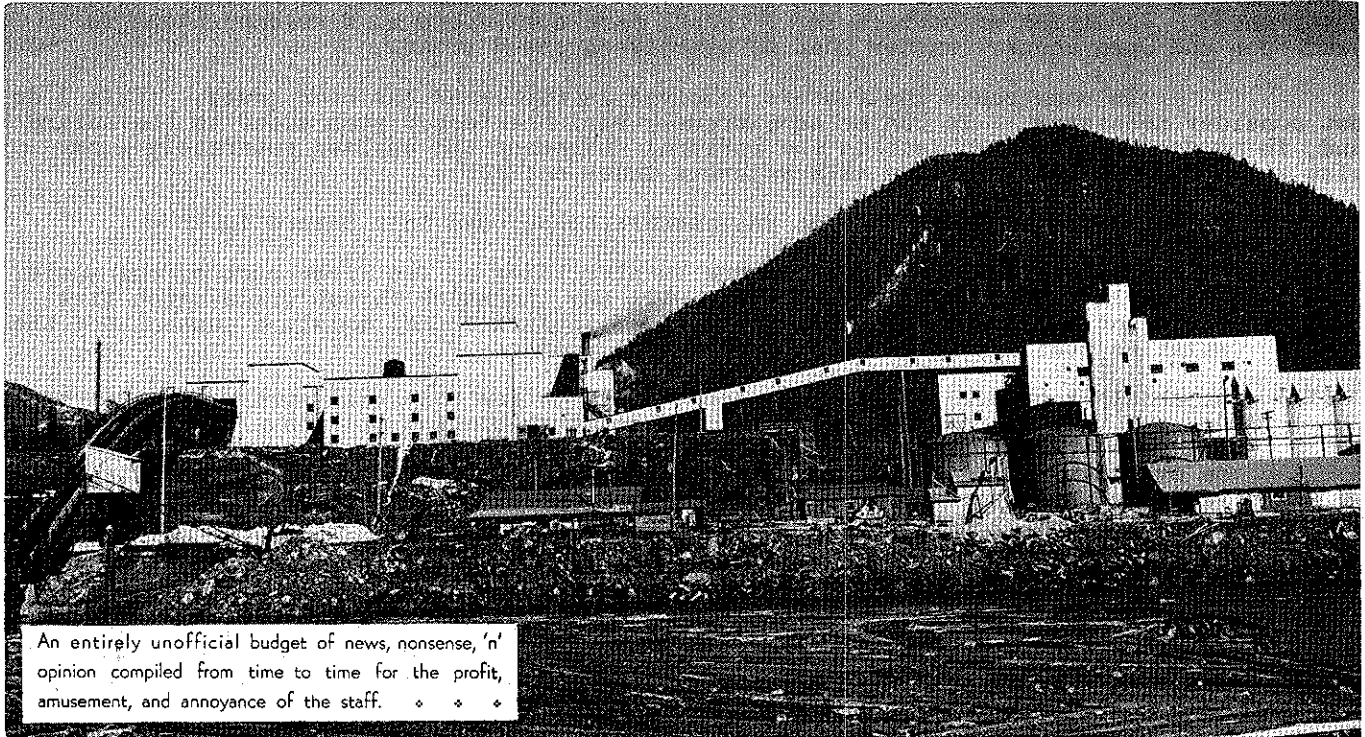


FOREST SERVICE NEWSLETTER



An entirely unofficial budget of news, nonsense, 'n' opinion compiled from time to time for the profit, amusement, and annoyance of the staff. ♦ ♦ ♦

No. 95

VICTORIA, B.C.

June, 1951.

A DISCOURSE ON FIRE-DANGER INDEXES

By James A. Pedley.

PART II

(Part I appeared in Newsletter 94 - May 1951)

To return now to the five questions mentioned at the beginning of Part I of this paper:-

(1) My original intention was to take a number of actual readings of relative humidity, temperature, wind, and moisture content, and apply them to four systems in current use - the Wright, Gisborne, Rocky Mountain and Region 6. The results of these I was to compare with a system of my own. Then I figured upon incorporating the best of the other systems and amending my own as I thought would be indicated by the results.

At first glance you would think that given the same readings for the very same factors and applying them to each system, a somewhat similar answer would occur. You would be surprised. Quite frequently I found that where one system would declare a state of hazard existed, another would put the degree of hazard as "low". I would find one system saying "medium hazard" where another gave "extreme". Sometimes I would find three different answers in four systems, only two agreeing.

