

OFFICE COPY ROOT AND BRANCH

BRITISH COLUMBIA
FOREST SERVICE
LANDS DEPARTMENT

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No. 5.

"TO BE OR NOT TO BE."

"What's all this talk I hear you fellows speil,
'Bout 'silviculture' and 'the future stands'?
It seems to me 'twould be a squarer deal
To let the farmer have the logged-off lands."
"Old-timer, there's another side to that.
Whether we should have farms or forests here,
Raise crops or trees, have homes or industries.
Is not by any means so crystal-clear
As you might think. To clear these rugged tracts
Of massive stumps would cost you, I might say,
A price per acre that I feel quite sure
No farmer in the world would want to pay.
And then, suppose the lands all nicely cleared
And all you have to do is break it up
And sow the seed. You're sure you'd get a crop?
You might-or you might find you'd bought a pup!
But where we know that it will grow fine trees
And keep on growing them while Time endures.
Well, there you are! Now, should we play a cinch,
Or bet upon a gambler's chance like yours?"

W.M.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.

TAKING STOCK

(G. R. Naden)

Probably there will not be a new idea in what I write tonight for any Forester who may read it, and yet it seemed to me that sometimes it is well to go over the old stuff again and again until it becomes as familiar as "THERE'S A REASON," "GRATEFUL AND COMFORTING," "HE WO'N'T BE HAPPY TILL HE GETS IT," and so on!

The most successful advertiser and propagandists have found out that, in order to put a thing over you must keep on endlessly repeating your own particular slogan, until that slogan means the article you have to dispose of and nothing else. The words above in inverted commas, mean to the average individual "Grape Nuts," "Epps' Cocoa" and "Pears' Soap," and have been given those meanings by constant reiteration.

If I were asked to epitomise the discussion of the British Empire Forestry Conference, and the main idea they were trying to put over, I would say that it could largely be compressed into "Crop your Forests instead of mining them," and I think all Foresters and all interested in Forestry should keep on repeating that advice until the general public begins to get a conception of what Forestry means.

The history of Eastern Canada and the United States shows conclusively that until quite recently the Forests have been mined, and where a tree has been cut down no effort has been made to have a new tree growing to replace the one destroyed. There has been such a wealth of virgin timber available that apparently the supply was deemed inexhaustible, and it was not until the horse was stolen that the necessity for locking the stable door was evident!

The same reasoning applies not only to timber, but to a number of our other natural resources.

A suggestion is now made that sock-eye salmon fishing should be prohibited on the Fraser River for thirty years. The Game Commission are considering the advisability of a prohibition on trapping fur-bearing animals for five years. In timber, and fish and fur the country is steadily depleting its capital instead of using ordinary common business sense and trying to conserve its capital and keep its expenditure within its income.

We will suppose the proprietor of a large Department Store died and left to five sons the store as a going concern, with a stock worth a million dollars. What a time those five sons could have for a year or two if they sold the stock and spent the proceeds, and put back none of the money into new stock. The faster they sold the stock the more money they would have to spend, and if they got through it in a year they could each

spend two hundred thousand dollars during that year!

Of course you will say nobody would be so foolish as to do anything like that, because at the end of the year they would have nothing left, and everybody knows that a business man can only afford to spend his profits and must keep money enough to replace his stock as it is depleted. Of course he must, if he intends to keep in business, and if the five sons who inherited the Department Store are good business-men and keep their capital intact, they may be able to divide ten per cent of their million dollars, or one hundred thousand dollars, among themselves every year in perpetuity or until they in turn bequeath their share of the business to other legatees.

Eastern Canadians and citizens of the United States have for a hundred years been selling and destroying their timber and until quite recently have made no effort to replenish their stock. As it takes anywhere from fifty one hundred years to grow commercial timber, a long sight is necessary if we are to continue in the timber business.

All the above is so simple and self-evident that it seems foolish to put it down on paper, and I have two excuses for doing it.

One of them is that attending the Forestry Conference impressed upon me so strongly the necessity, if we are to have a continuing timber business, of replenishing our stock of timber as fast as it is being destroyed. That, for every tree that is cut down for commercial purposes, for every one that is destroyed by fire or insects, we should try to have another one growing to take its place.

The other excuse is that a sane level-headed and successful business man was in the office the other day and wondered why we were spending so much money on our Forest Service, and why we had so many men riding around in motor-cats apparently doing nothing. In the few minutes I had to spare, I tried to tell him that nearly all our forest officers were simply clerks in the store, selling the resources of the forests to the customers who wanted to buy, and that the proceeds (which was our capital) were being used for revenue and hardly any of it being put back into capital.

I tried to show him that the money spent in protecting the forests from fire and insects was what he would pay in his business in Insurance premiums, and he could readily see that Insurance premiums did not go to buy new stock to replenish what had been sold but simply to replace what was destroyed by fire. I tried to show him that, in order to replace the stock sold, we had to spend money in investigating new growth under different conditions; to find out the most economical methods of logging so that competition from other countries could be met, and the logged-over land left in the best condition for re-seeding.

I tried to show him that it might be necessary to establish nurseries for providing seedlings to replant those areas more suitable for forest growth than for agriculture, and where natural regeneration was a failure.

Before he went away, I think I had persuaded him that instead of having too many forest officers we had not enough, and were spending altogether too much of our capital as revenue.

As I mentioned above, the visitor in the office was a sane, level-headed business man and he had not the faintest conception of what the Forest Branch was trying to do. If that man knew so little of what we are trying to do, is it not reasonable to infer that a great majority of the people are in the same condition, and that, before we can hope to get the generous support necessary for real Forestry, we shall have to educate the public?

We shall have to show them that forestry is not a fad of a few college graduates but means bread and butter, and that to a large extent the future prosperity of the Province depends upon how we use our fish and fur and timber and other natural resources.

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ENCOURAGE THE WORKERS - Men need a word of encouragement now and then, just as much as they need food, for as food is to the body so is encouragement to the mind and heart. A worker who is discouraged is not half a man, and fear of disfavour often holds back valuable information.

Even the most liberal compensation cannot take the place of a word of appreciation and encouragement given in the right spirit and at the right time.

Men and women crave the assurance that their work is meeting with satisfaction, and to withhold that assurance when it is due is not merely poor business policy - it is injustice. Part of the compensation of every worker is the satisfaction of knowing that he is accomplishing something, and to hold back that satisfaction is often more harmful than to hold back money duly earned.

More and more must those in business recognise the human element in men and women, and not avoid the part that the heart plays in business.

It is possible to say too much to a man, thus giving him an inflated sense of his value; but the general tendency seems rather in the other direction.

(Ex.)

PERSONAL PUBLICITY

(T.H. Ainsworth)

Can we make our publicity more direct in appeal? With the opening of the hunting season all fieldmen (and many officer men, too, for that matter) had a feeling in their bones that there was a busy time in the offing. History shows that their expectations were realised; the number of fires took a big jump, and investigation has proved since that hunters were directly responsible for the majority if not for all the fires occurring since September 15th.

In most instances, the fires occurred on or near game trails, and were not due to abandoned campfires but to smoking and hunting at the same time -- which is a bad combination!

Many good sportsmen would refute the idea that they were responsible by smoking in the woods; but in defence we would say that when a man has a gun in his hand his predominant thought is to take a shot at any game crossing his vision. And if he be smoking at that particular moment, then, so much the worse for the woods. Few men are sufficiently dexterous, however thoughtful they may be, to extinguish a cigarette stub and still keep the quarry in range, and the result is that the stub is often thrown where it is liable to cause damage. And there are others who are so careless that it would require personal attendant with a handpump, or a square mile of asbestos to prevent a fire.

In our methods of publicity we have appealed to the masses in the hope that we shall reach those who frequent the woods, and while certain deviations have been made in the form of posters to campers at camping places and through the 'Fisherman' envelopes, it would appear that we have not taken full advantage of getting our idea to the hunter. Possibly, this is due to the chance that the hunting season is usually the harbinger of rain.

Across the street from this office there is a large advertisement of a new and greatly heralded remedy for stomach misery. This is an example of an appeal to the masses in the hope of attracting sufferers from the misery referred to. At best, this is a very speculative method, for it does not appeal to us, nor would it appeal to the person suffering from a chronic hob-nailed liver. On the other hand, we have the advantage of knowing to whom to appeal and as a result are able to concentrate on them accordingly.

We understand that the Vancouver office this year adopted the novel and direct appeal to the hunter by means of stamping the words; "PREVENT FOREST FIRES - IT PAYS" upon the gun licences issued in that district - although it is understood that this was not accomplished without some difficulty. Why should there be any difficulty - all that is required is a little co-operation to establish the idea permanently, so that every gun licence issued in the Province would bear a printed warning as part of the licence proper.

We must look for the co-operation of those directly interested through the sale of hunting equipment, and would suggest that the Editor's idea of illustrated posters be used in this particular instance to show how hunters cause fires; and, if the coffers would allow it, why not a series of miniature stickers for the cartridge containers?

