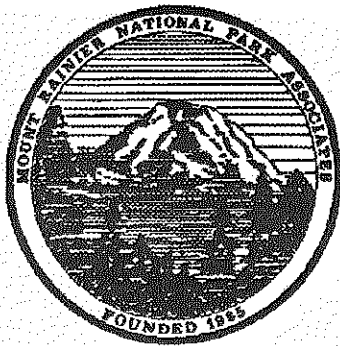




MRNPA News

Volume 6 Number 5

From the Summit

MRNPA has been very active as a citizen watchdog and support group for Mount Rainier National Park. As a reader of this newsletter (and I'm sure you agree with me that our newsletter staff does a super job), you are aware of the wide range of our activities. Examples are the regular meetings with NPS officials, the popular trail parties, and our review of EIS and EA documents involving proposed Park projects.

Right now we seem to be completely occupied with road problems: Highway 410 changes, closure and/or repair of the West Side Road, even minor changes to a bridge approach in Stevens Canyon. Road issues have been an important concern for us in the past as well.

The focus of so much attention upon roads in a National Park is very revealing. In fact, the debate is about more than just roads; it is about visitor impact, transportation alternatives, and just what a National Park is supposed to be.

The philosophy of this organization in the past, which I will continue to promote, has been to minimize the impact of roads, and NOT to sacrifice the beauty and sanctity of the Park to some set of bureaucratic regulations written thousands of miles away by a non-Park agency. (I wonder, did NASA have to guarantee that all trees would be cleared within 60 feet of the landing zone before touching down on the moon?)

We do have other issues to deal with this year (see the summary of our Annual Meet-

Continued on page two

Westside Road Closure Proposed! - Alternatives Questioned

History:

A series of flood events have damaged parts of the Westside Tahoma Creek Campground, the Tahoma Creek trail, trailhead and parking facilities. The early record of damaging events occurred in the 1960's and continues to the present.

Costs:

Repairs: 1989 - \$326,900; 1990 - \$380,400. Road open for about three months in the period 1988-1991 (6% of the time—normal is about 50%). Significant debris flow (1967-1991): approx 20 times.

Impacts on public use:

Floods obliterated picnic area, trailhead and parking, restrooms and closed road to public use. Day use has decreased in most areas. Lake George continues to have moderate day use.

There is considerable use of the Glacier View Wilderness trail as access to Lake George. Decreased public use has allowed for natural recovery of some impacted areas near the Westside Road.

Safety:

Public safety is a significant consideration. In 1987 a work crew of YCC young men and women very narrowly escaped injury by running uphill during one event. Again in 1987, a hiker was cov-

Continued on next page

In This Issue!

A Vision Statement for Mt. Rainier & Olympic National Parks.....	4
Mount Rainier Mining Company, Glacier Basin.....	5
Long hot summer brings avalanche of people to Mount Rainier	6
Mount Rainier Park's Forgotten Northwest Corner.....	7
A Limnology Study of a High Mountain Lake	8
An Ascent of Mount Rainier by John Muir	9
It Just May Be Sunset for Sunrise Lodge.....	11
A Profile of Floyd Schmoe.....	11
Writings of Floyd Schmoe	12
"The Winter Season"	13
Local Glacial Geology.....	14
Three Men and Their Mountain	16
Book Reviews & the August 22nd Trail Party.....	16 & 17
Minutes of Annual Meeting May 7, 1992.....	17

From the Summit cont'd...

ing minutes in this issue.) In addition, one of our goals is to strengthen our ties with other environmental organizations—we need all the help we can get! Also, I would like to see a more active and involved Board of Trustees and general membership.

In the meantime, get out and enjoy the last of the good weather on the Mountain. And we hope to see you at the Board meeting in October.

Jon Soest
President

Westside Closure cont'd...

ered above his knees by mud and managed to escape injury. In 1988, 22 visitors and their automobiles were trapped above the mud flow and had to be rescued. Because of the unpredictability of the flood events, the safety of visitors is a main concern.

Research:

The National Park Service and US Geological Survey are currently entering the last year of a four year study of the outburst events on Tahoma Creek. Results to date conclude there is little current ability to predict the events; they will probably continue and the Westside Road will likely be impacted by future events.

Alternative 1:

Permanently close the road at Dry Creek.

Officers of MRPNA

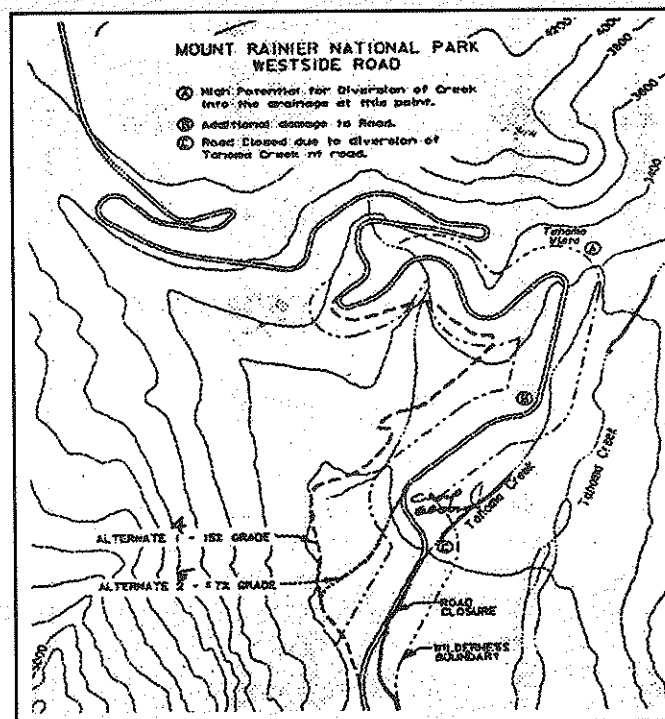
President	Jon Soest	(206) 863-3507
Vice-President	Bob Aegerter	(206) 547-4492
Secretary	Roger Garrett	(503) 260-2533
Treasurer	John Titland	(206) 747-1698
Editor	Joan Burton	(206) 524-1327
Layout	Bob Landen	(206) 854-2473

The MRNPA News is published periodically by the Mount Rainier National Park Associates of Seattle, WA. for the purpose of providing general information about issues affecting Mount Rainier National Park in furtherance of the goals of the Mount Rainier National Park Associates - To Maintain, Restore, Nurture, Protect and Appreciate the natural values of Mt. Rainier National Park.

The opinions expressed in the MRNPA News are those of those of the authors and do not necessarily represent the official position of the MNRPA.

Letters and articles from readers and members are welcomed. We reserve the right to edit for length, grammar or libel.

Unless specifically copyrighted, articles and graphics may be reprinted without prior permission if appropriate credit is given.



Westside road alternatives

Costs include constructing a parking area, trail, and the added administrative costs of increased travel to access areas above the road closure for backcountry patrol. Congress would have to approve Wilderness designation. Estimated cost: \$75,000.

Alternative 2:

Continue to repair the Westside Road each year as needed.

Costs of road repairs during 1989 through 1990: \$354,000/year average. Repair existing damage, maintain current road: \$323,300. Upgrade road in its existing alignment: \$871,800.

Alternative 3: (preferred alternative)

Temporarily close the road at Dry Creek until debris flows decrease.

USGS has indicated these debris flows are likely to continue for an undetermined period of time, maybe up to 20 years. Road would remain designated as a "road". Costs of implementing would include costs of constructing a parking area, and one-lane road through the washout area. Construction of primitive road: \$95,000.

Alternative 4:

Re-route the Westside Road from Dry Creek through existing wilderness for a length of 1.19 miles to connect with the portion of the road just south of Tahoma Vista.

A portion of the re-routed road would be in Wilderness and would have to be approved by Congress.

continued on next page

MRNPA Alternatives continued ...

Costs as estimated by Federal Highway Administration: \$1,600,000.

Alternative 5:

Re-route the road from below Dry Creek around the currently damaged section and connect with the road above the current closure.

A portion of the re-routed road would be in Wilderness and would have to be approved by Congress. The total length of road construction would be .34 miles. Costs as estimated by Federal Highway Administration: \$500,000.

MRNPA suggests the following issues should be addressed in studying the alternatives to the continued costly rebuilding of the Westside Road in response to repeated washouts.

Wilderness Impact:

- Implications of road encroaching upon present Wilderness boundary.
- Precedent that would be set by Congressional removal of road area from Wilderness.

Wilderness management issues:

- Within the Park: impact of decreased visitor load from road closure.
- In wilderness on adjacent National Forest.

Degree of Permanence of Closure:

- Temporary closure, allowing administrative access, with possibility of reopening sometime in future.
- Permanent closure, putting road to bed.

Impact on Natural Resources:

- Wildlife habitat.

- Wildlife migration/territory patterns, population numbers.
- Water quality.
- Wilderness values.
- Fire risk.

People Issues:

- Where will the people go who would have used the Westside Road for access into Park?
- Need for measures to prevent further overuse at Paradise.
- Existence of many un-maintained trails throughout the Park that might absorb hikers displaced by Westside Road closure.
- Parking at new road closure site attracting displaced Park users.

Cost/Benefit:

- Cost of current road maintenance versus closure as proposed, versus putting road completely to bed.
- Where will expenses be placed?
- What are the alternative expenditures?
- Cost of patrolling road/savings if road is closed.