Undoubtedly the main reason for this lies in the fact that each factor involved had been given a different value in the total. Another reason is that certain systems are made up to apply to certain conditions that may exist in the country to which the system was to apply and not apply elsewhere. For example, the readings we had taken would be completely out when applied to Wright's tables for Slash Fire Hazard. This is quite understandable as no such tables have been made up by Wright to cover B.C. slash conditions.

In passing I may say that in Forest Fire Research Note No. 12, by H.W. Beall, I found the tables for the East Slope closer to our conditions and giving more satisfactory results than any of the other systems used. Incidentally, the tables are by no means as complicated as they appear on the surface, and certainly they give a very thorough recognition of all the factors involved.

Generally speaking then, I found that no reasonable comparison existed between the four systems. The very same data, the same factors used to a large extent, but different degrees of hazard denoted - extremely different at times.

I concluded, therefore, that we are wrong in accepting any system that has not been worked out to suit our own conditions. It seems to me that there are four main points to keep in mind when working up such a system:-

- (I) The degree of combustibility of the fuels. (The "burning index" for fire inception).
- (II) The degree in which fire will spread once started. (The rate of spread).
- (III) The degree in which (I) and (II) above accumulates over a given period (The build-up).
- (IV) To keep it as simple as near accuracy demands.

In stating the above I have much authoritative backing. Some research men wish to go further, possibly increasing accuracy at the expense of simplicity. For example, the amount of precipitation and the intervals between measurable precipitation may be included. In this case it may be argued with some assurance that the effect of

2.

A Discourse on Fire-Danger Indexes (Continued)

relative humidity and fuel moisture as shown by the instrument will, to a large extent, cover this. Condition of herbage is, I think, more applicable to fire-conditions in semi-open and open country rather than to heavily-forested areas.

In some cases the factors involved in fire-risk has been added. This I do not consider necessary. It can be an extremely variable factor when added to the hazard and, in my opinion, is best left to the personal judgement and applied separately - or else a "fire risk" index evolved as a separate index entirely.

Taking a closer look at the factors to be used in a hazard index -

- (I) Practically everybody agrees on the burning index as the first part of the whole. This will be the degree of ease, we will say, in which forest fuels catch fire. It is not necessary to labour the need of including fuel moisture content and the relative humidity which effects that fuel moisture.
- (II) We should know something of the speed in which the fire will spread once started. Granted that if the fuel will burn its moisture-content will have much to do with its rate of combustion; but the influence of wind in the spread of fire cannot be overlooked. It is my definite opinion that any hazard index that omits the factor of wind omits the second most important principle. Again there is plenty of authoritative backing.

In connection with (I) and (II) I would also include temperature. For some reason there has been a tendency to overlook the importance of temperature on the grounds that fuel moisture content will show this effect. Mr. Lloyd Hayes, writing on the factors of forest fire danger (Circular #591 U.S. Dept. of Agriculture) has this to say - "Temperature is not only a direct control of fire behaviour at any time or place, but is also a major factor in altitudinal zoning of fire behaviour."

After examining over 900 weather readings taken during the fire season concerned, I was again struck by the steadiness of temperature as an indication of approaching fire weather as against the variability of other factors. It may be said that a working hazard index can be made by using the one factor of fuel moisture content, or as others may claim, by the use of relative humidity alone. If examined, it will be seen that the same applies to temperature.

It is true that extreme dryness may be experienced in cold weather, but usually such temperatures are around the freezing point. Temperatures taken during the fire season range from approximately 45 degrees F to over 90 degrees F. Within that range, I believe that temperature has an effect by itself over and above its effect on evaporation of fuel moisture. Evidently there are other far more authoritative people with the same idea. Both Gisborne and Wright use temperature.

- (III) The effect of the accumulation of hazard cannot be ignored. The Wright and Beall systems take care of this in the "drought index" used. The Rocky Mountain system allows for it when it uses its precipitation interval factor. I am inclined to believe that the factor of accumulation of hazard can be shown in a much simpler method and a workable value arrived at for this factor. Certainly it should be used in some form or another.

I believe, therefore, that a good workable hazard index can be made suitable to our conditions and using the factors of relative humidity, temperature, and wind, with an allowable value for accumulation based upon the time-period and the degree of hazard shown by the three main factors. The system can also be the answer to (IV).

- (IV) We can grant that greater accuracy in forecasting fire danger may call for the inclusion of a number of factors which must be carefully valued. But to include any factor whose measurement is difficult or requires expert knowledge defeats the main idea of a hazard index. It should be something that the man in the field or say, on the fire, can himself measure and understand. Complicated tables lead to error.

