

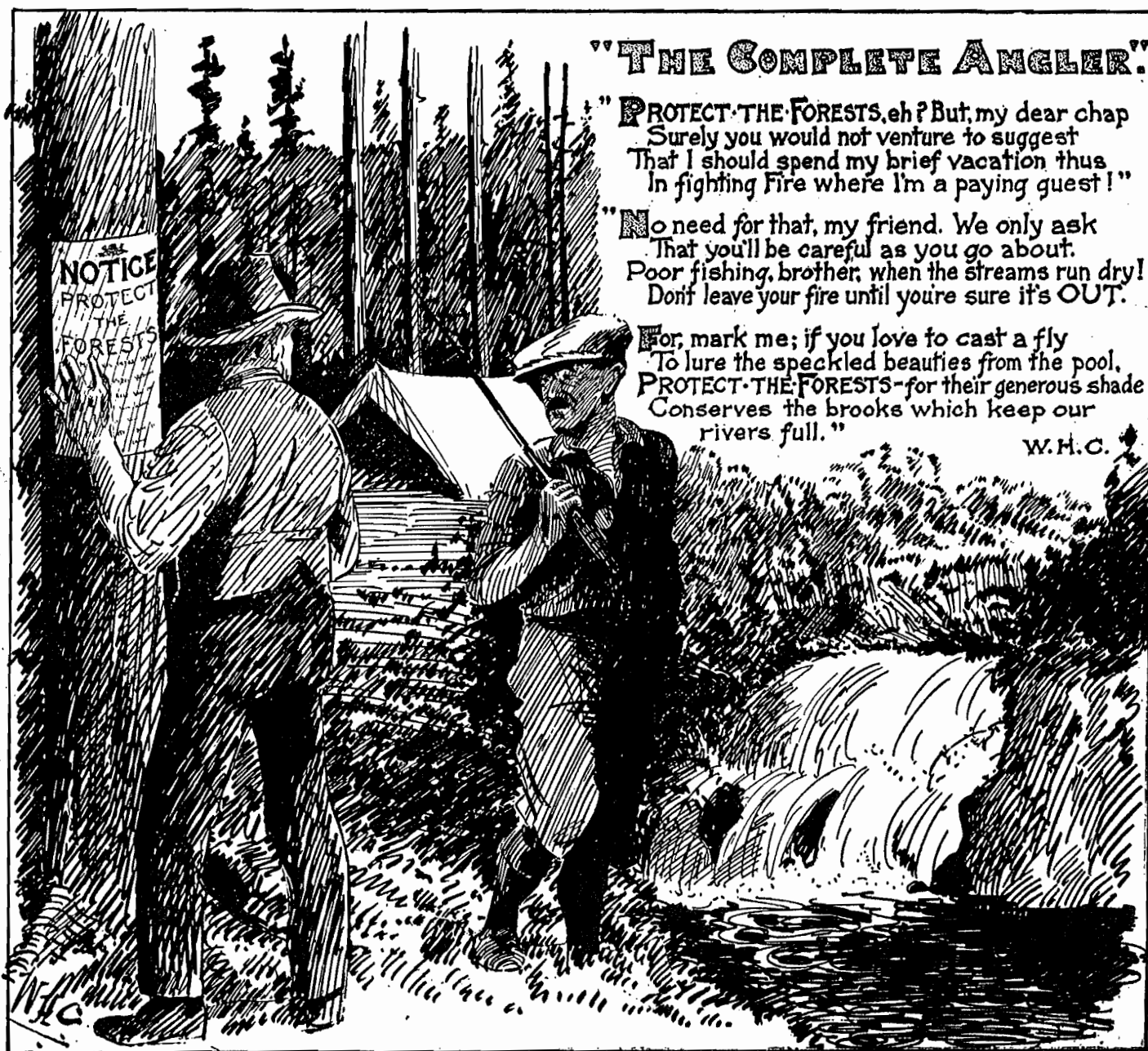
ROOT AND BRANCH

BRITISH COLUMBIA
FOREST SERVICE
LANDS DEPARTMENT

Vol. II.

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No. 3.



"THE COMPLETE ANGLER."

"PROTECT THE FORESTS, eh? But, my dear chap
Surely you would not venture to suggest
That I should spend my brief vacation thus
In fighting Fire where I'm a paying guest!"

"No need for that, my friend. We only ask
That you'll be careful as you go about.
Poor fishing, brother, when the streams run dry!
Don't leave your fire until you're sure it's OUT.

For, mark me; if you love to cast a fly
To lure the speckled beauties from the pool,
PROTECT THE FORESTS—for their generous shade
Conserves the brooks which keep our
rivers full."

W.H.C.

This magazine is a staff publication, and is not in any sense a medium for the expression of Governmental policy.

The object of its publication is to promote discussion, foster exchange of ideas, disseminate news of "family" interest and, through the encouragement of individual initiative, to strengthen the spirit of co-operative effort.

INVESTIGATION.

(J.L. Alexander)

Every year it is becoming more apparent that, in order to perpetuate our forests and use the soil to its best advantage sound silvicultural knowledge, based on reliable data, is essential.

To acquire this knowledge requires the study of stands the past history of which is known. This necessitates the establishment of experimental areas which can be observed over long periods, and the effect of various factors which influence production learned. At present we are handicapped in not knowing in detail the history of our present stands, much having to be deduced from observations on the grounds. Thus, it is often very difficult to determine why certain conditions exist.

The establishment of special experimental plots should be supplemented by further data. Every cut-over area and, where possible, virgin stands should be regarded as experiments. The description and history should be recorded with a view to silvicultural research and put on permanent record, so that those who come after us shall have reliable data on which to base their systems of management.

Our field men may know the history of certain areas, but this valuable information is lost to the cause of Forestry when they pass out from the Service. This history may be recorded on the ground, but with the flight of time much of it will necessarily be obliterated.

Every year experiments are being carried out by natural or human agency; these experiments are on a large scale usually, and should supply valuable information for future use.

For instance, I will cite a condition found in the CRANBROOK District. One of our rangers has several stands of young growth under close observation, and among them is a dense stand of larch reproduction, coming in under a stand which is Sixty per cent. Cedar, Thirty per cent. Larch, and the remainder Fir and Spruce. The young growth is even-aged four year old, Ninety-five per cent. Larch and Five per cent. Spruce. Only on the areas burned did reproduction come in, those patches which escaped the fire having no young growth. It was evident that reproduction followed fire, but the time of year at which the fire occurred was not determined. The time of burning, of course, might be an important factor in establishing a future crop, and no definite information could be gleaned from any source concerning this.

During last Summer, a crown fire swept through an adjoining area. However, in October many larch cones were found on the ground. This ranger is now in possession of detailed information as to conditions before burning time, as to the intensity of the fire, and as to the conditions resulting. In fact, he is in

possession of all the data required for a good experiment. If this information is recorded, the observation made will be of vast importance; but under present conditions, the value will be lost to us in the event of that Ranger's leaving the Service.

In silvicultural knowledge, we are behind the development along these lines. All countries pass through the same stages of Forestry. The first is exploitation without regard to future crops. Then with the first shadow of a timber shortage, more stress is laid on protection to save the remaining stand. With further development, a crop of any kind is considered fortunate and finally comes the stage when quality of material is considered an important factor.

During the final stages, with public education, the need for protection against fire diminishes. But these stages more or less overlap. We have passed through the exploitation stage and are entering the stage where a future forest crop of any kind is considered fortunate, though data is now being gathered for perpetuating the more valuable species.

Large sums are being expended annually by private concerns on developing equipment for more efficient logging and milling - equipment by means of which the virgin stands can be more rapidly depleted. Large amounts have been expended in developing markets for the product from our wooded areas, and every effort is made to ferret out the most efficient means and equipment for reducing the destruction by fire. Considerable amounts are spent annually in fighting insect and fungus infestations. But only a very small amount is set aside for studies in silviculture, which is the backbone of Forestry!

Dr. HOWE, in his report of 1915, states that fifty per cent. of our cut-over areas on this Coast are not restocking satisfactorily. In view of this, and of the fact that we will have to face a shortage of high grade timber, it is of vital importance that more basic data be gathered, so that our cut-over areas will restock One Hundred per cent. with species of most value to the industry.

Apart from the volume per acre, we know very little about our present stands. However, gradually more and more of the field work is being done by technical men. Still, the time seems to be at hand for the establishment of experimental stations and nurseries to supply plants for restocking areas on which natural reproduction is not possible.

At present much can be gained at little cost by taking advantage of existing conditions, and recording systematic reports on definite areas, and also by co-operation with the operators in the carrying out of experiments. But if we continue to invest such a relatively small amount of the revenue derived from Forest lands on the establishing and protecting of future stands, future generations will be less fortunate than we in their heritage of timber wealth!

To defray the added cost of marking trees, brush-burning research and the other work necessary for the perpetuation of our stands, a percentage of our Forest revenue could be set aside in a special fund, so that future growth shall receive due consideration, and the timber land be put on a sustained yield basis.

THE FOREST RANGER'S MOTTO.

The Forest Ranger's mottoes stand,-
"Create," "Protect," "Restore."
To help home builders with the land,
And bring content on every hand,
Now, and for evermore.

Seed time and harvest he computes,
And from her bounteous store
Summons Dame Nature's attributes
To make two saplings shoot their shoots
Where one shoot shot before.

