the Mountaineer

1962

Seattle, Washington

the Mountaineer

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The Mountaineers

To explore and study the mountains, forests, and watercourses of the Northwest;

To gather into permanent form the history and traditions of this region;

To preserve by the encouragement of protective legislation or otherwise the natural beauty of Northwest America;

To make expeditions into these regions in fulfillment of the above purposes;

To encourage a spirit of good fellowship among all lovers of outdoor life.

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Nancy Miller, Editor, Marjorie Wilson,
Betty Manning, Winifred Coleman

The Mountaineers

The Mountaineer Climbing Code

A climbing party of three is the minimum, unless adequate support is available who have knowledge that the climb is in progress. On crevassed glaciers, two rope teams are recommended.

Carry at all times the clothing, food and equipment necessary.

Rope up on all exposed places and for all glacier travel.

Keep the party together, and obey the leader or majority rule.

Never climb beyond your ability and knowledge.

Judgment will not be swayed by desire when choosing the route or turning back.

Leave the trip schedule with a responsible person.

Follow the precepts of sound mountaineering as set forth in *Mountaineering: The Freedom of the Hills* and the *Manual of Ski Mountaineering*.

Deport ourselves at all times in a manner that will not reflect unfavorably upon our club or upon mountaineering.

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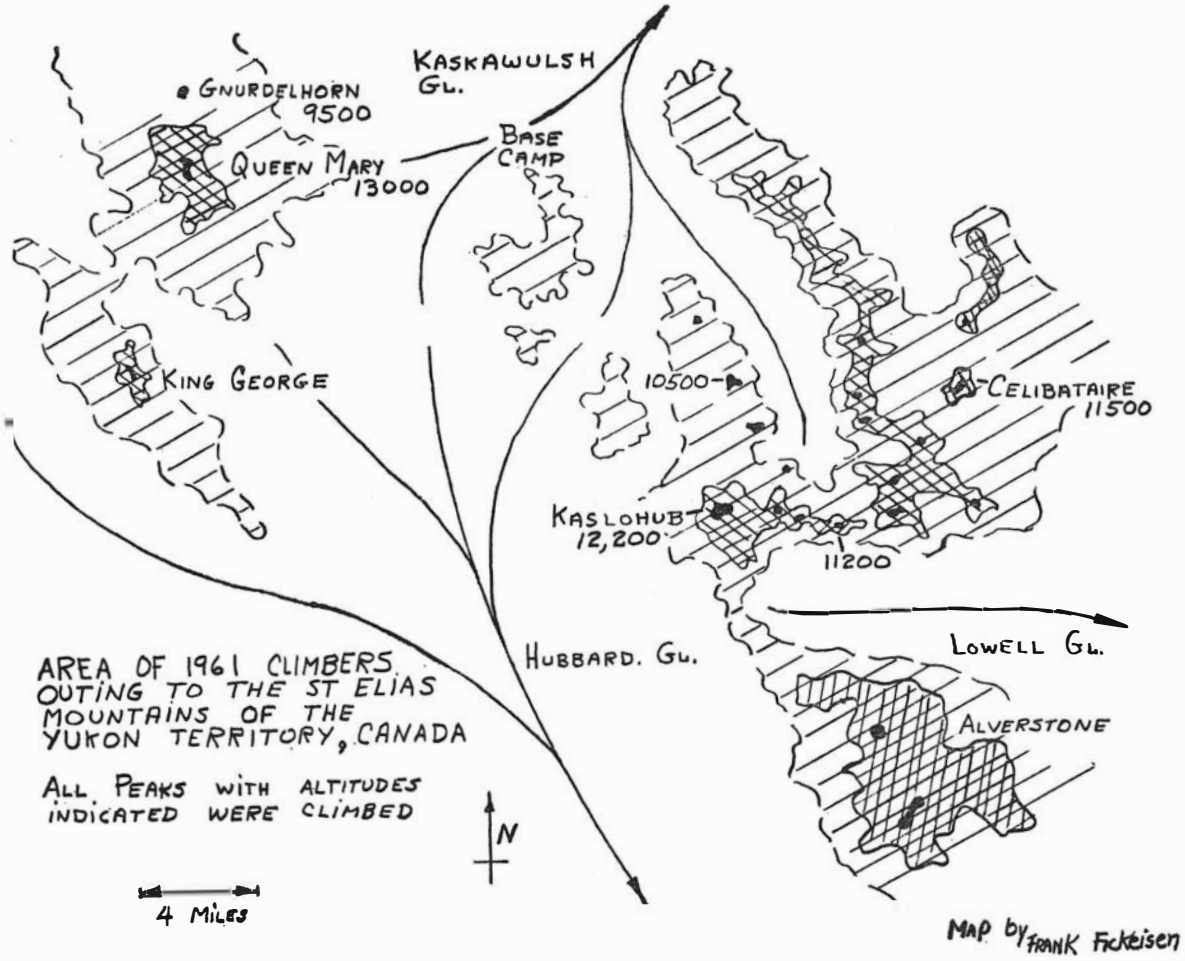
KASKAWULSH GL.
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11200
HUBBARD. GL.
LOWELL GL.
ALVERSTONE
AREA OF 1961 CLIMBERS OUTING TO THE ST ELIAS MOUNTAINS OF THE YUKON TERRITORY, CANADA
ALL PEAKS WITH ALTITUDES INDICATED WERE CLIMBED
N
4 MILES
MAP BY FRANK FICKEISEN

ST. ELIAS

OUTING

Twenty-four Mountaineers attended the 1961 Climbers Outing in the Icefield Range of the St. Elias Mountains from June 17 to July 3, 1961. Six first ascents were made during the two-week period and all members traveled many miles over terrain never before explored on foot, past dozens of unnamed and unclimbed peaks ranging from 8,000 to 13,000 feet.

The area, in northeast Yukon Territory, near Alaska's southern border, was chosen because it offered a large number of unclimbed peaks relatively close together, easy accessibility by small plane, and because it was suitable for a large group with varying levels of climbing experience and ability. Reports indicated that good weather had occurred in some previous Junes.

A radio was leased and permission secured for its use. Installed at Base Camp on the Kaskawulsh Glacier, it provided the possibility of communication in case of emergency.

All planning and preparation was done by the members of the Outing, under the able leadership of Frank Fickeisen. A list of recommended personal equipment for the Outing included a down jacket, warm sleeping bag, either skis or snowshoes, insulated boots with crampons to fit, plus items more commonly used in Cascade climbing.

Following an initial January meeting of all those interested in the Outing, the group was divided into four climbing parties, each with its own leader, community equipment, plan of activity and climbing philosophy. Plans and philosophies varied considerably at the outset. One party considered an attempt on the highest unclimbed peak in the area—Mt. McArthur—until it developed this would be the goal of other climbers earlier in June. The philosophy of another party was expressed by one of its members who hoped for a "leisurely schedule, considerable view-finding, a few (at most) climbs of moderate-to-little difficulty. . . ." Chairman Fickeisen and the other three group leaders coordinated plans until each climbing party had chosen main and subsidiary objectives which were practical from the standpoint of the strength and experience of the climbers involved, time available, distance from a central landing-point, etc.

Each party planned its own menus and met to package food, work on sleds, assemble wands and study maps and aerial photographs of the area. Sleds and personal equipment were taken to nearby slopes for testing and practice. Tents and stoves were collected.

In early June, community equipment was loaded into a closed trailer and hauled the 2,100 miles from Seattle to Whitehorse, Yukon Territory, by a Carryall owned by Dr. Ralph Uber and driven by Don Johnson, Bob McCall and Jim Kurtz. Other members drove or flew by routes of their own choice from Seattle, Yakima and Fairbanks. On June 17th all 24 climbers assembled at Kluane, about 40 miles north of Whitehorse.

Arrangements had been made with Ron Hayes, a bush pilot of Anchorage, Alaska, for air transportation from Kluane to a site eleven miles east of Mt. Queen Mary at 7,600 feet on the Kaskawulsh Glacier. Two Supercubs were used for the flights, the second flown by George Kitchen, also of Anchorage. Both planes were equipped with retractable skis and each carried 300 pounds—including one climber—per trip.

Jim Kurtz and Dick Curran, with the radio, were landed on the glacier about three miles from the site chosen—as close as the pilots could get. Most of the following landings were made at Base Camp but, because of some unsuitable flying weather, the airlift was not completed until mid-morning on Tuesday. By the time the last climber was landed at Base Camp, the first group had started toward its objective. The leaders of the various climbing parties tell the story of the Outing:

I. *Lowell Glacier Group* (Vic Josendal)

The last man of the Lowell Glacier Group was flown in to Base Camp on Sunday afternoon, June 18th. After sleeping through a rainy night, we packed our sleds and left Monday morning. John and Irena Meulemans, wearing skis, pulled one sled. Bob Booher, Leigh Clark and Vic Josendal, using snowshoes, were roped to the other sled.

Our first objective was the massive 12,200-ft. high mountain located just north of the upper end of the Lowell Glacier. Our route was easterly two miles down the main Kaskawulsh Glacier, then a right turn up the upper south arm in a south-easterly direction. Improving weather permitted views of impressive peaks bordering our two-mile-wide glacier. We felt privileged to be the first to explore this area on the surface.

Tuesday afternoon we camped adjacent to the tributary glacier where the Pinnacle Peak party would leave the main glacier. Early Wednesday morning, June 21st, we pulled sleds for several hours

up the main glacier on hard, frozen snow to a camp at the base of our 12,200-ft. objective. After setting up tents we left for the summit at 8:30 a.m. The one obvious route on the north side was followed without difficulty. John and Irena Meulemans were able to use skis most of the way. Unfortunately, cloudiness increased so that we could see little from the small summit pinnacle. The view would have been tremendous since there were no peaks higher within ten miles. To the south lay the head of the Lowell Glacier; the great Hubbard Glacier was to the west. We named this point on the map "Mt. Kaslowhub," after the three glaciers fed by its slopes.

Next day we changed our schedule, with a short hike in the morning, sleep in the afternoon and breakfast that evening. At 10:45 p.m. we left camp, pulling sleds up a steep grade toward a pass just east of Mt. Kaslowhub. This would be our most exhausting day. After midnight, following many rest stops, we reached the 9,900-ft. summit of this pass, which connects the Kaskawulsh Glacier with the head of the Lowell Glacier. We named this defile "Latus Pass" from the Latin word for broad. The temperature was 7 degrees F. Seven more miles of travel brought us to the far side of the Lowell Glacier and a camp southeast of Mt. Alverstone, 14,500 feet.

Friday evenings, carrying packs and prepared for a high camp on Mt. Alverstone, we started up a steep ridge which intersects the south arm of the Lowell Glacier at a false pass. Powder snow covered precipitous ice. The visibility was poor in a midnight white-out. Later snow began falling. In view of the uncertain weather, climbing difficulties, shortage of food for any extended attempt, and since we were at the end of a twenty-five mile supply line, we turned back. The same morning we loaded sleds and pulled them up the Lowell Glacier halfway back to Latus Pass. A Saturday night hike gave us excellent views of many mountains as well as of Disenchantment Bay in Alaska. We were at the extreme head of the Lowell Glacier, overlooking the Hubbard Glacier.