Law Enforcement Issues:

- Access through adjacent private land to west.
- Limited supervision of car-accessible areas.
- Wildlife issues, poaching.
- Fire risk.

History:

- The history of the once-planned road around the mountain.
- Likelihood of this plan being accomplished in the future.
- Impact on Gobblers Knob structure; alternatives to preserve.

Possible Future Issues:

- Impact on possible future additions to Park.
- Interaction (if any) with proposed railroad from Tacoma.

Letter of Response from MRNPA

August 20, 1992

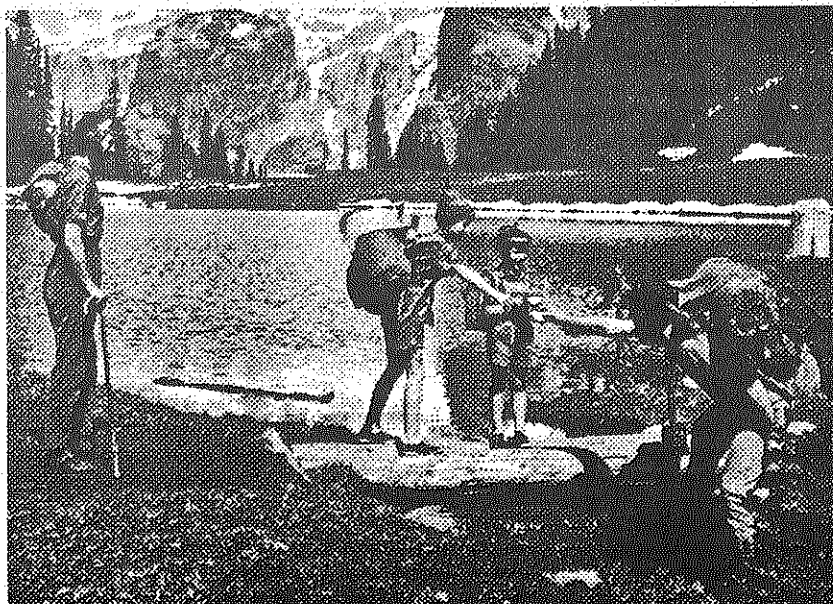
Superintendent Briggie
Mount Rainier National Park
Tahoma Woods, Star Route
Ashford, WA 98304

Re: Westside Road EIS Scoping

Dear Superintendent Briggie:

Mount Rainier National Park Associates has the following comments on the alternatives for management of the Westside Road.

continued on next page



Klapache Park - Off limits to families?

MRNPA Alternatives continued ...

Alternative One:

No one likes to hike a dry, dusty under-utilized road-bed. North Cascades National Park has a public relations problem of significant proportion because of the Cottonwood Camp road. Permanent closure should include putting the road to bed, including removal of some of the historic structures.

Alternative Two:

The secondary impacts of diverting funds for annual road repair are significant. What does not get done in order to keep the road open? There should be a risk analysis of the danger to the public.

Alternative Three:

Providing a shuttle bus for hikers and a portion of the backcountry ranger force would mitigate complaints about hiking the dusty road and give the Park experience with mass transit solutions.

An interpretation of USGS that "it may be up to 20 years" until debris flows decrease to a negligible level is not consistent with their observations. It would be more correct to say that it will be 20 years before we have a good estimate of how long this specific flow will continue.

Alternative Four and Five:

The loss of support resulting from tampering with the wilderness is not justified. If you believe this would be viewed as an exchange of wilderness, we have a dusty, well-used 1922 pickup truck we will be pleased to exchange for one of your latest fleet trucks. There is something wrong with the maps handed out at the meetings. The most probable error is mixed scales.

We have previously submitted comments related to scoping of a potential E.I.S. The format of the meetings and response sheets does not address traditional E.I.S. scoping concerns. If any alternative other than Three is selected, we are of the legal opinion that a regular public scoping session will have to be held.

Sincerely,
Bob Aegerter Vice-President MRNPA

Drop Bob Aegerter or Jon Soest
a note on how you feel about the Westside
Road closure and the alternates!

Send your letter to:

Jon Soest
President, MRNPA
5325 Monta Vista Dr
Sumner WA 98390

Bob Aegerter
Vice-President, MRNPA
9230 41st NE
Seattle WA 98115

A Vision Statement For Olympic And Mount Rainier National Parks

Bill Briggie

Superintendent of Mt. Rainier National Park

Maureen Finnerty

Superintendent of Olympic National Park

Future visitors to Olympic and Mount Rainier National Parks will encounter a landscape where natural processes operate on a grand scale with little hindrance. The many panoramic vistas of these parks show nature functioning as it has for thousands of years. Mountains and forests in various stages of succession, pristine watersheds and wilderness coastlines, reveal natural processes at work. At times, the appearance of these processes may not be visually appealing in the wake of fire or other naturally occurring events.

In this grand setting, ecological processes are apparent at all scales, from the geologic time scale of canyons carved by rivers, to ocean tides shaping pristine beaches, from the movement of gigantic ice flows, to the moment-by-moment pace of park fauna. Complex interrelationships of all components of the parks' environments—from the mountain tops to the smallest life forms—will be experienced through protection and interpretation.

The parks will be managed consistent with principles of biological diversity, emphasizing the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur.

Additionally, cultural resources will be interpreted, as knowledge of the cultural history of these parks complements the natural history. Contributions from the historic, cultural and ethnic diversity of the areas will be interpreted.

Management activities will be attuned to maintain the naturalness of ecological processes operating with minimal interference. Public use and enjoyment will be encouraged, so that human activities are a reasonable part of these processes. Opportunities for education will complement visitor use of the parks, emphasizing and interpreting the parks' wilderness designation, while recognizing the needs of an expanding urban population.

Quality visitor services and facilities will be provided while protection of park resources remains the primary concern. Development will be minimal and of high standards, using complementary architectural themes. Low impact access to the parks, such as transportation systems, will be pursued.

continued on next page

Vision Statement continued ...

Gateway communities will be encouraged to provide additional appropriate visitor services.

To ensure the epitome of park management and operations, a work force will be developed and maintained to meet the highest standard of professionalism and will remain current in state-of-the-art concepts and technology.

The parks will pursue the greatest possible public benefit through partnerships with other federal agencies, as well as state, local and tribal authorities; the Congress, and individuals and organizations in the private sector. "Friends groups" will be encouraged. Public involvement in resource decisions is essential. This effort will be further enhanced by park managers engaging in a proactive information sharing program through the media. These efforts will increase the consciousness of those living in Puget Sound to the importance and value of the National Park System, Mount Rainier and Olympic in particular.

Mount Rainier Mining Company, Glacier Basin

from Mt. Rainier Historic Resource Study, by Erwin Thompson, 1981, National Park Service

One of the more interesting mining companies to operate in Mount Rainier National Park was the Mount Rainier Mining company. Not only were its copper and silver workings in Glacier Basin the most extensive in the Park, at one point in its history its officers were jailed for the fraudulent use of the US Mail. In the early days of the company's operations, Park Ranger Tom O'Farrell learned to detest the original company and probably was the first person to recognize that it was as crooked as a switchback trail.

Peter Storbo of Enumclaw and his associates began extracting copper and silver in Glacier Basin as early as 1897, before the national park was established. The Mount Rainier Mining Company was first incorporated in 1905, with its offices in the Alaska Building in Seattle.

The first mention of this company per se in the Park records occurred in 1906 when the Interior Department permitted Storbo to improve the trail from

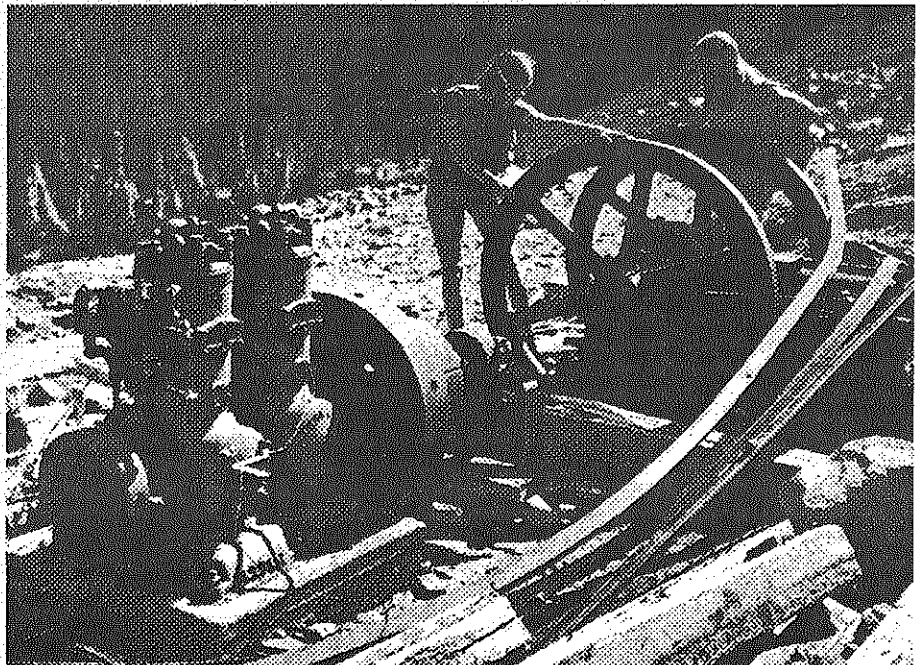
the northern Park boundary, up White River and Inter Fork, to his mining camp in Glacier Basin. Presumably the trail was improved, for the Park Superintendent reported in 1909 that the company had erected a water-powered sawmill in the basin that had a daily capacity of 10,000 board feet and had constructed two cabins, a barn and a blacksmith shop. As for workings, the miners had dug a 700-foot tunnel, a 73-foot tunnel, and a 13-foot deep prospect hole.