And once where sage and cactus grew,
With dam and reservoir
Fed from the mountain's covering snow,
He sees two drops of water flow
Where none "flew" heretofore.

He dams the streams that overflow
And tear the valley floor,
Ruining the farmer's crops and spuds,
So that two cows may chew their cuds
Where one cud heretofore.

And as fruits of his master hand
And wealth of forest lore,
Bearing the stockman's glaring brand
We see a team of horses stand
Where one stud heretofore.

So here's to the Forest Ranger!
May his tribe increase galore,
And may ten Forest Rangers ride
On road and trail and steep divide,
Where one rode heretofore.

FORESTRY AND AGRICULTURE THE COMPLEMENT OF EACH OTHER.

(From Address by Owen Jones, Chairman,
Forestry Commission, Victoria (Australia))

It is unfortunate that, owing to the general apathy in regard to forest progress, an apathy which we inherit from our forefathers in Great Britain, and which, as Lord Lovat expresses it, is not local or periodical, but is permanent and racial, there has been a great lack of knowledge of the meaning and aims of forest conservancy, and much misconception as to the real state of its relationship to agriculture. As is so often the case, ignorance has given rise to prejudice, bitter feeling has been engendered to the detriment of common sense and in the "pull baker, pull devil" state of affairs that has resulted, public interests have frequently suffered. Probably there have been mistakes on both sides; in any case there is nothing to be gained today by mutual recrimination. What we have to do now is to try to understand the whole question by examining it impartially from all aspects, so that we may reconcile interests that appear to conflict and evolve a sound and progressive policy. In order to do this it is absolutely necessary for us to learn that forestry and agriculture, so far from being mutually antagonistic, are in fact mutually indispensable, and that neither can obtain its optimum development without the assistance of the other. No doubt individual and selfish interest will declaim against this point of view; no doubt either that breadth of vision and wise and far seeing statesmanship are needed for the full realization of all that it implies. Its truth, however, has been proved over and over again in history, and every country which has allowed her forests to be destroyed in the supposed interest of agriculture has suffered untold losses, and has had eventually, at vast expense and with great difficulty, to re-forest the areas she formerly cleared.

The forester and the agriculturist have many points in common. They are both primary producers, for timber is a primary product no less than wheat or wool, and as such they both provide the raw materials on which other industries depend. They both need railways and good roads to bring their produce to market. They both need population to create a local demand for this produce. They both provide extensive employment on the land, and by so doing foster decentralization, and help to check the drift of population citywards.

The forester and the agriculturist again have many points whereon they are mutually dependent; The agriculturist needs timber for his buildings, his furniture, his fences, and his fuel, he needs tree growth to provide shelter for his stock, and to assist in keeping them alive during periods of drought; he needs forest cover to regulate stream flow and the run-off of rain water, and to help prevent erosion, flooding and silting. The forester, on his part, needs agricultural produce to furnish him with the necessities of existence; he needs labour for many operations which he has to carry out; he needs assistance to aid him in fighting forest fires.

This mutual interdependence has been foreseen and provided for by Nature herself, who has made it abundantly clear for those who have eyes to see and minds to understand. In almost every locality full utilization of all the natural resources present can be secured only by a combination of Forestry and Agriculture. Almost without exception Agricultural districts include areas which should be devoted to timber growing, whilst in regions composed mainly of Forest Lands there will be found blocks suitable for cultivation.

MORE EXTRACTS FROM SCHOOL ESSAYS - Now that the serious business of the School Essay Competition has been disposed of, we can devote a little space to its risible features.

"Some of the fire preventions in use today are that nobody can light a fire of any description without permission from the Government. If they disobey the law they will be fined fifty dollars or three months in jail."

"It is a country full of evergreen trees of mossy silver birches and watery maples."

"It is a haven for people who lead a wild life."

"Every year the Forestry Department spends large sums of money on Posters."

... ..

And here are a few further evidences of the truth of the saying that "Out of the mouths of babes cometh Wisdom."

"If the people do not invest more money for fire protection, the lumber and paper companies cannot carry on the business many years longer."

"Leaving a fire in a forest is worse than burning Dollar Bills, because the trees grow to be Two-Dollar Bills, and a Dollar Bill grows no bigger!"

FIELD SUPERVISION IN MANAGEMENT

(J. M. Gibson and W.W.Stevens)

Management of the utilization of our Forests and their replacement is a study which interest all of us, and it occurs to us that readers of "ROOT AND BRANCH" may be as much interested as were we in a U.S. Forest Service Timber Sale operation which we saw in Idaho.

Arriving on the sale area, we were courteously and cordially received by the U.S. Forest Service representative in charge of the sale. He conducted us over the area, explained their plans of cutting their system of brush disposal and the results so far obtained.

Cutting in the pure spruce and balsam stands which cover the greater part of the sale area has been on a clear-cut basis; (1) by the strip system, cutting clean nine-tenths and leaving one-tenth, the strips running up the main slopes; (2) by a block system leaving uncut blocks one chain square or more in area, approximately ten chains apart; and (3) by a seed group system, leaving a group of from seven to fifteen thrifty trees standing approximately five chains apart. Their idea of clear cutting is the removal of all sound timber, standing or down, living or dead, which will make a sixteen foot log with a six-inch top.

Before cutting takes place, the strips, blocks and seed groups to be reserved are marked by the scaler, who selects the groups and blocks from thrifty wind-firm stock, located if possible on high ground.

Brush is piled and burned by a special crew under the supervision of the Forest Service representative, the operator and the Forest Service sharing the cost.

The burning is done mainly in the fall after rain, and the brush is satisfactorily disposed of at a cost averaging 85¢ per M.

We were advised by the representative that reproduction was good on the burned areas, but were unable to verify this because of the snow on the ground.

All the steps being taken on this sale could, we believe, be used on our pulp areas and large sales. The most forceful departure from our methods now in vogue is in the matter of supervision. When the sale is in progress, a Forest Service employee is permanently on the ground to scale and mark all material cut. In addition to this, he sees that the plan of management laid down for the sale is carried out - that is, he does the marking, sees that each area is satisfactorily logged, and that the brush is satisfactorily disposed of. The scalers are moved from one sale area to another, according to seasonal logging conditions.

To follow any plan of management requires constant field supervision, and we believe that the efficiency of our Service might be improved in that direction by educating licenced scalers in the employ of the Forest Service in marking and brush disposal requirements, and employing them permanently on Crown Timber Sales.

CAPTAIN VANCOUVER TO REST BENEATH OUR SPRUCE AND FIR

"We recently obtained seed of the four chief Coast species," writes F.D. Mullholland, "from the Seed Extracting Plant at New Westminster for the Native Sons of British Columbia. This seed was taken over to England by the Board of Trade Delegation from Vancouver, in order to plant it on Captain Vancouver's grave. You probably noticed an account of this in the local papers.

"I asked the Empire Forestry Association for their advice for the Delegation, and the Association has very kindly undertaken to look after the seedlings. I enclose a copy of a letter to the Native Sons, which J.S. Corbett, Secretary of the Empire Association, has sent me. The interest that the Association has taken in the matter is very evident.

"Dear Sir, With further reference to your letter of May 4th., I now write to say that it has been a great pleasure for me, as representative of the Empire Forestry Association, to be associated with the successful function at Petersham, of which doubtless you have already had full particulars from Mr. McLennan. After inspecting the site, I was of opinion that the tree seeds, if sown on Captain Vancouver's grave, would have little chance of ever becoming trees owing to the situation of the grave. Therefore, with the consent of Mr. Wade, I arranged for a small nursery plot to be prepared in a vacant part of the churchyard so that the seeds might have a fair chance of germinating; then, when the seedlings are large enough to be transplanted to their permanent quarters there should be little risk of failure.

"In case the seeds sown at Petersham prove a failure I have arranged with the authorities at the Royal Botanical Gardens to plant a few seeds of each variety left over from the ceremony at Petersham. At KEW they will be constantly under skilled supervision, and in two or three year's time (should those sown at Petersham fail) would be available for planting out in the churchyard at Petersham.

"You may rest assured that my Association will do all they can to ensure the success of the scheme, and see that the seed bed received proper attention."

Apart from their perfect courtesy, it is extremely gratifying to know that the Empire Forestry Association have interested themselves in the matter to this extent, as their doing so practically assures its success.

ROUGHING IT.

(G.P.Melrose)

Howl with envy, all ye mosquito chasers of the North Thompson and Upper Country generally! Shrivel with shame all ye tough guys of the Service as I tell you a tale of what I saw and heard recently at the training camp for Scout Masters on Galiano Island, near Victoria. "How to be comfy, though bushed." is one of the subjects taught at these camps and then they go out on a two-day hike at the end of the course and deliberately "bush" themselves for a night. No need for any ranger now to hustle through his cruise in order to get back to camp for the night. Just take a course at the Scout Masters' camp and learn how to enjoy all the comforts of home while lying at ease, without blankets, matches or grub beneath the sheltering boughs of a friendly Cedar. Spend a fortnight in this camp and you'll live as Adam, raising a hide like a rhinoceros, impervious alike to mosquitos, bull dogs, no-see-ems, sand flies and the raucous jibes of your fellow rangers. They teach 'em how to be tough by encouraging the casting off of clothing resulting in many a badly blistered back and fly-bitten, manly bosom.