Several days of heavy snow gave us time to rest. Then a hard sled pull up to Latus Pass and an easy slide down the other side took us to our second camp. On Tuesday, June 27th, we made a pleasant and interesting eleven-hour climb of the best-looking peak below Mt. Kaslowhub. Bob Booher led most of the way up a wind-carved snow ridge, which was guarded by rock formations. A final sharp snow arete, with a little powder snow on ice, helped make the summit worthwhile. We called this high point Parapet Peak, 10,500 ft.

As we climbed down the ridge, we saw the Pinnacle Peak party making their way slowly down the tributary glacier on the other side of the main glacier. That night we heard about their adventures in our joint camp. A little more camp loafing, a final sled pull to

base camp, reunion with the other two climbing groups, and then we were flown out.

II. *Pinnacle Peak Group* (Frank Fickeisen)

The journey of the group of climbers including Hal Williams, Don C. Johnson, Robert V. Martin, Hans Zogg, Ron Priebe, and Frank Fickeisen was dominated by route-finding studies, powder snow difficulties, and dietary confusion. The dominance of these factors was in the main apparent even during the planning of the group. The main climbing objectives were selected as an unnamed, 11,500-foot peak and Pinnacle Peak, 12,200 feet, both unclimbed. The route-finding problem was two-fold, to find good routes on these peaks, but mainly to find feasible approaches to their bases. The unnamed peak was located on the rim of a high (10,000-foot) basin and Pinnacle was located just beyond this basin, considering the planned, common base camp for all of the four groups. Entry into the basin had to be via one of four glacial arms that fed the upper south arm of the Kaskawulsh Glacier.

The group spent considerable time in Seattle studying the available maps of the area and aerial photographs. From these, it was determined that only two of these arms were even remotely feasible and Hans detected certain features that cast great doubt on one of these two. The group followed the Josendal group in leaving base camp by one day, due to a weather-enforced delay in the operations of the bush pilot.

Traveling down the Kaskawulsh three miles and then southeast twelve miles on its upper south arm, brought us to the foot of the chosen glacial arm. This was the point of separation, for here we left the route followed by the Josendal party, our sleds, and—to our later regret—our snowshoes and skis. The glacial arm involved gaining 3,000 feet of altitude, an interesting trip through an ice fall, and at the top, a short but steep head wall. The packs were large and the snow on the head wall soft, thus making entry into the high basin slow but indicative of things to come.

The three-mile trip across the gentle basin to the foot of the 11,500-foot peak took a full day. Each step left us knee deep in dry, unpackable powder snow. The trek brought us to the base of a reasonable-appearing ridge at 10,000 ft. An early start was fortunate on the following day since the ridge climb to the summit took considerably longer than we had anticipated. The snow on the north, exposed side of the ridge was ideal skiing powder that reposed on a very steep face without any apparent tendency to stick. On the other side was heavy moist snow. The ridge climb required considerable care, several belays, and much uncertainty as

to the consistency of snow for each new step. The summit was commodious and the weather allowed good photographic opportunities.

We descended the mountain via a long, steep gully on the moist snow side and then waded around the base of the peak in more deep, powder snow back to base camp in the high basin.

This route down gave us a good look at our next objective: Pinnacle. It was decided that the following day would be for rest and preparation for Pinnacle. As it turned out the next two days were spent in the tents while a local storm renewed the already overabundant supply of powder. This enforced delay was much foreshortened by Don's easy candor and Bob's sharp comments on the situation in general.

The situation in general was dominated by the food situation in particular. Two of the party members had joined the group after the food had already been planned and thus found that certain of the menu items were not among their favorites. This whole situation was topped by the failure to bring the group's supply of tea and coffee up from Kluane, thus leaving them with only a highly fortified but grimly flavored liquid diet drink.

When the storm subsided we dug out of an extra foot or so of powder and decided that, considering snow and time, we would not try Pinnacle. Nearly a full day was spent crossing the high basin and the trip down the headwall of the glacial arm vindicated the judgment about the snow conditions. The storm had left the clear possibility of slab avalanche.

Hal and Frank were on the first rope that headed straight down the fall line with a minimum of rope slack. When the slab went, Hal was aboard and the rope insured that Frank was close behind. The headwall ran out to much more gradual slopes where the two picked themselves out of the debris and started the search for missing ice axes.

The other two ropes got down the pre-cleaned slope, finding one of the axes en route. The rest of the glacial arm was descended and the group was greeted in camp by the Josendal party.

The following day was dedicated to rest and such vigorous activities as eating and watching Vic's party leave for base camp.

On the ensuing day a trip was made via snowshoe and ski to the head of the upper south arm of the Kaskawulsh Glacier. From this point, an unnamed 11,300-foot peak was climbed. The summit was reached after Ron found a path and kicked steps through an intricate set of crevasses on the peak's ridge.

This climb was followed by a day's rest and an early morning departure to return to the main branch of the Kaskawulsh where we were the last group flown back to Kluane.

III. *Mt. King George Group* (Lex Maxwell)

The Kaskawulsh Bridge and Poker Club convened on Sunday, June 18, when Bruce Gilbert landed at base camp to complete the Mt. King George party: Lex Maxwell, Dick Curran, Bob McCall, Dr. Ralph Uber and Jim Kurtz. Bob aptly expressed the feelings of all of us when he landed on the Kaskawulsh: "When you guys finally go home, just leave the rest of the food with Bruce and me. Tell my wife I'll be home in the fall."

None of us had been prepared for the great mass and size of the Kaskawulsh and Hubbard Glaciers.

Traveling southwest from camp, we approached a ridge which we hoped would provide a key to the mountain. Instead, it turned out to be a steep wall broken by crevasses and scoured by avalanches.

Turning the sleds southeast, the party traveled the whole length of the ridge, turned on to the Hubbard Glacier and then into the Valley of the Lion. Here, again, we were surprised by the vastness: at one timed interval it took 15 seconds from the end of a yodel to hear the last echo die out in the distance. Nor had we ever expected the continuous bombardment of avalanches in the Valley of the Lion.

Slogging through hip-deep powder snow, the group reached its final camp site on Friday in the late afternoon, still only 6,000 feet high after three days and 15 miles of hard travel.

The summit attempt started at 1 a.m. on Saturday—and ended a little over an hour later when we got our first good look at The Crevasse. Extending the full width of the only seemingly climbable slope on the mountain, the crevasse was too wide to jump, too steep and deep to climb.

It was disappointing to have to return without reaching the summit of Mt. King George. However, we had a delightful holiday climbing and skiing on the largest ice field of our continent.

IV. *Mt. Queen Mary Group* (Ann Hughes)

Our members—Ann and Dwight Hughes, Gene Dodson, Ken Davis, Stella Degenhardt, Leon Israel and Art Nation—comprised what was known variously as the "eating and sleeping group" and the "Logan-with-a-day-pack group." This presented numerous problems as no single mood was consistent throughout the party on any given day. Nevertheless, after three relatively dormant days of waiting out storms everyone was eager to be on the move.

On Wednesday morning, we left base camp with ten days' food supply and sledded due west across the glacier to the base of Mt. Queen Mary, a beautiful, unclimbed 13,000-ft. peak which had

dominated base camp. This was June 21 and, after setting up camp, we considered staying up for the longest day of the year. However, since by this time the fog was so thick that we could scarcely see the outline of the next tent, the idea hardly seemed worthwhile and we went to bed.

Thursday morning was spent sorting food and equipment for the climb. The plan was to pack four days' supplies to high camp and try for the summit from there. If, at the end of the four days we still had not made the peak, part of the group would return for additional supplies. On Thursday afternoon four of us marked a route through the lower glacier breakup. This excursion resulted in the rapid location of several hidden crevasses but fortunately, no one fell in past his waist. Intermittent fog produced continually changing light patterns on the icefalls above us and much time was devoted to photography.

We rose at 3:30 a.m. Friday in extremely cold, clear air and started up the glacier. With the sunrise came the now-familiar fog which obstructed our view and produced a stifling heat. We reached our 9,000-ft. high camp at 3 p.m.

Saturday dawned foggy with light snow. So far we had obtained only occasional and inadequate glimpses of our proposed route up the northeast ridge and a scouting attempt proved fruitless. Since darkness would present no problem, we decided to prepare to leave at the first sign of a break in the weather. The "first sign" occurred at 2 p.m. that day and, after hearty lunches, we started up, hopeful of clear weather at last.

Being unable to find a route around the icefall which covered the slopes above our col, we headed up through its center. Three hours of excellent routefinding by Gene Dodson and Art Nation found us above this barrier. Skirting numerous crevasses, we eventually arrived at the gentler upper slopes where our only problem was a windslab area which settled with a heart-stopping crunch but remained harmless.

After climbing three false summits we reached the top at 2 a.m., Sunday, June 25. Temperature 9 degrees. No wind. The half-light of the brief Yukon night was aided by a three-quarter moon and provided a staggering view of the giants of the range—Logan, St. Elias, Augusta—as well as of Disenchantment Bay and the Pacific Ocean far in the distance. Reluctant to leave, we began our descent at 2:30, just as the sun began to rise.