If we accept the theory that all who frequent the woods are possible sources of forest fires, due attention may be given to the tent. We place our posters where we expect they will be read; couldn't we go one better and have appeals printed on cloth, and have one sewn on the inside of each tent manufactured in the Province? Here again we encounter the awful bogey of COST; but the cloth signs of the Game Board are seen everywhere, and the cost for tent signs need be no greater nor the signs any more elaborate.

No true sportsman would regard this as an infringement, neither should any objection be met with from the tent manufacturers. Even supposing that payment should be required for the sewing of these signs to the tents, it is machine work and doubtless a small flat rate could be obtained.

The tent has figured largely in the development of the hinterland; the Province is yet young and tents will still precede the settlements. An appeal rightly worded may have the effect of preventing one or more of those mysterious fires of large proportions which occasionally rage off the beaten track. Assuming that one such fire was prevented by this means, it would pay for a decade of such publicity - for the farther away the fire, the greater the cost in every respect.

There is the possibility that this article may appear unseasonable. If such is the case it is prompted by the words of George Washington to the effect that the most effectual means of preserving peace is to be prepared for war; and while sentiment may alter in regard to war, the maxim must always apply in our scheme of things.

... ..

(Personally, we do not admit that Forest Protection propaganda is ever unseasonable. Of course, there is a time and place for everything - the time for Forest Protection propaganda is any time and the place is any place. Editor.)

E D I T O R I A L

From time to time in "ROOT AND BRANCH" we have published articles deliberately designed to arouse discussion by the Field Staff, but up to the present we must confess that the results have been disappointing.

We say "disappointing" advisedly. We are disappointed but not discouraged - at least, not yet.

The fact that we did not bring out a number of "ROOT AND BRANCH" for September was due entirely to abnormal pressure in other directions, and must not be taken to indicate that we are weakening in our purpose.

With the support of the Field Staff, or without it, we shall continue to produce the magazine. The cordial reception it has received in other quarters is sufficient justification.

"Independent as a pig on ice," did we hear someone say? That's not our idea at all, although when we say that we will carry on with or without the support of the Field Staff we mean just that. At the same time, we know that the magazine would benefit and the service would benefit if the restraint which seems to exist were removed and greater use were made of "ROOT AND BRANCH" as a medium of expression.

Until it receives more generous support from the men in the field, the magazine will still fall short of the ideal we had in mind, namely that it should be the generally-accepted medium for the interchange of ideas and opinions throughout the service, and that it should help to create and maintain the esprit de corps which is so essential in an organization such as ours.

It is gratifying, of course, that our house journal should have attracted so much attention outside of our own immediate circle, but it is to our own immediate circle that the magazine is intended to appeal, and until we know that it does we are bound to feel that it is failing to achieve the goal we had in view.

It has been suggested that our readers are merely waiting for a good "lead." What better leads could be offered than, for example, Ranger Pym's article on "POSTERS" in a recent issue, or St Clair's on "UNIFORMS," Melrose's on "SILVICULTURE AND SLASH," or the numerous articles by Cowan on Forest Protection Organization. And in this number we have Wilkinson's on "CAMP SITES OR----?" and Orchard's "MAINLY ON CRUISING."

Might we suggest that the District Forester themselves might contribute a little more freely, for until they do, frankly we cannot see that the field staff can be expected to come forward to any extent.

MOSTLY ABOUT CRUISING

(C.D.Orchard)

If one who has made cruising almost his sole business for some years must sit and bite the end of a pencil for an hour by the clock, as I have just done, before he can find something to say on the subject, it would seem that we still have much to learn.

The conviction that this last is so; the hope of suggestions on the work from field men which will be of value in the conduct of big cruises; the evident interest of many District Officers with whom we have come in contact, in the methods employed by the cruising parties working out of Victoria; not to mention a gentle push from the Editor, are some of the considerations which prompt this article.

That there is room for improvement in cruising on the part of the field staff in general is sufficiently evident from the following taken at random from the timber sale files.
Four sales

<u>Cruised as below</u>	<u>Cut</u>
1,382,000	589,000
397,000	93,000
1,029,000	3,287,900
2,000,000	71,600

I have been told by both operators and commercial cruisers, especially the latter, that a Forest Branch estimate is worthless. If this be so (and they will not get many of us to admit it) it is at worst the pot calling the kettle black. The stand on a certain area on which we had occasion to make a check cruise this year was estimated by one commercial cruiser for one company at 20,955,000; by another for a second company at 8,320,000. Examples such as these indicate that there is no such efficiency in cruising as is displayed in the various other phases of the lumbering industry. That a few of us have learned the knack, however, is evident from the following examples, taken once more from the timber sale files. These exemplify a class of work which commercial cruisers will be hard put to to improve upon.

<u>Cruised.</u>	<u>Cut</u>	<u>Error.</u>
1,600,000	1,717,000	6.8%
250,000	244,000	2.4%

It is pretty generally admitted that a strip cruise will give the best results in the long run. It will be discarded for some more accurate system at a future date, perhaps for Tor Jonson's, but with our present data, experience and staff there is little room for question. The exact method of application is

open to argument and must be governed to some extent by local conditions. For a man working alone the circular plot at regular intervals is possibly best, though fixing of the boundary offers a greater chance of error than is the case with the straight strip. In the open stands, such as Yellow Pine, a two chain strip may be attempted. It is the writer's opinion that a two chain strip cannot be run with consistent accuracy in any other class of timber in B.C. Apart from the possibility (or impossibility) of getting all the timber on a two chain strip, two one chain strips through a 40 will give a better estimate unless the stand is exceptionally uniform throughout. The second strip can be run in the time taken to determine whether the area really is uniform or not.

The common sources of error in a strip cruise are always the same and are pretty generally understood, but like the words of the Governor of North Carolina, of well merited fame, will stand much repetition and discussion. They are then:-

1. Error in estimate of the strip width. A few cruisers are inclined to cruise too wide a strip but the common tendency is to make it daily a little narrower. This tendency will result in gross errors if not constantly checked. A cruiser on a Headquarters Party is expected to actually measure strip width with chain or tape at the beginning of every strip and to check his pacing thereby. He is expected to pace out to every tree concerning which there is any doubt.
2. Error in estimate of diameters. Headquarters cruisers are expected to carry a Biltmore stick and diameter tape with them on every strip and to check their judgement frequently in every 40. It is a well established fact that a man may judge every tree correctly today and misjudge about every other one by two or more inches tomorrow. There never was a cruiser who could afford to work without some diameter measuring instrument.
3. The misapplication of volume tables. Our volume tables have been prepared with the utmost care by men of wide experience, but no one of them can be depended on to give really accurate results in every stand. The very first step taken by a party working from the Victoria Office is to check volume tables for use in the particular locality in which they are to be applied. Sometimes they may be used without alteration. Correction factors as high as 30% have been used. A Ranger working for long periods in a given district should be able to adjust his tables to local conditions within an error of two or three per cent.

If height classes are sufficiently uniform a table based on diameter and total average height may be prepared which will give good results and greatly facilitate one man cruising.

Methods of adjusting tables, curves, etc., are beyond the scope of this little article. They are fully and clearly discussed in Chapman's mensuration, a copy of which should be in the possession of every Field Officer.

4. Cull factors. An allowance for cull is absolutely essential and the estimation of proper allowances on this score is the most difficult thing a cruiser is called upon to decide. Various systems have been used by Headquarters parties. All trees have been tallied as sound and a blanket cull factor used for each forty to cover all defect, seen and unseen, and breakage. Apparent defect has been allowed for as the defective tree was tallied by reducing diameter or log length, or both, and a cull per cent applied for unseen defect for the forty. To reduce a tree for crook, fork, or any such defect requires considerable skill which can only be gained by observation and measurement of down trees. A few such measurements should be taken on every visit to an operation. Whichever system has been used, and the second is the better, studies of unseen defect are always made by actually falling trees and frequently cutting into doubtful ones on strip.

5. It goes without saying of course that the strip should be straight and across the topography. A poor compassman may mean a poor estimate. Pacing or chaining should be accurate to within four percent. Offsets into "Average timber" should never be countenanced. The whole system is based on the law of averages. Stay with the strip.

These are the big sources of error. If they be eliminated, then a ten per cent cruise in reasonably uniform stands should give an estimate very close to the actual cut. Having dealt with these as well as possible, volume tables checked, defects studied, etc., it is the practice in Headquarters jobs to demand that cruisers work within an error of 10% both as to number of trees tallied and volume indicated. To this end every strip is blazed every two chains in order that it may be following exactly for checking purposes. Every cruiser is checked at least once a month, and if an error greater than 10% is disclosed he is checked very much oftener. Even compassmen newly promoted find very little difficulty in working to this standard.

On a check strip every tree is measured. If tally is being taken by log lengths, heights are measured constantly. Trees are felled to check up on judgement of merchantable top diameters. Number of chains covered is no object. Really the only thing that counts is that the portion done shall be absolutely correct to the satisfaction of both the checking officer and the original cruiser. The original cruiser always goes over the ground calling the tally to the checking officer who questions anything and everything he considers may lead to error.

Some such system of checking ones self is the only way to insure consistently accurate work. Every ranger should check his cruising at every opportunity, especially if another man is available to assist.

There are many small details connected with cruising which might be of interest to many but the available space will not permit of further discussion of methods.

