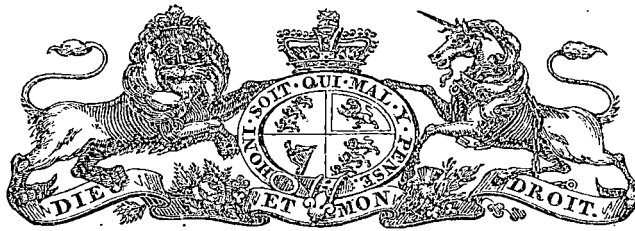


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PARLIAMENT OF TASMANIA.

1. TIMBER INDUSTRY OF TASMANIA : Report by Mr. E. A. Counsel, F.R.G.S., Surveyor-General and Secretary for Lands, Tasmania.
 2. FORESTS OF TASMANIA : THEIR CONSERVATION AND FUTURE MANAGEMENT : Report by Mr. George S. Perrin, F.L.S., F.R.G.S., F.R.H.S., Conservator of State Forests, Victoria.
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TIMBER INDUSTRY OF TASMANIA.

BY

E. A. COUNSEL, F.R.G.S.,

Surveyor-General and Secretary for Lands.

*Department of Lands and Surveys,
Surveyor-General's Office, Hobart, 3rd January, 1898.*

SIR,

IN obedience to your instructions, I have the honour to furnish a Report to you as follows upon the Timber industry of the Colony.

Recognising the great importance of the subject upon which you have been good enough to entrust me to report, and in the absence of any accurate and complete information upon which a reliable estimate may be made of the value and extent of the numerous timber-beds throughout the Island, it is with some diffidence that I venture to submit the succeeding observations for your consideration. It might have been well in the circumstances had the Government seen fit to call in an expert in Forestry to advise upon the whole question of our timbers and the laws relating to them; such advice would have been of great assistance at the present time in formulating a plan of operations for our future guidance. Possibly the services of a specialist in Forestry might be temporarily obtained from the Government of one of the neighbouring colonies for the duty.

In the absence, however, of such advice to guide me, I shall endeavour to make such practical observations as my past experience of the subject may suggest for your consideration.

TIMBERS OF COMMERCIAL VALUE.

It will not, I assume, be necessary for me to enter upon a description of the marketable-timbers of Tasmania, as they are not numerous, and are well known to those dealing in them, and to the public generally. The most favoured kinds are:—Blue Gum (*Eucalyptus globulus*), Stringybark (*E. obliqua*), Swamp Gum (*E. viminalis*), Peppermint (*E. amygdalina*), Blackwood (*Acacia melanoxylon*), Huon Pine (*Dacrydium franklinii*), King William Pine (*Athrotaxis cupressoides*), Celery-top Pine (*Phyllocladus rhomboidalis*), Red Pine (*Athrotaxis selaginoides*), and Myrtle (*Fagus cunninghami*).

The habitat of the blue gum is along the eastern portion of the Island, extending almost through its entire length. The stringybark is pretty evenly distributed, but is little met with on the West Coast, and seldom covers large areas. It is principally confined to rough and poor-country. Swamp gum is plentiful in Kent, Buckingham, Dorset, and parts of Wellington and Devon. Blackwood is generally confined to moist lands, but is in no place very plentiful. Huon pine was at one time abundant along the River Huon. The most accessible areas have been long since worked out, but young plants are plentiful there and also down the valley of the River Gordon and tributaries; whilst the King William pine is most plentiful along the western fall of the Lake Country, towards and upon portions of the Western Silver Fields.

To make a moderately accurate estimate of the extent of various timber areas would need a personal examination of them. Probably one-fourth of the Island, or 4,000,000 acres, is composed of forest timber of more or less value.

FOREST RESERVES.

The Forest Reserves consist of 33 blocks, embracing a total area of 55,300 acres, 30,600 which have been so proclaimed by the Governor in Council, but may be altered or abolished at any time by the issue of a fresh proclamation, and 12 blocks have been merely reserved by departmental order. The most of these combined areas have been reserved for years. They were not always judiciously chosen; some have no timber on them of commercial value.

TIMBER INDUSTRY NEGLECTED.

It is strange why the timber industry, which should have been one of the country's principal revenue-producing assets almost from the beginning, should have been so utterly neglected in the past, and that the extensive forests growing right out to the shipping ports, particularly along the D'Entrecasteaux Channel and the North Coast, should have been "worked out" for miles and miles inland without practically any direct advantage to the Treasury. Indirectly the country has to some extent been recompensed in the case of the fine agricultural settlements along the North Coast, in the opening up of which the timber trade proved such an important factor, the discovery of gold in Victoria, in 1851, where timber was scarce and of inferior quality, having created a wonderful demand for Tasmanian timbers at exceptionally high rates.

DESTRUCTION OF TIMBER.

