen so good and fine an average of timber and ornamental trees as in England; they are here planted in parks, hedge-rows and on farms, sometimes singly, sometimes in well defined rows, sometimes in groups; but English trees are rarely planted in forests.

Planted in this open manner, they are fully under the influence of light and sunshine, storm and rain, and have the benefit of plenty of fresh air; they spread their limbs, they grow slowly, and their wood becomes hard and tough; on the other hand, trees which grow close together in forests get little sunshine and light on their trunks, little fresh air or the bracing influence of wind, rain, and storm.

I contend that with scientific forestry, timber trees can be cultivated and thereby improved in quality just as by scientific and careful cultivation flowers, fruits, vegetables, and all garden and farm produce can be improved and rendered more excellent, and therefore more valuable; the partial success that has followed partial cultivation, encourages us to believe, nay, assures us, that with better methods, better results will be obtained: *Arte natura durabit.*

The establishment of high schools and elementary Schools of Forestry in England and her colonies would render excellent service to landowners, as also to manufacturers requiring sound and fine woods for their work; nor would the general public fail to reap a benefit, since it would get good articles of British growth and manufacture, thus keeping the money of the country to pay its own rents, rates and taxes, instead of sending it away to pay those of other people who now profit by our distinct negligence in not turning to good account our manifold resources.

Having carefully read the evidence given before the Committee of the House of Commons in 1885-86, as to the utility of Schools of Forestry, and the advantage of establishing one or more in England or Scotland, I was prepared to believe that great waste must occur, in forests and forest products, without careful and systematic management.

I was quite unprepared, however, to see and hear of wholesale and indiscriminate waste, probably as a sort of necessary preliminary sacrifice to the production of wood, but waste for all that. It may possibly be, that many trees left to themselves uncared for and uncultivated are fit for nothing but fuel; and it may be that trees fit only for cooking and warming purposes have their value, but all unnecessary waste should be avoided as a loss to the colony. It will be conceded at once that what may be a small individual loss, when multiplied ten thousand times, becomes a heavy national loss, and it is evident that the Dominion of Canada is at present suffering in this way.

In many parts the presence of trees seems to have been looked upon with as much dread as pestilence or famine, and to be got rid of at any cost, by felling, burning, blasting, rotting, &c.; and indeed there are districts which bear traces of a sort of hatred of trees, a hatred that leaves behind it scars, sores, and distortions on the face of the fair earth, tolerable to behold under the bright sun, but which must be gloomy, sad and forbidding in dull, rainy or foggy weather.

From the experience of Switzerland, Italy, France, Norway, England and other countries, it has become evident, and has been proved, that trees are the friends of man, and not enemies to be destroyed by any means, fair or foul; for they moderate and equalize the rainfall, the temperature, the climate, and promote the even and safe flow of rivers. They protect crops and cattle from the keenness and violence of winds and tempests, and they also afford shelter for those necessary birds and animals which keep insect life within due bounds, besides providing shade and shelter to man.

The stately trees of England grown in parks and hedge-rows, are not only ornamental in themselves, but give a character of beauty to the country, to say nothing of the fine quality of the timber contained in their massive trunks, to which storm, sunshine, and air have free access; their very beauty, however, is a snare for their owners unless they happen to be imbued with the mercantile spirit of the age and who are apt to delay, and do delay felling them while in their prime, especially if there are ladies in the case who venerate the sentimental old English ballad "Woodman Spare That Tree." This and other reasons combine to cause a large percentage of splendid timber trees to virtually rot as they stand, and ultimately to have no value whatever, not even realizing the cost of felling and removal.

Thus one passes from waste of one kind to a waste of a totally different kind in different countries, and under different conditions.

The evidence shows that by skilled management, such as would become general were good forest schools established and maintained—schools which would turn out skilled foresters of various grades—districts that cannot now be cultivated with profit as farms, might be made to afford good returns under timber, and probably fruit cultivation, with skilled and careful supervision.

If this has been put to the test by the intelligent foresight of the British Government in India, and will probably come to be considered an advantage in England, where timber cultivation has not hitherto been carried on under the best possible conditions for success, how much more would it advantage a country like Canada that abounds in immense natural forests, which could be rendered highly productive and more profitable under scientific management.

These volumes of evidence to which I have alluded, are well worthy of perusal by Statesmen, Members of Parliament, Government Officers, timber merchants, and all persons interested in the growth and improvement of trees as well as by those using wood in their manufactures; for it behoves the people of all countries to employ their national products with prudence and discretion, by avoiding waste and promoting their best possible use for the general welfare.