Despite this activity, mining activities in Glacier Basin soon slackened so much so that Secretary of the Interior R.A. Ballinger directed the General Land Office in 1911 to institute proceedings against the company on the following charges:

- (1) None of the claims were marked definitely on the ground.
- (2) Notices in the office of the Recorder of Pierce County did not contain descriptions of the claims.
- (3) No discovery of mineral-bearing vein or lode had been made.
- (4) No development work and no annual assessment work had been done. The outcome of these proceedings was the company's relinquishment of 32 claims and its retention of 9.

Park Superintendent Hall wrote the Secretary of the Interior following the relinquishment of the claims asking what should be done with the several structures belonging to the company that were on these relinquished claims. Meanwhile, Ranger O'Farrell prepared a list of the structures. The sawmill stood on the Turtle claim; there were a camp

continued on next page



Old mining relics in Glacier Basin

Glacier Basin Mining continued ...

cabin and a barn on the Lake City claim (later called Camp Storbo); a cabin stood near the mouth of a long tunnel on the Gate Claim; and another small cabin guarded the mouth of a short tunnel on the Reven claim. In the end, the mining company compiled a list of requests for permits to use Park land outside the claims it still possessed; the Interior Department agreed to all of them.

The company said that it wanted to relocate the upper three miles of the road to the north side of the river, instead of its existing location on the south side. It also wished to straighten and improve the lower portion of the road along White River to the Park boundary.

During 1913 and 1914 Ranger O'Farrell ran into Peter Storbo on several occasions. Following one of these encounters O'Farrell wrote to Superintendent Ethan Allen that the officers of the mining company annually "gulled" farmers in Minnesota and the Dakotas for money to operate the claims, even though they knew that mining in Mount Rainier National Park would never be profitable. In 1914 Storbo informed O'Farrell that the road had been completed up to the "Granite Slide", three miles below Glacier Basin. From there Storbo proposed constructing the road up the north side of Inter Fork. Shortly after making this report O'Farrell visited Glacier Basin. He took a cyclometer with him which measured the company road within the Park as then being 6.6 miles in length. Storbo said that the company had spent \$16,000 on improvements both inside and outside the Park.

In 1915 Park Superintendent Reaburn forwarded to the Interior Department the company's plans for two new structures on the relinquished claim. The larger structure, 36 by 79 feet, would eventually come to be called the "hotel" and would serve as a residence for miners. A power plant and a sawmill still stood on the Turtle claim. There was a 700-foot tunnel and two other tunnels, 240 and 300 feet. Also an aerial tram, 800 feet long, led from one of the shorter tunnels down to the wagon road.

Occasionally, shipments of ore were taken out by wagon and packhorses to Enumclaw, where they were forwarded to the Guggenheim Smelter in Tacoma. Later, Reaburn said that the ore assayed at \$60 per ton.

The upper part of Storbo Road, as it came to be called, appears to have been completed by 1916. The company reported that year that it had constructed 11 1/2 miles of road within the Park at a cost of \$38,500. Cars and trucks could travel on it.

(To be continued in the next MRNPA NEWS)

Long hot summer brings avalanche of people to Mount Rainier

by Art Popham

Tacoma News Tribune, Tues. July 28, 1992

On clear days, you probably spot Mount Rainier in the distance and imagine a sunny sojourn to Paradise. On cloudy days, when the mountain disappears, you forget it exists. What mountain?

That long-standing phenomenon—and our current dry weather trend—account for dramatic 1992 increases in Mount Rainier National Park attendance. Accompanying that growth is higher concession revenue for Guest Services Inc., the Fairfax, Virginia firm that contracts with the National Park Service to run all Rainier lodging, gift shops, snack bars and ski touring, as well as a service station.

"The numbers are phenomenal for this year, especially compared to last year," said Elizabeth Marzano, Guest Services' Rainier general manager. "Last year was a real bust. We had floods here, and with our rainy, cold June, we were down 14 percent for the year."

continued on next page

How to express your opinions to your elected Representatives

State your case simply, clearly and without rancor.

Don't use more than two typewritten pages.

Write often. If your statements make sense to the staffs, your regular correspondence will be read.

Use the correct addresses...

Your U. S. Representative

(Jolene Unsoeld, Rod Chandler, etc.)

U. S. House of Representatives

Washington, DC 20515

Your U. S. Senator

(Slade Gorton, etc.)

United States Senate

Washington, DC 20510

Concessionaire's Report continued ...

"When we really picked up was the early part of this year. January through May were very, very good. January to May and September to December are our shoulder months that surround our peak season. We are up 15 percent or better in visitation and in our business. It's all due to weather. Everything I look at and review is weather-related."

Cy Hentges, National Park Service management assistant, agrees the shoulder months are the ones in which Rainier sees attendance gains or losses.

"Our attendance jumps take place in the winter," Hentges said. "Through June this year, we were up 33 percent over last year—from 466,555 to 620,257. The percentage increase will drop a little bit now because this is when we do most of our annual business."

To-date increase or not, Marzano knows right now is crunch time for her entire year.

"It's difficult to bank all your income in two months a year," she said. "When I started here in '74, our season ran 88 days—from Father's Day to Labor Day. Now we have a 138-to 148-day season."

Although Marzano refused to discuss figures, it is reported that even in the down year of 1991, Guest Services took in revenue of \$5 million. Last year's attendance was 2,235,000, equivalent to half of Washington's population.

Those figures give a whole new meaning to the old expression, "There's gold in them thar hills."

A healthy 51 percent of Guest Services' business comes from Western Washington residents. Marketing surveys show that Western Washington overnight guests do not tire of the mountain: They stay at Rainier two or three times a year. Marzano says Pierce County's military population particularly supports the Park.

Accordingly, she expects future attendance increases to come from new Army troops and their families moving to Fort Lewis from Fort Ord, Ca. She also expects the Puget Sound area's expanding relationship with Japan to attract Asian tourists away from their usual Los Angeles-San Francisco-New York destinations.

But does Mount Rainier really need more business? After all, don't we go there for a break from crowds and I-5 gridlock? Is it called the National Park Service because parking is getting so tight on the mountain?

"It's not really that big a problem until you get a beautiful weekend. Then it's a madhouse," Hentges said. "You can't find a parking spot at Paradise after 10 in the morning. Cars are parked along the road almost a mile away."

"If you don't want to go to Paradise or Longmire or Sunrise, you're OK. Parking at those locations is limited, but you can't knock out trees and hills

and flower fields to create parking. You'd just add more people to a fragile environment."

The obvious solution is to get people out of their cars and onto mass transportation, but that's easier said than done. In a 1990 National Park Service survey, 47 percent favored a Rainier transit system, while 41 percent did not. Even more telling, 72 percent said they would not take a bus from the Nisqually entrance to Paradise if it were offered.

An accompanying problem is the lack of parking at Rainier's entrance, where people could leave their cars and board buses. Tacoma's proposed "Train to the Mountain" could alleviate that problem by setting up a parking lot at its eastern depot—near the southwest Park entrance.

If the train becomes a reality, it also could lead to construction of a major resort near Ashford, six miles from the Park gate. Gale Adams hopes to develop a large hotel, golf course and destination conference center on several hundred acres he owns between Ashford and Elbe.

Hikers Can Discover Mount Rainier Park's Forgotten Northwest Corner

Terry Richard

The Oregonian, August 17, 1992

The forgotten corner of Mount Rainier National Park shouldn't be that way. The vast majority of Park visitors spend their time at Paradise, Sunrise, Ohanepecosh, and the Tatoosh Range. And who can blame them? All are renowned for their beauty and are easily accessible by the Park's highway system.

What about Mowich Lake and the Carbon River, a pair of dead-end access roads in the Park's northwest corner? Summer weekend visitors from Tacoma, Puyallup and Auburn know about the trailheads, but few Park visitors from outside the Puget Sound region bother with the northwest corner.

Mount Rainier's northwest corner is a 175 mile drive from Portland. That puts it 3 1/2 hours away, but it still is the closest national park to Portland.

Driving to Mount Rainier's northwest corner is like taking a trip back through time. Backroads from Interstate 5 through Tenino, Rainier, Yelm, McKenna, Kapowsin, South Prairie, Wilkeson, and Carbonado skirt most of the growth that has enveloped Puget Sound over the past decade.

A new shopping mall at Yelm, with its stunning view of the 14,410 foot high volcano, is one of the few reminders of the rapid development that is

continued on next page

The Forgotten Corner continued ...

reaching ever farther outward from the salt waters of the Sound. The last couple of towns before entering the Mount Baker-Snoqualmie National Forest look like something out of the 1950s.

While approaching the Park through logging clearcuts on private land, visitors must choose between the high road to Mowich Lake or the low road to the Carbon River.

Both roads turn to gravel once they enter the Park. The Carbon River entrance ends at Ipsut Creek campground, 2,400 feet above sea level. The other road ends at 4,900 foot high Mowich Lake, which has a walk-in campground.