There are other very obvious necessities for the good workable hazard index, notably the place and time the instruments should be read - which brings us to the other four questions previously mentioned in Part I of this paper, and numbered - (2), (3), (4) and (5) - dealing with various points in respect to readings taken on the lookouts:-

- (2) Are hazard-ratings based upon instrument readings taken up on lookouts reliable for general conditions within the area covered by the lookout?
- (3) If not reliable in themselves, can they be used as a reasonably accurate form of interpolation for the lower levels?

The general opinion seems to be that a reading taken up on a lookout, possibly 3,000 feet above the risk area, and taken at 8 A.M., is a sure indication of what may be expected at the lower level during the afternoon.

The comparisons with the 4 P.M. readings causes much doubt. Taking readings of relative humidity and moisture content at 8 A.M. and at 4 P.M. produce too many discrepancies for a person to place much faith in estimating an afternoon condition from a morning reading.

There is often, for example, very little conformity between the drop in relative humidity and the drop in moisture-content shown by the sticks. Actually, 11 per cent of the readings show a decrease in moisture-content (as per the sticks) with a steady increase in relative humidity from 8 A.M. to 4 P.M.

Which are we to believe? Again, the natural lag in the sticks is difficult to comprehend. Take these examples

A Discourse on Fire-Danger Indexes (Continued)

Humidity	 8 A.M.	49	Sticks at 8 A.M.	7
"	 Noon	66	" " 4 P.M.	10
"	 4 P.M.	91		
"	 8 A.M.	47	Sticks at 8 A.M.	8
"	 Noon	65	" " 4 P.M.	15.5
"	 4 P.M.	85		

Same day, neighbouring lookouts, no rain indicated for that day or previous day. If the ranger, contiguous to both lookouts, had received the early morning readings he would perhaps look for a bad day. Instead, conditions improved - according to the lookout readings - by 4 P.M. In the first instance the sticks failed to pick up the true change shown by the humidity reading, still showing a certain degree of hazard with a 91 relative humidity.

There is no intention to say that this kind of thing can't happen. The emphasis is on the reliability of an 8 A.M. lookout reading for an afternoon index. I was struck by the frequently great difference in the rate of change between relative humidity and fuel moisture sticks. There appeared to be no rhyme nor reason for it. There was no conformity in lag to account for it, for the lag, or at times the increase, showed no relation to other factors. Therefore, I could see no answer to questions (4) and (5) upon the same subject.

There are several reasons why lookout readings, at any time of day, may give an entirely incorrect index for the country below them. One investigation that has been quoted as a sample, is a succession of low readings taken on Mt. Prevost which remained in force for some time, and during which time a bad fire occurred near Lake Cowichan. Could not the readings in question have been due to an inversion on the flanks of Mt. Prevost, and there been an entirely different set of conditions at Lake Cowichan? We can understand that fire conditions must have existed at the time at Lake Cowichan but, because Mt. Prevost at that time gave exceptionally low readings, is that any indication that Mt. Prevost will always forecast bad conditions at the Lake? Or was it just a peculiar condition existing on the mountain due to weather and topographic conditions?

To sum up, I believe we are badly in need of a good fire-danger index. I also believe we are not going to get one based upon instrument readings taken up on lookouts. We now know that peaks are subject to peculiar weather formations. The instrument readings taken up there register the weather there, not down below. I doubt if we can set up any reliable interpolation on the lookout readings. To conclude - fire weather and fire weather indexes should be every forest officer's concern, and out in the field and on the fires is where the final answer will lie.

It will come from a mass of data supplied to research from the field, which means careful weather records taken, careful fire histories, and an interest in the subject taken by the man in the field.

THIS MAY BE A GOOD YEAR FOR IT!

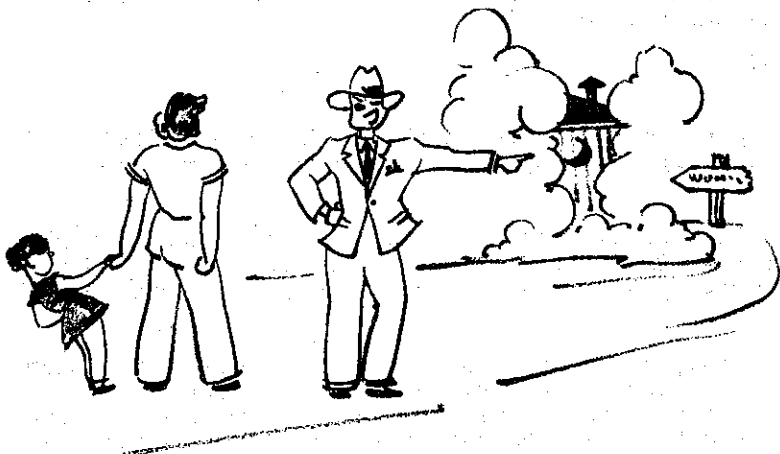
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"WHAT EVERY FOREST OFFICER SHOULD KNOW"III. HOW YOU ACT TOWARD OTHERS

"For a man by nothing is so well bewrayed,
As by his manners."