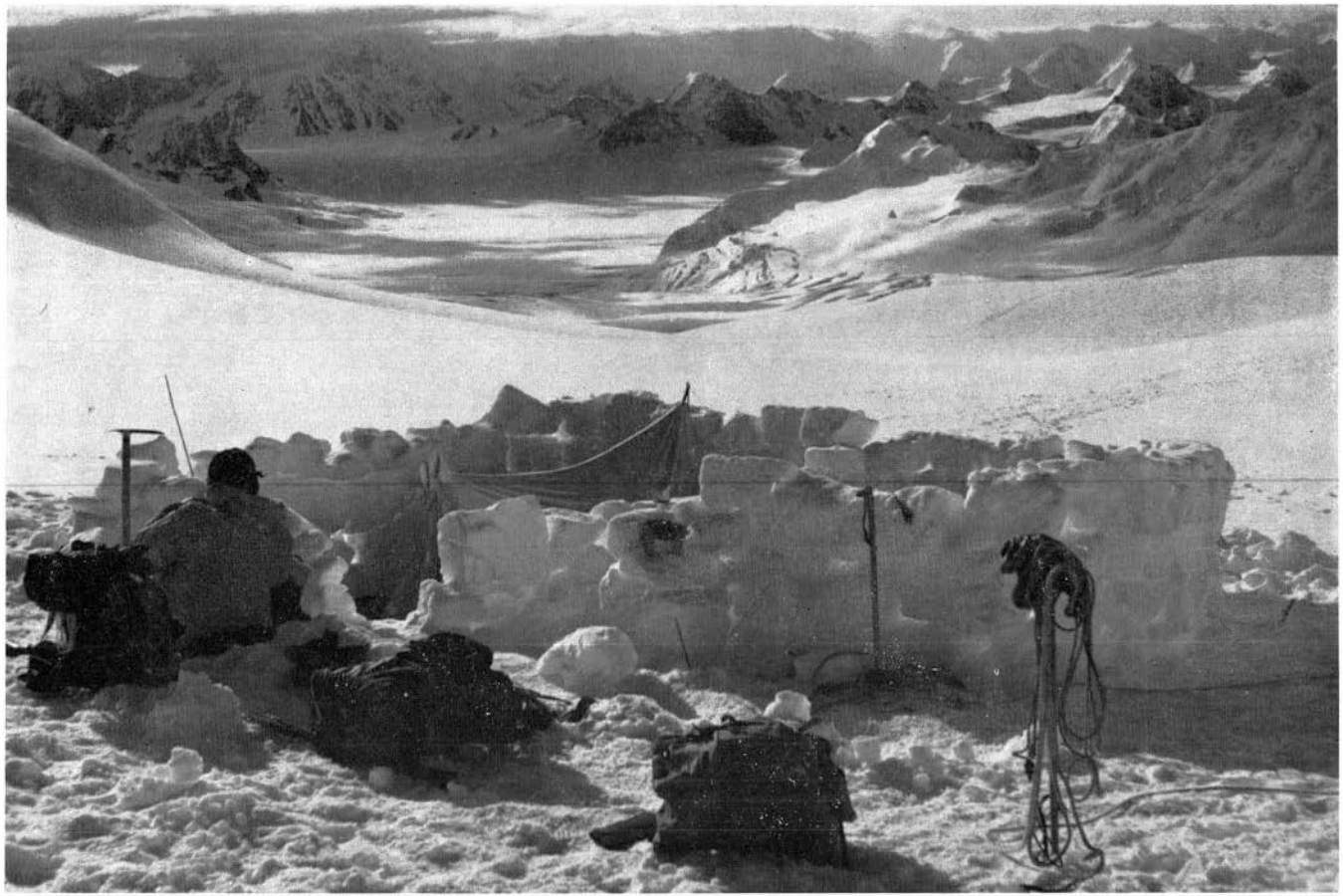
Back at high camp we crawled into our sleeping bags where we remained until late afternoon when the weather turned abruptly cooler. We later learned that this "cool spell" was the edge of a storm which blanketed the Fickeisen and Josendal parties with snow.

On Monday we climbed the 9,700-foot peak on the north side of the glacier, christening it "Gnurdelhorn." We then returned to camp, packed, and started down the mountain.

We next moved to an area about four miles from base camp where we enjoyed tremendous views of Mts. Vancouver, King George and Queen Mary. Here our activities were diversified, with three members going viewfinding while others donned swimming trunks (our party was equipped for anything) and took sun baths. We also spent many hours over the delectable meals and stayed up late to take sunset pictures at midnight.

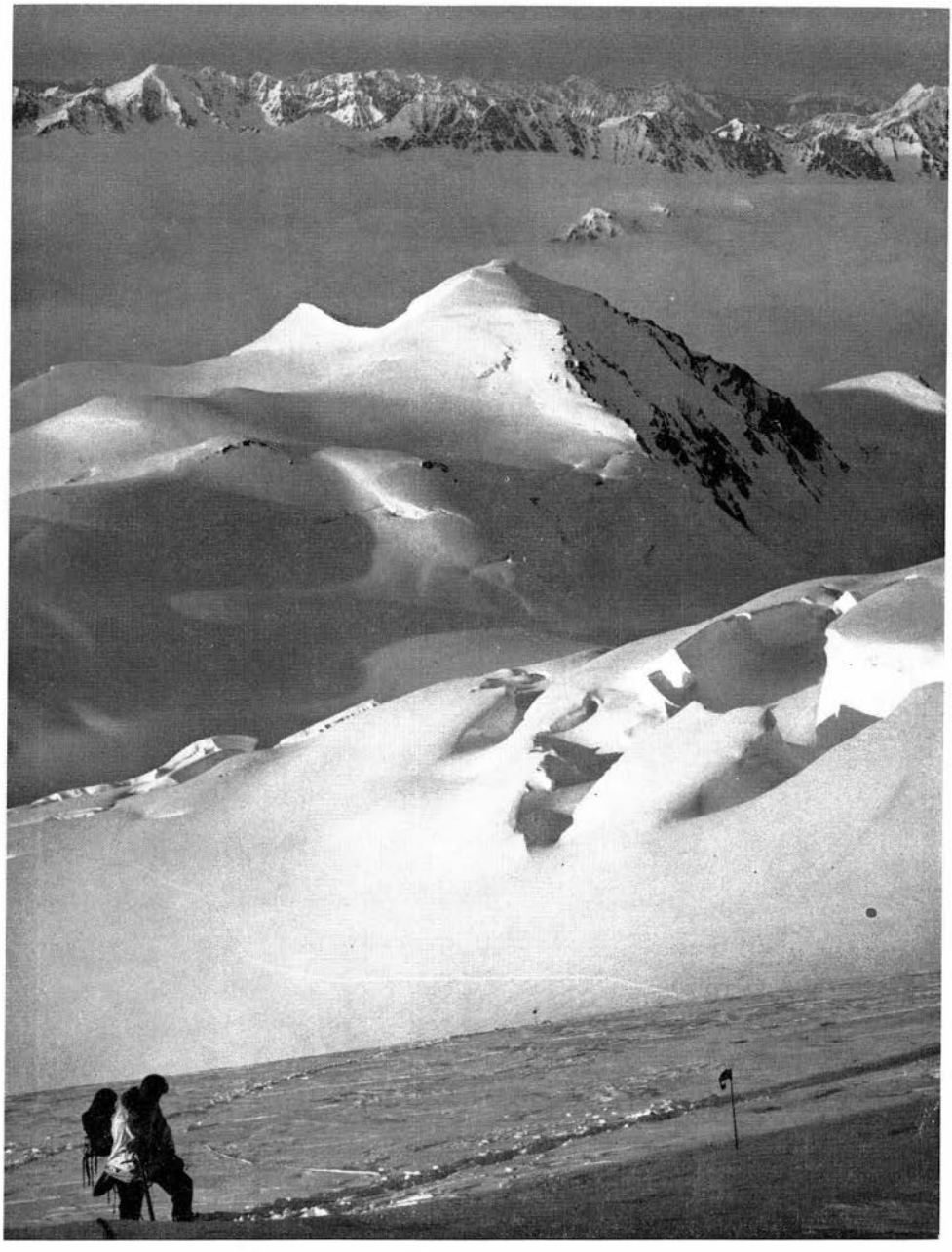
We returned to base camp to find everyone there but the Fickeisen party, which was to be flown out from another camp. By this time the days were unbelievably hot and any suggestions for additional climbs were met with hostile stares (the "eating and sleeping" faction now being in the majority).

On June 30 the last of our group was flown to Kluane Lake, back to greenery and brown earth which seemed strangely dull compared to the immaculate brilliance of the icy world we had left behind.

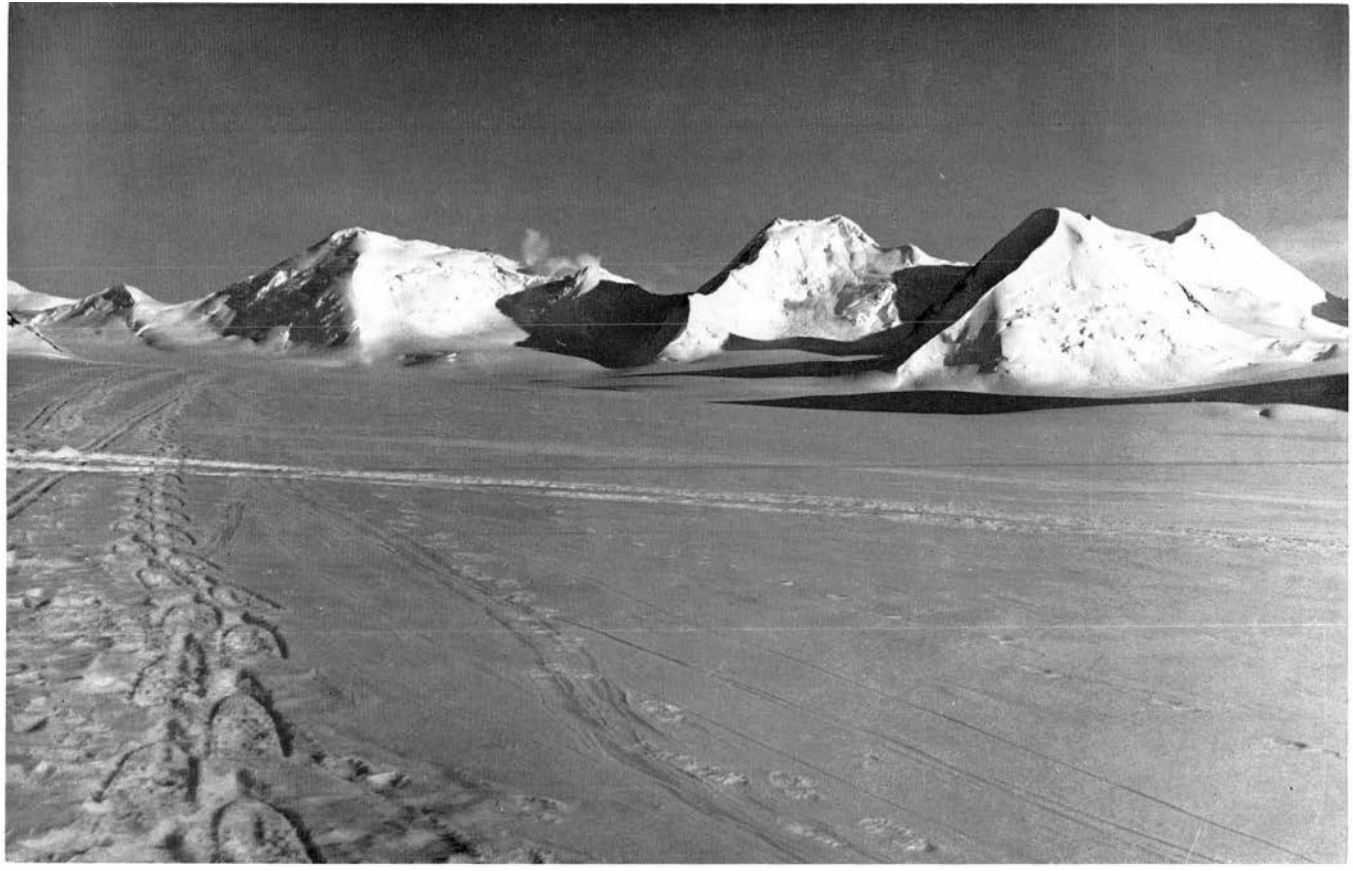


Looking back toward basecamp on the Kaskawulsh Glacier from Queen Mary. Group's high camp, eight miles away.