The two roads are connected by the Wonderland Trail, a 92 mile hiking trail that circles Mount Rainier. Hikers, with less time than the week it takes to walk around the mountain, can do an 18-mile loop through the Park's northwest corner as a day hike or an overnight trip.

The northwest corner's 18-mile loop is clearly defined on Park maps and even on some larger scale highway maps. It has enough variety to make it the equal in beauty of any similar-length trail in the Cascades.

A recent hike over the 18-mile loop was done in a counterclockwise direction beginning at Ipsut Creek camp. This route packs 2,600 feet of climbing in the first three miles, but everything feels easy after that is out of the way.

En route to Ipsut Pass, the trail passes a grove of Alaska yellow cedar just after an open section in the forest three miles from the trailhead. The yellow cedars aren't as big as other western red cedars and western hemlocks in the rain forest, but they are the largest specimens of their species in the world.

Mowich Lake is a 122 acre glacial cirque that has a view of the mountain heights above a forested ridge. The best view of Mount Rainier comes from Eagle Cliff on the part of the loop that connects Mowich Lake to Spray Park. The north Mowich Glacier has retreated 1.4 miles in the last century.

After a brisk climb to Spray Park, hikers enter one of the best wild-flower meadows in the Park. During the summer bloom, the wildflowers extend for more than a mile along the trail as it rises to its high point of 6,400 feet on the loop.

After crossing a permanent snowfield, the trail passes through more wildflowers in Seattle Park before it heads down steeply to its crossing of the Carbon River. A side trip leads to a 205 foot long suspension bridge that crosses the Carbon River just below the snout of the glacier. The rest of the loop is an easy walk along the river to the starting point.

Once the northwest part of the Park is explored, it won't be forgotten.

A Limnology Study of a High Mountain Lake in Mount Rainier National Park

*by Gary Lee Larson
summarized from an article
in Archiv fur Hydrobiologie, 1973*

Mowich Lake is a cirque lake located in the northwest corner of Mount Rainier National Park. It lies at an elevation of 1502 m, has an area of 45.9 ha, a maximum depth of 58.6 m, a shoreline development of 1.2, a mean depth of 28.2 m, and a volume of 12,948,900 m³.

The watershed is a portion of the remains of the Fifes Peak formation dated near the early Miocene. The upper portion of the watershed is sparsely vegetated, while the area surrounding the lake is covered with a fairly dense stand of timber. Limited observations indicated the humus layer to be less than .5 at maximum thickness. Climatic data from 1956-1966 compared the data of 1967 to past years. In 1967, both temperature and precipitation were averaged at 3.9 C and 298.2 cm, respectively.

The study of high mountain lakes has shown that most are low in mineral content and unproductive. The study concentrated upon biotic relationships. Mowich is accessible by road during summer, but from November to June it is accessible only by boat. Monthly samples were taken from March until June, 1967. Weekly samples were taken from July through November.

Mowich Lake was low in mineral content and unproductive of plants and animals. The lake's winter snow and ice cover developed into a floating snow pack up to 3.75 m in thickness. Snow cover may play an important role because it adds nutrients to the water. The production of phytoplankton (the plant part of the plankton) was strongly correlated in time and place, and was at its peak in July.

Smaller invertebrates consisted of 8 species of Rotifera, a fresh water animal with a mouth surrounded by fine hairs, feeding on bacteria, algae, and small bits of organic matter. When feeding, the hairs beat in such a manner as to resemble a tiny pair of revolving wheels, hence the name "rotifer". There was one crustacean. Plankton populations were at their maximum between early October and early mid-November.

The low concentration of nutrients probably caused the low activity quotient. Quotient was greatest just after the lake snow cover disappeared. No true pelagic species of Crustacea were

continued on next page

A Limnology Study continued ...

found. The absence is in part thought to have been caused by predation of kokanee.

Mowich Lake was found to be unproductive and to possess a relatively simple biological system. Little variation was observed in the succession from primary production, to phytoplankton biomass, to zooplankton production, and to zooplankton density.

An Ascent of Mount Rainier by John Muir

from Steep Trails, 1918

(John Muir climbed Mt. Rainier in 1888 when he was 50 years old.)

Ambitious climbers, seeking adventures and opportunities to test their strength and skill, occasionally attempt to penetrate the wilderness on the west side of the Sound, and push on to the summit of Mount Olympus. But the grandest excursion of all to be made hereabouts is to Mount Rainier, to climb to the top of its icy crown. The mountain is very high, fourteen thousand four hundred feet, and laden with glaciers that are terribly roughened and interrupted by crevasses and ice-cliffs. Only good climbers should attempt to gain the summit, led by a guide of proved nerve and endurance. A good base trail has been cut through the woods to the base of the mountain on the north; but the summit of the mountain never has been reached from this side, though many brave attempts have been made upon it.

Last summer I gained the summit from the south side, in a day and a half from the timber line, without encountering any desperate obstacles that could not in some way be passed in good weather. I was accompanied by Keith, the artist, Professor Ingraham, and five ambitious young climbers from Seattle. We were led by the veteran mountaineer and guide Van Trump of Yelm, who many years before guided General Stevens in his memorable ascent. With a cumbersome abundance of camp stools and blankets we set out from Seattle, traveling by rail as far as Yelm Prairie, on the Tacoma and Oregon road. Here we made our first camp and arranged with Mr. Longmire, a farmer in the neighborhood, for pack and saddle animals. The noble King Mountain was in full view from here, glorifying the bright, sunny day with his presence, rising in godlike majesty over the woods, with the magnificent prairie as a foreground.

By night of the third day we reached the Soda Springs on the right bank of the Nisqually, which goes roaring by, gray with mud, gravel, and boul-

ders from the caves of the glaciers of Rainier, now close at hand. The distance from the Soda Springs to the Camp of the Clouds is about ten miles. The first part of the way lies up the Nisqually canyon, the bottom of which is flat in some places and the walls very high and precipitous, like those of the Yosemite Valley. The upper part of the canyon is still occupied by one of the Nisqually glaciers, from which this branch of the river draws its source, issuing from a cave in the gray, rock-strewn snout. About a mile below the glacier we had to ford the river, which caused some anxiety, for the current is very rapid and carried forward large boulders as well as lighter material, while its savage roar is bewildering.

At this point we left the canyon, climbing out of it by a steep zigzag up the old lateral moraine of the glacier, which was deposited when the present glacier flowed past at this height, and is about eight hundred feet high. It is now covered with a superb growth of *Abies amabilis*, so also is the corresponding portion of the right lateral. From the top of the moraine, still ascending, we passed for a mile or two through a forest of mixed growth, mainly silver fir, Patton spruce, and mountain pine, and then came to the charming park region, at an elevation of about five thousand feet above sea level.

Here the vast continuous woods at length begin to give way under the dominion of climate, though still at this height retaining their beauty and giving no sign of stress of storm, sweeping upward in belts of varying width, composed mainly of one species of fir, sharp and spiry in form, leaving smooth, spacious parks, with here and there separate groups of trees standing out in the midst of the openings like islands in a lake. Every one of these parks, great and small, is a garden filled knee-deep with fresh, lovely flowers of every hue, the most luxuriant and the most extravagantly beautiful of all the alpine gardens I ever beheld in all my mountain top wanderings.

We arrived at the Cloud Camp at noon, but no clouds were in sight, save a few gauzy ornamental wreaths adrift in the sunshine. Out of the forest at last there stood the mountain, wholly unveiled, awful in bulk and majesty, filling all the view like a separate, newborn world, yet withal so fine and so beautiful it might well fire the dullest observer to desperate enthusiasm. Long we gazed in silent admiration, buried in tall daisies and anemones by the side of a snow bank. Higher we could not go with the animals and find food for them and wood for our own camp-fires, for just beyond this lies the region of ice, with only here and there an open spot on the ridges in the midst of the ice, with dwarf alpine plants, such as *saxifrages* and *drabas*, which reach far up between the glaciers and low mats of the beautiful *bryanthus*, while back of us were the gardens and abundance of everything that

Continued on next page

Muir on the Mountain continued ...

heart could wish. Here we lay all the afternoon, considering the lilies and the lines of the mountains with reference to a way to the summit.

At noon next day we left camp and began our long climb. We were in light marching order, save one who pluckily determined to carry his camera to the summit. At night, after a long easy climb over wide and smooth fields of ice, we reached a narrow ridge, at an elevation of about ten thousand feet above the sea, on the divide between the glaciers of the Nisqually and the Cowlitz. (Ed. Note Could this be the site of Camp Muir?) Here we lay as best we could, waiting for another day, without fire of course, as we were now many miles beyond the timber-line and without much to cover us. After eating a little hardtack, each of us leveled a spot to lie on among lava-blocks and cinders. The night was cold, and the wind coming down upon us in stormy surges drove gritty ashes and fragments of pumice about our ears while chilling to the bone. Very short and shallow was our sleep that night; but day dawned at last, early rising was easy, and there was nothing about breakfast to cause any delay.

About four o'clock we were off, and climbing began in earnest. We followed up the ridge on which we had spent the night, now along its crest, now on either side, or on the ice leaning against it, until we came to where it becomes massive and precipitous. Then we were compelled to crawl along a seam or narrow shelf, on its face, which we traced to its termination in the base of the great ice-cap. From this point all the climbing was over ice, which was here desperately steep but fortunately was at the same time carved into innumerable spikes and pillars which afforded good footholds, and we crawled cautiously on, warm with ambition and exercise.