Manners imply contact with others. When you're all by yourself, like Robinson Crusoe on his desert island, they are of little value or effect because manners are the way we impress others by our words or actions.

Manners can be classified as public, domestic and society. The last named has been commercialized under the title of "etiquette", which is French for how to behave when you try to keep up with the Joneses. Domestic manners are how you act around the house to your wife, children, cat, dog and mother-in-law after a hard day's work. Fortunately or unfortunately, the personnel inspection field does not cover these items as yet. So this story can be whittled down to public or professional manners as applied to Forest Officers.



There is one statement we always stress in describing all Forest Service work, and that is: The forests we administer belong to the people of British Columbia. The people pay for their administration and protection, and these items include our salaries. The citizen taxpayer contributes for services, and "Service" is our first and last name. The service that we are all called on to give, aside from the transaction of regular business of timber sales, grazing, and land uses, is mostly the giving of information, and the educating, directing and advising of the public.

You are rendering a service when you help people. You are helping people

"What Every Forest Officer Should Know" (Continued)

when you give them information they want about where to camp, fish and hunt; when you explain to forest users our regulations and the reasons for them; when you find and help people who are lost; when you do some little act of kindness.

The crux of good manners is your attitude. If you regard Mr. and Mrs. Tourist and all the Little Tourists as an affliction to be endured and then gotten rid of as quickly as possible; if you cuss under your breath every time a wandering forest visitor comes in and interrupts your thoughts with a silly question; if you look at the public as an asinine nuisance, you have the wrong slant on your job and are heading straight for trouble sooner or later.

On the other hand, if you look on all this as just part of the day's work and figure that you are just returning this service for the salary which these people are paying you, it will be much easier. If you can do it with a smile, it will be better than good manners; it will be courtesy.

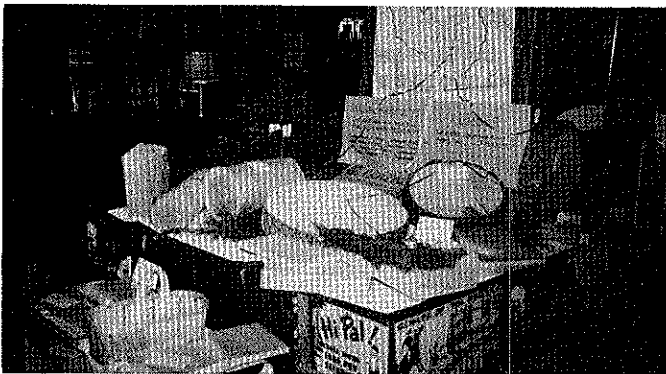
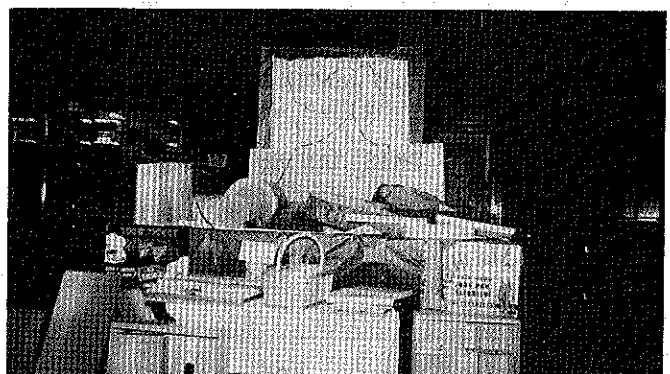
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KAMLOOPS DISTRICT

Kamloops was the scene of a Province-wide convention of the Junior Chamber of Commerce on April 27 and 28. In connection with this convention, the various industries and Government services were asked to put on displays by way of indicating to the visitors the importance of Kamloops and the surrounding District.