In new and expanding agricultural settlements there is a considerable demolition of timber beyond that which is actually necessary in clearing the land, by reason of the extra prevalence of spreading fires; but one of the main points to which I desire to direct especial attention in this Report is the enormous consumption of valuable timber which is in process of being destroyed in the Mining Districts, particularly on the West Coast. Some conception of this matter may be arrived at from the fact that the Mount Lyell Company alone will be utilising tens of thousands of tons year by year, that there is a prospect of many similar demands being made upon the product by scores of other mines in proportion to their importance, and that there is a wholesale and reckless destruction of the forest growth, young and old, by bush fires in all directions during many months of the year, whilst there is no constituted authority at the present time to prevent the lighting of such fires on the unoccupied Crown Lands, except where it has been specially reserved. This is indeed a serious matter, and it promises to be much more so in the near future unless prompt and effective measures are instituted for the preservation of our forests, for, although the prevailing forests on the rich agricultural lands are a cause of great labour and an impediment to the progress of agricultural settlement and mining, yet the supply available for market is not by any means inexhaustible, and in regard to other lands it is a welcome gift of nature, and should be an important element in the permanent prosperity of the country. Again, when it is estimated, by those whose opinions should be reliable, that owing to the slow growth after the first 6 or 7 years—during which it is stated on expert authority that a sapling will grow one inch in diameter yearly—it takes a forest eucalyptus from 15 to 20 years to attain marketable dimensions, the prudence of adhering to a fixed policy for the preservation of the young sapling growth to take the place of the old timber which has been removed by the saw-miller is apparent. On the other hand, due provision is required for the disposal of all timber when it has matured, in order to prevent its deteriorating by decay and the risk of loss by fire. The Mining Act of 1893 gives the sole right to every mining lessee to one half of the timber of every kind upon his leasehold. This is an enormous concession where such a large area as 80 acres is leased to one man, as in the case of the bulk of mineral leases. The question therefore suggests itself, whether it would not be prudent to consider the matter with a view to, at any rate, temporarily curtailing the prescribed area to more moderate proportions.

MAGNITUDE OF THE TIMBER INDUSTRY IN OTHER COUNTRIES.

Some idea of the magnitude of the timber industry in other countries and on the mainland may be gathered from a perusal of the official papers which are published from time to time on the subject, amongst which is one of a comprehensive and important character recently presented to the Government of that Colony by the Conservator of Forests in Western Australia. In the latter report the writer refers to the timber forests in the United States of America as being estimated to cover an area of 350,000,000 acres, from which the supplies for 25,700 saw-mills are drawn, giving employment to 141,000 men, at the annual wage of £6,700,000, and where the net value of the timber output for one year was £48,000,000. Great Britain, from an area of 3,000,000 acres, receives £2,000,000, and India, from a forest area of 144,000,000 acres, receives a yearly addition to the total territorial revenue of the country of £1,000,000.

Coming nearer home, we find that the capital invested in saw-milling in Western Australia, in 1895, was put down at £400,000, and that the saw-mills were affording employment and supporting, in all, some 200 men with their wives and families (in all, 5000 souls). The revenue derived from a small area in South Australia was about £12,000 per year in 1889, and the sum estimated to have been received from the same source in New South Wales was £20,000 for the year 1890.

The later reports from the last-named Colonies and Victoria embody tree-planting on an extensive scale, and the artificial production of forests—a phase of the subject to which my remarks are not intended to apply. It is, I believe, a costly undertaking, and although the expenditure necessarily incurred in the establishment of plantations of foreign timbers may be advisable under favourable conditions, yet the experiment is not recommended in regard to indigénous trees.

Prior to 1896, the only regulations that had been in force for the control of the timber industry in Tasmania were in the form of a wood-cutter or splitter's annual licence, for which purpose they are fairly applicable. There was no provision in the Law by which the exclusive right to the timber upon any prescribed area of Crown Land could be secured, except by purchasing the land, which was actually in contravention of the expressed provisions of the Land Acts for such purpose. This was, however, permitted, indeed it was almost essential that it should be, in the absence of special provision being made in the Law for the protection of the saw-miller's capital. The misapplication of the principles of the Act were, however, of small moment, in comparison with the lax administration thereof, by which it became the practice for the miller to make application to purchase a timber area under the long-deferred payment system, deposit the cost of survey, and possibly one or two instalments at long intervals, denude the land of all valuable timber, and throw it back upon the Crown.

Realising the disadvantages under which the timber industry was being protected at the time the Lands Department was placed under my control, and the need that existed for statutory reform in relation to it, an amendment of the "Crown Lands Act, 1890," was prepared under your instructions, dealing specially with lands required for saw-milling purposes, as introduced to Parliament proposed to authorise the Governor in Council to make regulations for the leasing of any area of Crown Land for any term not exceeding five years, under a contract for the payment of a small royalty to the Crown. This principle, which was one of the essential features of the proposal, was struck out in the Legislature, and a provision inserted in lieu thereof by which a differential annual rate should be charged according to the estimated gross value of the standing timber and the period of the lease, varying from £5 per cent. for one year to £3 per cent. for five years' currency of such lease. This system has been in operation since May, 1896. In the interim 31 leases have been applied for, embracing a total area of 10,000 acres, at a total annual rental of £350; the total sum received from ordinary timber licences for 1896 being £506 4s. 2d.

The reports upon which the valuations are based are furnished by the Bailiffs of Crown Lands or the various District Surveyors, as most convenient and expedient. As might be expected, the valuations are not uniform, and possibly at times are unfair either to the applicant or to the Crown. The system is working smoothly, but the principle by which the fees are charged is unsatisfactory, the supervision is defective, and the amount of revenue realised is, I venture to say, ridiculously small in comparison with the quantity of timber cut. The same lack of supervision and consequent loss of revenue obtains in regard to wattle-barking.

Looking at the matter from every standpoint, I am convinced that a system which provides fixity of tenure for a number of years, accompanied by a royalty chargeable by the State according to the value of the timber, is the most equitable, economical, and in every respect the best suited to the saw-milling industry. The royalty may either be computed on the sawn timber at the mill or on the estimated quantity contained in the tree as it stands; extra supervision would, however, be required in the latter case. In view of the variable positions of our timber-beds, and the special difficulties to be overcome in approaching many of them, it might be worth considering whether the calling for tenders would not prove advantageous.

THE ROYALTY SYSTEM.

The opinions which I have expressed in the two immediately preceding paragraphs in favour of a royalty system are materially strengthened by the report attached, with which Mr. Charles Dearden, Inspector of Timber, has kindly favoured me. Mr. Dearden, it will be remembered, has had many years' experience as a sawmiller, and otherwise connected with the timber trade of the Colony generally.