But "joking to one side", as our hero Jack Keefe would say, to his "friend Ah", they teach the scouts the many useful bits of information about life in the woods that have been gathered by woodsmen for generations. They have developed a course of instruction in woodcraft that any of us could profit by, and are teaching it to thousands of boys all over the world. How to build camp fires, and how to put them out; how to pack various kinds of dunnage in various kinds of receptacles to conserve space, weight and energy; how to sketch the country seen and bring back information on it; how to build bridges and use an axe -- these are only some of the subjects taught by the regular instructors while outside men are asked to give lectures on birds, bugs, animals, botany and forestry.

As mentioned in the June R.A.B. the result of our "Boy Scout" number was a request for a lecturer on forestry to attend this camp, and being absent in the field at the time they naturally hung it on me. However, I was glad of the chance and had a mighty pleasant trip there and back with Expert Patrolman Warburton and his able assistant Langstroth. At the camp I spent about four hours, two of which were taken up with my talk and the rest just everybody talking.

A brief summary of the talk, as promised by our Editor last month, covers the following subjects:-

The importance of the scouts, as future citizens in the welfare of the country and the relation of forests to that welfare, and therefore the importance of educating the scouts along forestry lines.

The forests of B.C., their importance economically, and aesthetically. How the forests affect our everyday life and work.

Forest protection and its importance to the community. Chief damage to the forests, how to prevent it and thus leading up to the care with fire in the woods.

The Forest Branch organization, the work it does and how the scouts can help it and be helped by it.

Identification of the more important and commoner tree species, including Douglas fir, Western red and yellow cedar, Western hemlock, Western white pine, Western yellow pine, Lodgepole pine, Western yew, Garry Oak, Arbutus, Maple and Cottonwood.

A short trip around the camp identifying the various species, of which we found about nine, finished the job.

The Scout Masters are examined on all the lectures and are then supposed to pass the information on to the scouts. The idea of training camps is a most excellent one and it is to be hoped that an effort will be made to have a lecturer on forestry attend every one that can be reached in the future. I felt safe in promising them every possible assistance from our organization in keeping with our work, and hope that everyone will do his bit toward encouraging our Boy Scouts in their study and use of the forests. At the same time we can learn from them how to be tough. Next year we'll have our cruisers clothed in a cynical smile and saving the wear and tear on boots, pants and bandana handkerchiefs, while the uniform of a ranger will be a shade of tan halfway between that of a Louisiana nigger and that bright appetising color displayed by a freshly boiled lobster. Mosquitoes will shatter their lances in vain against the pachydermic hide and devil clubs feel like the gentle pat of a kitten's paw. Get on the Band wagon, men! Learn from the Scouts what you can and teach them what you can. They'll be a help to you.

"NAY, WE ARE SEVEN, SIR!" SHE SAID" - Among the several forms to be completed by appointees to the permanent staff on entering the Service is a Statement of Dependents, which shows the number of one's dependents at that time. However, in the interval, the number in not a few cases has been augmented and in some cases depleted. We would advise all those who come within one or the other of these categories to forward an amended Statement. The form (which should be rendered in duplicate) can be obtained from the District Office and should be returned through the office to Headquarters, Victoria.

The importance of keeping the data up to date in regard to one's dependents is apt to be overlooked or minimised. That is a mistake. As we remarked once before, statistics are of value only when true.

THE NORTHERN INTERIOR AND OPERATION.

(C. S. Cowan)

I have just got back after a trip through the Northern Interior, and found that a real honest attempt is being made at completing an organization of fire prevention and suppression forces that will stand the strain of a fire season. This is good, more especially when it is remembered that this territory has been for so long regarded as fire proof, that the public attitude has generally been one of contempt for fire, and also, I am sorry to say, prior to this year, our own men and methods have more or less helped this line of thought and action along. This being so, the change is all the more striking; the work had to be started from the ground up, foundations made secure so that the structure erected will stand. Broadly, however, there are one or two points on which a decided stand still needs to be taken and one is the question of open burners.

Open burners are a danger; of that we who have had experience and are convinced; and convinced not only by a theory, but by the same set of reasons that have convinced insurance companies -- mills keep burning down and the reason generally given is "I suppose a spark from the burner started the fire". Here is the supposition of the mill owner or operator, he doesn't really know, but the only apparent cause of the conflagration and resulting loss is naturally laid to the open burner.

There can hardly be room for doubt that an open burner is an open sore, the cause of constant grief. Why the operators should not at least clear every tree and snag, live or dead, for at least two hundred feet around the burner, why an enclosure of from 10 to 20 feet or any desired or necessary height is not erected is beyond me, but it is a still more unexplainable matter as to why our men do not get it done.

This I do know, that there will hardly be much difficulty in explaining the need, and the time to do this was early in the season, early in April, before the real danger arrived.

It is a common thing, only too common unfortunately, for different members of the public, loggers, mill men and settlers to state when a risk is brought to their attention - "the wind always blows in a certain direction, and can't carry any sparks to the timber". Unfortunately, I found certain of our field staff who also took the same view, forgetting entirely that our experience tells us, definitely and decidedly, that no one on this earth can foretell in which direction the wind will blow; sudden gusts to any point of the compass during a wind storm are not unknown, and it only takes one spark to start a disastrous fire. Then, of course, the statement will duly arrive at Victoria - "this was an unusual wind". Quite so; all winds are unusual, all fires are unusual, but they both arrive at the same time.

The story of the unloaded gun is now known to most people, and to prevent any further misapprehension on the subject,

I personally feel that any such excuse as the one just given is an indictment of the officer in charge of that territory in which it emanates. Our job, it must be understood, consists in preventing the unusual; we have no power to stop the wind from blowing in an unusual direction, but we have power to try to prevent the spark from travelling with it.

Permits are being tightened up, so far as conditions are concerned, but there is still a tendency on the part of some of the men to put in impossible conditions, conditions which a moment's thought would show will not be lived up to such as "fire to be watched at all times". The man who makes out the permits knows perfectly well that the permittee is certainly not going to sit up all night to watch a fire; it would be better to state that "fire to be lit after 6 P.M. and watched until 10 P.M. and during the hours 8 A. M. to 8 P.M. the days following until out."

Further, there is a question in my mind as to whether permits should be issued before the general conditions as to the fire-breaks, brush piling, etc. is complied with. The big point is that while we don't want to stop the issuance of permits, while we want the farmer to clear his land and burn his brush, the settler himself should not be allowed to risk his own property to fire. A broadcast burn is generally a bad burn, it means, nine cases out of ten, that the bigger stuff has to be burned a second or even third time, and this burns the humus out of the soil, which experts say does not improve its growing qualities.

Getting back to the results of the inspection, generally there was apparent a distinct tightening up; equipment was in order, although I would have liked to have seen an attempt made to have tools made up into 5 man bundles, or any other size that appeared necessary for the rapid transportation, easy handling and quick checking of tools when a call is made for them.

It is the first time I have made a trip through the North Country, and feel that I have a better grasp of the fire hazard. I do know this however, that so far as the dense spruce country is concerned, that when a fire is discovered, it should be jumped on hard, as a crown fire very readily developed if an "unusual" wind springs up.

Taking it all round, I was rather pleased with the spirit of the men; have left with a clearer appreciation of the problems of the North and feel a good deal of assurance on the point that at least a real effort is being made to make the North country as fire proof as energy and thought can make it.

EDITORIAL

Those of our readers who subscribe to the "WESTERN LUMBERMAN" probably noticed in a recent issue of that publication reprints of articles which were written for and published in "ROOT AND BRANCH". We refer to G.P. Melrose's articles entitled "Scouting in the Queen Charlottes" and the notes by District Forester Gibson on Ties.

Apart from the fact that these articles were published by the "WESTERN LUMBERMAN" in such a manner as to lead their readers to infer that they had been written specifically for that paper (which, of course, they were not), they were published without permission or knowledge, and in disregard of our special request to all Trade Journals that they obtain our consent before republishing any of our articles.

We make this statement with a view to removing any misapprehension which may have been created in the minds of our readers many of whom might be deterred from contributing to "ROOT AND BRANCH" by the thought that their articles might be given a publicity which was neither sought nor desired.

The following is the text of our letter to the Trade Journals -

"With reference to our house journal 'Root and Branch,' a copy of which is forwarded to you each month, we think it well to point out that this is not the official mouthpiece of the Forest Branch in any public sense of the term, and although articles may appear in it in which changes in existing methods are discussed, it does not necessarily follow that the opinions thus expressed can be construed as indicating the future policy of the Branch.

"The basic idea of the journal is to promote discussion among our field force, to foster esprit de corps, and to disseminate news likely to be of interest to those of our own circle. It has no other object.

"We would suggest, therefore - if we may do so without seeming to arrogate for our paper an importance greater than it merits - that before any such article is quoted, or reference made to it, the matter should be referred to us; and we will give our permission gladly, and feel complimented in doing so, if no misapprehension is likely to result."

"The principal part of a chisel is the cutting edge. It makes no difference how finely made a chisel is or what splendid steel it has in it, or how well it is forged; if it has no cutting edge it isn't a chisel - it is just a piece of metal."

("My Life and Work" Henry Ford.)

DEATH OF THE "LIGHT BURNING" THEORY.