Finding that Professor Saunders, to whom was addressed my first letter of introduction, was away from his home in London, Ontario, I rapidly retraced my way sixty miles by railway to Chatham, and visited the hardwood mills of Messrs. VanAllen & Co. there. I found fine samples of straight grown oak, being cut and squared for special purposes; but there seemed a difficulty in disposing of the outside slabs and planks. These, if of good quality, might be sawn up into straight bars, packed in rough crates or cases, and sent to London, England, at small cost, for use in many trades; if sorted according to quality and marked in a manner to be understood both by the seller and buyer, they would readily sell at the carriage auctions, held fortnightly at the Baker Street Carriage Bazaar, London; if they could be sent sound and seasoned so much the better; but in any case the timber should be of good marketable quality, fit for manufacturing purposes, and well worth cost of packing and freight. American makers send seasoned spokes to the English market, which command a good price, and I see no reason why this waste timber, which is at present unproductive, should not in a similar manner find its way into our factories.

Various timber yards were visited at London, Chatham, Ottawa, Aylmer, Hull and New Edinburgh, but at only one (Mr. Cormier) at Aylmer, did I see hard and

tough timber suitable for carriage building purposes, although large quantities would have to be very carefully examined, selected and sorted by competent persons, in order to secure woods of fine and suitable quality.

Where elasticity is an essential quality required, the trees should be felled and sent to market in youth or middle age, when such quality is naturally in the wood, for it is with trees as it is with the human body, strength and elasticity must be sought in youth and middle age, not at full maturity or old age.

In order to economize weight, transport, freight, &c., it is desirable that trees should be converted into planks, as is done by timber merchants in England, who convert it where or very near to where it grows, so as to avoid all needless expenses for handling.

Moreover, after planking, great care should be taken to avoid another cause of loss by the timber splitting; for the harder and better the quality, so much greater is the chance of splitting in seasoning. Unless this is provided for and prevented, there may be a waste and loss of 20 per cent. when fully seasoned. Samples have been sent to Mr John Dyke, the Agent of the Canadian Government in Liverpool, to forward to the Department of Agriculture at Ottawa, showing how the various woods used in England by carriage builders are protected by wood clamps strongly nailed on the ends of all boards and planks one inch and upwards in thickness, and glued canvas smeared with strong paint on the thin boards used for panels.

With timber thus prepared and carefully handled in transport there need be little injury or waste, and thus the price can be so arranged as to be advantageous both to seller and buyer; every unnecessary waste should be avoided; and producer and consumer should be brought into close contact for their mutual advantage.

A system of second or artificial seasoning of timber seems to be very general in the United States in addition to the natural system of seasoning wood in the open air, thus—many factories I visited had hot rooms and drying closets and boxes in which seasoned converted wood is kept for several days previous to the framing being finally fastened together; this is probably a wise precaution for objects made of wood and intended to sustain the great heat of the summer in some of the States; but the system is carried a step further in some cases, as for instance at the great factory of the far-famed Pullman Railway Carriage Company, at Pullman, near Chicago. The timber there is exposed to the influence of steam for several days in closed chambers in order to wash out the sap; after a certain time, ascertained by experiment and experience, the steam is turned off and a current of hot air is blown in, the moisture being carried away by exhaust fans. It is contended by scientific experts that the sap of the wood is the part that sooner or later causes decay; containing as it does certain proportions of starch, sugar, or syrup according to the nature of the tree. Under conditions more or less favourable, this has a tendency to ferment, changes its character and decays, carrying the fibrous portions of the wood with it. If the steam and dry air really carry off the elements of decay and dissolution, and the cells that contained the sap close firmly, decay is deferred or becomes impossible. Be this as it may, the materials and workmanship of these choice and ingenious Pullman cars leave little to be desired, and if this American system has as much merit as its inventors and agents claim for it, a new era for workers in wood may have set in at which many will rejoice. The system has already been introduced into England, and before many years have elapsed we may possibly be able to hear the experience of those who have put it to the test.

At St. Catherines, in Canada, near Niagara, I found a prosperous branch of an American wheel manufacturing company, and it is probable, that with care and enterprise its business may be extended, and others established in the colony to meet the demand for good wheels in England.