Taking the Garden Island Creek mill as an illustration of the 12 saw-mills enumerated, Mr. Dearden estimates the total cost of placing the timber ready for market on the local jetty at 3s. 4d. per 100 superficial feet, and the total quantity that the 12 mills should produce at 335,000 feet per week, or 16,750,000 superficial feet per year. The difference between the cost of production as estimated and the average sale price of the timber last year, is 1s. 8d. per 100 feet. Adopting the royalty which he suggests, viz., 1 penny per 100 feet (superficial), the direct annual increase in the revenue to the State would be £697 18s. 4d. The suggestions embodied in Mr. Dearden's report for the collection of fees, inspection of saw-mill areas, and kindred matters are in my opinion practicable and valuable.

SUGGESTED POLICY OF THE FUTURE.

Having endeavoured in the foregoing remarks to briefly review the subject of our timber industry, especially in its relation to saw-milling, I beg to make the following suggestions for your consideration as to the outline of a policy of the future :—

1. An Amendment of the Crown Lands Act, 1890, 54 Vict. No. 8, making provision for a Crown royalty being charged upon all saw-mill timber.
2. The proclamation of forest reserves along all projected railways and other places where valuable timber beds exist on Crown Lands. The present Law affords authority for this being done.
3. That regulations be framed and especial care taken to protect young pine and other trees and plants from destruction.
4. That stringent measures be enacted for prohibiting the lighting of bush fires on unoccupied Crown Lands.
5. That a Forest Officer be immediately appointed to act with the Bailiffs of Crown Lands and the District Surveyors in connection with the timber industry, and for other duties required by the Lands Department.

I have the honour to be,

Sir,

Your obedient Servant,

E. A. COUNSEL, *Secretary for Lands.*

The Hon. the Minister of Lands and Works, Hobart.

THE policy suggested by the Secretary of Lands seems a good one ; but, before final dealing with his proposals, I would advise that Mr. Perrin's opinion be invited. I am quite sure that Mr. Perrin would be glad to afford us any assistance in his power.

The Hon. the Minister of Lands and Works.

E. N. C. BRADDON.

10-1-98.

*Department of Lands and Surveys,
Hobart, 31st January, 1898.*

DEAR SIR,

I AM forwarding herewith a copy of a Report made by me on the Timber Industry of the Colony, with a view, I understand, of obtaining the favour of your views on the subject. I am pleased that my suggestion has been adopted, personally, in regard to yourself, and because your previous connection with Tasmania as Conservator of Forests, will give especial weight and value to such suggestions as you may be disposed to offer for our guidance in dealing with this very important subject. If there should be any other information available which you may desire in regard to the matter under reference, I shall be glad to supply same, on your advising me of your requirements. I think, perhaps, I should mention that at present the Bailiffs of Crown Lands are appointed without salary, and combine their duties as such with their office of Superintendent or Sub-Inspector of Police, and, as a consequence, in the Municipal Districts the office of Crown Lands Bailiff is practically unrepresented, by the reason of the conflicting interests. The only remuneration a Bailiff of Crown Lands receives is actual out-of-pocket expenses, and 10 per cent. commission on Crown seizures, hence the recommendation for the immediate appointment of a Forest Officer to meet the present urgent requirements of this Department, and as a step towards placing the business upon a satisfactory foundation.

My being quite unaware that the Report would be likely to be presented for professional opinion must be my excuse for the brevity of my remarks, which, however, in the circumstances to which I have already alluded, may be deemed sufficient to meet the object in view.

I have the honour to be,

Sir,

Your obedient Servant,

E. A. COUNSEL, *Secretary for Lands.*

G. S. PERRIN, *Esq., F.L.S., F.R.G.S., F.R.H.S.,
Conservator of Forests,
Department of Lands and Surveys, Melbourne.*

TASMANIAN FORESTS:
THEIR
CONSERVATION AND FUTURE MANAGEMENT.

BY
GEORGE S. PERRIN, F.L.S., F.R.G.S., F.R.H.S.,
Conservator of State Forests, Victoria.

In a former Report (1886-7) upon "The Systematic Conservation of the Woods and Forests of Tasmania," I sought to impress upon the Government and people of the Colony the necessity—even then urgent—of placing the control and management of the timber supplies in the island on a satisfactory footing.

Since receiving from the Right Honourable Sir George Turner, Premier of Victoria, correspondence forwarded to me at the request of the Right Honourable Sir Edward Braddon, Premier of Tasmania, I have, after taking some trouble to obtain further information and to collect other reports (hereto appended), re-read that above referred to.

Re-reading in the light of further information, and the experience I have gained in the Forestry of Victoria and New Zealand, I can find nothing in my earlier Report that I could desire to alter or wish unwritten. On the contrary, wider experience confirms and deepens the conviction I then held, that the application of a well digested scheme of conservation must become day by day more urgently needed in order to avoid serious monetary loss through the rapid diminution of timber supplies. Indeed, lack of that supervision I then advocated has already led, through a continuance during the eleven years which have since elapsed, of waste, vandalism, and the preventible ravages of fires, to the destruction of so much valuable timber that, unless promptly checked, suitable timber for commercial purposes—notably mining—will certainly become procurable only with great difficulty, and consequently at high prices.

The fact that my arguments have been and still continue to be borne out by actual facts that are beyond dispute, enables me with the more confidence to once again draw the attention of the Government to my former exhaustive Report, and to urge that no further time should be lost in taking steps to save from reckless destruction the valuable forests of Tasmania.