(T. P. MacKenzie)

It will be of interest to the field men of the Forest Branch to learn that the investigation of the California Forestry Committee into the "Light burning" theory has resulted in conclusions which show distinctly that the theory is a wrong one, and that light burning should not be practiced.

The California Forestry Committee to investigate this matter came into existence as a result of articles written for the 'SATURDAY EVENING POST' by Stewart Edward White, a noted author. These articles were answered by Henry S. Graves, who was Chief Forester of the U.S. Forest Service at that time. Mr. White's contention was that, if light fires ran over the range and the forested areas in the early Spring, the result would be a clearing of rubbish and useless seedlings and a decrease in the general fire hazard. Mr. Graves, on the other hand, argued that such fires would prevent satisfactory future forest growth and would be generally detrimental.

After considerable discussion it was thought advisable to select a Committee of Lumbermen, of Railway-men interested in forest conditions, and of Forest Service men. After three years of careful investigation, this Committee reached the conclusion that no known fire prevention system is more practical or economical than that now in effect in the National Forests.

This investigation is interesting from the viewpoint of grazing, since Stockmen have insisted in many localities that light burning will be of benefit to the range and will result in open park-like range, and a general improvement in grazing conditions on the timbered areas.

All investigations in the South-western United States and on all of our western ranges have shown that fires are detrimental rather than beneficial. The stockmen are discovering this. We have in mind the resolutions passed by the Prairie City Stock Association of Central Oregon under which the Association undertook to bear the burden of all expense of fighting fires occurring on the ranges used by its members, and requested the Government to refuse granting permits to all those who did not participate in these protective measures.

It is noted also that the Lake County Cattle Growers Association, a very strong organization in Central Oregon, has unanimously endorsed Forest Service protection policies.

In British Columbia, the Upper North Thompson Stock Breeders' Association has also unanimously declared itself in favor of Forest Protection in the interests of better range. Thus time proves that the best means of protecting and preserving both Forest and Range is to keep out the fires, and it is apparent that time is not now far distant when all those people who are in any

way interested in the use of forest and range resources will be extending to the Forest Branch their hearty support in its efforts to provide the needed protection.

CONSERVATION OF NATURAL RESOURCES - The Journal of the Franklin Institute reports that in all schools throughout the state of Pennsylvania a book is being introduced, dealing with the natural resources of the country, and more particularly with their conservation. The Journal, in commending the spirit of the handbook, expresses a wish to see its counterpart in every school of the world, so that the almost criminal waste of fuel, energy and other natural resources, which at present continues with little check, should gradually, by the good sense of the people, be turned to the immeasurable benefit of future generations.

... ..

A step has been taken in this direction by the introduction into the song-books in use in the schools of British Columbia of the "CANADIAN FIRE SONG" The song was written by Mr. C. Fulton, Principal of the Vernon Central School, and is set to the tune of "Vive la Compagnie."

Come, sing ye together, all good girls and boys,
Save our Fir and Spruce.
And if you can't sing, you can make a big noise!
Save our Fir and Spruce.

Chorus: Watch the match, douse the fire,
Watch the match, douse the fire,
Watch the match, douse the fire,
Save the greenwood tree.

The wealth of King Midas could ne'er equal ours,
Save our Tamaracks tall.
They cover the mountains like cities with towers!
Save our Tamaracks tall.

Let all young Canadians hear the loud call,
Save our Cedar and Pine.
To guard our green hills is a duty for all,
Save our Cedar and Pine.

Then watch the "Fire Demon" no matter how small -
Campfire, match or spark.
Our cone-bearing woods we will save from his thrall.
Campfire, match or spark.

HOW ABOUT IT? - With some little difficulty, I have persuaded the Editor to publish this. I want to appeal to the Field men for the same co-operation for "ROOT AND BRANCH" that was given in the School Essay Competition. Judging from the remarks I have heard in the field, the monthly issue of "ROOT AND BRANCH" is looked forward to with the greatest interest. Then, why not support it by sending in a news item or a short article?

If "ROOT AND BRANCH" appears to be a Headquarters magazine this is entirely due to the fact that you chaps in the field are not doing your share.

You have read Garman's article on the Wireless Telephone; they were good. Ranger Pym's article last month on "posters that Post" was splendid, - the finest kind of constructive criticism.

It is no uncommon thing for us to come down to the Office in the evening and find the Editor pounding a typewriter or editing copy. In fact, it's a safe bet that he can be found there four nights out of seven! I did not realise until I was moved to Headquarters just how much work was involved in getting out "ROOT AND BRANCH", but I know now, and feel sure that if you knew, the Editor would be flooded with matter for our magazine.

The Forest Branch men are known as "go-getters" so why not confirm that by helping to make your own magazine the best of its kind in existence. Come on, boys! Let's go!

T. H. W.

ANOTHER GEM FROM OUR DAILY MAIL - "Timber Sale X---- to cut 4100,000 m.f. cedar hemlog balsam McKenge sound if that is handloggen sow please let me know i like to if one."

... ..

And here's another one which conveys some idea of the kind of service expected from the Forest Branch. Rather a tall order in this particular case, as the list which the writer enclosed covered some fifty individual parcels. -

"I am a returned soldier and am intending to locate a pre-emption up near C---- Lake, and would like you to give me an idea as to whether your cruisers could please mark the enclosed list which I obtained at the Land Office, just to show how much timber there is on the respective claims mentioned in the list of pre-emption."

A salesmanager, on receiving the expense account of his star salesman, wired - "Why is your expense account larger than that of any of our other salesmen?" And the salesman wired back in reply - "I'll bite; why is it?" (Ex)

VANCOUVER'S PICNIC was held at Hastings Park, Saturday June 16th, having been postponed from the previous week on account of rain.

Threatening weather in the morning kept away a few, but those members of the staff and representatives of the logging industry who braved the weather were rewarded with a fine afternoon. Most of the mill-men stayed home, we are told; it is supposed by the loggers that their sheltered life has unfitted them!

The races were so popular that most of them had to be run in two or three heats, and the Sports officials were kept busy. E.P. Fox was quite at home with a tally sheet pinned on a large board; his watchful efficiency made it impossible for any irregularities (such as a logger among the "Stout Ladies") to creep in.

W. Black is slowly regaining the use of his voice. He says that, after an exhaustive test, he cannot recommend registration of the megaphone provided.

F. D. Mullholland was on the job as starter, except on one occasion, when he was found to have retired in an unobtrusive manner with a friend after borrowing two glasses from the Lemonade stand. (No. no lemonade, thanks!)

R. V. Stuart got away with his job as handicapper without actually antagonising anyone, a fact which speaks volumes for his diplomacy. It is said he can make a fat man like a 10-yard handicap just as easily as he makes a logging company like a refusal of a fire claim!

G. H. Birkenhead says that no decisions can be disputed on the grounds of inaccurate ground work; all the lines were properly run and the corners flagged. - Mr. Grainger's trespass in the Walking Race was held to be unintentional, and his claim that he will properly complete the course next year is taken as extenuating circumstances. His competition is feared, evidently, as already there is a movement on foot to change the race into a running race instead of walking. (What's the difference, anyway?)

A few mysteries still remain, however. What was the exact significance of the length of half inch steel cable found anchored at one end of the tug-of-war rope after the event was over? What became of the last container of strawberry ice cream? And who was responsible for the lump sugar served with the strawberries?

... ..

Speaking of Walking Races, we remember witnessing a particularly exciting finish. The winner, who was a Jew and suffering from a severe cold in the head, won by a nose - only to be disqualified on the ground that his nose was running!

Nanaimo, B. C.
July 19th, 1923.

The Editor,
Root and Branch.

Dear Sir:

I had allowed myself to think that your big little monthly was doing splendidly without my assistance, but reflected that if everyone thought the same, the editor would be a greatly overworked man.

Commenting on this fire season, we seem to be the favoured ones. Our axes are well ground, the saws all greased for action, the pumps all starting on the first flip and we are waiting for the fray. Twice the weather prophet has sent us warning to beware, and twice we have been forced to resurrect the old slickers; let us hope that he will continue his prognostigation with the same amount of success. We are, however, too old birds to be lulled to sleep by any false feeling of security; so even while the rain falls - we are keeping "de eye ope'."

One of our chief aims on the Island this year has been to get the thought of fire prevention well into the public mind. The newspapers have afforded splendid co-operation; the enclosed editorial from the Nanaimo Free Press of April 25th was also published in the papers at Duncan, Ladysmith, and Comox. During Forest Protection Week all the stores in Nanaimo showed our posters and the majority still retain them. The parade on May 24th also carried some of these posters, and this, following the school essay competition, increased the interest in our cause. At Nanaimo, Duncan, Ladysmith, Port Alberni, Comox, and Cumberland, the moving picture theatres are showing Forest Protection slides at every exhibition.

The theory held by Mr. Ainsworth and myself that the Forest Aide buttons would have a greater value if the boys applied personally for them has proven true. Over seven hundred boys called at the office and all were given a little talk on the dangers of fire in the woods, each boy promising help and vigilance as he received the badge. A large number of boy scouts came for the badge and these were easily picked out by their great keenness. One evening a talk was given to sixty-five members of the St. Paul's Troop, Nanaimo, and buttons distributed to each.