Gene Dodson



Above icefall on Mt. Queen Mary (looking N.E.). Peak in middle is Gnurdelhorn (9,700)
Gene Dodson



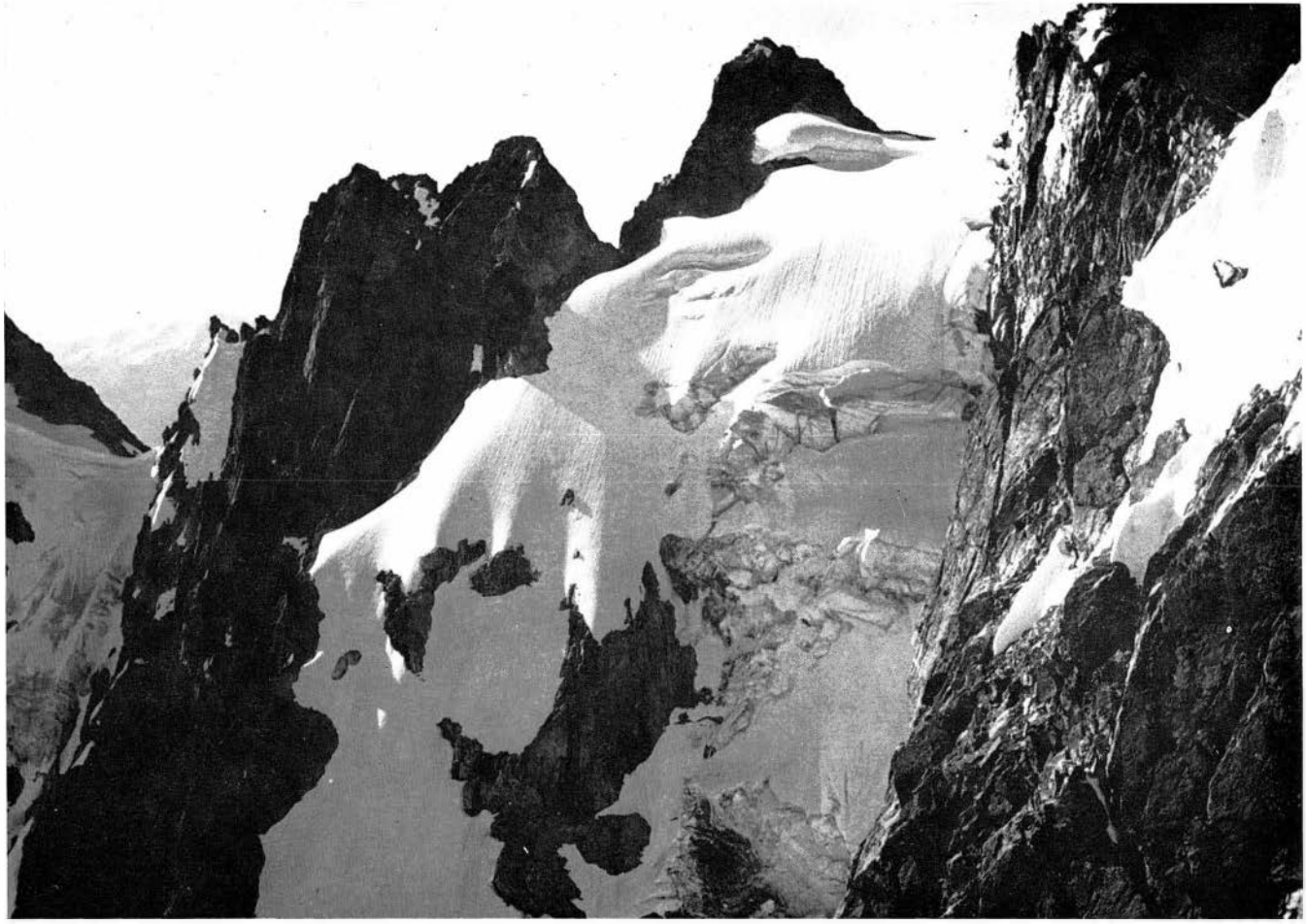
Pyramid Peak (left) ca 10,500 feet
Others unnamed

Frank Fickeisen

Mt. King George (left) 12,500 feet
Mt. Queen Mary (right) 13,000 feet

Frank Fickeisen

View north from Crescent Creek Spires *E. F. Cooper*



North face of Southern Pickets *E. F. Cooper*

Figure 1.—South Cascade Glacier and surrounding area (viewed southeast). South Cascade Glacier (center), LeConte Glacier (left center), Chickamin Glacier (upper center, left side of Dome Peak), Dana Glacier (right side of Dome Peak), Sentinel Peak (between head of South Cascade Glacier and LeConte Glacier), Mount LeConte (left, lower center), Lizard Mountain (at head of South Cascade Glacier). Photo by Austin Post, September 30, 1958.

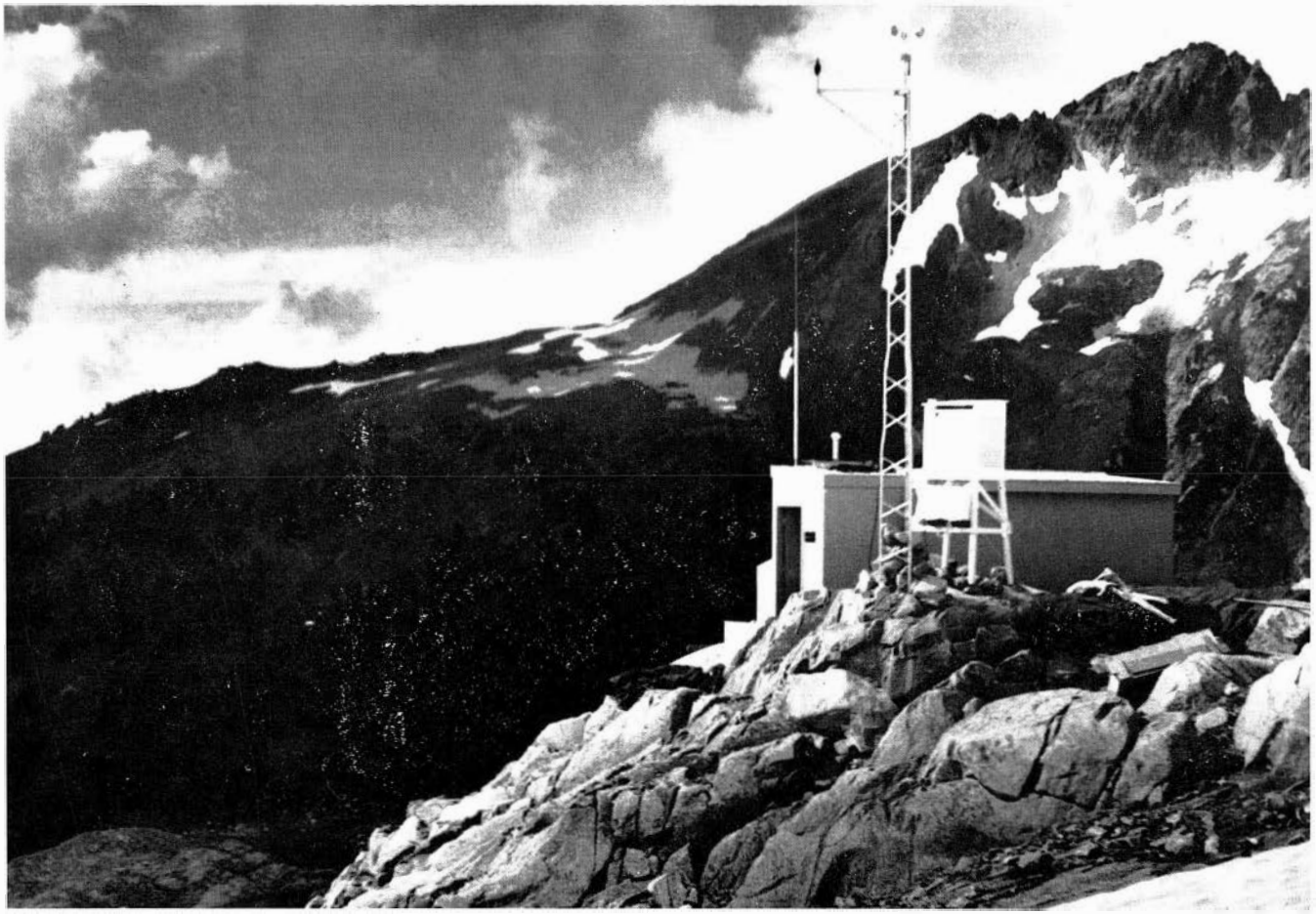


Figure 4.—Research station hut and weather station at South Cascade Glacier. U. S. Geological Survey photo by M. F. Meier, 1959.

GLACIOLOGICAL INVESTIGATIONS

ON SOUTH CASCADE GLACIER

By WENDELL V. TANGBORN[1]

Introduction

Water is one of our most valuable resources and we in the Pacific Northwest are fortunate in that, compared with many other areas, we have what appears to be an unlimited supply. However, water supply problems do exist in this area due to the unequal geographic and seasonal distribution of precipitation and runoff. As our economy develops further we shall become more and more dependent on exact hydrologic knowledge which will enable us to predict the availability of water supplies more accurately and to understand fully the hydrologic problems we shall encounter. Also, we need to know more about climatic changes and how these changes might affect our supplies of water in the future.

The study of glaciers is important with regard to the past, present and future hydrology of an area. First of all, glaciers are very sensitive to climatic changes and leave permanent evidence with regard to these changes. Consequently, we can determine past hydrologic and climatic conditions through the interpretation of glacial evidence. Secondly, glaciers are in themselves important sources of water, especially during the critical dry season.

Very little is now known of glacial and mountain hydrology. To enable us to find out more about the hydrology of areas containing glaciers, an intensive glaciological research program is necessary. Solutions to fundamental problems of glacial-climatic relationships require that we obtain basic glaciological data on the following: the amount of annual net gain or loss in volume of a glacier as determined by snow accumulation and ablation (wastage), the various meteorological factors that produce melt and accumulation, and the positions occupied by the glacier in the past. Especially desirable is a permanent glacier research station which will provide an index record with which future data from other Northwest glaciers can be compared. A long-term study was begun in 1957 under the direction of Mark F. Meier of the U. S. Geological Survey

[1] Approved for publication by the director, U. S. Geological Survey.