At length, after gaining the upper extreme of our guiding ride, we found a good place to rest and prepare ourselves to scale the dangerous upper curves of the dome. The surface everywhere was bare, hard, snowless ice, extremely slippery; and though smooth in general, it was interrupted by a network of yawning crevasses, outspread like lines of defense against any attempt to win the summit. Here every one of the party took off his shoes and drove stout steel caulks about half an inch long into them, having brought tools along for the purpose, and not having made use of them until now so that the points might not get dulled on the rocks ere the smooth, dangerous ice was reached. Besides being well shod each carried an alpenstock, and for special difficulties we had a hundred feet of rope and an ax.

Thus prepared, we stepped forth afresh, slowly groping our way through tangled lines of crevasses, crossing on snow bridges here and thereafter cautiously testing them, jumping at narrow

places, or crawling around the ends of the largest, bracing well at every point with our alpenstocks and setting our spiked shoes squarely down on the dangerous slopes. It was nerve-trying work, most of it, but we made good speed nevertheless, and by noon all stood together on the utmost summit, save one who, his strength failing for a time, came up later.

We remained on the summit nearly two hours, looking about us at the vast map-like views, comprehending hundreds of miles of the Cascade Range, with their black interminable forests and white volcanic cones in glorious array reaching far into Oregon; the Sound region also, and the great plains of eastern Washington, hazy and vague in the distance. Clouds began to gather. Soon of all the land only the summits of the mountains, St. Helen's, Adams, and Hood, were left in sight, forming islands in the sky.

We found two well-formed and well-preserved craters on the summit, lying close together like two plates on a table with their rims touching. The highest point of the mountain is located between the craters, where their edges come in contact. Sulphurous fumes and steam issue from several vents, giving out a sickening smell that can be detected at a considerable distance. The unwasted condition of these craters, and indeed, to a great extent, of the entire mountain, would tend to show that Rainier is still a comparatively young mountain. With the exception of the projecting lips of the craters and the top of a subordinate summit a short distance to the northward, the mountain is solidly capped with ice all around; and it is this ice cap which forms the grand central fountain whence all the twenty glaciers of Rainier flow, radiating in every direction.

The descent was accomplished without disaster, though several of the party had narrow escapes. One slipped and fell, and as he shot past me seemed to be going to certain death. So steep was the ice-slope no one could move to help him, but fortunately, keeping his presence of mind, he threw himself on his face and digging his alpenstock into the ice, gradually retarded his motion until he came to rest. Another broke through a slim bridge over a crevasse, but his momentum at the time carried him against the lower edge and only his alpenstock was lost in the abyss. Thus crippled by the loss of his staff, we had to lower him the rest of the way down the dome by means of the rope we carried. Falling rocks from the upper precipitous part of the ridge were also a source of danger, as they came whizzing past in successive volleys; but none told on us, and when we at length gained the gentle slopes of the lower ice-fields, we ran and slid at our ease, making fast, glad time, all care and danger past, and arrived at our beloved Cloud Camp before sundown.

Continued on next page

Muir on the Mountain continued ...

We were rather weak from want of nourishment, and some suffered from sunburn, notwithstanding the partial protection of glasses and veils; otherwise, all were unscathed and well. The view we enjoyed from the summit could hardly be surpassed in sublimity and grandeur, but one feels far from home so high in the sky, so much so that one is inclined to guess that, apart from the acquisition of knowledge and the exhilaration of climbing, more pleasure is to be found at the foot of mountains than on their frozen tops. Doubly happy, however, is the man to whom lofty mountain-tops are within reach, for the lights that shine there illumine all that lies below.

It Just May Be Sunset for Sunrise Lodge

*by Paul Shukovsky
from Post-Intelligencer, July 22, 1992
and The Herald, July 22, 1992*

Mount Rainier National Park officials are seeking to demolish the deteriorating Sunrise Lodge because of rotting wood and fire danger and to replace the 1930s-vintage building with a new visitor center.

The rustic, wood-frame building covered with cedar shake and shingles was constructed in 1931 at 6,400 feet and has a commanding view of Mount Rainier's northeast face. It was intended to be part of a much larger lodge that was to include hotel facilities, Park spokesman Cy Hentges said.

But the building was never completed, and in the limited space available the National Park Service has packed in a gift shop, restaurant, bathrooms, ranger station, housing for 12-14 people who work for the concessionaire, and first-aid facilities.

Water has leaked into the basement of the 61-year-old lodge, rotting floors and walls causing the foundation to settle unevenly, according to an environmental impact study completed last month. Annual maintenance costs are high because winter storms scour the shake and shingle walls and roof, while spring runoff floods the basement and is undermining the foundation, Hentges said. The building cannot meet building and safety codes, nor the demands of increased tourist traffic. Nearly 282,000 people visited Sunrise from June to September last year, and attendance is up 30% so far this season.

It would cost the Park Service \$4.4 million to bring the lodge up to code, and it would need constant maintenance. The Park Service has developed four alternatives that call for either renovating the lodge or demolishing it and building a new struc-

ture. But it will take years before any of the alternatives reach fruition. The National Park Service wants to spend \$4.2 million on a new lodge at the same site and has asked Congress for money to begin. Keeping the site would do less harm to the environment, the report says. The demolition proposal is the least expensive of the four alternatives. The most costly plan calls for extensive rehabilitation of the lodge for \$4.94 million.

The lodge, together with other structures at the visitor center, are listed as a district on the National Register of Historic Places. That means the Park Service will have to go through a review and consultation process as required by the National Historic Preservation Act, said David Hansen, deputy state historic preservation officer.

If Congress approves the project next spring, construction would probably begin in 1995 and be completed in 1997. During the two seasons it would take to build a new lodge, rangers and concessionaires would operate out of temporary portable structures.

Some Sunrise visitors and workers worry the rustic lodge will be replaced with a modern structure that won't offer the same atmosphere. Dixie Gatchell, 68, has been visiting Sunrise almost every summer for 50 years. She and her husband spent part of their honeymoon there.

As someone who appreciates the area's beauty and history, Gatchell would like to see the lodge restored. But as an eight-year volunteer at Sunrise, she knows the building has seen better days.

"My sentimental side would like to see them restore and maintain the lodge, but my pragmatic side knows that if someone were hurt in this building, it would be awful," Gatchell said.

"Sentiment just can go so far. You have to think about health and safety."

(More about MRNPA's position on this issue in the next MRNPA NEWS)

A Profile of Floyd Schmoe FIRST PARK NATURALIST

from the Seattle P.I., Sunday, January 3, 1988

The souvenirs of Floyd Schmoe's life include 20 or so still-occupied homes built shortly after World War II in Hiroshima, Japan, a series of books exploring the wonders of nature, including A Year in Paradise, Our Greatest Mountain, and the children. All of his books are on a shelf in the living room, including the two he wrote about Mount Rainier telling of the time he and his late wife Ruth spent there. The big mountain has long been an intimate part of Schmoe's life.

continued on next page

A Schmoe Profile continued ...

"At Christmas the first year Ruth and I were all alone on Mount Rainier. We had decorated a tree outside and put colored lights on it. It snowed, and there was some sleet covering the lights. I turned them on and they were under the snow and ice with the colors coming through the ice, and there were two martens chasing each other up and down the street."

He is a Quaker, a naturalist, a conscientious objector to four wars, a writer, a builder, a carver, a father, grandfather, and great-grandfather with a lot to talk about. "Always have something exciting to do tomorrow," Schmoe says in his soft clear voice.

For a man of peace, Schmoe saw as much action in war as any man who bore arms. His life has been vibrant with adventure. Schmoe reaches under his shirt and produces a dog tag of sorts—a silver medal marking his service for the Red Cross in France during World War I.

"I was a conscientious objector and President Wilson made it legal for us to serve with the Red Cross instead of serving in the armed services. After the armistice was signed, I was asked if I would go with a train of medical supplies and food to Poland while the Germans and Poles were still fighting. We got to Berlin on Easter Sunday, 1919, with 52 boxcars and the German Army stopped us. We sat under machine guns and police dogs for 10 days without being able to change our clothes." They were finally released and reached Warsaw after being fired on by various combatants.

After World War I he married Ruth and came to Seattle for "the green trees and clean water" to study forestry at the University of Washington. He completed his senior year in New York because the UW forestry school was "only interested in Weyerhaeuser, logging, chips, and pulp, while I wanted to study ecology and naturalism."

From 1922 to 1939 he served as naturalist at Mount Rainier at Mount Rainier National Park, the first Park Service naturalist at that park and the third naturalist in the history of the service.

"When we went to Mount Rainier, the only woman employee of the Park Service was a telephone operator," Schmoe notes. "Now I am glad to say they are everything; naturalists, trail builders. One naturalist visited recently and she said she was just back from fighting a fire in California. It has changed for the best."

Out of his first year on the mountain with Ruth he wrote "A Year in Paradise", published by Harper Brothers, the first of more than a dozen books he has authored. It is a lyrical description of a honeymoon spent on duty at Mount Rainier.