An incident has since occurred which proves that the boys who wear these buttons are eager allies of the Forest Branch. A small boy, all out of breath, and perspiring, rushed up to my back door one evening and told my wife between laboured breaths, that there was a fire in the Millstream Park which was too big for him to put out. The Ranger, Assistant Ranger, and myself were out of town so my wife thanked the boy, and assuring him that the fire would be attended to, got the Asst. Supervisor on the 'phone. He got to the scene of the fire in a hurry, and found it to be a permitted fire, well cleaned around and safe, with a man not far off who was

attending to similar fires. It might have been something serious and it shows that we are getting results.

The demand for the buttons was not without its humorous side. One boy who upon receiving his button, returned an hour later and asked if he could have one for his baby brother, adding; "he wont stop crying 'til he gets one". "Put Mr. Ainsworth, who is rather cautious, refused on the plea that the baby might swallow it. Thus a great channel of publicity was probably lost to the cause, for we can imagine the huge interest the following newspaper heading would arouse:

"BABY SWALLOWS A FOREST AIDE BADGE", and the resultant query all over the country as to the badge.

The personal appeal seems to be getting results; all of the Rangers, Assistant Rangers and Patrolman call among the camping tourists while on their patrols, preaching the cause of Forest Protection and giving help or information whenever asked. Whenever a fire is reported to any of the organization by a private individual, we make it a point of writing to the person concerned, expressing the appreciation of the Forest Branch, thus strengthening the interest.

In conclusion, I would say that as a result of our activities in the directions outlined, the mysterious fires, usually attributed to small boys, as also the neglected camp fires, are becoming rare occurrences, proving that our time has been well spent

W. R. FLUMERFELT.

GOOD PUBLICITY - "One of the attractions at the annual regatta of the Cowichan Yacht Club, held on Cowichan Bay, Friday, was the motorboat "BALSAM", Mr. Warburton, forest ranger of the Provincial Forestry Department, in command. Skipper Warburton sailed his craft to the regatta from Port Washington, Pender Island, and before the start of the first race it cruised among the anchored boats carrying two huge signs warning all within reading distance to beware of fire in the woods. The boat was additionally decorated with a number of green balsam trees."

(Nanaimo Free Press, July 8, 1923)

ONE ON THE WORM! - Cuthbert has been listening for half an hour to a lecture from his father on the evils of late nights and late risings in the morning.

"You will never amount to anything," said his father, "unless you turn over a new leaf. Remember, it's the early bird that catches the worm."

"Ha, ha!" laughed Cuthbert. "How about the worm? What did he get for turning out so early!"

"My son," replied his father, "that worm hadn't been to bed at all - he was on his way home!"

A JUVENILE FOREST PROTECTION LEAGUE FOR BRITISH COLUMBIA.

(T. H. Ainsworth, Nanaimo.)

The possibilities of such a league came to my mind some time ago, and one of the serious drawbacks I found when later outlining a plan, was not so much the starting of such a movement as the big question of sustaining interest. With the coming of the Essay Competition, however, and the promise in the JUNE issue of "Root and Branch" that this could now be regarded as a permanent institution the way has become clearer.

In the contact with many of the Nanaimo schoolboys since Forest Protection Week, and noting their zealousness in telling of the principals involved before the Forest Aide button was given, I was impressed by the thought that this could be profitably extended over the entire province, and the following outline is submitted for adoption or criticism, according to its merits.

(1) That a movement be started and given the name "The Forest Protection League of British Columbia." The Minister of Education to be asked to allow this league to be formed in all schools within the province.

(2) That a suitably-worded creed be formed and printed on cards having lines for the signatures of the member and official, the card to be retained by the member and a register of names to be kept by the Principal.

(3) That authority be sought to allow of Forest Protection matter being given for dictation or transcription at the different periods, particularly between Spring and the closing of the Schools for the Summer Vacation.

(4) That the Essay Competition be worked in connection with the League.

(5) That the date of closing the schools in Summer be instituted as FOREST PROTECTION DAY, and that the children be then addressed on the subject of Forest Protection by the school principal or by a member of the Forest Branch wherever possible.

(6) That a suitable badge of the league be awarded and that this be presented by the principal for the most outstanding example brought to his notice of any pupil's aiding materially the cause of Forest Protection by extinguishing a camp-fire, notifying the Forest Branch of a serious outbreak, or in any like manner. This could be awarded in the Fall and would tend to promote keenness during the holidays.

The Cost - Since the movement is patriotic in nature, there would be no expensive organization to maintain, and the real items of cost would centre around the creed cards, register and badges, none of which need be expensive. In the case of the badge this could be bought at the same figure as that supplied to Honorar

Fire Wardens - for intrinsic value does not count, and the cost of the most coveted of decorations (the V.C.) is but a few cents.

The Effect - Since the future of British Columbia is to a very great extent analogous with the future of its forests, and education along the lines of Forest Protection is now being accepted as the remedy for the high per-centage of fires traced to human agency, such a movement by the creation of a common interest should prove invaluable.

The value of school education might be measured in accordance with what may be accomplished by its possessor. Certainly geographical knowledge embracing some remote portion of the globe cannot prove as high in value as that dealing with a subject of pre-eminent importance at home, for in this instance the benefit is two-fold, to the citizen and to the Province.

It is all too apparent that where Forest Protection is concerned, British Columbia is lacking in "custom," that mysterious something which in Europe is a marked characteristic between the different races, and which fostered from childhood becomes a part of the national life. While not commending all the customs of Europe, I use this in an illustrative sense, and feel that in starting with the children of the Province we can establish a custom, and so mould public opinion in the way most dear to every member of the Service.

... ..

(Here is another article which affords abundant opportunity for discussion. We can only hope that the field staff will take advantage of it, and that more of them will come forward and make use of our paper as a medium through which to submit their ideas and suggestions. Articles of this description are bone and sinew to "ROOT AND BRANCH" - Ed.)

The census taker entered a large garage in Louisville.
"How many people are working here?" he asked.
"'Bout half of 'em," said the proprietor.

BITS ABOUT BEEF - The average long three-year-old beef weighs 1200 pounds on the hoof. It spends two years and four months of its three years and seven months on the open range. On dividing the total weight in accordance with the total period of time spent on open range, the proportion of the 1200 pounds due to the open range is approximately 780 pounds.

Investigation has usually shown that the average range beef animal makes its heaviest growth on the open range, and considering the 780 pounds we find that the forage cost per pound is very low. The grazing fee is 5¢ per head per month. A seven months season for three seasons at 35¢ per head per season equals \$1.05 per head. From this should be deducted 35¢, that amount representing a sum equal to one third- of the grazing fee, which goes back to the range in improvements. The total cost of grazing a steer on the open Crown range from birth until it is a long three year-old is, therefore, not more than 70¢, or less than one-tenth of a cent per pound.

That is very cheap feed, and indicates that the grazing fee is such a very small charge that it is hardly worthy of consideration in any estimate of cattle ranch costs.

WE ARE GETTING RESULTS. - "Two rough looking individuals, with packs, had climbed wearily up the steep trail from Arrow Lakes to Shields," writes District Forester Macdonald from Nelson, "and prepared to camp for the night where a creek crosses the Railway. The camp fires was burning nicely and the weary travellers were reclining within range of its benign influence. The Section foreman resident near the spot, strolled over, sized up the campers, and proceeded to give them a lecture on the need for care with fire in the woods. He had barely turned his back when a Russian Nobleman (Douk) who has a timber sale just to the south came along, and in broken English the lecture was repeated.

"The campers were unknown to either of these ardent Forest Protectionists, but we all know them - L.S.Hope, Assistant District Forester, and A.E.Pickford, Chief of Operation of Nelson!

"It is not often that any of the staff here have such definite evidence of the results of our Forest Protection propaganda but it seems to me that this incident proves that the message is getting across all right."

PERSONAL PARS

"Personal Pars" is at a low ebb this month, but F. D. Mullholland comes to our rescue and saves us from drawing a blank.

"You might note the arrival of KENNETH MULHOLLAND. His father is Irish, his mother Scottish, and he was born on the 4th of America in Canada. With these two advantages, he ought to be a good Canadian."

SCHOOLBOYS ORGANISED FOR PREVENTION OF FOREST FIRES IN THE DOMINION.

Ottawa, July 10 - (Assoc. Press) One hundred and forty thousand Canadian Schoolboys have been banded into an army of guards to watch for and prevent forest fires in the Dominion, according to an announcement made by the Canadian Forestry Association.

The new organization, which is known as the Young Canadians Forest League, will, it is expected, save several million dollars' worth of timber from fire ravages.

VINDICATION OF THE APPLE - From time immemorial it has been the generally-accepted idea that humanity owes its heritage of woe to our first parents' partaking of a green apple. The modern view, however, inclines more to the theory of a green pear!

The remainder of this issue is devoted to a recapitulation of the Resolutions on the papers read at the Ranger Meetings held at Thurston Bay, Nelson and Prince George. Most of us were able to be present at one or other of these meetings, but only a few were privileged to attend them all. Consequently it is felt that this recapitulation will be of general interest.

Many of these resolutions are purely local in scope, and their adoption or rejection is a matter for the District Forester. Others require changes in legislation before they can be adopted, and some deal with statutes and policies beyond the control of the Forest Branch. The resolutions therefore are more in the nature of recommendations, and where a change of present policy is indicated they will be followed, if adopted, by specific instructions as to how and to what extent they are to be adopted.