An accurate estimate of the timber on a logging chance is a prime necessity. It is essential in the planning of any considerable operation and an absolute necessity in appraisal work. The purchaser of Crown Timber pays for an estimate and is entitled to a good one. The examining officer needs an accurate estimate for the completion of his appraisal and should know that he has it. Forest Branch cruises should be so reliable as to be accepted as the standard throughout this province and it is quite easily within the bounds of possibility for us to make them so. A little more care in the running of strips and sizing up of a sale; close observation of sales in the process of logging and application of information so gained will produce the desired result.

Remember:-

1. Paul Bunyon himself (had he turned to cruising) would have made gross errors had he continued to work for long periods without a check. Run check strips as often as practicable.
2. An intimate knowledge of local characteristics of stands is absolutely essential to accurate cruising. Note defect wherever found and especially the unseen defect disclosed on logging operations.
3. Compare the estimate on every sale cruised with the actual cut and decide definitely how the error (if any) occurred.
4. You can't always believe what your eyes see. Check judgement of diameters and strip width often.
5. If you know some tricks of the trade you think we don't, we want to hear about them. We'll be watching for them in the next issue of the Root and Branch.

If you think you are beaten, you are;
If you think you dare not, you don't;
If you like to win but you think you can't,
It's almost certain you won't,
If you think you'll lose, you've lost;
For out of the world we find
Success begins with a fellow's will;
It's all in the state of mind.
If you think you're outclassed, you are;
You've got to hink high to rise:
You've got to be sure of yourself before
you can ever win a prize.
Life's battles don't always go
To the strongest or fastest man;
But soon or later the man who wins
Is the one who thinks he can.

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CAMPSITES OR "?"

T. H. Wilkinson

Camping places in the interests of Forest Protection have been given very serious consideration lately. To those who are interested in the matter I submit a few remarks and suggestions for their consideration and action during the winter months, in preparation for the Period 1924.

The chief object of the Campsite is to centralise and control a hazard which is obviously increasing through:- an increased tourist traffic from the outside, more car owners in our own Province, and new and better roads. These are facts which cannot be overlooked, and it is therefore, necessary for us to put our house in order, if we are to handle the situation, because British Columbia is rapidly becoming the mecca of the motorist on this continent.

The campsite is not constructed merely for ornamental purposes, but for the tourist motoring through the country who prefers the "Great Outdoors" to the four walls of a room, and for the weary city man and his family enjoying their week-end picnic.

From a study of the matter and discussion with visitors to B.C., it seems to me that campsites should be divided in three groups (1) Those areas set aside and used principally for picnics. (2) Community (3) Individual. The last two are naturally for the tourist. By community I refer to the area which has been laid out as one campsite capable of accomodating many parties. This is the type where the camper must share the fire place. There are always people who prefer company to solitude, and the community camp should attract that class. The individual campsite is a group of one party camps, and would appeal to those who prefer privacy.

Choosing and locating campsites is of primary importance. In deciding on any location the following should govern the selection. Drainage, Sanitation, Water supply, Expansion, Beauty, Comfort, Parking Space and Status of area. The first three viz.; Drainage, Sanitation and Water Supply need little elucidation for the woodsmen who has experienced a night or more in camp after a heavy rain, the aggravating fly encouraged by a dirty camp, or the after effects of partaking of water out of an unhealthy swamp; fully appreciate what these three things mean to camp life, and you have established the foundation of your campsite.

Wherever possible, endeavor to lay out the campsite to permit expansion. You may only be able to build to accomodate six parties this year, but next year may find you desiring to prepare and extend the same site to care for twelve.

The individual touring the Province is distinctly on the lookout for points of scenic beauty. Endeavor to locate your campsites at such points if you wish to control and hold the hazard.

It is not always possible to secure a site with all the foregoing good qualities, and it is just in such places which lack beauty, that the originality of the Field man must come into play "Make your campsite attractive."

Before putting in any improvements, never fail to establish the status of the area upon which you wish to construct your camp. If your location falls on private land, endeavor to interest the owner in Forest Protection, and secure co-operation in your camp scheme. If the area you require is Crown Land, then submit a plan of the area to your District Office, and suggest the area be placed under reserve for Camp site purposes.

The comfort of a campsite must be included in your general scheme. Low swampy ground should be given a wide berth, as well as the open hot plain. Shade trees must naturally form part of any camp and care should be taken to fall trees that are obviously not windfirm. Prevailing winds must, as in the case of fire, be given careful thought. A campsite in an exposed position is not conducive to comfort. Campsites should never be located too close to a main road, because the clouds of dust from passing vehicles make camp life anything but attractive.

Parking space for motor cars is a very essential part of the general scheme, and in selecting ground for this purpose remember your own experience with a car on a wet day in soft ground.

A further point to consider is the relation to other camps including both municipal and private. The campsite should certainly be established with due regard to the days journey or its location from the last likely stopping place of the camper.

Having considered the main factors or control points governing the selection of the campsite, the next thing in the plan is the equipment required to complete the construction of the camp. The most important in order are:- Fireplaces, Tables, Sanitary Conveniences, Receptacles for rubbish, Poles for tents and wood for the fire.

Standard fire places, Tables, and Sanitary conveniences, have been designed by "Operation" Office, and blue prints of these will be forwarded to the Districts in due course. Each individual has his own pet theory to what constitutes a serviceable open fire place, but I feel certain that the consensus of opinion will lean towards the standard cast iron fire place, after one has been tried out. If you want to install a fire place of your own design in the campsite, then do so by all means, as originality must and will make your camp attractive.

The standard table is made of lumber finished on one side and the edges with seats complete^{and} is designed to seat six people, although an additional two can be accommodated by placing boards across the ends. Some critics might declare such a table too

small, but remember you can always move them and put two together. Experience has shown that there are not two parties content with the same location of the table - one wants it under the shade tree, while the other wants it in the sun. This means that the tables will be moved frequently. If they are made heavy and cumbersome they are bound to be damaged in the course of being dragged about. Small tables are easily moved to any part of the campsite to suit the wishes of one and all. There is the additional fact that many people are adverse to sharing a common meal table with stranger which is after all, the way most of us feel in the matter.

Sanitary conveniences are indispensable in the life of the camp. Considerable adverse comment has appeared in some of the motor magazines regarding the lack of sanitary arrangements in many of the existing camps. Locate the site of these structures with due regard to camp life, and preclude the possibility of trouble with the Health Officer. Care must be exercised to avoid possible contamination of the drinking water. The excavation for the sanitary convenience should not be less than six feet deep and the building should not be closer than 200 feet to the camp and never within sight of the camp.

Receptacles for rubbish should be placed at every table. It is not necessary to supply anything elaborate, half barrels or tubs or boxes easily transported, are all that are necessary. These can always be painted to conform with the neat appearance of the camp. The camper should of course, always be encouraged to burn as much of the refuse as possible in the fire place.

Poles for the tents should be available in order to eliminate the tendency to destroy shade trees for this purpose.

Wood for the fire place is a necessity, otherwise the camp shade trees, tables, etc. are bound to go up in smoke. It further adds to the comfort of the camper and this point is, after all, what will hold your hazard in the regulated camp.

Again I want to establish the fact, that any standardization in the camp should in no way prejudice the Field man against his own ideas. If you want to construct a rustic table and rustic seats, then do so, there is nothing to prevent you carrying out your own scheme for the beautification of your camp.

In addition to the equipment set forth in preceding paragraphs, there is such construction work as a rustic archway at the approach to the camp. The stream from which water is procured can be improved so that the camper will not draw part water and part dirt; in some places a few feet of flume or pipe will solve this. Another part of the stream might be partially cleared as a paddling spot for the youngsters.

The approach, or road to the camp should be good, no tourist will return to your camp if his car sticks in the mud.

The old army scheme of dipping rocks in white wash and using the rocks as a border to the road improves the general appearance. Seeds are cheap, and if sown at the right time might eventually give the campsite the dash of color so necessary and which only flowers can reproduce. The notice board on which you post:- the Fire Law and Game Law notices, the map of the district, the information regarding the location of the next camp, the instructions to the campers regarding cleanliness around the camp, Notice boards, one mile each side of the camp, on the main highway, directing the camper to the campsite, must not be forgotten. In many instances a fence will be necessary to keep out cattle and horses.

The foregoing covers the general campsite scheme, but undoubtedly many other fixtures to make the campsite comfortable and attractive will suggest themselves as the work of construction progresses.

To sum up briefly then, the most important factors governing campsite construction are: (1) Careful selection of the site, having due regard to natural beauty, comfort and health. (2) Determining the amount of equipment required to make the camp serviceable. (3) A general scheme to improve the appearance of the campsite in order to make it attractive. (4) Keen interest and ingenuity on the part of the individual constructing the camp.

Does the Branch contemplate building such camps as described in the preceding paragraphs? To this I can give an emphatic reply in the affirmative, provided, the Field man is prepared to assist in demonstrating the value of such a scheme in the interests of Forest Protection.