The Forest Service display was set up in the lobby of the Plaza Hotel. It featured the wide range of forest products which are cut within the district. The figures on volumes cut per year and estimated values of the products were given. For instance, did you know that in 1950 the lumber cut in the Kamloops Forest District totalled 316,544,000 board feet and the estimated value of the product approximates \$25,820,000.00? Did you know that the estimated value of all minor forest products is over \$2,523,000.00? Not only that, but there are almost 88,000 head of beef cattle on Crown ranges.

This display seemed to be of great interest to the local people as well as to the visitors. Perhaps the Service needs to do more advertising from the Management viewpoint in addition to its educational program in the field of Forest Protection.



... ..

HATCHED

Congratulations are in order for Mr. and Mrs. J.R. Johnston on the arrival of a DAUGHTER, Patricia May, on May 18.

Also to Mr. and Mrs. E.A. Bowers who had an addition on May 26. This was a SON, Brent Murray. (Eric now needs a holiday to recover from the two days he spent in trying to fill out the reams of Family Allowance forms!)

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MATCHED

Matrimony seems to be the latest style in the Kamloops District office. The return of spring has brought forth seven engagements, and in the month of May two weddings.

Mel Kerr of Management took the final leap on Monday, May 21, when he took as his wife Bette Milburn of West Vancouver. The bride and groom are both members of the Aero Club and are taking their honeymoon trip by air. Our very best wishes to you both, Bette and Mel.

Rose Klemens, Operation Steno, and Albert Paulsen of the Grazing Division were married on Friday, May 25. After a reception at the Plaza Hotel, Mr. and Mrs. Paulsen left on a honeymoon trip over the Big Bend to points unknown. After their return they will reside in North Kamloops. Our heartiest wishes are extended to you, Rosie and Al.

... ..

Ranger Meeting

The biggest event here in recent times was the Ranger Meeting held on April 4 and 5. There was a goodly-sized Victoria contingent present consisting of F.S. McKinnon, Percy Young, Johnny Stokes, and Art Stringer. It's really amazing the way they can handle awkward questions from the floor. Other very welcome visitors were Jack Payne and Jack Scott from Rupert, and our old friend, Rusty Campbell. A good deal of old ground was covered until somebody interjected the words, "cutting budgets and sustained yield".

After two days' discussion, the meeting got down to the real task in hand, dining and wining. The banquet was a great success - Lorne Swannell presiding in masterly fashion. Guest-of-honour was Lars Strom of the Northern Interior Lumberman's Association. He, too, mentioned cutting budgets and sustained yield. (Must be something about those words!) Having successfully intimidated all the speakers, Lorne presented Al Dixon and Rusty Campbell with suitable farewell presents. Bill McCabe, who was also to have been a recipient, was unable to be present and anyone who knows the road from Aleza Lake can probably guess why! Al and Rusty have left us to become "brass hats", Al with Operation and Rusty with Public Relations at Victoria. We wish them all the best and will be pleased to lend them a pair of snowshoes any time. Bill has gone the way of all flesh and is now Fire Boss with the Celanese Corporation - the Rupert District can now relax.

After the banquet, Eric Robinson produced another radio skit which, needless to say, was first-rate. We can only hope that C.B.C. are not on the distribution list as to lose Eric would be a loss indeed - if only to the local softball team.

*** **

'New' Business

Everyone is now busily engaged in trying to understand the 'new' surveys system. Barrie Ford, who breezes in and out daily, seems happy, so we can only assume that everything is under control. Besides Surveys, we have also been discovered by Research Division in the genial personality of Dick Spilsbury. A new forest site type classification will doubtless be underway soon, judging by the new and rabid converts!

*** **

Still They Go

Since the Ranger Meeting, we have lost yet another stalwart. Jack Woolsey, Ranger at Fort St. John, resigned and is now with Industry. As he is staying up in "the frozen north", it can't have been the weather!

*** **

"Through The Punch Bowl"

A recumbent draughtsman creating a traffic hazard in the lobby of the hotel.

A Management forester-in-training reviving the Charleston and later heard to boast that he was the only man in the ballroom that could dance around the floor on one foot.

Rusty Campbell drinking milk.

An Assistant Ranger trying to drink the bowl dry because he heard the punch was better at the bottom than at the top.

*** **

NEWS FLASH

We learn with pride that one of the Management stenos was mainly responsible for saving a few million feet of timber piled in one of the local planer-mill yards. Her quick thinking and heroic efforts with rake, shovel, and what-have-you for gardening tools, served to put under control a grass fire which threatened said lumber piles. We are sorry to report that the main loss sustained was one pair of perfectly good slacks.