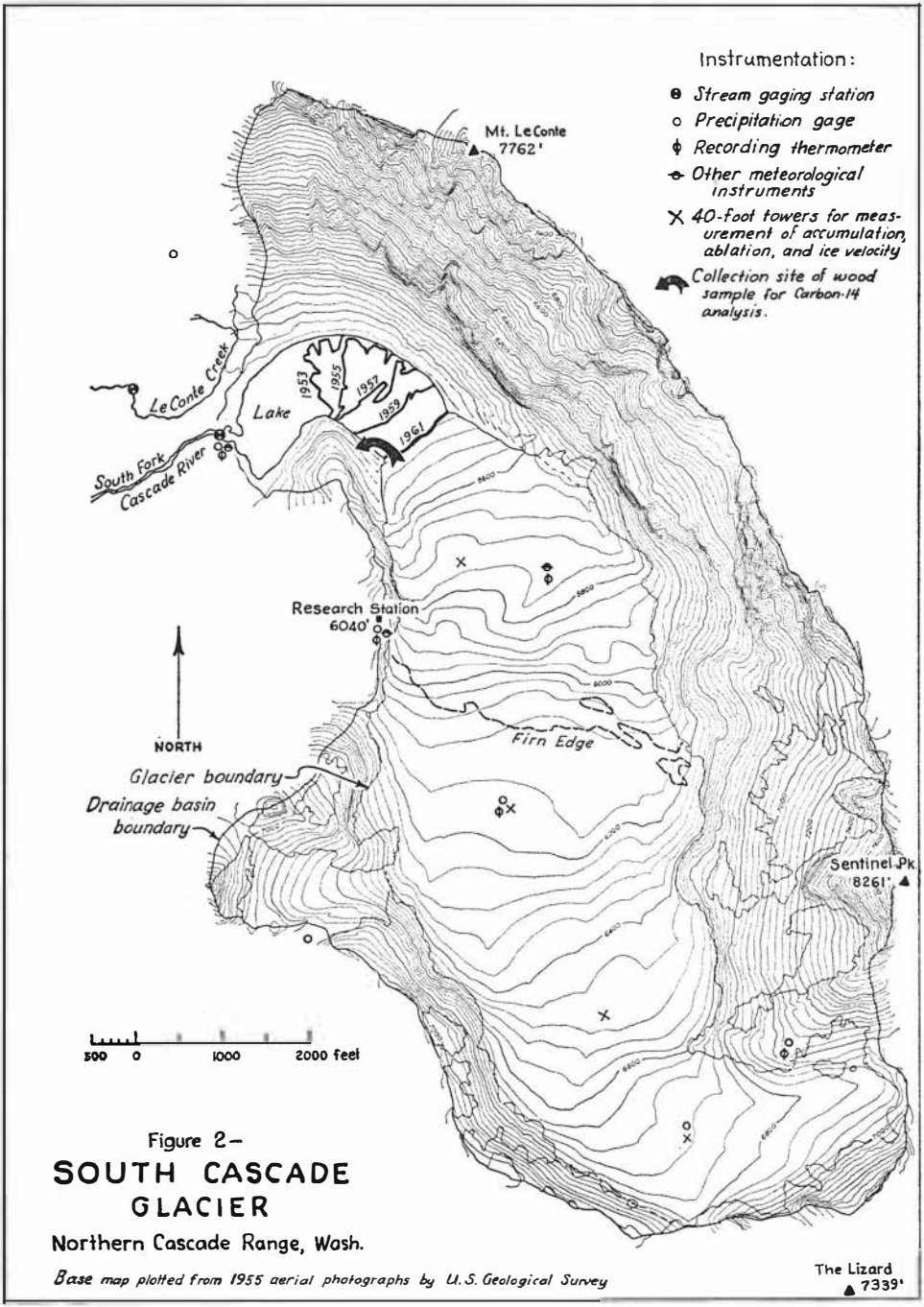


Figure 2–

SOUTH CASCADE GLACIER

Northern Cascade Range, Wash.

Base map plotted from 1955 aerial photographs by U.S. Geological Survey

(see Meier, The Mountaineer, 1958.) South Cascade Glacier was selected for study as the index glacier because it is a typical small valley glacier with simple geometry and mild slopes that make movement on the glacier fairly simple and safe. Hydrologically, it is an ideal glacier to study because it occupies a relatively large part of its drainage basin and is well confined so that an accurate measurement of its runoff is possible. As an index station it is valuable because it is located in an area where its environment will not be modified by man for a long time.

South Cascade Glacier is approximately 20 miles north of Glacier Peak. The basin is 2.36 square miles in area and the glacier itself is slightly over 1 square mile in area and 2 miles long. Sentinel Peak and Mount LeConte rise two to three thousand feet above the glacier on the east border of the drainage area and many other well known peaks lie within view (fig. 1). The climate is characterized by very heavy precipitation (as much as 210 inches annually has been recorded,) most of which occurs as snow. Temperatures are mild and winds are moderate except during the severe and violent storms that occur during the fall, winter and spring periods. Summer weather is often pleasant as precipitation is usually slight and temperatures moderate.

Field Methods

For an intensive study of this glacier elaborate instrumentation was needed. Installation of equipment was begun in 1957, and completed by 1961 (fig. 2).

To determine the amount of meltwater produced by the glacier a record of the stream discharge from the lake at the terminus was obtained by determining the relationship between stage and discharge from the lake and utilizing a water-stage recorder. To aid in the interpretation of the hydrologic regimen of the glacier a much smaller unglacierized basin on the west slope of Mount LeConte, adjacent to and very similar in topographic and climatic environment as the glacierized basin, is being studied. To determine the runoff from this small area another stream discharge recorder was installed in 1961 on its main stream. To find the distribution, amount, and effect on runoff of precipitation that occurs in these two basins, seven rain gages were installed at different elevations. Two of these are recording gages, and the remainder are storage type gages.

Melting of ice and snow is dependent on air temperature, wind and radiation. Temperature is measured by four recording thermometers placed at strategic locations. Wind plays an important part in melting by the turbulent mixing of air next to the glacier surface—especially during storms. Two cup-type anemometers, one of which gives a continuous record, measure the wind speeds. The

amount of radiation received by the glacier surface is a very important factor in determining the rate and variability of melting. To detect just what portion of the total incoming energy from the sun is used in producing meltwater three instruments are employed: a solarimeter, a net radiometer, and a pyrheliograph. Analysis of the data recorded by these instruments allows calculation of the energy received from the sun, sky, and the clouds, and how much energy is reflected or re-radiated back into space.

Other meteorological factors of importance are humidity and cloud cover. These are determined by a hygrograph (or wet-dry bulb readings) and by visual observations of the cloud cover. The record obtained from these hydrological and meteorological instruments is unequaled in completeness in the high mountain areas of the United States (fig. 2).

Each spring a coring auger is used to measure the total winter's snow accumulation, which often exceeds 25 feet in thickness. As the summer season progresses, more corings are made to determine the amount of water which has been removed from the glacier. For a more detailed examination of the snowpack at depth, pits are dug down to the previous season's horizon and a careful study is made of the density, crystal structure, hardness and grain size of the snow that has accumulated.

Wooden, aluminum or plastic stakes are set in the snow and ice to determine the ablation (loss of snow or ice) from the surface of the glacier and the neighboring slopes. These are set at many locations to give an accurate determination of the total volume lost. The distance between the bottom of the stake, which is assumed to remain fixed in the ice or snow, and the snow or ice surface is measured periodically to determine the ablation. During intervals when a more intensive study is made of melting rates, a record of surface wastage is made with an ablatograph, a device which produces a continuous record of the rate at which the surface of the ice lowers.

Each year the health of the glacier is determined by changes in its volume or mass, commonly known as its budget. If more snow and ice is removed by ablation than was added during the previous winter, the budget is negative, the glacier's health is poor, and it shrinks. However, when accumulation exceeds ablation, the budget is positive and the glacier grows. In 1958, a year of low accumulation and a long and warm ablation season, the glacier lost an amount of ice equivalent to an average of 7.1 feet of water over its whole surface. In 1959, when the 1958 climatic conditions were reversed, the glacier gained 2.3 feet, and in 1960, a year of low accumulation and a short ablation season, the budget was -1.8 feet (Meier, 1961) despite the gain in 1959. The terminus of South Cascade

Glacier has retreated continually since the first observations were made in 1953 (fig. 2).

Through velocity studies much can be learned about the behavior of glaciers under varying climatic influences. For instance, knowing surface velocity, ablation and width, we can closely estimate the flow of ice, the mean thickness, and the volume of the glacier. Surface velocity of ice on this glacier is determined by stakes set in the ice and surveyed with a theodolite from two reference points which have been previously mapped. The resulting triangle fixes the position of the stake. It has been found that this glacier does not move rapidly compared with many others; the maximum velocity measured thus far is about 70 feet per year, which occurs near the center of the glacier on a highly crevassed area below the firn edge. Higher velocities may occur on the steeper portions of the glacier but the average velocity is about 25 feet per year over the entire glacier.

Aerial photos are very useful in the study of glaciers and their environment. From them much is learned about glacier recessions and advances, snow accumulation and ablation, and they are also used in compiling the topographic maps which are a very necessary part of a detailed study. Aerial photos of South Cascade Glacier were taken in 1953, 1954, 1955, 1958 and 1961. A topographic map with 40-foot contour intervals (fig. 2) was made of the basin from the 1955 photos. This glacier will be remapped in the future to determine changes.

In order to safeguard instruments and life, a research station hut was constructed in 1959 on a ridge overlooking the glacier (fig. 4). Designed to withstand snow loads up to 25 feet deep and winds of 150 miles per hour, it was also planned and painted to be as inconspicuous as possible, although it had to be located in an exposed position where it would be accessible during the winter and spring. It is equipped with a radio transmitter and receiver and a complete set of rescue supplies and tools which are available for any emergency that may arise in the area.

Glaciation and Past Climate

To find some indication of climates of past ages and their effect on the growth and distribution of glaciers, we look to evidence of past glaciation such as the moraines left by glaciers as they paused in their advance or retreat. Many small moraines have been found below the present terminus of South Cascade Glacier, which proves without doubt that this glacier once occupied a larger area. The mapping of these moraines and their dating by tree ring counts give good estimates as to the size and shape of this glacier at different periods in the past.