Is not the campsite as outlined rather elaborate? To this question I reply in the negative. The day of building a rough table, piling a few stones together in any old spot and calling the result a campsite, is gone forever. Cast your memory back to just such a spot and you will remember, that in addition to the table and fire places, you now have empty cans, paper and other debris, giving the whole scene a most unhealthy and unsanitary appearance. Would you care to spend a few days with your family in such a place? You certainly would not, and neither would I. Compare the last scene with the suggested campsite. In the existing case you are not particularly satisfied with the result, in the future scheme you are proud of your work and you share in the credit it reflects on the Service. I am not disparaging the attempts of many of the men to create campsites. I fully appreciate that their efforts were restricted through lack of funds.

I have stated that it is possible that the Branch will construct good campsites, and I am convinced that such a scheme will eventually be part of our annual programme. Such a plan will require an auxiliary patrol force for the maintenance of the camps. However, before such a campaign can be carried out, it has got to be clearly demonstrated from a practical standpoint that it is feasible and in the interests of Forest Protection.

I have discussed the matter of campsites with a great many Rangers and I have yet to discover one who is not in favor of them. It is with this in view that I present the following scheme for consideration and if possible immediate action.

Let each Ranger, in whose District the motoring Camper forms part of the Forest Protection problem, undertake to construct one campsite along the lines suggested, capable of accommodating not less than six parties, when fully developed.

"How and when can I do this and what about the cost"? A fair enough question, Mr. Ranger, but just give the matter a little thought.

You are starting out with the understanding that this is to be your camp and it is going to be second to none in the Province. Having worked up the necessary enthusiasm, figure that you have, from this date until June 1st, 1924, to complete your camp. Your knowledge of your district will make it a comparatively simple matter for you to decide on the site. If you have several spots in mind, look them over next time you are in their vicinity and make your choice, always keeping distance from the nearest town or the next camping place in mind.

Having decided on the location, the next step is to commence clearing and cleaning out the area. In order to do this, I would suggest you estimate the time it will take to clear the site, then endeavor to put in a day or so whenever possible, carrying out this part of the work. If the Assistant Ranger or Patrolman who worked with you this year, lives in the vicinity, explain your plan, and I am sure they will assist you in the scheme. It may be possible to interest an Hon. Fire Warden or two, and by holding a "Bee" with this voluntary help, the initial part of the work will be carried out expeditiously. The preliminary work should not require any expenditure and this is a very important point, because funds are bound to be limited. If you spend all your allotment on the house, what are you going to do about the furniture? Stress of other work may prevent your completing this preliminary part of the programme alone, and you may have to use Assistant Ranger labour for a couple of days in April. However, make a real attempt to complete this work yourself, so that when your Assistant Ranger help is available in the Spring, it can be applied to the construction part of the campsite. Cognizance of our own regulations regarding the piling and burning of slash must not be overlooked. I don't think it necessary for me to go into further detail on this part of the work, as our Rangers have shown that they can find ways and means to accomplish results.

Having completed the preliminary task of clearing the site, prepare your estimate of the equipment you require for your camp and forward your requisition to the District Forester. If you are constructing a six party campsite you will require at least two standard cast iron fire places, costing approximately \$10.00 each, and as these are set in concrete base you will require about

thirty five cents worth of cement. The fire places will be supplied by Victoria on requisition. You will need two sanitary conveniences, blue prints and bill of material of these will be forwarded to each District Office, the cost of material for these will amount to approximately \$20.00 each. You should have at least four standard six man tables which will in material alone cost about \$6.00 each. Blue prints of these will also be forwarded to each district office. In order to have sufficient tables you could construct a couple of rustic ones. You will also require a notice board and should allow about \$2.00 for material. Allow \$10.00 for paint (which should be green) and incidentals, and you have a total estimate of approximately \$105.00. not including labour. Your own efforts, that of the Assistant Ranger and whatever voluntary help you can get should solve your labor problem.

I think you will agree that if you complete the preliminary work, the constructional part of it can be completed in a very few days.

The question of poles, fencing, etc. is a mere detail and the gradual improving of the camp will depend on the amount of time you and your assistants can put on this from time to time.

Insofar as fuel for the camp is concerned this is easily solved, if you load up the car when you are at one of the mills, with wood, that would otherwise go into the burner.

Consideration of the foregoing, I think, will convince you that the whole undertaking can be completed with out much difficulty and cost. I would much rather see one first class camp in each Ranger District than several of a very indifferent quality. Again I repeat, make a good camp and keep it clean, the latter can be done by an occasional visit by yourself or Assistants.

I would, therefore, ask each Ranger who is interested in this scheme, to communicate with "Operation Office", through his District Forester, in order that an immediate start may be made and also that we can ascertain the amount of money that will be required. It is not necessary to put in your estimate at once. We merely want to estimate the cost and we can only do this when it is known how many Rangers have developed this scheme.

I would suggest that each campsite be named and numbered. An attempt will be made to visit each camp during the season 1924, in order that we may announce which is in our opinion the best Ranger Campsite in the Province. Each Supervisor and District Forester, I am sure, will be interested in each of his Rangers' campsites and will render every assistance to carry off the District honours.

It is of course essential, that a correct account be kept of the labour put in on this work, as these figures will be required for our work in the future.

A book might be posted on the notice board requesting all campers, to sign it, giving their addresses and remarks; this is very desirable if we are to ascertain how many people use the camps.

I have really gone into greater detail than originally intended, but in my estimation it is a very important subject, especially, as I stated in the first place, in view of the fact that the tourist traffic is increasing tremendously.

You realize the importance of Forest Protection: but does the man in the touring car, travelling through your District appreciate what it means? Probably not, but get him in your camp for a day or so and I am sure he will have a keener preception of the subject than heretofore.

Make a good comfortable attractive camp and you make a valuable friend in the interests of Forest Protection. You and your assistants will visit the campsite during the summer when it is occupied, and during the course of your conversation you can explain why the camps are constructed. Can you conceive a scheme where you have a better opportunity of "educating the public?" I don't think so, neither do I believe that Forest Protection can secure cheaper and better advertising. Sell anyone a good article at a fair price and that person is the best booster and friend your business can make. By the same token, your campsite efforts will make the Hosts visiting our Forests, an army of supporters, who will adopt as their slogan, our watchword, "Forest Protection".

WHAT ABOUT THE BOY SCOUTS ? - Last May we published a BOY SCOUT Number of 'ROOT AND BRANCH.' In this we were very materially assisted by the B.C. Headquarters of the Boy Scout Association, who contributed an article in which they suggested a number of ways in which the Forest Branch could help the Boy Scouts. Shortly afterwards, G.P. Melrose attended the Scoutmasters' Camp at Galliano and gave them a talk on Forestry, and C.S. Cowan on numerous occasions has addressed Scout gatherings.

Up to date that is the sum total of our achievement towards identifying ourselves with the Scout movement. However, now that the Fire Season and its immediate aftermath is over, the time is ripe for discussion of ways and means of establishing a closer contact. We feel sure that if the Forest Branch and the Scoutmasters were to get together throughout the Province, with a view to fostering the interest of the boys in Forest Protection and the Forestry idea generally, a very valuable auxiliary force could be recruited. What is the mind of the meeting?

"THERE'S A REASON!"

(P. Z. Caverhill.)

With pipe, slippers, and a sigh of relief we sit down. It is September 30th and another Fire Season has passed. As the smoke rings mount upwards, they bring reminiscences; through them we see other smoke clouds and incidents connected therewith. For instance, that sprint to the fire at Jones' corner, which we reached only just in time and then only because "Lizzie" did rather better than she had ever done before; or that scrap we put up to save Sam's buildings after he had started a clearing fire too late to avoid the afternoon wind; or how the fire at Thompson's Ford broke out again after all visible signs had been extinct for days; or how grateful we were to Mrs Smith who by promptly reporting prevented a bad conflagration on the Harbour Road.

Even in the Head Office, although we are not so closely involved in the actual fray, we are conscious of a slackening of the strain, and of the feeling of relief which comes with the closing of the Season.

Our retrospective view of the season of 1923 shows much that is pleasing. It has been the most successful in ten years. What can we gather from it which will help in planning for the future?

The weather - yes, the weather was favourable in general, and yet there were times of extreme hazard, times when a fire would have burned fiercely and spread rapidly, and the fires which occurred showed that there was a real hazard to combat.

In viewing the past season, it seems to me that the real reason for our success was in our organization. Never before was there the same organized effort to be prepared for the situation. Equipment in shape, crews lined up, the experiences of 1922 noted and remembered, the co-operation of the public sought and obtained; but most of our success can be attributed to you field men who so nobly put it over, accepting suggestions and working them out to suit your own conditions.

I believe, however, that our review will show many examples of where the control of this fire, or that, could be attributed directly to the work of some public-spirited citizen who got on the job early, reported the fire, or took those initial steps which mean so much in control.

Or of fires which never started because the camp equipment was complete, not delayed from day to day as was so often the case in former years.

To these our hearty thanks are due, and it is not too late yet to shake hands with them, and thank them for their co-operation.

Whatever the reasons, the results are these: Of the 1500 fires reported, 76.6 per cent. were controlled and kept under ten acres, as compared with a maximum of 69 per cent. previously. This reduction means a great deal less in timber loss - in fact, the timber loss has been the lowest in ten years and the loss in reproduction has also been exceptionally low. Fire-fighting expenses have also been kept down, and we now find ourselves in the happy position of entering the new year with a surplus which can be used for improvements and betterment of equipment.