The practical commercial value of scientific forestry has, so far, unhappily failed to obtain from Australian Governments, save in South Australia, the just appreciation and recognition which I have no hesitation in claiming as due to it by reason of the immense interests at stake, and, in the hope of attracting to this subject more general attention, I append among others my Report upon "The Conservation of New Zealand Forests," in which I have dealt at length with the many obstacles that hamper the forest reformer in this hemisphere. Though written for New Zealand, remarks on this subject apply with equal force to all of the other Colonies. I also append the Victorian Report (1890), and from these, covering forestry operations in three Colonies, much valuable information may be obtained.

The experiences of each colony, indeed, support my often repeated assertion, that, to be effective, forest conservation should be taken up at the outset with a broad and liberal policy in a thoroughly systematic manner.

Half-hearted measures are mischievous and vexatious. Such have hampered my work in Victoria during the past ten years, have made it impossible for me to accomplish all that I could otherwise have done, and have led, I am glad to say, to the appointment of the Royal Commission now sitting in Melbourne, which will, I hope, result in a more vigorous policy of dealing with Victorian forests and reserves. Attention is directed here to these experiences in Victoria, in order that the Government of Tasmania may note that the apathy and indifference of successive Ministries has resulted in progress being slow and cramped, which should be rapid and extended.

But, it may be urged, the reluctance of the authorities to embark upon a system of forestry on an extensive scale is due to considerations of expense. This is, of course, quite true. It applies to all the Colonies, Tasmania included; yet, I would point out that, however great the necessary outlay to establish satisfactory forest management, it is invariably a most profitable investment of public funds.

The condition of Tasmanian forests is infinitely worse to-day than it was at date of my Report in 1886-7. Another decade of waste, of private monopoly, of fierce bush fires, of neglect by the Government to check the damage to public property, must ultimately result in disaster to the industries and thousands of people dependent upon the timber resources of the Colony.

Then, the vast mineral wealth of the West Coast is just now being developed. For the mining industry, now only in its infancy, ever increasing quantities of timber will be required.

The bush fires about Lyell, Zeehan, the Pieman, and Lake Dora, &c. have already destroyed timber which it will cost shareholders in the mines many thousands of pounds more than they would otherwise have had to pay to replace by drawing from other localities. The greater mining activity the greater will become the demand for, and consequent scarcity of, timber on the West Coast.

Then, saw-millers have by a short-sighted policy been allowed to monopolise the principal forests about accessible localities, and any attempt on the part of the Government to organise a systematic management of the forests will now be met with the opposition of "vested interests," which ten years ago were not so formidable, but which ten years hence will probably be much more powerful. The question of maintaining supplies of timber for mining alone is, then, one at the present moment of the greatest importance.

But the experiences referred to in the section on "Continental Forestry" in my New Zealand Report show, by the facts and figures quoted,—these are authoritative, and may be relied upon,—that in every European country, except Italy, systematic forest management not only benefits indirectly industries dependent upon supplies of timber, but gives a very great profit to the State.

It has also to be borne in mind that the expenditure of public money in this direction is simply a loan to the people employed in timber industries, and comes back to the State treasury in the shape of royalties, licence fees, &c.; while no financial or other commercial enterprise in the world gives so high a percentage of profit upon the outlay.

So far, it is true, the forests of Tasmania have met the limited local demands, and have not been called upon to any large extent to supply outside markets. Yet these facts do not justify the neglect to recognise present and ultimate value which has hitherto prevailed.

The superiority of Eucalyptus hardwoods as material for street-paving has already been demonstrated to the satisfaction of the authorities in Great Britain and on the continent of Europe. For this purpose Australian hardwoods are absolutely unrivalled, and, though only as yet in its infancy, when the use of these in London is followed by its adoption by other great cities, as will certainly be the case, the possibilities of a profitable export trade are simply unbounded.

It is probable, too, that Americans will replace with our timbers the wretched pine blocks which have gained for the streets of their cities, as is well known, an unenviable reputation.

The requirements of such markets as the world's great cities represent will be prodigious, and may well open up a trade that will occupy the saws of thousands of mills and provide cargoes for numerous lumber ships engaged in conveying the produce of Australian and Tasmanian forests to Europe and America.

West Australia enjoys control of the London market for Australian hardwood to-day, deservedly, because that Colony has made special efforts to open up the trade. Pioneers such as Messrs. C. and E. Miller and H. M. Davies worked for years, and spent thousands of pounds before they could overcome the conservatism of London vestries, and it is just that they and others who have successfully faced the opposition of powerful soft-woods paving "Rings," should reap the first fruits of that huge business in Australian blocks for street-paving which is sure to be built up at no distant date.

Extensive exportations of timber are, then, among the profitable industries which these Colonies may well foster, and, as it is beyond doubt that though few private individuals can afford to wait the 25 or 30 years which must elapse before a return can be obtained by growing timber trees, no investment of State money so certainly returns large profits. The plantation of forests as extensively as possible should be undertaken by all the governments, in conjunction with the conservation and protection of the living timber we have still available to meet requirements of the present and near future, while the new plantations are being developed.

Further, too, the use of timber in connection with furniture, house fitting, art, and other industries has assumed such gigantic proportions in comparison with those of a century ago, that

the value of timber as a revenue-producer is almost beyond computation. It is, however, deplorable to consider the general and wide-spread ignorance that prevails on this subject, even among those who should be better informed.

It was at one time assumed that, as iron has been successfully substituted for wood for many purposes, such substitution would be extended, and by materially reducing the demand for timber relieve the present heavy strain upon the world's timber resources. For instance, steel or iron sleepers or "ties," it was declared, would entirely supersede wooden sleepers. But the experiment failed, so that in America, for instance, the great forests are still called upon to supply annually millions of pine sleepers, and the demand is steadily increasing. But these American forests, depleted and wrecked by gross extravagance, extensive fires, and the short-sighted selfishness of monopolists into whose hands they have fallen, are already showing signs of exhaustion, apparently limitless though their resources were formerly thought to be. (*Vide* New Zealand Report, page 52.)