*** **

VANCOUVER DISTRICT

The Red Carpet

We extend a welcome to the following ladies who commenced work in the District Office on June 1: Miss J. Becker and Miss J. Holroyd, stenographers, who came to us from the Child Welfare Branch; and Mrs. L.M. Douglas, Mrs. I.F. Lister, Miss V.G. Miller and Miss F.B. Taylor, Key Punch Operators. On June 1, also, the I.B.M. equipment commenced operating here under the supervision of Mr. S.A. (Sid) Benwell, formerly Recorder of Scaling.

*** **

Presentations

To both Messrs. D.A. (Doug) Sims, Cashier-ledger-keeper, 15 years, and G.K. (Ken) Gamble, Chief filing clerk, 42 years, a desk set on the occasion of their resignations.

In the absence of the senior officers, Mr. Fox made the presentations on behalf of the staff. He expressed hearty felicitations, and remarked that this was the first time within his recollection that there had been a double presentation on retirement of two members of the staff.

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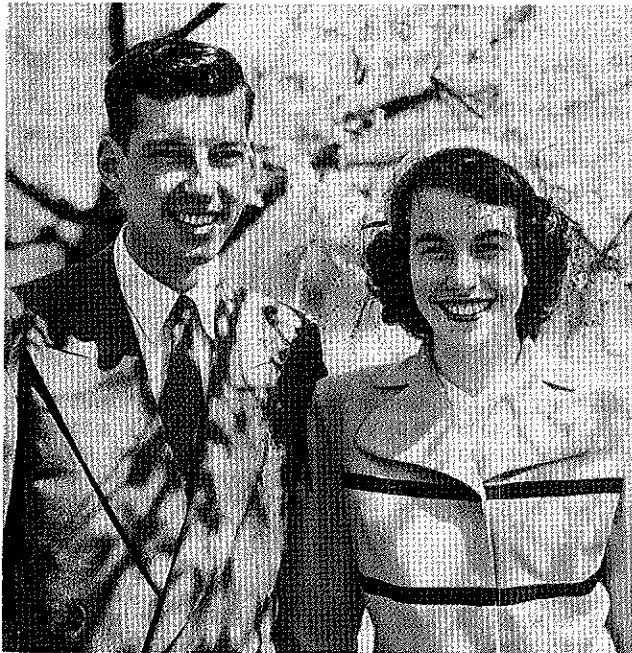
Vancouver District (Continued)

Bang-Bang

From the standpoint of hospitality, Bute Inlet and the continuing waterway up the Homathko River has never amounted to much. Rough water, lack of shelter, fires, floods, and deep snow have all been recognized as reasons why reports occasionally miss the deadline. To all of these we now record another as evidenced in Ranger Ginnever's letter of September 27, 1950, which has just been brought to our attention --

"...Referring to above sales - These areas were visited during last trip up Bute Inlet, but inspections not completed due to the presence of grizzly bears. Suitably armed, I hope to return and complete these examinations....."

... ..



WEDDING

The Vancouver Office was well represented at the wedding of Margaret Johns and Mel Wensink which took place at the Cathedral on May 26, and also at the reception which followed at Stanley Park Pavilion.

Shown at left - Mr. and Mrs. Mel Wensink. (Photo by Stan Phillips).

... ..

Last Post

With regret we report the death of another old-timer in J.B.(Bert) Conway, 65, of 290 Burnside East, Victoria. He served with the Forest Service for 20 years and was well known as a particularly effective forest protectionist.

Previous to World War I, Bert worked on location for the Grand Trunk Pacific Railway, and with survey parties from Winnipeg to the Mountains. He saw service Overseas with the Canadian Engineers of the Second Division, and had been a member of the Canadian Society of Forest Engineers for some years.

... ..

With an Ebb Tide

We are now able to complete the obituary of George Henry Waller who died at Vancouver on March 5, 1951, where a funeral service was held, after which the remains were cremated. At the request of the family the ashes were entrusted to the sea in that Ranger District where George served for a number of years.

From the log of the M.V. SYRENE we take the following: "...May 10, 1951, Time 17-35K. Position 127° 27' 00" W, 50° 46' 30" N. Ship and engines were stopped while a short service was held for the late Ranger George Henry Waller whose ashes were scattered over the waters at this the entrance to Hardy Bay by the District Forester, Mr. E.W. Bassett. The committal office was read by Captain A.W. Bouch.

Those present included C.E. Hopper, Assistant Deputy Minister of Lands; P. Young, Assistant Forester; C. English, Radio Technician, and G. Ryder, Deckhand.

The tide was at high water slack. The ensign was dipped, a farewell whistle was blown, and the ship was put under way for Hardy Bay anchorage.