Already we are beginning to think of 1924, and "ROOT AND BRANCH" is carrying in this issue a suggested scheme for Camping Sites. Have you any others to offer? It is by mutual help and team work that still greater success can be accomplished in the future.

FIRST FRUITS : We may be wrong in citing this particular instance as the first-fruits of our School Essay Competition, but at any rate it is the first concrete case which has come to our notice.

In commenting upon a Fire which occurred in the neighborhood of SALMO, District Forester MacDonald states that "Three young girls found working on this fire were personally commended by me for their zeal at the scene of the fire."

"The fire was discovered by the District Forester about 7 p.m. on September 6th. Three little girls trying to put it out," reads the Final Fire Report. Property protected - Entire countryside."

Someone with a delicate sense of the fitness of things has named this fire "THREE GRACES", under which appropriate designation it will continue to be known.

"FRISCO OR BUST!"

(W. Carey.)

After hearing so much about the Sunny South and its glorious climate, its wonderful roads, and so forth, not forgetting its "go-getter" attitude, I decided to take the trip as far as San Francisco, to get to know a little about the ways and habits of those people who are making things hum so much at present.

Starting off from ANACROTUS in the little old Ford, we hit the pavement and after travelling for part of the first day in a rather severe storm, we arrived in SEATTLE Auto Park for the first night. Here we found everything for the tourist; hot and cold water, and a good place to cook food. About sixty cars were already parked there and until the early hours of the morning they kept on arriving, setting up tents and taking them down.

Good and early we got away with the idea of dodging the traffic in that hustling burg, but nothing doing! One has to take it on the hop - cars galore, and they sure do move!

Once clear of Seattle, the next place of importance was TACOMA, then OLYMPIA and on to PORTLAND, which we reached on the second night. Portland is a fine city with a good auto park, where everything is done to make one comfortable. The district is a great agricultural one, with smiling acres of fine orchards.

We crossed the ferry to HARRISBURG and from there travelled on to COTTAGE GROVE, where we spent the night in the same kind of Auto Camp as at Seattle - shower baths and lots of comfort.

One cannot help being impressed with the roads travelling through Oregon. They are concrete paved and every vestige of rubbish is cleaned up and burnt right back to the fence-line. No campers are seen on the road-side, there being no incentive to camp other than in the regular camping places, when each little burg has its own auto park.

From ROSEBURG we hit the mountains and the fir belt, and began to look around for fire notice. We were much disappointed to see only three during the day's drive. One tool cache was seen and that was 'way up in the hills and consisted of a six-men outfit. It was still very dry everywhere, and on one mountainside a fire was going strong.

The absence of timber was another disappointment; we had expected to see a lot more of it. We saw several small mills, but no open burners.

Once over Grant's Pass and we were in CALIFORNIA, and we were not long in hanging our feet overboard! Here's where we get the climate! At one Service Station we asked: "Is this heat about the average?" "Oh, no - we usually get it about 106 in the shade in summer," was the answer. No wonder they sell double-decker ice cream cones. You may depend on it we kept the water bottle full and lots of fruit aboard. We needed it!

California has the same roads as Oregon - pavement, pavement, and more pavement. And how the old bus did rattle along!!

After five and a half days, we got to 'FRISCO and its traffic jams. Things in general are moving down there, one must admit that, especially the street cars. Anyhow, it moved too fast for us Northerners, and we sojourned in OAKLAND and looked over its parks and Broadways.

From there we went on to BERKLEY to look at the scene of the disastrous fire. We were told that for days this fire was allowed to ramble around promiscuously, until one very windy day it tore over the hills and into Berkley, where it cleaned up block after block. To make out a Final Fire Report on that blaze would surely have kept a Ranger busy for a while.

Car after car we saw standing in ruins by the sidewalks. Palm-trees were burnt down to the roots. And here and there, throughout the devastated area, we saw isolated Bungalows which apparently had escaped entirely.

We found conditions in regard to fire prevention rather lax. For instance, the leaves and rubbish is gathered at the edge of the sidewalk in the city, and burnt right there. We prosecute for less than that!

But the Americans certainly do cater to the tourist trade. Their camping places are really excellent, and the charge is usually fifty cents a night; there may be some free camping places, but we saw none. Generally speaking, they have spared neither trouble nor expense to make their camping grounds attractive, comfortable and sanitary, and there is no doubt that it pays good dividends in the way of Forest Protection. Naturally, when these attractive places are available people prefer to use them rather than camp elsewhere, and the hazard from that source is very greatly reduced.

In other ways, however, it appears to me that we are quite as far ahead on Forest Protect, although of course one does not feel competent to criticise to any extent on the impression gathered from such a hurried trip.

On the whole, the trip was well worth while. The scenic attractions are just as good as they are cracked up to be, and that is no disparagement to our own as they are very similar in many ways, apart from those features which are peculiar to California

CUT DOWN THE CAR COSTS

J. H. Blake.

The operation and care of motor cars by field officers has been under review by this office for some time, and it has been decided that an article, covering this matter, in a general way, but particularly with regard to mileage and the high cost of operation and the relation between the two, would be timely.

The fuel report sheets and accounts for various cars are carefully scanned and analysed both in general and detail and many interesting facts come to light in this perusal. For instance in one district where several cars are in use, the reduction per car per month for the busiest six months of this year, compared with the same six months of last year, amounts to a certain sum, while in a neighboring district, under similar conditions, the reduction is only 30% of this amount. When an item of this kind shows up it causes a little deeper delving into the figures concerned and in this particular case we find that out of a number of cars one or more stand high above the average. In striking the average of a number of cars operated in one district we find that even one car, which has been costly to operate, raises that average and by doing so reflects not only on the driver of that car, but also on all the other drivers in that particular district. This is evidently unfair and brings in the other parties as accessories after the fact when the possibility is that they are innocent.

This cost of repairs when brought to the notice of the officer responsible almost without exception brings up the old excuse "Well, look at the roads in my district," If this were the real answer to the problem there would not be one solitary mile of good road in the Province. This, as anyone knows, is not the case as we have more roads and better roads per capita than any other province in Canada. No, the state of the roads is not the answer, as good and bad roads are pretty evenly divided throughout the province. The real answer is "Speed and more of it", In this contention we are amply supported by the Public, and we have letters on file protesting against the speed with which our cars are driven.

The idea that motor cars are provided for the express purpose of getting between points quicker than the other fellow, is basically wrong, and any man who thinks that obtaining the speed record of the province will count for anything in his favour in this service, should stop and examine the cost of such efforts, to the service and the general public. This refers not only to the terms of dollars and cents but to the effect on the nerves, on the opinion of thinking people and directly on the fire patrol of any particular district.

There are proper places for racing cars, and those are the race tracks and not the public roads and highways. It has been

our experience that field officers who drive a car at a sane conservative speed are as hard to find as needles in a haystack, and it has often occurred to us that if they had to pay for the wear and tear on the car themselves, they would not be anxious to go careering along the road at a dangerous and destructive rate.

No doubt the claim will be made that the speed is not dangerous and in reports of accidents the statement is invariably made that "the car was proceeding at a speed of ten miles per hour", or that "the car was proceeding slowly". These statements certainly look well on paper, but they are not borne out by the accounts turned in for repairs later on. It has been figured out that a Ford car can be stopped within certain well defined distances, at certain speeds per hour, and some road tests, carried out last year by one of the Ford dealers on the Coast, show that at a speed of ten miles per hour, the distance is from four to five feet, and at twenty miles; from twenty-two to twenty-five feet.

In the September issue of the Western Canadian Motorist, there is a good article by Jimmy Murphy, the well known racing driver, on the subject of speed on race tracks versus public highways, and he has some pertinent remarks to make regarding driving. He says in part "Highway travel should not be a speed duel but a pleasurable mode of transportation. There seems to be no legitimate excuse for the reckless manner in which public officials hasten to fires. I often think as I see the lines of motorists and pedestrians open up for the speeding juggernauts that a few minutes would not make much difference. The work of saving property must be carried on, but to one who wheels a racing car around a board bowl at 115 miles per hour, (yet as shy in highway traffic as a maiden attending her first party) it appears that drivers of public vehicles should set an example of being more careful. The cause of most accidents is pure, unadulterated carelessness. Drivers don't keep their minds on their driving. Their thoughts are centered on the office, home, or a thousand and one places remote from a few feet around their moving machine. Keep your car under control. That sounds easy - too easy to be true. It sounds so easy that on the surface it appears foolish but if my advice and my experience at the wheel of an automobile are worth anything, it is the most important thing I can say."

Now, we can't all be Jimmy Murphys, and if any have such aspirations, then the race-track and not the public road is the proper sphere for their activities.

The B. C. Electric "Buzzer" had an article on "Wet Paint" recently in which is described the longing to touch paint-work so placarded, not that the sign is disbelieved, but simply to prove without fail that the sign is true and also how wet the paint may be. This "Wet Paint" feeling evidently has a parallel in the driving of the Red Box car and it would appear that the aim in life of the driver is to find out if possible how close he can get to the ultimate speed of the car without its either leaving the road or disintegrating into a pile of junk.