Here, in reference to the possibilities of an export timber trade, may be pointed out the present conditions of forests in the other Colonies.

The Jarrah, Yate, and Tooart forests of West Australia are undoubtedly of great extent, and are favourably situated with regard to means of access to the seaboard by tram or railway; but here, as elsewhere, timber is being destroyed with a ruthless prodigality that, unless superseded by wise control, will very speedily extinguish supplies that are as yet ample for legitimate requirements.

In Victoria the matured forests which are accessible have already been practically denuded of timber suitable for trade purposes.

South Australia, of course, never had any natural forests of importance, and only the enlightened policy of the Government enables that Colony to meet local demands for firewood, shelter, etc.

Along the extensive sea board of New South Wales are accessible forests, but these, again, have been so far wrecked that they can do no more than supply the local markets. Other forests of the mother colony are so situated that the cost of getting timber from these to market is practically prohibitive.

In Queensland, also on the sea board, are extensive forests, but timber of the height and massive proportions familiar in Victoria and Tasmania is nowhere plentiful.

Thus the resources from which lumber for export can be obtained in these Colonies are limited, now and within twenty years, unless recuperative measures are promptly adopted, must be exhausted, especially if the very probable failure of American supplies causes a heavier drain upon Australian forests.

Victoria and Tasmania are, of course, the Colonies most favourably situated for the production of timber. Conditions of soil and climate in both are such that, excepting tropical produce, there is scarcely a valuable timber of commerce that could not be profitably grown.

Hence the more reason, in the case of Tasmania, that the Government should adopt a bold and comprehensive system to conserve for immediate requirements, and to plant for the future markets that such a policy will certainly command for Tasmanian timber.

By following such a course the forests will be made magnificent and permanent sources of direct revenue, in addition to assisting the development of other industries.

PRESENT CONDITION OF TASMANIAN FORESTS.

Consideration of the facts recorded below as to the state of the forests referred to may serve to indicate that immediate necessity for reforms which I have so vehemently urged again and again.

Districts.

1. *Huon*.—South and east of a line from Mount Wellington to the Huon River, thence to Mount Picton, thence to Adamson's Peak, Mount La Perouse, and to South Cape.
2. *Port Davey*.—South and east of Mount Picton, south of La Perouse and Adamson's Peak.
3. *Bruni Island and Port Arthur*, including Maria Island, Swansea, St. Mary's Pass to Railway Lines and to coast.

4. *Launceston and Ringarooma*.—Deloraine, Latrobe, North-West Coast to Mount Bischoff, Circular Head and Montagu, thence to mouth of Pieman River.
5. *Pieman*.—Bischoff, Heazlewood, Rocky River, and country east and north to the Pieman.
6. *Zeehan and Mount Lyell*.—Lake Dora to King River, thence to Strahan.
7. *Gordon*.—South and east of King River to Gordon, to the Franklin, thence to Mount Arrowsmith and head-waters of the Derwent.
8. *Arthur Range*.—East of Franklin River, south of Derwent to Hobart, thence to the Huon, Mount Picton, and Port Davey.

Each of these eight districts is sufficiently extensive and important to fully occupy in protecting their forests a separate officer. Numbers 7 and 8, perhaps, unless population increases rapidly in them, might be left unguarded for the present, as they are practically unknown and are not interfered with.

1. The *Huon District* is, of course, the best of the forest country, and in it saw-millers have exercised their vocation for the past 50 years. The timber here is greater in height and productiveness, consequently of greater value, than any other found in the Colony. Here the various blue gum, stringy-bark, and gum-top eucalypts grow to large size, as does also the beech or Tasmanian myrtle, which is still plentiful. The best "beds" are limited to a maritime area, bounded by a coast range which extends south from Mount Wellington to La Perouse, the enclosed territory being somewhat in the shape of a horseshoe, the deepest part lying between Geeveston and Port Esperance. From the valleys and foot-hills of this district most of the best available timber has already been taken, and where formerly stood magnificent blue gums in the "beds" at Geeveston, Port Esperance, Lady's Bay, and Hastings, are but the remnants of fine forests wrecked and decimated by indiscriminate felling and lack of proper care.

No attempt at reproduction has been made or care taken to control the bush fires which every two or three years have destroyed the young trees as they sprang up, and hence ruin and desolation marks the sites of forests which have supplied immense quantities of splendid timber during the past half century.

In point of fact, the Huon district is practically worked out. Year by year it is found necessary to extend the tramways further and further inland from the mills, and very shortly the whole of the accessible timber which is found on a strip of land running back from the coast for from 5 to 12 miles will be stripped to the dividing range.

But, seeing that under proper supervision these forests will reproduce from seedlings in 40 years marketable timber of 40 inches diameter, or one inch per year, it is suicidal to neglect the means necessary to provide ample supplies for the maintenance and extension of so valuable a source of supply for the timber industry in the future.

2. *Port Davey*.—This district is heavily timbered on the Port Davey side, and about the valleys of the Picton and other streams running into the Port or the Huon. For many miles west and south of Adamson's Peak and the La Perouse Range the country is rugged in the extreme and most difficult of access, particularly around the head-waters of the Picton and streams running into Port Davey. Near the mouths of the rivers and creeks there is Huon pine in fair quantity, and millions of young trees are springing up among the scrub and undergrowth.

There appear to be three routes for ingress and egress to this rugged country. 1. From Victoria Bridge up the Huon to its junction with the Picton, and thence by the latter river. 2. By tramways along the creeks to Port Davey. 3. By way of Geeveston or Port Esperance; but the country is very little known, and, according to experiences of the Geeves family, anything but easily get-at-able.