REPORT OF RESOLUTION COMMITTEE

ON

THE FIRE SEASON OF 1922

(a) The committee feel that the present book of instructions, issued to Assistant Rangers is in urgent need of revision, and recommend that this be revised and expended to cover in much greater detail, the various phases of our Forest Protection responsibilities. A section to be included covering operation and maintenance of mechanical equipment.

(b) In view of the fact that the season of 1922 demonstrated, as never before, that the fires originating in logging operations constitute the major part of the Fire Protection problem, and also, in view of the various important legislative changes affecting the responsibility of logging operations in connection with fire prevent and fire fighting, that the efforts of the field men in trying to obtain better fire prevention, and suppression, organization in the camps, be supplemented by an energetic campaign in this direction by the District Offices, along the same lines as carried out in 1921 and 1922.

(c) In view of the increasing use of airplanes in connection with Departmental work, particularly Forest Protection, and as the use of transportation of this nature nulifies the life insurance carried by the average person, the Committee respectfully ask that the Department make special provision, in the matter of insurance for Forest Officers who may be called upon to travel by airplane during the course of their official duties.

(d) That in the coming season, meals served to fire fighters be charged for at a flat rate of so much per meal, instead of on a basis fixed by the number of hours worked by the fire fighters, which arrangement has been in effect in the previous years.

Approved.

RESOLUTIONS

AND

REPORT OF COMMITTEE ON METHODS OF FIRE FIGHTING.

The Committee recommend:

(a) That the Western fire fighters Manual and any other test books or publications on forest fire fighting methods, applicable

to British Columbia conditions, be issued generally to the field staff as soon as possible. The Committee also feel that there is urgent need of a manual on Forest Fire fighting based on actual British Columbia experience and conditions, and recommend that this be gotten out by the Department as soon as possible.

(b) In view of the fact that new appointees (Assistant Rangers) need intensive instruction in many phases of Forest Protection work before being in a position to carry out their duties efficiently, that all Assistant Rangers be appointed on the same date and not later than April 15th in each year, and also, before taking over their respective districts, that they receive training in fire fighting methods, organization and other phases of forest protection work, for several days at Supervisors headquarters.

(c) The Portable five gallon hand pump, having proved its worth, in fire suppression, that each district be provided with a number before the coming fire season. It is also recommended that a pack board be provided for each pump of this type.

Approved

AMENDMENTS TO THE "FOREST ACT"

(1) Recommended that the regulations regarding watchmen at Donkey Engines be amended to read "That a watchman be kept at every donkey or unit continuously during working hours, also at the noon hour and for four hours after operations have ceased for the day."

(2) That a copy of the Amendments and Regulations be sent to all Operators at the earliest possible date.

PUBLIC EDUCATION OF FOREST PROTECTION

Logging Camps.

Letters regarding	equipping early.
"	" Registered spark arresters.
"	" advisability of training fire fighting crew.

Railroads and Steamers:

Placarding of smoking Compartments with protection propaganda, similar in size to Public Health Notices.

Hotel and Summer Resorts:

Circular letters asking proprietors to spread forest protection propaganda. Special posters.

Schools;

Lectures by teachers and Forest officials.
Essays by pupils.

Newspapers;

Short articles. Advertisements.

Guide books and Tourist maps.

Concise message on cover.

Street and Interurban cars;

B. C. E. Co.'s "Buzzer". Placards in cars.

Telephone Bills;

Inserts or dodgers in phone bills or superimposed stamps. Also Telephone directory Sample "Use your phone to report fires."

Automobiles;

Stickers for all cars entering from U.S. to be placed on cars at points of entry by Customs officials and Immigration officers. Letters to automobile Yachting, Mountaineering and all similar Associations and Clubs asking co-operation in fire prevention.

Government Stationery;

Liquor permits, hunting licences, fishing licences, miners licences, marriage licences, etc. to bear Forest Protection propaganda. Weekly expense sheet books, utilize the new blank covers of these as an advertising medium.

Cinemas;

Literature to be thrown on the screen.
Slides, "Before, during and After a Fire, etc."
Animated pictures showing carelessness and its results.

Exhibitions and Fairs;

Attractive and educational exhibits.

Scouts;

Lectures to be given Troops and other Juvenile outing associations by F.B. officials.

Radio Broadcasting;

That the various Provincial Broadcasting stations be approached with a view to sending out daily messages before or after their regular program, particularly during hazardous spells.

Canvas Signs;

That these be strung across well travelled highways.

As a final recommendation, this committee strongly advocates a Forest Protection Week, each year; Provincial wide in its scope in which the Public be asked to Think, Talk, Live and Practice Forest Protection.

The results of this week will be felt throughout the whole year.

THE OBJECT OF LOGGING INSPECTION.

(1) As a result of discussion of the paper given on the object of Logging Inspection at the fourth Annual Rangers meeting held at Thurston Bay 1923, your Committee beg to report the following suggestions are recommended for amendments to the policy now in force.

(2) That ditto maps on a scale of twenty chains to the inch be supplied with each timber sale contract, to accompany inspection reports during the entire life of the sale, if a handlogging sale covering two years, twenty four copies will be required. Sales on which inspections are due monthly will require three copies for each month during the life of the sale. For all area or i.e. T.L. L's C.G.'s P.R.'s. I.R.'s. etc. on which operations of any importance are conducted eight copies will be required for each year's inspections. These are loose leaf maps to be attached to report and can be put on any suitable paper.

(3) That unnecessary waste on timber sales (if any) be scaled by field officer, during inspection, and the lessee billed with waste, under penalty clause of contract, at the time of each inspection as operation progresses. The ranger is to notify lessee personally and in writing on our existing counterfoil book to the effect that he is to be penalised for the waste. The duplicate copy of this notification to be forwarded to Vancouver office with copy of inspection report.

(4) That copy of the factor for conversion of logs per section of the different species into board feet as used in the Vancouver office be supplied to each member of the Field staff at an early date.

(5) That a circular letter setting forth the importance of cruising any V.C.L. adjoining existing operations be made in ample time to insure continuity of operation, i.e. in order that the prospective lessee may purchase the sale with the least possible delay, when he applies for the area.

(6) That a fire hazard report on form 62 be made with final logging inspection report, where a fire hazard exists.

(7) That a circular letter be issued re the frequency of inspections due on timber sales of different classes. Also instructions re mapping and whether or not a report on the regular form is required on inactive operations. It has been suggested that a letter would carry the same weight as the regular form 89.

Approved - Chairman J. A. Fairbanks. Committee:

J.A. Mahood

P. Sweatman.

J.M. Daniels.

LAND CLASSIFICATION

(1) It is suggested that the Forest Branch approach the Department of Lands and strongly recommend that where ever small parcels of agricultural land occur in the midst of absolute Forest land, that these be withheld from settlement. The salient facts of the case should be brought to the attention of the Lands Department; viz: that the revenue of the land if settled will not equal that from the same land if bearing timber; that it is only an existence and not a normal living obtained from such tracts; that children on such tracts cannot receive the benefits of school and medical attention that the settler is a constant menace to the surrounding Timber Lands and that the Government is put to the needless expense in providing roads.

(2) It is recommended that a circular letter explaining in detail the methods of acquisition of homesite leases and the conditions of tenure, etc., be sent to all Rangers and Supervisors. The data already supplied on this subject is couched in two vague terms to be readily understood.

(3) It is recommended that good land already open for settlement under one system of acquisition be made possible of acquisition under the other system as well, i.e. Homesite Lease and small purchase.

That in order to divert prospective settlers from small parcels of non-suitable Vacant Crown Lands, Timber Licences, close to settled areas and markets, be made more readily available for settlement than at present under all present methods of Land acquisition wherever suitable tracts occur as is possible under Section 23 of the Forest Act.

(4) That the value of second growth be pointed out to all Rangers and some readily applicable standard of valuation be supplied them for use. That general soil description form be supplied the Ranger for use in soil analysis.

(5) Where logged off land practically unsuitable for agriculture reverted to the Crown now Vacant Crown Land that this land be placed under reserve and if natural reproduction be on the area it be protected and if unstocked artificial reproduction be resorted to.

That as many instances occur where surveyed pre-emptions and homesites for settlement are larger than are necessary for the settler and as these usually include absolute forest land undesired by the settler, that provision be made for the further subdivision of such areas to the mutual advantage of the Government and the settler.

C. L. Armstrong.

A. H. Waddington.

R. Gritten.

W. Byers.

REDUCTION OF FIRE HAZARD

(a) Recommended that a definite policy of putting in specific reports on specific slash areas which must be disposed of should be followed and that such areas be burned in the Spring, even if necessary for the Department to insist on its powers under Section 123. The system of burning slash should be drawn up on general lines so that the results of experience can be shown in print to the tardy operator.

(b) The suggestion that the portable "can type" of pumps be recommended and shown to operators as a District improvement on the buckets around donkey engines and that the pump be demonstrated before the loggers in Vancouver either through the Department or the Manufacturer's agents.

(c) That the public Works Department slash should be disposed of at once as both a menace and a lesson to the general Public. Such hazard reports should be followed up closely and action secured by the Ranger being informed of Public Work's action in the matter so that his course of following up in the Field is made clear.

(d) That the old card of showing the name and addresses of the Local Officers be re-issued.