Writings of Floyd Schmoe

*from Mount Rainier Nature News
Notes, July 16, 1924*

"Gossamer Days"

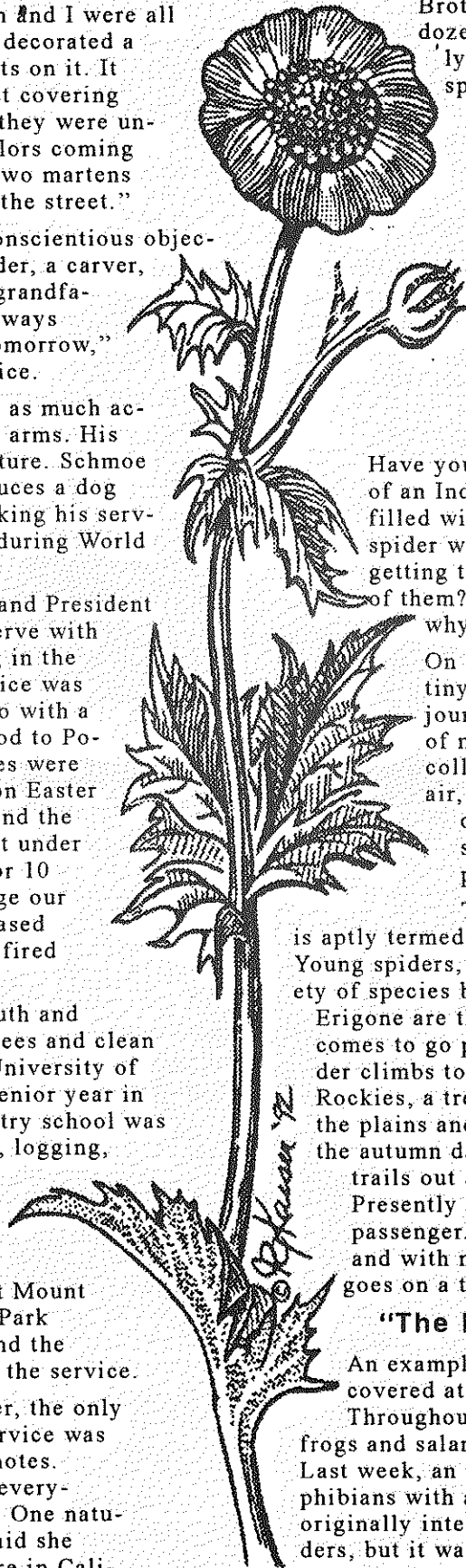
Have you ever peered into the deep blue of an Indian Summer sky and found it filled with silvery webs, gossamer webs, spider webs that had no possible way of getting there but still were there, millions of them? I have and I have often wondered why and how.

On the end of every silky thread is a tiny aviator, a spider aviator on a journey that may carry him thousands of miles. Such voyagers have been collected eight thousand feet in the air, have been collected in mid-ocean, have been collected in Missouri, having taken-off on the upper Mackenzie!

This method of aerial navigation is aptly termed "ballooning" by entomologists. Young spiders, mere specks of spiders, of a variety of species but more often of the genus *Erigone* are the balloonists. When the time comes to go places and do things, this baby spider climbs to the tip of a tall peak in the Rockies, a tree in the forest or a fence post on the plains and spins his first web. Those are the autumn days of rising air currents. The web trails out and up, buoyed by the rising air. Presently sufficient kite is out to carry the passenger. Then little *Erigone* cuts loose and with millions of other little *Erigones* he goes on a trip.

"The Eighteenth Amendment"

An example of animal temperance was discovered at the office of the Park Naturalist. Throughout the summer, a small colony of frogs and salamanders has been kept on exhibit. Last week, an attempt was made to amuse the amphibians with a little alcohol. The alcohol was originally intended for the preservation of spiders, but it was thought an interesting experi-



continued on next page

Schmoe writings continued ...

ment to see how frogs react to strong drink. The largest frog was removed from the aquarium and offered a swig. The frog smelled of it a moment, and then, very deliberately and decisively, passed his hand in front of his nose, to shut off the smell. That it is impossible to intoxicate a frog was shown by repeating the experiment. You can lead a frog to alcohol, but you cannot make him drink.

**"Unpicked flowers
are the loveliest"**

Almost all of the lovely blossoms for which this Park is world famous, wither within a very few hours after picking and the plants from which they are torn bleed and die. Left to bloom undisturbed they will spread their beauty over many weeks, even months, and will be alive and sturdy to repeat their free flower show next season.

You are only one of many hundreds of thousands to whom these flowers belong. Those who come after you have as much right to the enjoyment of these God-given beauties as you have. Unpicked flowers give unending enjoyment.

"The Winter Season"

*from
Our Greatest Mountain
by Floyd Schmoe, 1925*

Winter is a time of wonderful scenes, amazing vistas, ermine-trimmed woods, much pleasant weather, and exhilarating sports. The Park is a veritable fairyland to which, unfortunately, the summer visitor is a stranger. From early in December until late in spring Boreas is King and Jack Frost is his Prime Minister. Together they hold open house on the mountain and many thousand visitors come to enjoy the views and sports they offer.

The heavy snowfall and the moderate temperatures, coupled with the accessibility by either train, stage, or private auto, are combining to make Mount Rainier National Park one of the famous winter resorts of the world. The mountain itself may be hidden for days at a time by the falling flakes, which, due to the high temperatures, are usually large, and although they seem to settle down in leisurely fashion they cover the ground, the trees and the buildings with amazing rapidity. Sooner or later, however, the wind will

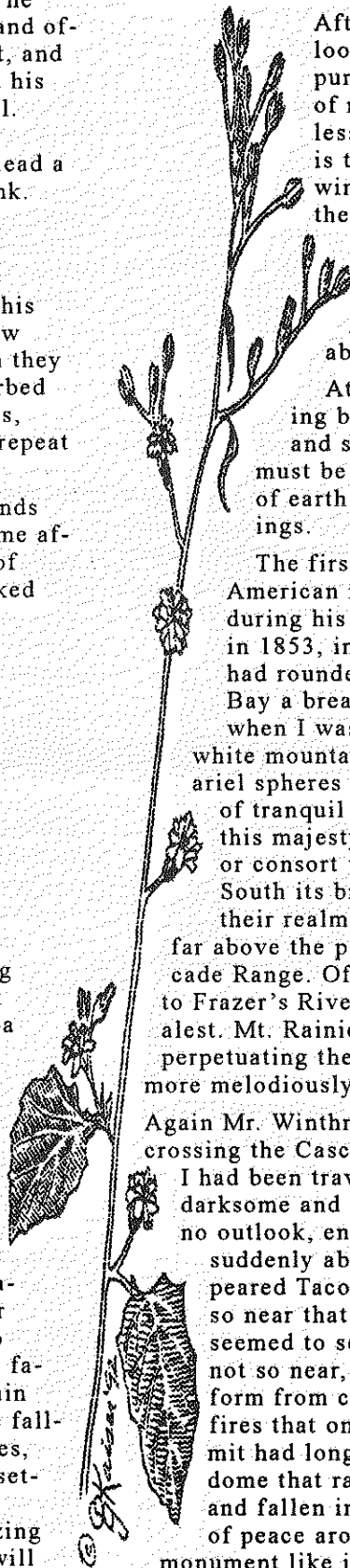
shift and the peak will clear, then is the visitor doubly rewarded for his wait.

After periods of storm the sun looks down upon a mountain of purest white. Hardly a square yard of rock is exposed to mar the flawless expanse of snow. So brilliant is the peak on these clear days of winter following the snows that the eye can hardly look upon it, and when the sun sinks low in the west and touches the crests with old rose and gold the scene passes beyond the ability of words to describe it.

At all times is the old peak inspiring but in winter when all is silent and serene it would seem that one must be lifted above the trivial things of earth by the majesty of his surroundings.

The first man to record the mountain's American name, was Theodore Winthrop during his canoe voyage on Puget Sound in 1853, in his *Canoe and Saddle*. "We had rounded a point and opened Puyallup Bay a breadth of sheltered calmness, when I was suddenly aware of a vast white mountain rising and seeming to fill the ariel spheres as its image displaces the deeps of tranquil waters. Kingly and alone stood this majesty without any visible comrade or consort while far to the North and South its brethren and sisters dominated their realms in isolated sovereignty, rising far above the pine darkened sierra of the Cascade Range. Of all the peaks from California to Frazer's River the one before me was royalist. Mt. Rainier white men have dubbed it, perpetuating the name of somebody or nobody, more melodiously the Indians call it Tacoma."

Again Mr. Winthrop expresses himself while crossing the Cascade Mountains. "Thus for hours I had been traveling the blind path, harsh, darksome and utterly lonely, urging on with no outlook, encountering no land mark, when suddenly above the surges of forest appeared Tacoma; large and neighbor it stood, so near that every jewel of its snow-fields seemed to send me a separate ray, and yet not so near, but that I could see its whole form from clear cut edge to edge. The giant fires that once burned under that cold summit had long since gone out. The great dome that raised in fury had crusted over and fallen in upon itself. Only the thought of peace arose from this heaven up bearing monument like incense and overflowing filled the world with deep and holy calm."



Local Glacial Geology

"A Visitor's Guide to Mount Rainier Glaciers"
by Carolyn L. Driedger, USGS

It has been said that good scenery and interesting rocks usually go together, and Mount Rainier is no exception. Here, a complex plot has been written where glaciers are reducing the mountain upon which they are sustained. Although volcanism and landslides are responsible for the overall shape of the mountain, glaciers are responsible for its fine sculpturing. The Emmons, Winthrop, and Fryingpan Glaciers exist in scars remaining from the landslide that produced the Osceola mud flow. Other glaciers, such as the Puyallup and Tahoma Glaciers, exist in the scars of smaller slides. Even the summit crater, formed by volcanism, is filled with snow and firn. All the glaciers on Mount Rainier are the products of volcanism in that it has built a high altitude environment favorable to glacier formation.