3. *Bruni Island, &c.*—Upon Bruni Island a tract of forest country running several miles back from Adventure Bay includes very fine timber, and if not selected this area should be permanently reserved as a State forest.

Fine timber is also found on Maria Island, but, unfortunately, in the most inaccessible portion—the north-east corner. This cannot be reached by tramways, and on the coast side the precipitous cliffs form a barrier to traffic which has so far proved impassable. Most of the remaining portion of this district has been selected, except in the Ross forest, where small timber, chiefly stringy-bark, suitable for fencing purposes, is available.

4. *Launceston and Ringarooma*.—This is of course a most important district, and good timber is found at Ringarooma, Castra, Latrobe, Burnie, Table Cape, and along the coast to Circular Head, where the forests run out. The country thence nearly to the Pieman consisting of sandy plain covered with heath and button-rush; there is fine timber about Mount Bischoff, and the valley of the Pieman is densely wooded with gum and myrtle (beech).

All along the West Coast, however, the forests are "patchy," though timber of large size and excellent quality grows upon the richer soil near the coast, and extends for some distance inland in the watersheds of the Forth and other streams. About the source of the Forth are found limited numbers of the King William pine; but here, as in the Huon, the ring-barker and saw-miller have worked havoc, and fine forests, which should have been permanently reserved by the State, are in the hands of selectors.

5. *The Pieman District.*—The Pieman Valley is a very rough portion of this district, while the centre area is a plain of sandy soil covered with useless heath. North of the main road from Bischoff to the river the country is mountainous, and only timber of moderate size and of little value, unless for mining purposes, is found, except near the coast about Emu Bay, Table Cape, and Duck River.

The valley of the Pieman is well timbered on both banks for the greater portion of its course. Pines of both the Huon and King William varieties at one time grew about the upper waters, but here, as all along the West Coast, the miners have made sad havoc among these trees. The principal timbers here, however, all through are the Huon pine and beech. Eucalypts are not plentiful and are of little value, but the beech grows to large size and is extensively used in the mining fields.

6. *Zeehan and Lyell, &c.*—The forests generally about these localities are not of great value, and the Eucalypts are only fit for props and firewood. The best trees are found along the southern side of the Pieman and its sources. At one time dense scrub (bauera and horizontal) formed an impenetrable thicket that almost entirely covered the country, but this was soon cleared off by the miners, and with it perished under their fire-sticks millions of young trees that, with proper care, would have become invaluable material for use in and about the mineral fields.

The valley of the Queen River is sparsely timbered with Huon pine, beech, and stunted gum (*Eucalyptus amagdalina*), and with considerable quantities of blackwood; but, except in the case of the beech, the trees are small.

Good Huon pine is found along the King River from Mt. Lyell to King Gorge, and a fine bed was also discovered at Flanagan's Flat by the pioneer miners; but the timber is nowhere plentiful or of large size, and is conspicuous by its absence from the rugged slopes of Mounts Darwin and Jukes, and the Seven Peaks of the Sorell Ranges, which exhibit a succession of razor-back ridges, barren of everything except rocks and stunted scrub.

East of Mount Darwin patches of timber occur, but everywhere the apparently interminable scrub meets the eye. On Frenchman's Cap and in the adjacent valleys also there is timber of fair size, valuable at least for mining purposes, if not quite good enough for the sawmill.

About Mount Lyell, Strahan, and Zeehan scrub is the principal product, with patches of beech, blackwood, and Huon pine in the flats, and King William pine on the ranges.

All through, however, indiscriminate felling and fierce bush fires have already destroyed large quantities of the useful timber I saw in this district ten years ago, and have completely changed the face of the country. Indeed, unless preventive measures are promptly adopted, famine prices for timber will, before long, be experienced on the West Coast fields.

7. *The Gordon.*—Both banks of the river are clothed with timber, and at the mouth of the Franklin some good "beds," including Huon pine and blackwood, are found; these latter were, however, to some extent worked out by the convicts in the old settlement days. Indeed, I found pine logs in an old tramway about 30 miles up the Gordon, and not far from the Franklin.

The Gordon runs for many miles between limestone cliffs, precipitous and, in some places, running up to a considerable height; but above the Franklin, open country extends to the Arthur Range, where a rough mountain system succeeds the timber and scrub-covered slopes nearer the Coast. The Gordon may, therefore, be regarded as the limit of the timber country to the east of the Sorell Range, and the valley of the Collingwood, with Frenchman's Cap and tributary creeks of the Franklin, as the boundary on that side.

From Mt. Arrowsmith west to the Frenchman's Cap and down the Franklin the country is all fairly well, and, in places, densely timbered; but none of the trees are large, nor are they numerous, and while some of the finest King William Pine in the Colony is found in the valley of the Collingwood, it occurs only in isolated patches or "beds."

8. *Arthur Range.*—The main features of this district are sandy, "button-bush," and stony plains, diversified by curiously shaped and barren peaks and ridges, which give a peculiarly sterile appearance to the country. Some timber is found on the main divide and towards the Frenchman's Cap; but the prospect of deriving any considerable supplies from these localities is very poor indeed until the Gordon is reached.

From the details given above, it will be seen that Tasmania practically depends for her timber supplies upon two districts, No. 1, "The Huon," and No. 4, Launceston and Ringarooma, including the North West Coast, Mt. Bischoff, and as far as the Pieman, though No. 2 district may also be drawn upon from Port Davey, and timber forwarded to Macquarie Harbour, and thence by rail to the mines.