(e) That the various posters issued last year be re-issued this year.

(f) That the Field staff make every effort to meet such bodies as the Farmer's Institutes, Boy Scouts, Schools and similar organization to sell the Forest Protection idea. Every Field Officer should conduct a systematic personal Campaign to cover the field.

(g) That the Department lay down a definite ruling showing how far they are prepared to go in closing down an operation which evades spark arrester regulations deliberately.

That the B. C. boiler Inspectors Licence number be referred to in correspondence regarding donkey engines, instead of the Makers number.

J. G. Macdonald.
Wm. Byers.
R. Gritten.

REPORT OF COMMITTEE ON MANAGEMENT OBJECTS AND

IMPORTANCE:

(1) It is considered that definite action should be taken to reserve for Forest purposes logged off Timber Licences and other land most suitable for growing timber, although not carrying statutory timber, when reported by the Forest Branch as not forming a block of agricultural land large enough or so situated to warrant development for that purpose. Also that the redefinition of "Statutory Timber Land" to include such land be considered.

(2) It is recommended that a definite Fund comparable to the Forest Protection Fund be formed for the purpose of providing money for Forest stock taking and investigation necessary for and leading up to the application of systematic Forest Management. It is suggested that the Fund might be supplied by a tax on timber Sales and an equal sum provided from general revenue.

(3) It is felt that means should be found to further the education of the Public with regards to the value of immature forest growth and logged off Forest Land, by:-

(a) Articles in newspapers and magazines. (b) Lectures in school or the inclusion of Forestry either as a definite subject in curriculum or as part of subject already taught, such as nature study or botany. A text book having special reference to B.C. Forest types to be used.

Approved.

Chairman, F. D. M.

Committee P. Sweetman
G. H. Smith
J. B. Scott.

ORGANIZATION OF MANAGEMENT WORK.

COMPILATION OF RECORDS.

It is recommended that a standard work chart be adopted; similar to one discussed at this meeting. Chart to be printed on durable paper. Chart to be termed "LOGGING INSPECTION CHART."

Signed:-

"T. H. Wilkinson"

Chairman

"T. D. Mulholland")

"J. A. Fairbank" (

"C. L. Armstrong")

"W. R. Plumerfelt" (

"D. McDougall".)

Committee.

RANGER MEETING JANUARY 1923.

INTENSIVE ORGANIZATION OF PROTECTION FACILITIES.

.....

(1) Recommended that the matter of education of school children on Forest Protection, as outline in this paper, be taken up with the Minister of Education with a view to having the same included in the school curriculum.

(2) Recommended that instructive pamphlets be printed for distribution on Coastal Steamers, hotels and other Public utilities.

(3) Also that the B.C. Electric Railway Co. be approached with a request to insert a small paragraph on fire prevention in their publication, the Buzzer, during the fire season.

(4) Also that arrangements be made with the B. C. Telephone Co. to have reserved on the cover leaf of their next directory, to be issued, and the words "Prevent Forest Fires" or other such words, printed in bold red type, across the centre of the page.

H. Smith.

G. H. Smith.

A. H. Waddington.

D. B. Taylor.

Edward Hill.

REPORT OF COMMITTEE ON TIMBER SALE ADMINISTRATION
AND APPRAISAL OF STUMPAGE VALUE.

- (1) It is considered that it is impossible for a ranger in the ordinary course of his Logging Inspection to obtain really reliable figures for detailed logging costs, and it is urged that special parties be detailed from Headquarters to make a study of typical sample operations, and the results of their investigations be supplied to Rangers.
- (2) It is recommended that all detailed appraisals of the larger timber sales made in the Province be reproduced with sufficient description of the timber, locality, market, etc., and issued in bulletin form to all Supervisors and Rangers every three months, together with any general information available to labour, equipment, prices and market conditions.
- (3) It is requested that average current market prices of all logs sold, in species and grades, be supplied to Rangers weekly.

Approved: Chairman: P. Sharkey.

Committee: F. D. M.

Jno. R. Noot.

Wm. Byers.

NELSON RANGER MEETING MARCH 13th & 14th/23

Fire Season of 1922 and its Lessons, F. A. MacDonald, Chairman;
Watson, McClusky, Price.

The committee on this subject wish to recommend that, since in many parts of the several districts fires occur in isolated timbered areas where access is difficult, the practice of employing patrolmen to remain on these areas, make improvements whenever possible and attack incipient fires should be continued and extended wherever possible; that patrolmen be appointed as early as possible and employed on maintenance of existing improvement and their extension where possible:-

That discretion should be exercised in reducing fire crews when fire is being brought under control:~

That when Rangers or Assistant Rangers give instructions to foremen, definitely named men should be assigned from fire crews to undertake specific work, that is if men are wanted to attend a fire over night do not say "Take five men up there tonight," but chose the required men by name and give them definite written orders what to do. This gives you something to take action on if instructions are not carried out;

That all persons should be encouraged to report fires and as rarely as possible should the person reporting be asked to take any action on the fire unless he so desires;

That all phone calls can be sent collect;

That every opportunity should be utilized to enlist the public on the side of forest protection, having in mind that condition where every resident realizes the value of the forests, and the seriousness of a forest fire.

.....

Public Education in Fire Prevention,

Norman Moore, Chairman;
Allen, Sharpe, Thomas,
Holmgren.

Your Committee recommends:-

I. Whereas it has been found that the school children are interested in Forest Problems, that an effort be made to appeal to the children, and that the District Forester, Ranger or other forest official endeavor to talk to the children in each school in his district before the fire season opens.

II. Whereas it is felt that we are not getting the co-operation from the public which is essential to the success of our work, that an organized appeal be made before the opening of our

fire season through the Press, Boards of Trade, Tourist and Automobile Associations, Rod and Gun Clubs, Moving Picture Theatres, Girl Guides, Cadet Corps, churches and municipal organizations, pointing out to them the seriousness of the Forest Fire menace and asking them to lose no opportunity to suggest care with fire.

III. Whereas the tourist traffic is increasing from year to year, and it is essential that we provide safe camping grounds, your committee therefore recommends that more money be appropriated for this work and that efforts be made in each district to construe camps and camp grounds, and especially in districts frequented by fishermen and picnic parties, that the location of these camping places be advertised in tourist guide books, post offices and other available sources.

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Resolution on Logging Inspection. J. B. Conway, Chairman, Oldham, Price, Schupe.

We, the committee on Logging Inspection, believe that present regulations and principles of logging inspections are sound and that by a systematic enforcement of those regulations we are affording the best possible protection to the public interest in forests.

We also believe that the question of slash disposal is one requiring considerable study and that amore frequent exchange of ideas through Root & Branch would be of great benefit.

We consider that a rigid enforcement of trespass regulations is the best means of stamping out the evil, and that undue waiving of those regulations would cause considerable difficulties to the field staff.

We further believe that a higher standard of efficiency in field work can be obtained by systematic planning of all field work and that the practice should be adopted as rapidly as possible.

..... CARRIED.

LAND CLASSIFICATION H. Oldham, Chairman; Watson, McParlan, Price

That no timber be removed from A P. R. before improvements to the value of \$2.00 per acre have been made, except such timber as is being cut for land clearing purposes and making actual improvements on the land, but timber values and qualities should not be the final method of judging whether pre-emptions should be granted, but the standard be that of soil conditions and agricultural values.

In view of the economic loss both to the individual and to the Government by settlement of isolated areas, and also in view of the hazard created by such settlement, we also recommend that timber valleys unsuitable for agriculture be closed as forest reserves.

That in every case where a pre-emptor removes or sells any Forest material from his pre-emption, that a stumpage reservation price be fixed the same as is charged on adjoining timber sales and amount so collected be taken to account and held till his homestead duties have been fully completed, and Crown Grant secured.

That no applications for P. R's be granted in inaccessable outlying districts, where applicant will be isolated from roads and schools, unless under exceptional circumstances, when it can be shown that P. R. will pay.

Recommended that no area having other than five acres suitable for cultivation if cleared, be granted as a pre-emption.

Recommended that all abandoned P. R's and areas not coming up to the above recommendations be put into Forest Reserve, with the exception of good grazing areas which may be open for purchase.

Recommended, that no area having less than 5 acres suitable for cultivation, if cleared, be granted as a pre-emption.

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Reduction of Forest Fire Hazard,

M. V. Allen, Chairman;
Little, Griffith, Sanderson.

Whereas being opposed to the practice of Broadcast burning of Logging debris in mixed stands of fir and larch type, we would recommend that such debris should be disposed of by top lopping and the scattering of accumulations, but that accumulations of such debris along roads of all kinds should be piled and burnt.

Whereas in a true and pure stand of yellow pine our opinion is that a broadcast burn destroy all hope of a reproduction of such a stand we would express our opinion that under no circumstances should broadcast burning of yellow pine slash be allowed except in areas which are affected by the pine beetle or in cases where debris should be declared a public nuisance and that such slash should compulsorily be piled and burned.

Whereas it is the consensus of opinion that a large number of forest fires are caused through carelessness and ignorance of people traversing or camping in our forest areas, that it is very desirable that a campaign of education in forest matters to the youth in our schools should be carried out and that it would be of material value in offsetting this feature in the coming years. and with that purpose in view we would recommend that all Forest Officers should deem it a duty to speak at various times to the pupils at the schools and organizations such as boy scouts in their districts on forest matters and forest protection.