A sane, conservative driver will get just as much mileage out of his car at a far less cost than a speed maniac, and in connection with this, there is an instance which goes far to prove our stand in the matter. During this summer a certain employee of the Forest Branch has driven his car a distance of sixty-five hundred miles (6500). He is proud of the fact that he has had no repairs and in fact states that "he has never had a wrench on the engine". This car looks like new, and, from personal observation, runs like a sewing machine and in general is a credit to the service. Another instance is that of another employee whose costs for the summer run well into \$300.00 for repairs. In the first case the driver operates his car in a manner which gets the best results. He slows down, and on a narrow road, where it is necessary to pull out, stops, to let other cars pass. In other words, he takes no chances whatsoever, and therefore, has a record to be proud of. In the other case, we can have only a poor opinion of the operator as his cost sheet shows poor judgement, carelessness and inefficiency.

In conclusion we would say that there is no situation even during the height of the fire season, which calls for speeding. Far better to arrive cool and collected and with a car good for any emergency than to get there with nerves frazzled and probably a trip to the repair shop for the car necessary.

The car that is kept out of the repair shop, and is always ready to proceed to a fire, is doing the work for which it was originally purchased and redounds to the credit of the officer in whose care it is.

The place for Forest Branch cars is on the road. When they are constantly in repair shops the patrol suffers, the public suffers and undoubtedly the officer's record suffers, and it is on this last item that all are judged.

VERNON (Oct. 18th., 1923) - One of the windows of MacDonald's Drug Store is attracting much attention this week in its 'Fire Prevention' dress, with the cup and medal recently won by Miss Marjorie Wakefield and Miss Margaret Gillespie prominently displayed. These prizes were awarded to Miss Wakefield and Miss Gillespie for writing essays on - "Why We Should Protect Our Forests. The green bows lend a real out-doors appearance to the window which has drawn many visitors during the week.

Vernon News, Oct. 18th, 1923.

FOREST EXPERIMENT STATIONS

(R.C. St Clair)

Up to this time our energies have been very largely devoted to the organization and administration of the Forests of the Province. The necessity for their correct technical management has always been recognized and during the past two years some effort has been made to start a programme of technical investigation which would lead to the development of a better silvicultural practice. The point has now been reached, it seems to me, where more exact knowledge is necessary and particularly where more orderly methods of collecting the necessary data should be worked out.

Considerable research work in various forest problems has already been done by the United States Forest Service and such success as they have obtained in their solution has been largely due to their policy, entered into some 15 years ago, of establishing forest experiment stations in each of the principal forest regions. So that the establishment of such stations is not by any means a new or untried departure.

Forestry in British Columbia is a basic industry and with 41 percent of our land area suitable only for growing timber steps should be taken to perpetuate it. A basic industry is one which must underly and support all other industries. Forestry is like agriculture, both basic industries and both utilize land in the continuous production of necessary materials. The forest experiment station is as necessary to good forestry as the agricultural experiment station is to the best farming practice. The relations are identical.

In British Columbia there are four experimental farms maintained by the Dominion Government at a cost of approximately \$130,000 per year. I believe that the country has a fair appreciation of the need of agricultural experimental stations, to increase the production of field crops. But in determining methods for the growing of timber, basic to our industries in the same way that agriculture is basic, our expenditure during the past two years has averaged about \$3000 per year.

In addition to the Dominion experimental work in agricultural development, the province maintains a staff of plant pathologists, entomologists and horticulturists in addition to an experimental farm at the University at Point Grey and a staff of over 20 teachers of agricultural subjects. The Forest School staff consists of two teachers, and the sum total of forest experiment work carried on there is nil. Now this is given, not to condemn in any way the desirability and necessity of encouraging the greatest possible production of agricultural wealth. It is only to show a comparison of what is done along this line for our agricultural and our forestry industries.

Now let us compare the two industries as to their relative importance in the Province:

	<u>Agriculture</u>	<u>Forest</u>
Percentage of land surface suitable for.....	6%	41%
Value of Production 1922	\$55,000,000	\$59,500,000
No. of men employed (estimated)	20,000	23,000
Revenue produced to Province	\$1,000,000	\$ 3,500,000

It would seem, therefore, in view of the importance of the forest industry to the Province, and the large proportion of the land area only suitable for growing and producing timber, that a considerably larger investment could be made in research and experimental work, without being out of line with the aid being given the parallel industry of agriculture.

The establishment of forest experiment stations in the principal forest types in the Province would seem to be the best means of obtaining results in solving the forest problems, in the same way that the establishment of agricultural experiment stations has resulted in solving agricultural problems.

The problems that can be taken up at a forest experiment station are almost infinite in number. They may be divided into two general classes of Forest Problems and the indirect influences of the forest. Forest Problems proper include both individual tree studies and studies of the stand or mixture of species. In the case of individual trees one of the first things that the forester desires to know is their silvicultural characteristics. Hitherto our ideas of silvicultural characteristics have been based largely on what was taught us in forest school checked by loose observations, frequently with contradictory results. The information gathered at forest schools and through current literature cannot always be relied on because it is based largely on the species as it grows in the United States. Climatic conditions here are different and many of our species are on the extreme edge of their northern range. A species behaves differently in such locations than it does in its place of optimum development. cursory observations, and blind adherence to some one's else investigation and findings made, perhaps, under entirely different conditions of growth and habitat, are not conducive to a clear understanding of the habits of the different species, nor to their correct management in British Columbia. The forest experiment stations afford a means of determining points like these beyond dispute, and in such a manner that the results can be trustworthy for use in formulating silvicultural methods.

An observer living right in the forest, and devoting his entire time to this work will be able to actually measure the factors affecting tree growth. Such subjects as the light requirements of different species at different altitudes, the demand of the different species upon soil and moisture, the frequency of seed years, the age at which fertile seeds are first borne, how long seeds remain fertile, the relative value of seeds from old and young trees, healthy and diseased trees, can be carefully and accurately studied. Other suggested subjects for experiment might be:- Introduction of new species, influence of situation and soil on root systems and on crown shape and size of stem; influence of stocking on strength and quality of wood; frost, winter and drought hardness of different species; methods of artificial restocking including gathering and storage of cones and seeds, nursery methods and direct seeding.

Stand studies are largely studies of types, their origin, composition, development, characteristics and methods of management. The forester is particularly interested in the stand as a whole because that is the raw material he is given with which to work. The question of how to treat a given stand in order to improve the composition and obtain the largest possible quantity and best quality of wood products, commensurate with the site and market conditions is the ultimate problem of forestry. That studies and experiments to determine the best methods of cutting to obtain natural reproduction and increased growth, yield table determinations, the effects of fire and grazing can be handled better by regularly established experiment stations, than in any other way, admits of hardly a doubt.

One of the most important uses of the experiment station in connection with stand studies will be the study of permanent sample plots, which are really small, model forests within which the proper method of management to use in that type of forest will be exemplified.

Of the indirect influences of the forest which may be studied at experiment stations which are hardly less important than the forest problems proper, is the much discussed relation of forest cover to the water supply. The actual proving of the relation which it is believed exists is difficult. In this connection the effect of forested and non-forested land on evaporation is important as is also a study of the percentage of moisture which gets into the soil in each case, and is available for irrigation. The rate of transpiration of trees also has a bearing.

I have only attempted to mention a few of the many technical forest problems which experiment stations can study but which when accurately worked out will be of practical importance; for it must be borne in mind that experiment stations are not for purely theoretical investigations, but the results obtained will be of immediate practical value. Some of the experiments will require several years before they can be completed, but many of them will produce results of value within a very short time.

Since the work of experiment stations is to be purely of an investigative character they should form part of the Division of Management and in order to divorce the work so far as possible from the Administration end, the officers in charge should report directly to the Chief Forester and not to the District Forester, within whose district they happen to be located.

Co-operation with the Forest School of the University and with others engaged in similar work should be encouraged.

It would seem therefore that the questions that relate to management, cutting, planting and yield, may be answered slowly and unsatisfactorily by administrative trial or cheaply and authoritatively by research. Under the former method large areas are involved. Costs are high, particularly if mistakes are made. It may not be possible to correct a mistake during the life time of a single forest covering 75 to 150 years. At experiment stations various methods can be tried out on a small scale by trained men, and the successful methods determined and demonstrated. Unsuccessful trials are on a small scale. Large scale costly methods are avoided.

As a start along this policy I would suggest the establishment of two stations, one to be located on the Southern Coast, and the other in the Northern Interior along the Grand Trunk Railway. In the Vancouver District we have approximately half the total stand of the Province from which is being derived about 80% of our annual cut. Destructive methods of logging are apparently necessary in order to take out the large sized trees. Fires are numerous in the ordinary year, and are particularly destructive due to the accumulations of logging debris. To destroy the slash means possibly inadequate reproduction and What is the answer? Another problem is that we find the large/growing population centred around Vancouver dependent on three rather small streams for a water supply. What is going to be the effect of logging these watersheds? What cutting methods should be practised to secure reproduction and keep the area forested? These and many others are subjects needing thorough and analytical study.