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PARKS & RECREATION DIVISION

By C.P. Lyons

Ole Johansen tells us that on a weekend, the Mt. Seymour Road is busier than Kingsway at 5 P.M.! The view-points on the road are always jammed with people amazed at the spectacle of Vancouver as seen from above. The new parking lot won't come too soon!

York Edwards helps make history by starting the full-time duties of Wildlife Officer. He's off to look for Ralph Ritcey, another wildlife expert, who was last seen in Wells Gray Park calmly sitting on a bellowing bull moose and counting the ticks on its belly -- pardon me! -- stomach.

At long last, development will get underway this summer on road-side picnic and camp sites. Largely made possible through the 'teen-age-youth-program, the work will be concentrated on the loop through the Fraser Canyon, down the Okanagan Valley, and

Parks & Recreation Division (Continued)

along the Hope-Princeton Highway. Bob Broadland, Recreational Officer at Kamloops, will be keeping an eye on this project and will also bring delight to the locals and visitors alike by fixing up a number of sites in the famed fishing and hunting country around Kamloops. Bill Welsh, youthful flyer of cornpatch fame, will be field supervisor on this work.

Three shiny, raw, U.B.C. graduates - Wally Rolls, Gordon MacNab and Bill Hepper - have finished a two-week familiarization course in the bottomless mysteries of the Forest Service and other departments. Wally will now be working on planning, Gordon on reconnaissance and inventory, and Bill (he of the web feet and insect-resistant hide) is slated for Prince Rupert in the Fall as Recreational Officer.

Wonder if there's any way of taking 20 pounds of lard off the rotund (and growing rotunder every hour) Park Ranger in Manning Park and adding to the lean, rawhide frame of Les Cook in Wells Gray -- a problem in balancing the bulge.

Then there is the story of the enthusiastic Park Attendant who was urged to learn the name of some of the common wild flowers so that he could be of help to inquiring visitors. When the dear old lady pointed to the showy red and yellow flower he was quick to show his new-found knowledge. "That's a wild concubine, Madam. We have lots of them in the West."

The welcome mat is ready for Lloyd Brooks, due home June 18. Lloyd has completed a year's post-graduate course in Parks and Recreation at Michigan State. Now, let's have the questions!

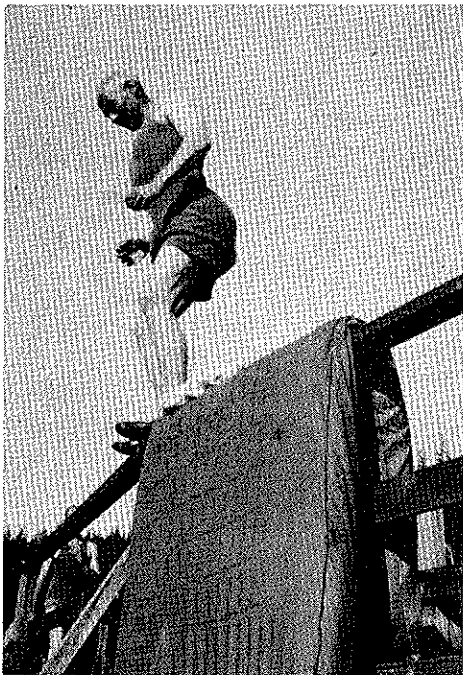
With some trepidation (whatever that means), we hope in the next issue to publish for the first time in print and pictures, the authentic, thrilling story of "A Day in the Life of a Park Ranger." Miss it if you dare!

... ..

FROM THE MARINE STATION

Guess Who?

Looking through some old snaps, this print, showing a prominent Forest Service official displaying the latest in bathing apparel (1928) was discovered. No, it is not Clement Attlee at Blackpool! It's (see bottom of page for answer).