But of the two districts first named, most of the land which produced the finest forests has been, or is in process of being, alienated, while the remaining portions of the Colony, never prolific in first-class timber, have been so far exhausted of late years that they can do little towards meeting any extra demands that may arise.

Hence, I should fail in my duty if I neglected to point out the urgency of the situation.

In the Port Davey District the Government have still the opportunity of permanently reserving good country as a State forest, and thus assisting to ensure the material that will certainly be of paramount importance to the mining industry in the West.

Other State reservations of great value could also be established at the Pieman, as also on the Gordon and the Franklin.

Writing, as I now do, ten years after my last inspection of many of the localities I have referred to, I am of course aware that many changes have since then occurred. Yet all these changes have been in the direction of accelerating the wasteful destruction of timber I then foresaw and wished to guard against. Hence they add force to my argument in favour of prompt action.

Such action to be effective need not involve the immediate adoption of a complete and complicated system. It will meet the case if a definite scheme of conservation is provided for by legislation, initiated in a small way, and gradually developed with rigid adherence to the general lines originally laid down. But no genuine reform of forest management can be carried into effect unless the subject is treated on business lines, and those who are responsible for the administration of the Forest Laws and Regulations are protected from political interference at the instigation of persons who have private interests opposed to the public welfare.

To establish such a system as shall conserve and perpetuate the forests of Tasmania so that the people, through the Government, may derive for the future full benefit from the natural advantages they enjoy, it will be necessary—

1. To proclaim permanent State Forests.
2. To appoint a temporary staff of five Crown Lands Bailiffs, one for each of the five districts where valuable timber is found, pending the training of special officers selected from candidates who have passed an examination on lines suggested in my Report of 1886-7, Sec. III.
3. To abolish licences and substitute royalties.
4. To protect alike the legitimate saw-miller and the forests by allotting to the mills larger areas, on the block system.
5. To prohibit selection upon timber areas until permanent reservations have been mapped out.
6. To close wattle districts for from 3 to 5 years to give time for recuperation, and then let by tender royalty for stripping trees of or over 4 inches diameter.
7. To place the forests and timber reserves under the control of a trained expert, with special powers to deal with breaches of the forest regulations, the disposal of timber, and the general system of conservation and reforestation, without fear of political influence.
8. To provide for the training of officers and foresters as suggested in Report 1886-7, Sect. III., page 10.

THE BLOCK SYSTEM.

Saw-millers' areas for working on the block system should be allotted according to the horse-power and value of plant employed, in three classes,—first, up to 2000 acres; second, 1000; and third, 500.

These, again, should each be surveyed in 8 blocks, classed first, second, or third, according to density, quantity, and value of the timber growing upon them.

After survey the right of occupation should be sold by auction, subject to conditions for systematic working of the blocks.

Blocks should be worked in order of rotation until "cut out." First-class blocks of 250 acres each would give work for about three years; hence to "cut out" the entire holding of 2000 acres would extend over 24 years.

As each block is "cut out" it should revert to the State Department, be kept clear of *débris*, and the young trees, as they spring up, carefully thinned and tended. Hence by the time the 2000 acres have been exhausted of mature timber, the new growth on Block 1 would attain the age of say not less than 24 years, and be nearly ready again for the miller. So on in rotation with the other blocks.

This is, of course, assuming that each block is "cut out" in the same period of three years. But, as the quantity and density of timber in the blocks will of course vary, and the output also be irregular in consequence of market conditions, it is probable that in many instances blocks will supply the mill material for longer periods than three years, and the rotation not be completed under 30 years, an advantage to the miller who desires to start afresh on Block 1, as the new crop will then be six years older and, consequently, yield more marketable timber.

Three factors operate in determining the length of time necessary to complete the rotation:—
 1. The cutting capacity of the mill. 2. The timber-bearing capacity of the various blocks. 3. The market requirements.

The first and second of these can easily be arrived at with more or less accuracy, and, but for the third, it would of course be a simple matter to calculate how long it would take to cut out the block. But the demand for sawn timber or, any other commodity is an uncertain quantity, and slack markets, leading to the closing of the mill for varying periods, would of course upset any estimate of time to be occupied in "cutting out" a given area.

This uncertainty would, however, not affect the saw-miller prejudicially so far as his forest holding is concerned, as he would only pay royalty on the timber after he has cut it, and if his mill is idle the trees on all blocks are growing daily to larger, and hence more profitable size.

The rotation system is of great value to the State, too, in that there is no inducement to waste timber in order to prevent someone else getting it, as by licence under a time limit; and the miller is equally interested with the State in conserving the area he holds. It is for his interest, for example, to avoid carelessness in the use of fire, which might rob him of anticipated profits, by destroying the material he proposes to operate on. He might also be permitted to employ splitters, which would be an advantage to the forests, as the miller would naturally see to it that good mill-logs were not left at the mercy of the splitter; while the latter would do useful work in thinning out smaller trees that would never become fit for milling. The inferior timber could thus be utilised for posts and rails; and both parties would work, of course, under supervision by the Government officer in charge. Except under such circumstances, however, the splitter should only be permitted to exercise his vocation in forests where there are no mills, and where the timber is sparse and of medium size; and strict supervision should be exercised in order to prevent the wasteful methods of splitting which have hitherto been in vogue. Royalty should be charged in his case, also, upon the superficial measurement of the trees he fells, with due allowance for faulty or crooked timber, which should also be disposed of for firewood at royalty rates.

As a guide to the Tasmanian Department, I append lists of Royalties now charged in Victoria; and, in conclusion, desire to call special attention to my Report upon the New Zealand Forests, which fully explains my views as to the conditions necessary to successful forestry, and applies equally to all of these Colonies.

FIRE PROTECTION IN STATE FORESTS.

This is a matter of urgent moment to the future of Tasmanian timber supplies.