Along the Grand Trunk Pacific we have a region which I believe is on the threshold of a large development by the pulp and paper industry, which in a comparatively few years will be taking from the locality a large annual cut. The region can be made to supply in perpetuity the raw product for several large mills, which will spell prosperity for the north country and its settlers, but as yet no work has been done to develop methods of cutting that will assure a permanent timber growth. A few years of intensive study, trial and experiment, may save costly mistakes should the development come before we have the knowledge to properly handle the problems.

The establishment of these two experiment stations and later stations in other parts of the Province seems to offer the best method laying the foundation of proper British Columbia forest

practice, and of serving as a practical demonstration ground. They should serve as the centre for all investigative work in the region where located and should eventually lead to a better appreciation of the value of our forest land and to a full and expert knowledge of "the art of producing and tending a forest".

FAVOURS THE HONORARY FIRE WARDEN SYSTEM : "The experience of the past Fire Season has demonstrated most plainly to me," writes 'Zero', "that great good is derived from having reputable and able citizens appointed fire prevention officers and Honorary Fire Wardens at suitable places throughout the various districts. In this connection, I would suggest an alteration in the "FIRE LAW 1924" Signs, so that at the foot, where the Ranger, Assistant Ranger and Supervisor have their names, there is also a notice to the effect that -

"The nearest Forest Fire Suppression Officer (or Honorary Fire Warden) is....."

"There are other things that I would suggest. For instance, that permission be obtained from the Minister of Education to allow Essays on 'OUR FORESTS AND WHY WE SHOULD PROTECT THEM FROM FIRE' to be written in school on an afternoon set aside for the purpose. This day should be late enough in the year to give the Rangers a chance for their little spiel. In connection with Forest Protection Week, outlying districts should be advised of this about a week or ten days before the lower Coast districts, so that intimation of it reaches the Rangers before about half the special week has elapsed!"

The first suggestion is good.

"With regard to the Essay Competition, as a matter of fact there was nothing in the rules to prevent the essays being written in school, and except in a few isolated cases they were all written during school hours.

There is some ground for 'Zero's complaint that in some cases the Rangers did not know about Forest Protection week until the Week was actually half over! But this was mainly due to the fact that no action was taken by the Federal authorities in regard to declaring a "FOREST PROTECTION WEEK" until after several promptings from Victoria.

U N I F O R M S

The Editor has complained more than once that seldom any of the articles in "ROOT AND BRANCH" start a discussion - from which it would appear that most of us are not argumentative by nature; or shall we say that we are too busy?

This time I'm going to pass a few remarks on the subject of Uniforms discussed by Mr. St Clair in the last issue.

On my last field trip I had the pleasure of meeting a U.S. Parks Officer from California. He wore his uniform, which is quite similar to the U.S. Forest Service one, and I must admit it made a favourable impression on me. In a quiet way it commanded attention, and I believe respect.

The wearing of a uniform would bring us more to the attention of the public especially to the ordinary man in the street. If our Service on the whole commands the respect of the public, and the deportment of our individual members is as it should be, then I quite think the added publicity would be an aid to our cause; but not otherwise.

It should also assist a Forest officer in carrying out many of his duties, where his authority or right is questioned. For instance, last Summer I was looking through a large mill when the Superintendent (a stranger to me) asked me if I was looking for a job, and not being satisfied with my answer he suggested that I leave the mill and secure the authority of the Manager for going through it before returning. The Manager afterwards, half-jokingly, told me that I had no business to be going around in such old bush clothes. Maybe he was right!

So far as I personally am concerned, I would prefer not to tell everyone I meet all about my business and occupation through the wearing of a uniform; but at the same time I am inclined to believe that its advantages would outweigh its disadvantages.

And now, since no ruling has yet been given forbidding one to write on more than one subject in the compass of one article, I'd like to pass on for the consideration of others a suggestion I heard made the other day. Wouldn't it be a good idea to make use of the covers of "ROOT AND BRANCH" as posters for use in places where people congregate? A sufficient number in poster form could be run off at small cost, if printed concurrently with the covers, and if these were posted up in suitable places where people had time to read them, they should prove to be excellent advertising material. Everyone must admit that there's nothing published in Canada along this line to equal these cuts with the accompanying poems.

E.C. MANNING.

... ..

"Having read Mr. ST Clair's interesting article on 'UNIFORMS'," writes W.H. Browne of the Grazing Branch, "I would like to give in brief my reasons for NOT being an advocate of a clothing allowance. In each and every district the Rangers and Assistant Rangers are personally known to everyone in their respective districts; therefore from the viewpoint of advertising their profession nothing is gained. To the tourist, the red-box 'Lizzie' is equally well-known, so that again nothing is gained by having the Ranger dressed in uniform.

"The amount of \$4,000 as estimated by Mr. St Clair could, I fancy, be used to better advantage by placing large mileage signs on our highways so that our cousins from across the border, as well as our own tourists, would be reminded of the fact that "the member of a certain organization carrying definite responsibilities" aided him in his tour through the country - thereby impressing on his mind the usefulness of the Forest Service, in more ways than one.

"The signs one sees of this nature along the highways, put there by well-known wholesale and retail firms, are inadequate in so far that the colours used are not the right kind and have so faded as to be of no practical use in many cases. I would suggest a thin red border inside a broader black one, on a white background, and that the lettering be also in black except the words 'B.C. FOREST SERVICE' which should be in red -."

B.C. FOREST SERVICE
25 Miles to PRINCETON
-----X
10 Miles to CAMP GROUND

The Joys of Being an Editor: Most any man can be an Editor. All the editor has to do is sit at a desk six days in the week; four weeks in a month and twelve months in the year, and edit stuff like this :

"Mrs Jones, of Red Hill, let a can-opener slip last week and cut herself in the pantry. A mischievous lad of Piketon threw a stone and cut Mr. Pike in the alley last Tuesday. Joe Doe climbed on the roof of his house last week looking for a leak and fell, injuring himself on the back porch. While Harold Green was escorting Miss Violet Wise from the church social last Saturday night a savage dog bit him on the public square. Ike Trimmer, of Town Creek, was playing with a cat Friday when it scratched him on the verandah. Mr. Frank, while harnessing his young colt last Saturday, had the misfortune to be kicked near his corn crib."

(Ex.)

THE ROAD TO HELL

(C. S. Cowan)

This road, we are told, is easy travelling, being well paved with good intentions; for instance, good intentions on the part of the Field Staff to write articles on the various topics brought up for discussion in "ROOT AND BRANCH".

Personally, I feel that we are not getting the benefit that should accrue from this publication.

Primarily, the paper was established as a medium for the dissemination of ideas and the criticism of ideas - both the newly-born and those which had been brought to maturity.

Are we getting results ?

I cannot imagine that any of our men would feel hurt at having his own pet theory criticised, since it is that measure of criticism which rounds it out, and either the idea is decently interred on the spot, or it becomes a part of our system.

Obviously, if the obsequies are really called for, they should take place without delay, as soon as the theory advanced has been killed or has died a natural death. But who is to know whether we should nurse the ~~youngster~~ and bring it out into the world of accomplished fact, unless we have the opinion of the family circle.

Perhaps the family circle prefers that we should go to the expense of rearing the child, that they may wield the lethal club which they have meantime been keeping in pickle, and so achieve the satisfaction of saying, "Well, I knew it was no damn good!"

Did we believe that this was really so, then we would feel disposed to write FINIS in the next issue.

A debating society whose members are silent while the debate is in progress is no longer a debating society. With few exceptions, "ROOT AND BRANCH" is compiled month by month by the same contributors, and so far as any solid response from the field is concerned the Victoria office might about as well be writing for ~~their~~ own edification; and they would be quite as far ahead, and save the trouble of getting out a magazine.

The plain fact is that contributors are not coming ⁱⁿ nearly as freely as they should. Instead of being assisted in his task, the Editor very rightly feels that team-work is lacking, and that only one side is pulling its weight. Don't think, because the same subject has been touched upon so often before, that it is not in accordance with the facts. We cannot get along without an Editor, and the Editor is beginning to find it difficult to get along unless he receives more general support.

Quit adding another block to the pavement; turn your good intentions into actual deeds. For Heaven's sake, let us know what you think!

YEAR SHOWS LOW FIRE LOSSES

(Pacific Coast Lumberman, Nov. 1923)

The Forest Branch of the Department of Lands is to be congratulated upon its excellent forest fire protection work this season, which shows the lowest losses since the year 1913.

While the weather was this year, on the whole, favourable to a good season, it was upon occasions very dry and warm, and periods of extremely dangerous hazard were passed through in many localities. The slightest relaxation of effort on the part of operators and officials might have resulted in the very heavy losses which resulted elsewhere on the Pacific Coast and the rest of the continent. It is not too much to say that the comparatively light loss was due not so much to the favorable conditions as to the advantage taken of them by the fire fighters and wardens.

We are glad to see how Mr. Pattullo has paid tribute to the valuable assistance rendered to his staff by the logging operators. The cost of this freely-given co-operation in dollars and time was heavy indeed, but the result was encouraging.