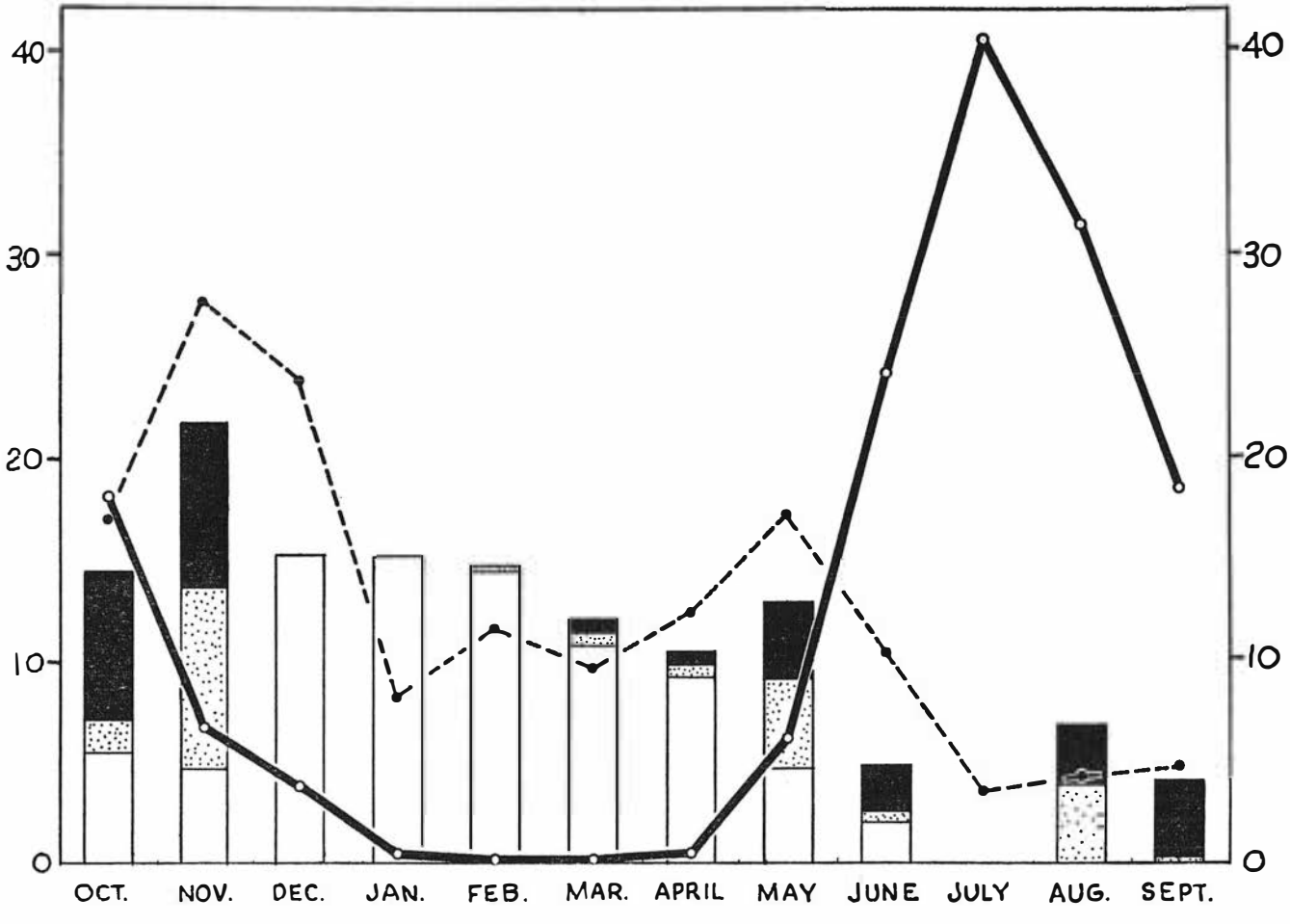
The response of this glacier to climatic change has been studied mathematically by a British glaciologist, Dr. John F. Nye, a leading authority in this field. Positions of the terminus from 1953 to the present are used in his analysis but no information is known about the terminus positions before this time. Pre-1953 photographs of this glacier would be extremely helpful in the interpretation of this glacier's response to climate and would add immensely to the knowledge we now have. We would greatly appreciate hearing from anyone who has visited this glacier before 1953 and has photographs of the glacier showing the terminus.

An exciting discovery about the history of this glacier was made recently. A stump of a tree, uncovered in 1956 or 1957 by the retreating glacier, was found to be 4700 ± 300 years old (sample W-1080, radioactive Carbon-14 determination by U. S. Geological Survey laboratory). This wood was not even slightly decayed, indicating that this area had been covered with ice continuously since the glacier first overrode and killed the tree. After the last ice age and up to about 4700 years ago the climate must have been warmer and/or drier, causing retreat of the glacier and permitting growth of vegetation. Then conditions changed to a cooler and wetter climate, and South Cascade Glacier advanced over the location where the stump was found. However, the present-day retreat of the glacier indicates that the climate is now warmer and drier than it has been for about 4700 years. Future plans will entail much more detailed study of the moraines and vegetation to verify this discovery and to relate the present hydrologic and glacial regime of this glacier to the present climate.

Glaciers and Water Supplies

Of considerable practical importance to water users is the fact that glaciers retain a predominant portion of their water during the wet winter season and release this water during the hot dry season when it is most needed. The opposite is true of nonglacierized areas which release most of their water during the wet seasons and little during the dry seasons. Also during wet cold years when not as much water is needed by irrigators and other consumers, glaciers tend to grow and hold their moisture and then release it during the hot dry years. Thus glaciers are naturally regulated, frozen reservoirs.

Figure 3—Runoff in inches (1960 water year) for South Fork Cascade River at South Cascade Glacier (solid line) and South Fork Tolt River near Carnation, Wash. (dashed line), and precipitation in inches at South Cascade Glacier (bars). Precipitation is differentiated into rain (solid), snow (clear), and mixed snow and rain (dotted).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To illustrate the release of water at critical times by glaciers we found that during the 1960 season for three months—the critical low precipitation period of July, August and September—South Cascade Glacier produced 59.5 percent of the total year's runoff (3737 million gallons) (Meier and Tangborn, 1961). A typical nonglacierized stream (South Fork of Tolt River), which has a lower mean elevation and nearly the same total runoff as South Cascade Glacier, produced only 8.4 percent of the total year's supply during these months (U. S. Geological Survey, 1961, p. 135). Figure 3 gives monthly runoff for South Fork of Cascade River at South Cascade Glacier, monthly runoff for the South Fork of Tolt River near Carnation, Washington, and precipitation for the 1960 water year at South Cascade Glacier.

Assuming an average yearly production of about 13 cubic feet of water from each square foot of glacier area, it is estimated that the glaciers in the State of Washington contribute 1,300,000 acre-feet of water (1 acre-foot = 326,000 gallons) to the State each year (Meier, 1960). This is 424 billion gallons or 40 percent more than the water withdrawn for public supplies in the entire Pacific Northwest (MacKichan, 1957, p. 3). When it is remembered that nearly two-thirds of the water, which amounts to 285 billion gallons, is released during the very low precipitation months, the importance of these glaciers to our economy is clear.

When further observations and studies of other Pacific Northwest glaciers are made, this glaciological station will serve as a key station to relate the behavior of these glaciers with climate and thus further our understanding of how glaciers react to climatic fluctuations.

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YEAR 'ROUND IN THE MOUNTAINS

By ISABELLE LYNN

For 51 weeks of the year we lead the kind of lives that most people have a peek at only during their vacations. We live in the mountains, an active life that holds lots of time for contemplation of the beauty that surrounds us. Our daily pleasures are in the wildlife, and the patterns the weather, the changing seasons, and the transformation from day to night and back again make in our surroundings. Our excitements are provided by finding the first spring beauties and yellowbells on the prairie or coming unexpectedly on a patch of morel mushrooms or getting a limit of silvers in Bumping Lake. Autumn's glorious colors and the first snowfall are more interesting than the World Series, and a new recording for our stereo more thrilling than a mink stole.

That other week of the year's 52 we go "out," usually to Seattle, to see whether our point of view needs freshening. More often than not we don't even last the week, for the assaults on eye, ear, nose and throat—from flashing neon to grinding disposals—is almost more than we can bear.

Our guest ranch, the Double K Mountain Ranch, was built by Kay Kershaw in 1945-46, at 3400 feet on the eastern slope of the Cascades at Goose Prairie. The prairie was homesteaded before the Forestry Act, so we are lucky enough to own seven acres right in the Snoqualmie National Forest.

The Prairie was homesteaded by Tom Fife and his father, John, a pair of Highland Scots who landed here in 1886, after a brief stop-over in Pennsylvania's coal mines. They lived here, hunting, fishing, trapping, hiring out their team of mules for freighting when others discovered the area and bought land from them. They are still here, buried under Ponderosa pines in a neckerchief-size ceme-

tery on the prairie. Tom, of course, named the prairie for a lone Canada goose that made a stop here.

The area was further "discovered" by the U. S. Reclamation Service in 1908, when need for additional water storage for the Yakima Valley made a dam a necessity. Bumping was a natural lake, and the Reclamation Service enlarged it to make a storage dam. Back in those days the road, or rather enlarged trail, was open only about three months; the trip from Yakima took two days by team; and it required three years to build the reservoir. The Reclamation Service's original damkeeper, Jack Nelson, now in his 80's, still lives at the lake in summer.

We have gained on the road since 1911: In 1950 the U. S. Government decided that Goose Prairie-Bumping Lake was an outstanding recreation area and contributed half a million dollars for ten miles of blacktop to the lake from U. S. 410, the Chinook Pass Highway. Now we have a six- instead of a three-months' road. During those other six months we are quite literally snowed in. And at least part of the charm of being snowed in is that everyone else is snowed out!

Kay Kershaw has known this country since she was a child; her family used to take her to the Nelson's at Bumping Lake when she was still in diapers, and she developed a case of mountain fever that has never waned. She grew up on a ranch in Lower Naches and always had her own horses; when she was "working," that is, for a weekly paycheck, she spent all her weekends and vacations in the mountains—from the North Cascades to Oregon's Wallowas —on horseback, afoot, on skis, and on snowshoes.

At Walter Reed Hospital in Washington, D. C., where she was recovering from a back broken in Egypt in World War II, Kay made the happy discovery that people should lead the kind of lives they want to, if it's possible, and she's convinced that anything is possible. The next question was how to support living in the mountains?

With her ranch background, her fondness for horses, people, and the out of doors, the answer seemed obvious enough to have been preordained: a guest ranch in the mountains.

The question of *where* was not so difficult. The goal of owning rather than leasing narrowed the field almost immediately to Goose Prairie, which also answered all other requirements: the surrounding country was, and is, wild, untouched, and spectacularly beautiful. There was already the beginning of an excellent trail system made by sheepherders in the distant past and improved by the Forest Service. There are 200 lakes, ranging in size from potholes to sizable bodies of water, within a six-mile-radius of the prairie. The Double K is only six miles from the Cascade Crest Trail and all its endless possibilities for riding and hiking, fishing and pack trips. All of

Washington's snowcaps are on view from our high country and from American Ridge, which rises 6000 feet directly behind the ranch house.

The climate is superb: dry and warm in summer with little or no rain, and an expected normal eight to ten feet of snow on the level in winter.

By the spring of 1945 the plans were drawn, reluctantly, by a Seattle architect friend of Kay's who wailed that it couldn't be done, there were priorities and other things too tiresome to list standing in the way of building a three-story ranch house big enough for 18 people to live in comfortably and happily. By the end of 1945 the concrete foundations were poured, a small cabin had been built to live in that winter, and Kay had hand-dug a 4-foot square 17-foot well.

The end of the following summer saw the Double K a reality. On January 1, 1947, it was open for business, which in winter then was pretty much touch and go. The Double K had no snow machinery and went in for such expensive devices as hiring a bulldozer at Naches for $500 to plow the road and such inexpensive ones as praying there wouldn't be a four-foot fall of snow before those guests got in---or out. Things are under better control now: we have our own weasel, a track machine that was built for the Army during World War II and which we have completely rebuilt into a dependable machine that can travel in any kind of snow that can be traveled in at all. (There are times when you just *don't* travel—in the weasel, on foot, on skis, or on snowshoes. You stay home and put another log on the fire and relax.)

The coming of summer promised a less hectic manner of coping with guests in this different and delightful milieu. But there were problems. If you are going to live at 3400 feet in the Cascades and have horses, there is the omnipresent question of feed. It can't be raised: the growing season is too short. Hay and grain have to be trucked in from the Yakima Valley, but there is still the problem of keeping the horses shut up all the time, which is not good for them. The answer to that seemed obvious: a Forest Service grazing permit. One simply goes to the Forest Service, gives the district ranger the number of stock to be turned out and for what length of time, pays his money, and goes out with a permit. This was the beginning of comprehension that in dealing with the Forest Service nothing is simple.