A stringent Fire Act should be drafted with as little delay as possible.

The presence of the miner on the West Coast has, of course, resulted in the usual gross carelessness, and sometimes malicious vandalism, with which it has been associated elsewhere, and, unless the matter is dealt with promptly and vigorously, timber in this district for mining and other purposes will be completely exhausted within a very few years.

Miners, as a rule, are bumptious individuals with reference to their supposed "rights," but when, under cover of "miners' rights," the holders by wantonly and wastefully destroying living forests occasion great national loss, the State ought to step in and protect the industry upon which these men depend for their living.

In order to clear prospecting claims it is quite an ordinary custom for the prospector to set fire to the timber and let the flames spread at will over as much of the surrounding country as they can reach.

This is ignorantly regarded as a creditable and serviceable exploit in "clearing the country," no consideration being given to the fact that timber destroyed in this haphazard fashion will be wanted later on, and can only be replaced at great cost.

Bye and bye, however, when mines are opened up in the vicinity, timber for the buildings and shafts—even firewood—that had been available on the ground have to be brought from a distance, and the cost of working the properties is thus materially and quite unnecessarily increased.

And when this course is adopted by hundreds of men scattered far and wide over extensive districts, under the cover of that palladium of licence, a "Miner's Right," cautious and far-seeing people are apt to see, in the privileges exercised under the mysterious document referred to, that a great national injury is being perpetrated against the interests of the men themselves and the shareholders in companies by which they have been employed.

But, in addition to the miner, the careless use of fire by the splitters and wood-cutters must also be dealt with, and a comprehensive measure should therefore be framed at once to prevent the recurrence of those disastrous fires which have already wrought such havoc, and which, unless prevented in future, will certainly extinguish, for all practical purposes, any hope that Tasmania will be able for any length of time to meet the demands of her own, much less supply outside markets.

Suggestions for the drafting of a Fire Act are given in the accompanying copy of my Report on New Zealand Forests, page 37.

THE TRAINING OF FOREST OFFICERS.

Scientific forestry is as yet in its infancy in Australia; and one of the greatest difficulties in this connection is that of getting trained officials,—a difficulty which has been experienced in every part of the world in the earlier stages of forest conservation, &c.

Professional men in all other branches of scientific work,—doctors, engineers, architects, &c.,—are educated in more than sufficient numbers to cope with their work; but, when forest experts are wanted, suitably trained men are conspicuously lacking.

The fact is that the English people have never, till recent years, been forced into recognising the necessity for care of timber supplies. When timber has been wanted, John Bull has put his money down and obtained it from various sources where it has been plentiful. But the "needs" of the Empire have lately increased so enormously that supplies are shortening all over the world; and the Britisher now finds himself confronted in every one of his over-sea possessions with the problem which continental Europe had to face, and faced with more or less success, a century or so ago, and is now forced to follow in the footsteps of the savants of Germany, France, and Switzerland, in the care and systematic management of the forests.

Trained officers are an absolute necessity to any Colony undertaking Forest Conservation; and in my Report on "The Woods and Forests of Tasmania," (1886-7) I dealt fully with this important question, to which I desire once again to draw the attention of the Government.

I should strongly advise the immediate adoption of the policy I then suggested with reference to this matter; and further, that one or two well-educated young men should be selected and sent over to Victoria to gain experience and practical knowledge of the work.

I have no doubt the Victorian Government would, if approached, readily assist Tasmania in this matter, and, meantime, my other recommendations could be carried into effect, wholly or in part, according to circumstances.

But this question of training forest officers is one of vital importance, since, in the absence of skilled men to direct operations, the work can never be done effectively, and efforts at reform can only end in disastrous failure.

CONCLUSION.

The recommendations made in the correspondence submitted to me are all excellent so far as they go, some of them conspicuously so, and it would be wise to make a start on the lines laid down by Mr. Counsel, Secretary for Lands, pending the adoption of the more comprehensive system involved in the comments and recommendations I have the honour to submit, which may be summarised thus—

1. The permanent reservation of State forests, and the extinction of all "rights" inimical to State interests in the forests.
2. The protection of forests from fire.
3. The training of officers.
4. The substitution of royalties for the licence system.
5. The non-recognition of "miners' rights" privileges when these involve national loss.
6. Applying to the care and control of the forests scientific management in order to put a stop to the reckless destruction of valuable timber all over Tasmania.



Premier's Office, Melbourne, 31st May, 1898.

SIR,

WITH reference to your letter of the 9th February last, enclosing a file of papers relative to Tasmanian timber and its conservation, and asking that you might be furnished with a Report thereupon by our Conservator of Forests, I have the honour to forward herewith, together with the file in question, a Report which Mr. Perrin has given me in the matter, accompanied by copies of documents, as per margin, bearing on the subject of State Conservation of Forests. I trust that this Report, with the attached publications, will supply you with all the information which you desire.

I have the honour to be,

Sir,

Your most obedient Servant,

GEORGE TURNER, *Premier.*

The Honourable the Premier, Hobart.

14th June, 1898.

SIR,

I HAVE the honour to acknowledge receipt of your letter of the 31st ultimo and the enclosures marginally noted therein, and to express my most cordial thanks to you for the courtesy you have shown in permitting your Conservator of Forests to furnish a Report upon the conservation of timber in Tasmania.

I shall feel obliged if you will convey to Mr. Perrin the thanks of the Tasmanian Government for the very valuable and exhaustive Report, and the hope I feel that this paper will have an effect highly beneficial to our forest resources, and satisfactory to him as the result of his labours in our behalf.

I have the honour to be,

Sir,

Your most obedient Servant,

E. N. C. BRADDON, *Premier.*

The Right Honourable the Premier, Melbourne.