No better proof of the risk the modern logger takes in the one matter of fire hazard alone can be given than in the official returns of the estimated damage caused by fire in the woods of British Columbia this year.

Of the \$520,000 money damage caused by forest fires, no less than \$430,000 - or almost 80% - represents loss of personal property and valuable logging equipment gone up in smoke; nor does this amount include the hundred and one losses and costly vexations caused by the stoppage of operations and delay in restarting in cases where restarting is practicable.

The education of the public from the school children up, to the proper appreciation of what fire hazard really means, is proceeding along very promising lines, but the minds of many remain wilfully unreceptive.

Practically all the serious fires this year were traceable to the negligence of campers and tourists. It is a shameful thing that the public domain should be sacrificed, its industries crippled and its payroll considerably curtailed because of the criminal carelessness of a bunch of cigarette-smoking tourists and campers, ignorant of the first principle of open-air camp life.

THE FORUM

WHAT'S WRONG WITH OUR WINDSHIELD STICKERS ?

"Allow me to endorse the opinion of the gentleman with regard to the Forest Branch windshield sticker 'BEAR IN MIND' which the Editor commented on in August "ROOT AND BRANCH". Our friend has uncovered one of the foibles of human nature, one that provides a link between the primitive and our present civilized state, namely Vanity!

"The windshield sticker is twin to the luggage label in that it enables the traveller to exhibit the extent of his wanderings. A reflection of this is seen also in the child who walks many miles and returns with a bunch of wildflowers as a souvenir of where he has been; in milady of fashion arriving from PARIS with a 'creation'; or in Davey Jones who returns from Nagasaki with more permanent memento in the form of a picture of a geisha tattooed on his chest; all of which. Outcroppings of the same spirit are seen where souvenirs are left instead of being carried away. There are the bare rocks which frown over the wharf at Skagway, where dare-devil seamen have striven to outdo each other in painting the name of their ship above that of the others; while we are all familiar with the sight of initials, city names and dates, hacked upon the woodwork of our public places.

"Souvenir-makers the world over have learned long since to profit by this vain streak in the human make-up. An example in particular is furnished by the pottery trade in the making of articles that bear the coat of arms of various cities and boroughs.

"The foregoing will serve to show that this craze may be successfully exploited by the Forest Branch. The idea that our windshield sticker should be a memento of British Columbia is indeed a good one, carrying as it does the guarantee of a wide circulation. As to design we do not need anything subtle - our own trade mark is a good one, and I would suggest that we stick to the towering Fir and use the phrase of the Forest Aide button; "WE GUARD THE FORESTS". Those words, forming the positive declaration of a principle, are rich in the power of auto-suggestion; so let's scatter them over the trails and highways of this continent, imposing a just demand upon our own motorists and also upon our guests from across the border!"

(T. H. Ainsworth, Nanaimo.)

.....

"The first windshield stickers issued by the Forest Branch were decidedly unpopular, partly on account of their inartistic design, and partly because the back of the windshield sticker (which was blank) faced the front of the car. The design for the present year's sticker was much more popular, but even this one still showed the bare surface towards the front.

"I have had an opportunity this year of seeing a large number of cars, particularly foreign ones, lavishly decorated with stickers many of them being very elaborate in design, but in every instance the bright side of the sticker was towards the front of the car and the bulk of the message printed on the side facing the driver.

"Windshield stickers have become quite the vogue and it seems to be one of the objects of each driver to decorate his car with as great a variety of these as he can possibly get during his trip. Forest Branch stickers were noticeably few. Handsome stickers and ones which were most frequently seen were those issued in the Dominion Parks; these stickers carried typical pieces of mountain scenery, nicely colored and gummed on the decorative side, while the side facing the driver carried the complete message which it was wished to convey.

"The 'BEAR IN MIND' Sticker issued by the B.C. Forest Branch would have been popular had it been gummed on the opposite side, and there would have been plenty of opportunity for printing on the side facing the driver. Last year there was great difficulty in inducing anybody to put anything on the windshield; at the present time the drivers are clamouring for decorations, but they must be decorative."

(F.A. MacDonald, District Forester, Nelson)

LINING-UP THE SPEEDER : "For satisfactory operation of a velocipede, the wheel setting plays an important part as to whether the machine will stay on the rails or not," says Mechanical Inspector Blake, in answer to T.G. Martin's remarks in the August number.

"The proper setting should be tested with a straight-edge and should show a lead of 1/16" to 1/32" toward the rail on the part of both the driving and the leading wheel; the guide wheel should lead slightly away from the rail.

"This is in answer to T.G. Martin's (Smithers) request for opinions on the subject, and must be taken in terms more general than specific, as each machine of this kind, depending principally on the wear and handling it has had, required a slightly different set up to the wheels. The machine referred to is the Fairbanks-Morse #1."

In common with all other "up and coming" publications, we are beginning to figure on our Christmas Number. Please give us your assistance, and help us to make our December issue a really representative number.

PERSONAL PARS

The bulk of our Personal Pars this month emanate from the Vancouver District.

Congratulations are extended to Assistant Ranger A. S. Coburn (Nanaimo) who proudly announces the arrival of a son on September 2nd.

Also to Assistant Ranger T.A. Greensmith (Cowichan Lake) who intimates the birth of an heir but neglects to give the date; and oddly enough, a diligent search of Assistant Ranger Greensmith's Diary for September fails to reveal any mention of the event.

We wish the little fellows all kinds of Good Luck.

Ranger Jackson Thompson (Vancouver) sustained minor injuries while back-packing supplies on the Pitt River trail. The cut-bank caved in under him and threw him into the river.

More serious was the accident to Scaler J.T. MacLeod (Powell R.) some weeks ago, when he fell and broke his left arm at the elbow joint. The contributory cause in this case was a loose plank in the sidewalk.

We are sorry to hear from Nelson that Ranger H.S. Nelson of that district has been down since Oct. 18th, with enteric fever. Both he and Ranger Price were hard hit by lightning fires this year, and worked under a severe and constant strain.

The lightning fire we shall have always with us. That source is beyond the reach of our propaganda.

... ..

A pleasant little function relieved the monotony of our days when Miss Winona Ross was made the recipient of a small souvenir on the occasion of her leaving the Service.

Since June 1918, Miss Ross has agreeably and efficiently handled the stenographic work of the "OPERATION Office" so that she can quite truthfully be said to have done much for Forest Protection.

The souvenir took the form of a miniature Forest Service badge, mounted on a bar pin - something entirely unique - and was accompanied by a few words of appreciation on an illuminated card in the inimitable style of Mr. Stokes, our Chief Draughtsman.

Miss Ross has been succeeded by Miss Sybil E. Dash.

Mechanical Inspector Blake is being congratulated on his election as an Associate Member to the Engineering Institute of Canada. It will be remembered that, some time ago, Mr. Blake was elected a Member of the Association of Prof. Engineers of B.C. Both are much-coveted distinctions.

... ..

OUR BOOK SHLEF

Forest Figures for the Pacific Coast States.

(Prepared for the Senate Select Committee on
Reforestation, 1923)

In Penn's Woods. Handbook of Pennsylvania State Forests.

(Penn. Department of Forestry, Bulletin No.31)

Sweden's New Forestry Legislation Regulating Cutting of Timber &c.

(West Coast Lumberman, October 1st, 1923.)

How Lumber Distribution has Widened; H.R. McMillan.

(Canadian Lumberman, Nov. 1923)

The Forest from an Investor's Standpoint.

(Illus. Canadian Forest and Outdoors, Oct. 1, 1923)

White Pine, Tree Pamph. No.1 Dep. of the Interior, Forestry Branch.

White Spruce, do No.2 Ditto. Ditto.

Douglas Fir, do No.3 Ditto. Ditto.

Hemlock, do No.4 Ditto. Ditto.

Interesting Venture in Reproducing Spruce.

(Illus. Canadian Forest and Outdoors, Oct. 1, 1923)

Forest Investigative Work of the Dominion Forest Service; W.G. Wright.

Talks on Forestry; Gifford Pinchot.

(Penn. Dept. of Forestry, Bulletin No.32.)

British Empire Forestry Conference, Canada, 1923.

(Summary Report and Resolutions.)

... ..

It occurs to us that possibly our field staff are not aware of the fact that the publication referred to on this page are at their service on application to Miss Taylor, the Forest Branch Librarian.

They will be forwarded at once to anyone expressing a desire for them, the only stipulation being that they be returned within a reasonable time.

... ..

"TRANSFERRED TO THE INTERIOR"

I sympathise with R.H.L.'s appeal,

With tearful eyes I scan it line by line.

Wrenched like a barnacle from off his rock,

Condemned in the Interior to pine!

Ruthless the act, and soul-less the decree!

No more with spade and pail he'll blithely play

Like happy child upon the golden sands

Of OCEAN FALLS - or was it SWANSON BAY ?

.....

But my deductive powers are sore beset,

Imagination falters 'neath the strain -

"A 'mowitch' - what's a mowitch, tell me, please?"

Again and yet again I tax my brain.

I search my Dictionary page by page,

My Book of Synonyms in vain I con.

"A mowitch? Something hidden in the brush?"

Why, Yes - of course - it is A DEMIJOHN!

W.H.C.