The then district ranger, for an assortment of reasons, turned down the request for a grazing permit. That stumbling block removed, the Double K could begin to function.

Other rangers followed—timber salesmen all, save for one, who not only was not a timber salesman, but was actually a conserva-

tionist and spent more money on trails than had ever been spent. He didn't even last eight months.

The Forest Service is not the only thing we have had to learn to live with in the mountains. Isolated as we are, we are a strictly do-it-yourself operation. If the electricity fails, there's no calling the PP&L with complaints. No phone and no PP&L. We make our own electricity with a 15-kw diesel and a 3½-kw Kohler. The same do-it-yourself applies to the rest of the ranch machinery—the weasel, a 4x4, a jeep, chain saw, and outboard motor. Kay, fortunately, brought a certain basic knowledge and a great deal of interest in machinery to the ranch. And a good thing, too. She's had to call on it plenty of times.

Having built a handsome and sturdy ranch house in one of the most spectacular areas of the nation's most beautiful state, we assumed that business would be an immediate success. It wasn't. The natives were interested in week ends here and a three-week vacation in Albuquerque or Jackson Hole or Hawaii, anywhere but near home, which they think they know all about anyway. The rest of the country, if it had heard of the Cascades at all, assumed they were part of the Rockies, and not a particularly desirable part at that.

Building a ranch business in these mountains has been a slow but infinitely rewarding experience, especially showing this magnificent country to adventurous outsiders who decided to take a chance and not follow the crowds. And we have learned from all of them. Only last summer two botanists from Utah cleared up some plants that had been defying us for years. A "birdwatcher" from Dallas identified a variety of empidonax we had been unable to find. A prospective Ph.D. in geology spent two summers here, doing his dissertation on this area, and discovered our own Tumac Mountain to be the newest volcano in the United States. From all of our guests we learn something.

As a means of helping people discover the Cascades, Kay took on the AFA Trail Riders of the Wilderness for a two-week Cascade Crest-Goat Rocks Wild Area trip. She did this for five years in probably the most strenuous advertising campaign anyone ever put on. But it was successful in that it let people from all over the United States have a look at the Cascades. We gave it up after it served its purpose, for "wilderness" seems a misnomer for the invasion of an area by some 30-odd guests, the help to take care of them, and the stock to pack them and their gear. Now we run our own pack trips, limiting the guests to eight.

We have Justice William O. Douglas to thank, too, for the advertising he has given this area in his books about the Cascades. The first, *Of Men and Mountains,* brought me from the steaming jungle

of Washington, D. C., to have a look at this country written about so excitingly by a man I so much admired. I was so overwhelmed by the Cascades that I could hardly imagine returning East, but of course one does. I came back again the next year, and in December resigned my job as director of Publications at Red Cross National Headquarters and came West to live. I had worked for a year as Red Cross Field Representative in eastern Washington and Oregon when Kay's partner, a former social worker, decided to return to her profession, and Kay asked me to join her in operating the Double K.

My preparation for living in the mountains and running a guest ranch, aside from horseback riding, which I had done all my life, and being a fair hand at cooking, which I enjoyed as a hobby, was almost entirely negative. I was born in a middle-size Pennsylvania city, attended a large eastern university, studied for a summer at Heidelberg, and spent most of my adult life in Washington, D. C.

But I had the feeling, when I first saw this country, and have had no reason to revise it, that this is where I wanted to be. Some atavistic principle, perhaps, makes it more interesting to me to watch Stellar jays eating apples in the snow than to stare vacantly at TV. I *enjoy* shoveling snow, and I really believe that food cooked on a wood stove tastes better than the electrically produced product. Maybe the fact that we cut the wood, and each piece is an old friend, has something to do with it.

People ask us continually if we aren't afraid to live here all alone (and we *are* the only residents of Goose Prairie in winter). They have visions of bands of wolves attacking or escaped criminals creeping up our lane (on snowshoes?), or sickness, which seems to be what most people think of first in considering "getting away from it all" on a permanent basis. This is certainly not the life for a chronic invalid, and no place for serious physical defects. We are both healthy, and not subject to all those people-borne viruses. But what about emergencies? we are asked. We have found that *real* emergencies are few and far between. Much of what seems of emergency character outside simply disappears in the mountains if it's ignored for a couple of days.

It would be fatuous to pretend that the Double K was built for all those then unknown people who have been our guests. It wasn't; it was built as a means to an end. But the byproduct, that is, seeing what living here has done for others, has made our own more meaningful than we had ever anticipated. And it has brought us face to face with the realty that we—and they—and all of us stand a very good chance of losing it.

Kay has known this country all her life, and I have known it for the past 10 years, and because we have seen it invaded and despoiled

so very little, we had supposed it was somehow sacrosanct and inviolable. It has never really been *used* or used up. Winters are far too exacting ever to have invited the Indians, for living here, that is. They did some hunting and fishing here in summer and some of the braver Yakimas used the shores of Bumping Lake for a chipping ground. Their legends had it that the lake was haunted, a place of evil spirits. But our *real* Indian lore, for a western ranch, is that there isn't any!

Miners have prospected around this country since it was first known, loners mostly, like Bacon-ring Dick and Six-fingered Pete, but once Copper City had a number of shafts and three stamps. It is all gone now: the shafts have fallen in, the stamps have been removed, and the forest has reclaimed all but a few roofless shacks. But where there is ground in which to sink a pick, there will always be prospectors. During the uranium boom of 54-55, dozens of claims were staked, along the road for the most part, and more people carried 30-30's than during deer season. Geologists of the Guggenheim Foundation made a survey of all this country ten or twelve years ago and reported that this part of the Cascades has everything, and nothing in commercial quantities. Try telling that to a man with a pickax and a gold pan!

Five years ago our eyes were opened to the fact that this area is *not* sacrosanct. The Forest Service, with no word to anyone, made a large timber sale six miles down the Bumping River from us. They took a beautiful stand of Ponderosa pine, built a road almost to the top of American Ridge, ruining a beautiful early summer trail up Fife Creek, and left behind an unbelievable shambles of down trees and half-burned slash, sidehills deeply rutted and eroded by bulldozers, and thousands of damaged young trees. No one uses the road; it goes nowhere and presents no view. In its six or seven winding miles there is not a spot that would tempt anyone to stop. The logger who built the road brags that he made more money on the road contract than he did on the timber. For what it is worth, the supervisor of the Snoqualmie National Forest, acknowledges that "The Forest Service is ashamed of that particular logging operation."

After that sale we became angry and articulate conservationists. With the help of Senator Jackson and Justice Douglas, a further sale on American Ridge was quashed. The regional forester in Portland gave his assurance to the Senator and the Justice and to us that no further sales were contemplated in the Bumping for five years, which was as far as any plans were made, and that the Naches District Ranger was developing long-range use plans for the area.

Expecting simple honesty from the Forest Service is probably a pit that many conservationists have fallen into. We certainly did. In less than a year gyppo loggers were in the area. When we protested, the supervisor assured us they were taking only dead and down and danger trees in campgrounds and along the road. Since this was demonstrably untrue, we again protested. This time there was no answer.

We realized that protesting individual sales and depradations was not getting us anywhere. Since part of the Cougar Lakes Limited Area was in our bailiwick, and there was a good deal of country east of the Bumping River deserving of wilderness protection, we began thinking in terms of a dedicated area. The Limited Area, as the Forest Service had drawn the boundaries, could never qualify as a wilderness: the Chinook Pass highway cuts right through the middle of it, and the area north of the highway is already crossed by roads.

With the encouragement and backing of Howard Zahniser, executive secretary of The Wilderness Society, we made a formal proposal for the dedication of a wilderness area of approximately 125.000 acres. The area we included has something of everything the Cascades have to offer, from high alpine meadows and lakes to rugged, glaciated terrain. Deer, elk, bear, and mountain goats live within it, as well as fox, snowshoe rabbits, cougar, coyotes, weasles, otter, mink and whistling jacks. Jack Nelson has identified over 80 species of birds, and some of our botanist friends have topped 400 in flower species.

We were overwhelmed at the response our proposal received, from the North Cascades Conservation Council's identification as cosponsor of the proposal to our St. Louis guest and friend, Carmelita Lowry, who did all the duplicating of proposals, processing of photographs, and writing of innumerable letters in behalf of the proposal. Indeed, the proposal for the establishment of a Cougar Lakes Wilderness Area has received the most favorable attention everywhere but in the offices of the United States Forest Service.

In the face of the proposal, within the boundaries of a limited area, and despite hundreds of protests from people they were allegedly benefiting, the Forest Service made its now infamous Copper City timber sale. For an estimated $7000 worth of windblown timber, the Forest Service has pushed a road one and one-half miles further toward Blankenship Meadow on the crest of the Cascades. Of course the road contractor gets $30,000, which comes out of that "stumpage" device the Forest Service hides behind.

The supervisor of Snoqualmie National Forest was here last summer, along with Harvey Broome, the president of The Wilderness Society, George Marshall, managing editor of *The Living*

Wilderness and board member of the Sierra Club, and Justice Douglas. The supervisor remained adamant on the subject of the Copper City sale, unconvincing as to his expertise in any field to an unconvinced, frustrated, and disillusioned audience. Having made this sale, he assured us that no more sales would be made in this area until a thorough study had been made. (This "study," which has been supposedly going on for more than five years, remains in the mythical stage. We know of no one who has seen it or knows anything about it, least of all the district ranger who is making it.) The supervisor's assurances were still tingling in our ears when we heard of plans afoot for a sale on the Upper Bumping and another adjacent to the one the supervisor is so ashamed of. The former has been denied, the latter confirmed. It is, of course, anybody's guess as to what the Forest Service intends.

We have a vested interest in this part of the Cascades, well beyond the financial interest in the Double K. It is a way of life for us, and it becomes a way of life for the guests who spend time with us. It gives them a glimpse of simple reality, of a manner of living their forebears had (with civilized refinements) now virtually extinct. To hack further at this wilderness, for it is that now, would be wanton desecration, some quick money for the pulp mills, a few temporary jobs in the timber industry, and an absolute zero for all of us whose land it is.

On Little Tahoma, looking north *Ernest Rosenberg*

BEFORE—Clearcut logged and burned in 1937. This devastated site had only remote natural seed sources available to start a new stand. This is not a beautiful sight but see the next picture for what nature can do in twenty years.

AFTER—Natural regeneration twenty years after logging. Conifers mantle the hillsides and are mixed with hardwoods (mostly alder) in the bottomlands. The present-day forest practice on such a cleared site would probably be to helicopter seed the upper slopes and plant the lower slopes.

Natural regeneration. This mixed stand of hemlock and Douglas fir ranges from five to ten years in age. There are many more trees than needed to form a new stand here.

Douglas fir plantation. This method is now a major technique in industry and government reforestation efforts. The stand in the picture was planted six years previously. Note the species and spacing control provided here.