But the glaciers themselves are slowly reducing the size of the mountain they depend on. Glacier ice alone is too soft to be a powerful rock-cutting agent. Many glaciers are armed with rock fragments embedded within the ice that are effective cutting tools. The rock-choked ice grazes over the glacier bed, removing rock obstacles and leaving the bedrock rounded and smoothed. In some places fine-grained debris polishes the bedrock to a lustrous surface finish called **GLACIAL POLISH**. Coarser rocks may gouge scratches called **STRIATIONS**.

Bedrock knobs are commonly polished on their upper side and are quarried and broken on the lower. These rounded knobs are formed in all sizes. Observers of the 1700's thought they resembled fashionable wavy wigs of their day and named them **ROCHES MOUTONEES**. Look for them in the vicinity of Paradise Glacier, on valley walls above the trail to Carbon Glacier, at Box Canyon, and elsewhere in valleys around the Park.

Frost action and running water are responsible for additional erosion. Broken rock and ice continually avalanche from walls surrounding glaciers, sandwiching rocks between fresh layers of snow on their journey toward the terminus.

Look for evidence of glacial erosion in the streams and rivers around the Park. First, observe the stream water originating in snowfields. Because no major erosion occurs here, the water appears clear. Those rivers originating beneath glaciers are choked with **GLACIAL FLOUR**, the silty fine-grained sediment produced by the abrasion of rocks at the glacier bed.

Not all glacier beds are alike. Some glaciers rest upon sturdy bedrock foundations, while others engulf so much rock that there is no distinct boundary between the glacier and its bed. As glaciers melt, their remaining load or rocks is distributed in several ways. Rocks may be dropped in place by the melting ice; they may be rolled to the ice margins, or they may be deposited by meltwater streams. Collectively these deposits are called **GLACIAL DRIFT**. **TILL** refers to the debris deposited directly by the glacier. Rock debris rolls off the glacier edges and builds piles of loose unconsolidated rocks called glacier moraine. **LATERAL MORAINES** form along the side of a glacier and curl into a **TERMINAL MORaine** at the glacier's downvalley end. Drift and moraines are valuable to geologists because they outline the boundaries of past glaciations. At Mount Rainier look for aging lateral moraines perched precariously above the present glaciers with their terminal moraines breached by glacial streams.

TRIMLINES are the sharp vegetative boundaries that delimit the upper margins of a former glaciation. The age difference of the ground surfaces is commonly visible because of the corresponding age differences of the vegetation. Look for trimlines in all glaciated valleys of the Park.

Scientists studying past climatic trends have developed ingenious techniques for determining the ages of drift and moraines. For instance, they measure the amount of weathering on the exterior of cobbles; ascertain the presence or absence of dated volcanic ash; determine how long a moraine has been ice-free by noting the age of the oldest trees on it or by measuring the largest lichens on its surface; and they examine historical accounts.

Rock slides from Sunset Amphitheater, Willis Wall and Little Tahoma Peak are, in part, responsible for the debris on the surfaces of glaciers below. Indeed, there may be enough debris to control glacier behavior. On the glacier surface the darker rock absorbs heat, which causes the ice to melt faster than if the ice were exposed. For example, a 1/4-inch dusting of volcanic ash may increase surface melting by 90 percent. When the ash layer is one inch or more thick, it will insulate the snow or ice below. Other rockfall deposits are thick enough to insulate the ice and inhibit melting substantially.

One reason why glacial erosion occurs so quickly on the mountain is the crumbly nature of its rock. The porous volcanic rock may be structurally weakened by **HYDROTHERMAL ALTERATION**, a slow geothermal cooking of the rocks in the presence of ground water. The weakened rock often collapses and exposes cliffs yellow or rust in color. This unstable rock is, in part, responsible for the numerous rock slides and mud flows on the mountain.

continued on next page

Glacier Geology continued ...

The presence of hydrothermally-altered rock near glacial meltwater can create a devastating combination. Mud flows and debris flows (called **LAHARS** when on the slopes of a volcano) have left numerous deposits on the flanks of Mount Rainier.

One of the largest lahar events—indeed one of the largest known on earth—was the Osceola mud flow, which occurred 5,700 years ago. It is likely that rocks and mud moved in surges down the White River valley to the present location of Kent—a distance of 70 miles from its source on the mountain. The Electron mud flow, 600 years ago, easily eroded the rock near the mountain's northwestern summit to form Sunset Amphitheater. These lahars may have originated with volcanic heating of the mountain.

Some smaller lahars may be triggered by the sudden release of water from cavities within or beneath the ice. We call these events glacial outburst floods, of **JOKULHLAUPS** (and Icelandic term pronounced yo-kul-hloips). They have occurred at numerous glaciers on the mountain. Jokulhlaups often become lahars when they incorporate the rock debris that lies within their path.

(To be continued in the next MRNPA NEWS)

“National Parks are short on research, study says”

by Rudy Abramson

Los Angeles Times, Aug. 20, 1992

The nation's crowded, environmentally besieged national parks must be subjected to more scientific research to avert deterioration, according to a study released yesterday by the prestigious National Research Council.

The report warned that officials are short of crucial scientific insight as they make far-reaching choices between preserving natural treasures and providing service to mounting numbers of campers and sightseers.

The study, sent to the Department of the Interior and its National Park Service, urged that Congress mandate a research mission for the park service, with a research budget and appointment of chief scientist.

“We think these issues are so visible and so important that the park service is going to respond,” said Paul G. Risser, vice president of the University of New Mexico at Albuquerque, who headed the two-year assessment.

Nearly identical recommendations have been made in the past, but have produced no profound action. Critics maintain that scientific judgment has been colored by politics and that much of what the park service has considered research has been nothing more than resource management.

Within an hour of release of the report, Bush administration officials endorsed its general thrust. Michael Hayden, assistant secretary of the interior for fish, wildlife, and parks, called the findings “an excellent blueprint for actions needed to take certain functions of the park service into the 21st century.”

Park Service Director James Ridenour, who requested the study, said he regards a “science capability” a first priority for his agency in its obligation to provide a national demonstration of environmental protection. But the officials stopped short of promising to carry out the report's specific recommendations.

For instance, the apparent mechanism to create a parks research mission would be to incorporate it into the 1916 act that established the National Park Service. But Ridenour said that also could present “an opportunity for mischief,” changing the clear, simply stated mission of the system, which manages 360 sites, ranging from the White House and its grounds to sprawling parks such as Yellowstone and Yosemite.

Ridenour also skirted Risser's suggestion that 300 or more scientists be added to the park service staff. The service has about 112 scientists, about 3 percent of its staff, and Risser noted that other federal agencies devote as much as 10 percent of their manpower to research.

But Ridenour, alluding to tight federal budgets, suggested adding scientific manpower by enlisting university researchers and borrowing scientists from sister federal agencies such as the Fish & Wildlife Service and Geological Survey.

Nevertheless, he said, “I don't think there is any doubt that we will push to hire more scientists.”

In the course of the investigation, Risser said, the 12-member panel explored numerous cases where scientific research has paid off for the park system, as well as unfortunate episodes created by inadequate information.

A notable success story, he said, is the case of the giant sequoias in Sequoia National Park, which were endangered because the park service assumed they benefited from uncompromising fire control. Research eventually showed that fires, in fact, help produce seed beds and promote propagation of the species. The park service now conducts a controlled burning program within the park.

Three Men and Their Mountain

The majesty of the mountain attracted men of vision whose lives were dominated by the mystery and seductive powers of Tahoma.

Dr. William Fraser Tolmie

On August 29, 1833, Dr. Tolmie, with a group of Indians, headed up the mountain and became the first non-Indian to visit the mountain. Tolmie's dedication to the area allowed him to be the first to report on the mountain's vast glacier formations and to call it by its Nisqually name. A physician and botanist, he brought care to the Indians, an understanding of the vast botanical wealth of the mountain area, and later was instrumental in the Longmire Expedition's successful crossing of Mount Rainier via Naches Pass. Without the life and work of Dr. William Tolmie, the early history of Mount Rainier may have been quite different.

James Longmire, Sr.

James Longmire, Sr. and various family members appear throughout the last half of the 1800's in the discovery of the mountain's grandeur. The Longmire Expedition from Indiana in 1853 brought settlers west across the Cascades into the valleys of the Puget Sound area. He and his family built the Longmire Hotel and Baths at the springs his horse "Old Shot" is credited with discovering in 1883. Longmire acted as the earliest tour guide throughout Paradise Valley. He introduced early visitors to the meadows and majesty at the base of the mountain.

Indian Henry (Sotolick)

The progress brought by men like Dr. Tolmie and James Longmire would not have been possible without the trust of the Indians living in the area. Indian Henry's name appears throughout Mount Rainier National Park as an honor to his contribution. He forgave the loss of his family (1856) during the Indian War by the murdering Maxon Raiders on the Marshall River. Indian Henry's Trail and Campground became the first gateway and mountain road to Mount Rainier.

Original Flower Sketches
were provided by
Charlotte Kaiser,
MRNPA member and Freelance Artist

Book Reviews

Regreening the National Parks, by Michael Frome, University of Arizona Press, Tucson, 289 pages, 1992

"I propose to close Yellowstone National Park for five years to automobile traffic. I propose to eliminate half the overnight facilities in Yosemite Valley and all the automobiles."