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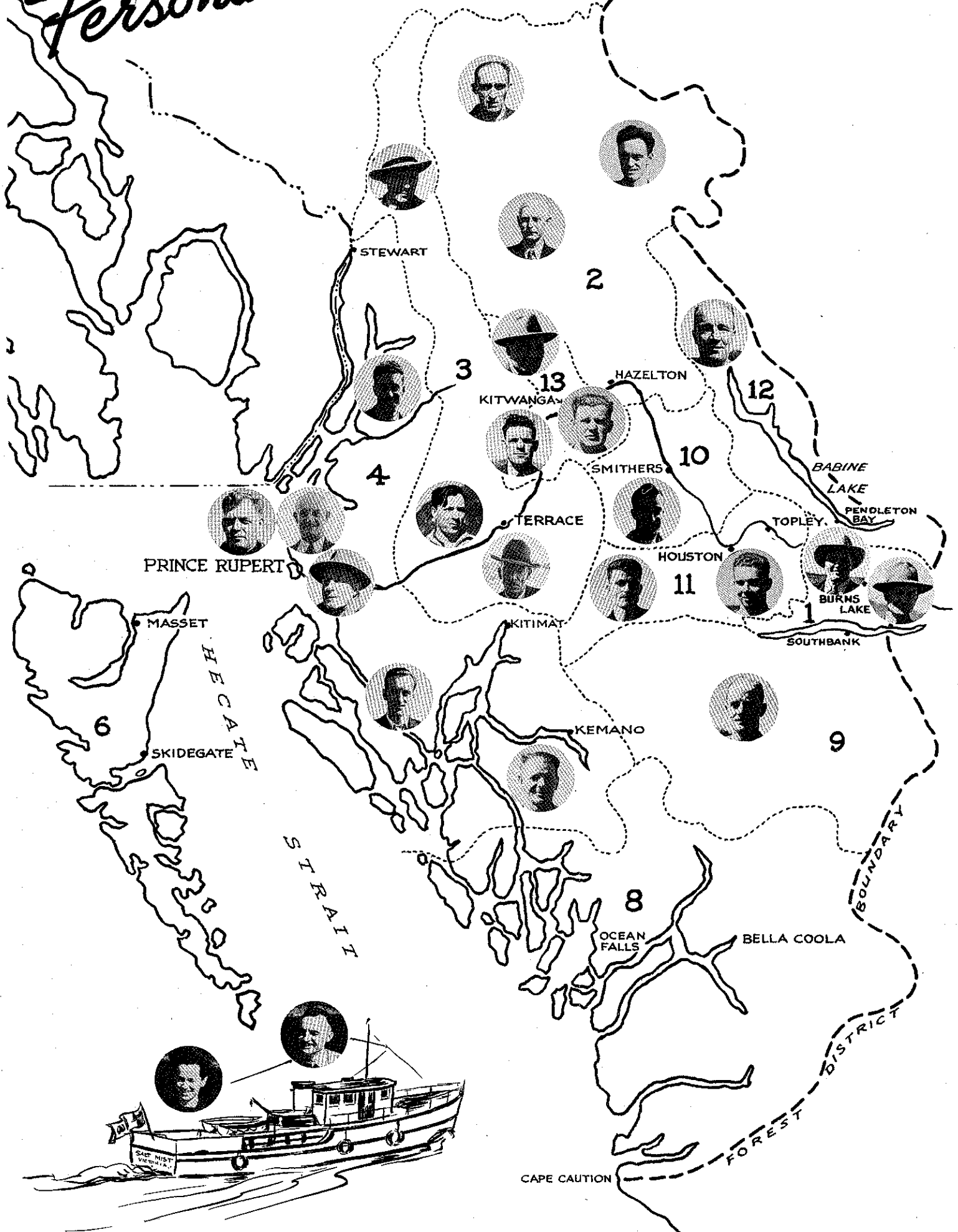
OUR MASTHEAD STORY

The Masthead on this issue of the Newsletter shows a view of the giant new Columbia Cellulose plant at Port Edward, Watson Island, in the Prince Rupert Forest District. Our thanks to Marvin Kullander for the good photography.

... ..

(Answer: Vancouver's Asst. District Forester, Doug. Taylor).

Personalities IN THE "RUPERT DISTRICT"



Who's Who in Rupert —

J.B. Scott, H.Q.	H.W. Campbell, R.D. #3	J.F. Munro, R.D. #11
S.G. Cooper, H.Q.	D.R. Smith, R.D. #3	J.J. Keefe, R.D. #11
C. Dahlie, Smithers	I.J. Benoit, R.D. #3	A.A. Antilla, R.D. #12
R.L. Brooks, R.D. #1	R.G. Benson, R.D. #4	J. Mould, R.D. #13
C.L. Gibson, R.D. #1	S.T. Strimbold, R.D. #4	A.L. Tourond, R.D. #13
L.G. Taft, R.D. #2	H.B. Whalen, R.D. #4	D.S. Cooper, R.D. #13
J.H. Willan, R.D. #2	W.A. Antilla, R.D. #9	R. Farmer, M.V. "Salt Mist"
J. Gilmour, R.D. #2	A.C. McPherson, R.D. #10	E. Stacey, M.V. "Salt Mist"