Resolutions of Timber Sale Committee, E. S. Hope, Chairman;
Thomas; Little; Palethorpe.

We believe that marking should be 100% done on the T.S. area from which timber is to be removed.

We believe that logs, poles and piling should be scaled in the bush.

We believe that in view of the varying conditions on different areas and even on the same areas the cutting system and necessary marking be recommended by the Forest Officer in charge of the area.

We believe that slash should be so disposed of to assure a future crop of the most desirable species. Since this depends upon the conditions governing the specific area the method of disposal should be carefully considered from both a silvicultural and protective point of view and recommended by the forest officer in charge.

We believe that there should be a greater distinction between intentional and unintentional trespass.

We believe that every effort should be made to arrive at a value for stumpage equitable for both the Department and operator, and that this should be determined in a systematic manner similar to that followed in the stumpage appraisal manual.

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PRINCE GEORGE RANGER MEETING March 22 and 23rd. 1923.

Recommendation of Committee on a paper read by T. W. Brewer on
LESSONS OF THE FIRE SEASON OF 1922.

Chairman: T. W. Brewer; Hunter, Boyd, and Frost.

ORGANIZATION CHART.

Be it resolved:-

That the chart of organization for the field staff, for Forest Protection purposes, be filled in by the individual officer concerned, which should be carefully checked by the Ranger, Supervisor and District Forester.

PATROLMEN.

Be it resolved:-

That Patrolmen be not assigned to Assistant Ranger Districts except for the purposes of Forest Protection.

HONORARY FIRE WARDEN.

Be it resolved:-

That Honorary Fire Warden be given power to employ a fire crew not to exceed ten men, to fight fire until authorized officer is able to investigate conditions, with the understanding that the nearest official is to be notified by the quickest available means of communication as soon as fire is discovered.

EARLY APPOINTMENT OF ASST. RANGERS.

Be it resolved:-

That Assistant Rangers be appointed not later than April 15th, so that they can organize for Forest Protection and begin the issuing of Permits at opening of the Close season.

TELEPHONIC COMMUNICATION.

Be it resolved:-

That telephonic communication be established between all

headquarter points throughout each Forest District at the earliest possible date.

PATROL OF OUTLYING DISTRICTS.

Be it resolved:-

That a more extensive patrol be established in outlying timbered districts.

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Report of Committee on Public Education and Forest Prevention.

C. J. Haddon, Chairman; Heath, Eden & Calvert.

Be it resolved:-

That a digest be made of the Annual Report in so far that it relates to the amount of Forest Revenue, Forest Products, Payroll, Costs and Total Value produced in each Forest District for the use of Rangers in spreading propaganda and enlisting sympathy of the better class of settler so that we can get their co-operation in Fire Prevention in order to show the relation between their means of existence and connection with the necessity of the conservation of the timber supply which latter, in a very large percentage of cases is their only payroll.

Be it resolved:-

That we are of the opinion that the strict enforcement of the Forest Act in connection with fires is absolutely necessary but that the Forest Branch should not relax in any way the Educational Propaganda which is being carried on.

Be it resolved:-

That some change be made in the design of the present calendar, each year, and that the wording be made more directly applicable to the month in relation to the snow belts of the Interior.

Be it resolved:-

That instead of Victoria sending out posters without due regard to Interior conditions that the District Officers, requisition such Posters as are applicable to the District concerned.

Be it resolved:-

That as it is necessary to educate the coming generations that some brief outline be supplied the Rangers for talks to school children. That Department of Education be requested to include some brief studies in Forestry in connection with the present curriculum.

Be it resolved:-

That the Forest Branch set aside a certain sum of money for certificates and badges for the best essays on Forest Protection in each Forest District. Competition to be graded according to age. A special prize be allotted for the best essay turned in for the whole Province.

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Reduction of Forest Fire Hazard.

R. S. Leighton, Chairman; Lowry, Woods, & Horne.

Resolved that it is the opinion of this meeting:-

- (1). That with a view to the reduction of fire hazard, lands open for pre-emption, should, as far as practicable, be defined by settlement areas, and the granting of Pre-emption records over isolated areas discontinued.
- (2). That all slash created in the construction of Government roads should be piled and burned on the right-of-way as construction proceeds.
- (3). That all available data on the cost of the various forms of brush disposal be collected and tabulated, and placed in the hands of the field staff to assist their recommendations as to the control of this hazard.
- (4). That coal burning locomotives be replaced by oil burning, on the mountain divisions of the Canadian National Railway during the Close Season.

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Report of Resolution Committee on Land Classification.

J. M. Gibson, Chairman; Sharkey, Noble & Mathieson.

- (1). In view of the fact that certain pre-emptions are taken up under the residence section of the Land Act for the timber values involved and with rather doubtful intention of compliance with bona fide residence duties, it is resolved that regulations be placed in force to place a stumpage reservation on permits to cut on these pre-emptions.

The stumpage collected to be held in trust until such time as the bona fide intention of the pre-emptor is shown.

CARRIED.

- (2). In view of the fact that in certain portions of the Province, land clearing is very heavy and the soil a heavy clay, it is considered that the present pre-emption of 160 acres is too large and the committee would recommend that on such areas pre-emptions be limited to forty acres and that only one pre-emption be allowed one man in such cases.

CARRIED.

- (3). In view of the fact that pre-emptors are often widely scattered with lack of transportation and school facilities it is recommended that agricultural areas be set aside as reserves with the intention of community settlement.

CARRIED.

- (4). The Committee is resolved that the time has come when it is an urgent necessity that Forest Reserves be created. It is therefore recommended that each Ranger furnish to his District Forester a map outlining the area which he considers should be placed under such a reserve and that the District Forester take the matter up with the Victoria Office.

CARRIED.

Resolutions relating to questions in paper on The Objects of Logging Inspection, Chairman W. Langmuir, Heath, Sharp, Noble.

Be it resolved:-

That in view of the fact that Forest Officers are burdened with Management work at the beginning of the logging season, that a simplified form of Preliminary Report be compiled for ordinary Logging Inspection Reports. This form to consist of:-

No. of Lot and Status, Land Dist. - Forest Dist. - Atlas Ref. Name and address of operators, date of commencement, date of examination, scaling, log mark, Conditions of boundaries, seasons output expected. No map on this report.

Be it resolved, that when instructions are issued to Foremen or Operators (as a result of logging inspections) if cleared, be granted as a pre-emption.

CARRIED.

Timber Sale Administration and Appraisal of Values.

J. E. Mathieson, Chairman; Boyd, Campbell, Frost.

- (1) This Committee recommends that on areas classified as absolute forest soil seed trees of the most valuable species be left

where natural reproduction is insufficient to restock.

- (2) It is recommended that Headquarters appoint parties to compile data obtained from logging studies in the various districts and distribute to all districts for standardizing logging costs.
- (3) In view of the insufficient data regarding the best method of slash disposal this Committee recommends that studies by sample plots be undertaken by parties appointed by Headquarters and the results of their investigation be published in a general bulletin.
- (4) It is recommended that as a matter of policy scaling of timber from Crown land be carried out before leaving sale area where such timber is rolled into rivers or lake for transport to mills. Except that the present policy of scaling on timber sales be not changed.

CARRIED.

OUR BOOK SHELF.

- Tennessee Forest Fire Manual. (Tennessee Forestry Bureau Circ. No.6)
- Ethics of the Forestry Profession - T. S. Woolsey Jr.
(Journal of Forestry, Feb. 1923)
- The Relative Unimportance of Protection and Silviculture as Compared
with Sustained Yield (Journal of Forestry, Feb. 1923.)
- Classification of Forest Sites (Journal of Forestry, Feb. 1923.)
- The Comparative Fire Resistance of Douglas Fir and Redwood.
(University of Washington Forest Club Quarterly)
- Progress in Reforestation in the United States.
(Broadcasted by "Oregonian Radio," Jan.30,1923)
- Do Thinnings Actually Increase Growth per acre as compared with
Unthinned Stands? (Journal of Forestry, Feb,1923)
- The Deterioration of Felled Western Yellow Pine on Insect Control
Projects.
- The Effect of BROADCAST Burning of Sale Areas on the Growth of Cull-
producing Fungi. (Journal of Forestry, Feb. 1923)
- Forest Fire Education and Publicity Methods.
(Journal of Forestry, March,1923)
- Method of Determining Quality of Yellow Pine.
(The Timberman, April, 1923)
- Inspection of Logging Railroad Projects.
(The Timberman, April, 1923)
- Stability of Douglas Fir Market since 1921,
(The Timberman, April,1923)
- The Relative Cost of Making Logs from Small and Large Timber.
(Univ. of Cal. Publications,Bulletin 339)
- Colouring of Standing Trees. (Journal of Forestry, March 1923)
- The Alinement Chart - Method of Preparing Tree Volume Tables.
(Univ. of Cal. Publications on Agricultural Science)
- Interest charges on Growing Timber
(Ill. Canadian Forestry Mag. April.1923)
- A New Cruiser's Stick and Universal Volume Table.
(Journal of Forestry, March, 1923.)
- New Devices for Solving Some Problems in Timber Mensuration.
(Journal of Forestry, March, 1923.)

THE EDITOR

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was finished.