This is what Michael Frome means by "regreening."

"The National Park Service has caved in and lost its sense of mission...as we know it now, cannot provide the necessary leadership. The influence of the director has steadily declined; he follows orders from assorted political supernumeraries in the Interior Department. Consequently, the Park Service fails to speak out against the degradation of the parks; it pussyfoots around the issues and answers in cautious, politically acceptable terms.

Frome's ten-point program for the regreening would "...reconstitute the National Park Service as an independent bureau, distinctly separated from the Department of Interior...establish vast quiet spaces...determine the human carrying capacity...encourage ecological harmony..."

Best known for being fired in 1971 by American Forests for criticizing the coziness of the forest industry and the Forest Service, and three years later by Field and Stream, Frome has studied the National Park System since 1966. He expresses sympathy, admiration, even fondness for many individuals who wear the ranger suit, but his velvet glove thinly covers a mailed fist. To quote from the publisher's release,

"Armed with interviews from all over the country—with public officials, conservation leaders, park rangers, scientists, and concessionaires—he lets go a barrage of criticism at the state of our national parks...presidents, secretaries of the Interior, congressmen, national parks superintendents: like ducks in a row, Frome lines them up and picks them off in his blistering indictment of parks management."

Strong medicine. One hopes the patient is given a stiff dose. Of course, that cannot happen until the White House is occupied by a doctor-in-chief as able to accept input to his brain as he is able to accept input on the banquet table. In any event, Frome's prescription will be widely pondered. Coming so soon after Carsten Lien's Olympic Battleground, and soon to be followed by our own book on the North Cascades, it should help get the

continued on next page

Book Reviews continued ...

attention of the nation's governmental-medical community.

We could have wished that while addressing the problems of Yellowstone, Yosemite, and even the Virgin Islands, he had found space for more than passing references to Olympic National Park and the North Cascades National Park. Even Mount Rainier National Park deserved to be held up as somewhat of a national scandal. However, a book has room only for so many scandals. From his current base camp at Western Washington State University, Frome has the opportunity to study the national parks of Washington state. Another book, perhaps?

Harvey Manning

Glaciers of North America, Sue Ferguson, Fulcrum Publishing, 1992.

Translating complicated subjects into simple but clear words while keeping the interest of readers is an art. Sue Ferguson practices it well.

This is a field guide to glaciers by an author with a doctorate in geo-physics from the University of Washington. She is a meteorologist with the Forest Service Avalanche Center.

Not only does she tell us everything we would want to know about glaciers, but she also does it with whimsical drawings and at-home and on-ice experiments for the weekend scientist. And the sense of humor: What can you say about a chapter called "Real Glaciers Eat Rocks"?

The Everett Herald

August and September Trail Parties

Fourth Crossing Trail Improved

Nineteen people participated in the MRNPA trail party at Paradise August 22nd and September 12th. They built 70 waterbars and 29 stone steps to finish the trail along the fourth crossing of the Paradise River. In August, The work party camped together at Cougar Rock Campground, and despite a hailstorm before dinner, they had a good time at the group camp and a relaxing day on Sunday.

Minutes of Annual Meeting May 7, 1992

The 1992 Annual Meeting of Mt. Rainier National Park Associates convened at the Washington Park Arboretum in Seattle. Approximately 40 members and guests were in attendance. An excellent catered meal was provided.

MRNPA President Pat Smith opened the meeting by thanking the Board for their continued dedication and involvement with MRNPA. Smith remarked that this would be her final meeting before the next president took office, and several issues need MRNPA's continued vigilance. The Highway 410 issue, which has serious negative impact potential, needs our continued pressure. Other ongoing issues include: Construction of the Sunrise Visitor Center, ski dormitory issue at Paradise, Westside Road closure, poaching and hunting within Park boundaries, and logging on the north boundary of the Park. She invited all members to attend Board meetings and get involved with the organization.

The following Board of Trustees members and Executive officers will serve during the 1992-93 term:

Jon Soest	President
Bob Aegerter	Vice-President
Roger Garrett	Secretary
John Titland	Treasurer
David Berry	Trustee
Joan Burton	Trustee
Polly Dyer	Trustee
Jeannette Franks	Trustee
Paul Heilman	Trustee
Paul Joslin	Trustee
Van Perdue	Trustee
Pat Smith	Trustee
John Thompson	Trustee
Norm Will	Trustee
Vim Wright	Trustee

Guest speaker Carsten Lien was introduced by President Smith. Mr. Lien spent 20 years researching his recent book Olympic Battleground: The Power Politics of Timber Preservation (Mountaineers, 1991). Mr. Lien is a previous president of the Seattle Mountaineers and a noted writer and historian.

Mr. Lien opened by saying he was planning to share some little-known archive information of Mt. Rainier National Park's "sordid" history. Two important names are key to understanding Mt. Rainier Park's history: The Northern Pacific Railroad and Stephen Mather. Lien said the Northern Pacific Railroad wrote the National Park Bill single-handedly, and then helped get it passed. He said that obscure monographs and texts are the only

continued on next page

Minutes of Annual Meeting continued ...

places where this is documented. The railroad decided in 1896 that it was time to create a park, so they could continue raiding other areas of the public domain. The bill they wrote gave themselves everything, and President Cleveland would not approve it. However, Congress passed a bill which allowed the railroad to exchange rock and ice for timberland. The bill which passed made no requirement for surveying, so another bill passed which required that equal "areas" be surveyed—not those of equal "value".

Since this legislation did not include the State of Oregon, the two words "into/or" were written into the bill, and now the railroads had everything. Interestingly, Frederick Weyerhaeuser was tied directly to the bill, and now any area where the railroads ran could be exchanged for timberland. Under the bill the railroad could not claim river beds, and this included glaciers of Mt. Rainier. Therefore, the railroad claimed the mountain itself, citing the fact that there had to be land under the ice somewhere. They also claimed they wanted to establish a restaurant on the summit. However, in the end the General Land Office denied these claims.

From 1895 on, continued Mr. Lien, Gifford Pinchot, who felt everything had an "economic use", agitated for logging with the national parks. This continued until 1905, when the Forest Service was created. But in 1910 preservationists held a national conference on national parks, and the Forest Service sent representatives outlining a plan to log the parks. In 1911-12 the preservationists could not prevent the clause allowing "dead, downed and mature" timber within the parks to be utilized from being included. It wasn't until 1915, when the final park bill was drafted, that that phrase was cut out.

Stephen Mather wrote a letter to Secretary of the Interior Lane, who later asked Mather to take over management of the parks. At the time Mather was rich, arrogant, and about 47 years old. He had no knowledge of the national parks or logging issues. It was said that he was often wrong—but never in doubt! Lien says Mather was the most destructive of all individuals involved with national parks. Money was key to Mather's management style, and the national parks are still reeling from his decisions. He viewed national parks as public playgrounds.

In 1917, said Lien, women in this country were on the rampage—and they had decided it was time for them to have the right to vote. Against this backdrop Mt. Rainier National Park administrators somehow missed the point! Mrs. Edward D. Palmer, wife of a Seattle attorney, was refused permission to drive to Paradise because the drive was too dangerous for a female driver. The Park maintained their rule against female drivers was in ef-

fect because a woman had almost driven her car off a cliff on an earlier occasion. The Park administrators wrote that "women looking over steep areas suffer dizziness." And, "If we let one woman drive, we must let them all." The superintendent also said he had driven the road himself, and the rule must remain in effect. However, the pressure on the Park became intense, and that winter's sixteen feet of snow somehow made a difference in the safety of the road. In March, Mather told a bit of a lie, saying that the roads had now improved, and he allowed women to drive to Paradise.

Mather frequently tended to use his wealth in which ways which undermined park administrators. He would give key administrators money under the table—like Forest Townsley, who organized the Ranger Corps. Lien said he learned of this through the writings of Robert Shanklin.

Mt. Rainier National Park was the focal point for a road-building program which was to be a showcase of how to bring people to the Park in big numbers. The plans were to completely encircle the Park with roads (largely done now!), and then build spur roads up the major ridges, and into all the key areas of the Park. In October 1927, in addition to the roads encircling the Park, a plan was designed to build a road to Panorama Point and out Mazama Ridge. There was so much opposition to this, that after only three days in office as Secretary of Interior in 1933, Harold Ickes called the Superintendent of Mt. Rainier National Park himself, and ordered all further road construction halted.

Carsten Lien concluded his remarks by commenting that we environmentalists are in the midst of a crisis. Our country has gone from a resource surplus to a resource deficit country. The salmon crisis is a good indicator of things to come, as well as the possibility of drilling oil wells in the Arctic National Wildlife Refuge. Lien fears that all previous set-asides of resource areas are up for grabs, and that we will be constantly re-negotiating. He feels many national parks will not survive this pressure. He believes there is a 90% chance Olympic National Park will not survive. Much of this is due to the devastating legacy of Stephen Mather. The period ahead is extremely ominous, and with no easy answers.

President Pat Smith thanked Mr. Lien for his presentation, and remarked that it was parallel in many ways to Dale Crane's presentation (National Parks and Conservation Association) at last year's annual meeting. Jon Soest requested that MRNPA formally commend Pat Smith for her services as president of MRNPA.

Respectfully submitted

Roger C. Garrett

Secretary