While receiving the assistance of the Canadian Government through the courtesy of H. B. Small, Esq., of the Department of Agriculture and his colleagues at Ottawa, I was afforded opportunities of seeing the enterprise, industry, skill, and rapidity of

work of some of the chief timber merchants, lumbermen and their assistants in that hive of timber industry, Ottawa.

At one of the leading mills, great baulks of pine were neatly hauled up from the river near the Chaudière Falls, and almost solely by the water power judiciously applied from the falls, they were placed in position on the great saw benches, the process being watched and directed by a foreman, so situated that his range of vision took in all that was going on; and I was informed after seeing the sawing done, and the great mass of timber moved by machinery, apparently as easily as a skilled nurse turns over a tiny infant, that a great tree can be converted into joists cut to a given thickness and length at an average of eight minutes per log.

Of course there is much refuse from these logs, and men and lads have to be tolerably active in clearing this away in order to prevent impediments and delays.

The larger refuse is rapidly converted into water pails by very ingenious machinery. Such as is not available for pails is used by a neighbouring match manufactory, which works up the scraps, except the bark, and what adheres to it, and the saw dust.

But there is a leak, and a very troublesome one, notwithstanding all this use of refuse, much of which finds its way into the river, and becomes interlaced, forming shoals, banks and impediments that must inevitably cause difficulties and troubles hereafter, which will have to be dealt with by the municipality, or the Government.

Many years ago, some French merchants discovered a great waste going on in England. Immense quantities of coal dust could be had at the collieries almost for the asking; they secured it, mixing it with some simple compound, they had it compressed into brick-shaped lumps, and now use it largely for heating the furnaces of their steam engine boilers. I would suggest that the waste saw dust, chips, &c., instead of choking the flow of the river, be compressed, converted into charcoal and sent to England, where such fuel is valuable and necessary for many trades, especially for metal workers, and where its use might be indefinitely extended, could a regular abundant supply be relied on at moderate price.

Abundant and cheap charcoal in many parts of continental Europe enables the people to carry on many metal trades which cannot thrive without it. Canadian charcoal might relieve England of a difficulty, and help to establish and extend various profitable branches of trade now neglected for want of it.

England is at present largely dependent on Sweden for "Safety Matches," where a lower quality of wood seems to be utilized, possibly by the use of improved processes of splitting, and the Swedish matches have the further advantage of being "safety matches," lighting only by friction on the specially prepared surface of the boxes.

This seems a trade that should naturally fall to the lot of Canada, and it probably only requires a little tact, energy and perseverance to secure it.

I was in some parts of Canada surprised, almost indeed, painfully startled, at the apparent want of care to avoid the risk of setting fire to factories and workshops. In many cases I saw iron forges being worked on floors of wood, the ceilings also of wood. I had never in any part of England or of Europe seen such, to my mind, hazardous risks of house burning incurred. Invariably, when I remarked on this, the owner, occupier or manager smiled, or passed off the incident with the answer "no danger, we always do so." In England fortunately for us other ideas prevail. Let us hope that they will spread; that our Canadian friends will not need to keep harness continually slung over the backs of horses at their admirable fire engine stations, ready to run out at thirty second's notice, lest some neighbour or dear relative's life should be sacrificed by one of the most horrible forms of death.

Before I conclude let me cast a glance at the effect of good home social legislation. Driving through Hamilton, my coachman remarked: "Hamilton is a prosperous place, Sir—they are very strict about the liquor here; 'tis drink that makes and keeps a country poor."

I had an opportunity of reading an extract from the law forbidding gambling in Canadian railway carriages; could such a regulation be put in force in steamers crossing the Atlantic, many a well-to-do young emigrant or visitor might have the contents of his purse preserved for his own use instead of enriching the professional card sharps and gamblers, who haunt the Ocean lines and are constantly on the look out for young dupes.

Before concluding, I desire to express my cordial and grateful thanks to all those gentlemen who kindly assisted me with letters, information or advice.

Very imperfectly, I am aware, have I endeavoured to throw out a few ideas, hints, and suggestions that may possibly turn to the mutual advantage of colonists and the Mother Country; had time permitted I might have carried my enquiries and investigations further, but, if, as a wandering member of the Council of the London Chamber of Commerce, I am permitted to assist in promoting trade, and friendly and profitable intercourse between the capital of the Empire and a colony so loyal and patriotic as Canada, I shall not have made a journey of nearly 9,000 miles in six weeks entirely in vain.

I have the honour to be,

Sir,

Your obedient servant,

GEORGE N. HOOPER.

The Honourable
The Minister of Agriculture,
Ottawa.



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