The original old growth Douglas fir forest. In forty years nearly all this forest type will be found only in national parks and national forests. In 400 to 600 years its fate is sealed by the processes of ecological change. Note the hemlock understory in this stand. Two hundred more years would have found this species predominating. At the time of this picture (ca 1910) its value was only for skid roads upon which to move the Douglas fir logs.

THE NEW FOREST

By PATRICK J. CUMMINS

The finest mountaineers I know have vigorous minds and bodies and a spirit naturally curious to understand the natural processes which they see occurring in the forests and on the peaks when they are in the mountains. The dynamic natural processes which we observe while driving to the site of our outings and also in hiking and climbing in the hills are many and diverse in nature. Three main processes of which all mountaineers are keen observers are those occurring in ecology, geology, and meteorology. This article concerns the ecological whys and wherefores of plants, particularly forest trees.

Some of the questions I hope to explain have bothered many mountaineers when confronted with the grim presentation of a forest cleared by fire, avalanche or logging.

In Western Washington all forests are subject to clearing by fire, regardless of ownership. A small fraction of our forests are subject to clearing by avalanche. These are mainly in federal stewardship, and the geologic and meteorologic factors which cause avalanches are usually repeated so often that only young or stunted forests occupy these sites. The greater portion of Western Washington is subject to clearing by logging. The forest products manufactured from these logs are a mainstay in our economy; and when a forest is managed with care it can yield profits, products and other benefits, both tangible and intangible.

Once an area is cleared there begins a process of plant succession which in five to ten years usually develops a perennial crop which may or may not be economic. Man can do more immediately after clearing to affect the nature of this perennial crop with less cost than he can at any other time in the life of a forest stand. There are four major methods of reforestation in Western Washington—natural seeding, artificial seeding, planting, and relying upon residual or understory trees. These methods usually occur in some combinations, as it is difficult to eliminate the effects of natural seeding from any of the latter three.

A successful reforestation method must give full consideration to the ecological requirements of the site and the species being established. Artificially established trees must be competitive with

natural seedlings or they will lose their place of importance in the future stand. In selecting a species some weight should be given to the economic projection of future fiber needs, as major clearing of the area may not occur again for 100 years. We now see that reforestation is more than planting a tree, or waiting for Mother Nature to take her course, and that a variety of factors must be considered in selecting a method and determining its economic feasibility.

After clearing, the site should be evaluated to determine whether additional treatments are necessary to make conditions favorable for reforestation. Fire may be needed to reduce fire hazard and remove debris; tractor scarification may be employed as an alternative to expose the mineral soil, a requirement needed by some of our favored species; ditching may be needed to relieve drainage problems; and existing perennial brush may need chemical application to reduce its competitive effect.

Before reviewing the effectiveness of these four methods of reforestation, it would be advisable to explain the method of cutting most commonly used in this Douglas-fir region. Clearcutting is an ideal method of economically removing the old-growth timber while meeting a basic requirement for the establishment of a new stand of Douglas fir. There are additional requirements beyond removing the old-growth trees, however, and mountaineers might well exercise some judgment on the intent of forestland managers to establish favorable conditions for a new stand of trees. Douglas-fir seed germinates best on mineral soil, and heavy concentrations of logging debris commonly referred to as slash not only preclude germination but increase the risk of accidental fire which could destroy a young stand of reproduction-aged trees. Logging is not destruction but removal for use. Wildfire in young seedling and sapling trees is true destruction, because a new stand needs to be established and no one benefited from the previous one. Millions of acres of second-growth became established "accidentally" following the removal of old-growth timber in the first forty years of this century. Hundreds of thousands of these acres started to grow a new crop of young trees which were subsequently destroyed by a series of accidental fires which a thoughtless and poorly organized society had caused. Foresters were among the first to recognize the value of the new crop and to organize efficient cooperative methods which have now reduced wildfire to a level such that a long-range forest management is not only feasible but desirable. Some evidence of the past history of reproduction fires is shown on our hills by the vast acreage of hardwood forest types. Natural seed sources were often far removed at the time a seeding area burned and hardwood trees

captured the site. Artificial reforestation by hand planting was only carried out by a few dedicated and farsighted men of the U. S. Forest Service. Industrial forest practices are now generally more intensive than those on federal land, followed by the State of Washington. There is a great variation in forest practice among woodland owners, from high intensity to negligence, dictated by the educational and economic incentives possessed by the owner.

It is important to grasp the fact that natural forces are continually changing the face of the earth. Meteorological changes occur constantly and at a rapid rate, while geologic changes occur steadily but at an almost indeterminable rate. The forest ecological process is intermediate between the above two. In the case of Douglas fir, the natural cycle would be 400 to 500 years, while the present optimum economic cycle is 80 to 100 years to maximize both fiber and dollar returns. Deliberate thinking by thoughtful mountaineers on the present models of forest stewardship would reveal that there is now no plan for perpetuating the old-growth forest of Douglas-fir type which we appreciate so highly and was once so common to us in Washington. The current level of forest protection, if extended 400 years and more, will result in two distinct classes of timber. Those lands being managed to produce wood for the market will contain a rather evenly distributed series of age classes from 0 to 100 years in contrast to the forest in dedicated areas, such as national parks and wilderness areas. Here eventually only all-age stands of hemlock, cedar, silver fir and spruce will be present. Only in areas of clearing, such as that caused by accidental fire, will even-age stands exist, and even here there will be no Douglas fir if the predominant seed source is of another species. There are many alternatives, and this should be food for thought for many a campfire discussion.

There are four main reforestation methods:

Natural seeding. As previously stated, this is the dominant method of reforestation in Western Washington. It occurred to such a great extent in the past that 99 per cent of our current second-growth resulted from natural seeding. There is a widespread belief that this method is the lowest in cost. Some even consider it to be free; but it has definite limitations, both because of the delay caused by sporadic seed crops and hostile sites and because a species composition and distribution of growing stock must be accepted which may be incompatible with the needs of long-range management. A delay of five to ten years in regenerating a new stand means that 5 to 10 per cent of the lands are idle on forestland being managed on a hundred year cycle. A correspondingly greater acreage of forestland base is necessary to establish as large a yield of forest products

as an area where reforestation is concurrent with clearcut logging. Rising forestland prices, intensive forest management, and encroachments on the forestland base in the form of roads, power lines and dam projects are rapidly decreasing the favorability of the natural seeding method. Stand densities of 15,000 trees to the acre are not uncommon due to natural seeding. This results in a long delay before any merchantable size stem can be thinned from such a stand. Rising labor costs make precommercial thinning of these stands unfeasible ($150 to $300 per acre at the present time). Among the advantages of this method are the high degree of natural pruning which occurs in the stand, improving the quality of the trees, and the often mixed nature of the forest composition which is a definite hedge against insect and disease epidemics which are often selective to one particular species. Dense natural stands of "doghair" are intimately known by mountaineers who travel cross-country to their objectives.

Artificial Seeding. This method of seeding can be accomplished by hand or by helicopter and reduces some of the objections to natural seeding. Successful artificial seeding reduces the delay in establishing a new stand and gives greater species control than natural seeding does. Careful selection is necessary to determine a species and sowing rate which can produce successful results. Some of the factors which may limit success are lack of a germinative site, competition from other plants, consumption of the seed by rodents, extreme soil temperature at the time of germination, and prolonged drought thereafter. It can be seen that artificial seeding is not a panacea; even when apparently successful, it is often so dense as to present problems similar to those resulting from dense natural seeding.

Planting. This method has the greatest potential for reducing the objections raised by other reforestation methods. If planting is employed concurrently with logging, we can not only eliminate the delay of establishing a new stand but hasten the date of establishment by the effective age of the trees which we plant. Species mixes can be carefully planned and the distribution of trees can be planned to prevent overcrowding. Vigorous plants will compete effectively with the existing vegetation, and tree improvement programs can be utilized to produce genetically superior stock. Planting has been a major method of reforestation in Western Washington since the early 1940's, but there are problems inherent with this method also. Small stock used on sites where it cannot compete with existing vegetation, animal browsing (particularly deer, mountain beaver and rabbits), poor planting procedure, frost heaving or prolonged drought after planting, and a cost three times as great as artificial seeding are factors limiting success and causing concern to forest managers.

A regular row pattern in a young forest stand is the physical evidence of a successful planting operation. Five to seven years must often elapse before this is readily visible to an untrained observer, especially one in a speeding motor car.

Residual or Understory Trees. Often cedar, hemlock, spruce, silver fir and grand fir (shade tolerant species) are present beneath the large trees removed in a logging operation. If fire or tractor clearing does not remove them, they will be factors affecting any further means of reforestation on the site. Residual or understory tree reseeding, therefore, is usually accidental, but it is occurring to an increasing acreage where the dominant overstory trees are removed and there is no provision for starting a new stand from "scratch." It is often very costly ($30 to $40 per acre) to prepare a site so that a new stand of trees may be established. On some of the best growing sites a perennial understory of devil's club, vine maple, salmonberry and other brush species may become so dense as to remove the site from commercial forest production. Cost factors are a limitation to recovering these sites and forest research is studying effective methods of regenerating them. Mountaineers do not often encounter the problem of high site lands dominated by non-commercial vegetation, as our mountain sites are average to low in producing forest yields. However, we do have considerable opportunity to observe Forest Service and industrial logging in the mountains where commercial species of residual trees can become a considerable factor in the next stand.

Some general observations on reforestation follow: Clearcut logging gives a growing site a devastated appearance and it may take ten to fifteen years before the next crop is easily visible. North slopes are more favorable to regeneration than the hot, dry south slopes, and trees will show up on them sooner. During the seven- to ten-year period in which the forest is becoming visibly established, it would be interesting to many mountaineers to tramp through some cut-over land and try to identify the various methods of reforestation used and the species resulting from their combined effect. The best time to make these observations is in the fall or spring when competing vegetation makes its visual presence least apparent. I hope this article will stimulate readers to be more observant of reforestation practices wherever they go in Western Washington, and also that it will provide a basis for more intelligent judgments as to the effect of cutting procedures and reforestation measures employed.

SUMMER OUTING—

LITTLE YOHO VALLEY

By ROSE MARY WAGNER

Summer Outing, 1961—eighty-eight once again answered the call of the Canadian Rockies. Our objective by Sunday noon, July 30, was the end of the road at majestic Takakkaw Falls, about 50 miles west of Lake Louise. The advance party arrived in a downpour, with water up to their boot-tops in the parking area. However, the three weeks' storm had spent itself, the water receded, and the main party ushered in two weeks of perfect outing weather. A brief shower of rain one or two days, and a flurry of snow on one climb only emphasized the matchless Indian summer with day-long sunshine, crisp nights, and a waning moon.

After our dunnage was unloaded, we took a last long look at the cars, symbol of the comforts of home that we were leaving behind. The trail proved arduously long, and always up and up to an elevation of 6800 feet after about eight miles. To the seasoned climber this was a simple hike; to some of us, the great achievement of the outing.

Our campsite was at the headwaters of Little Yoho River in the President Range of Yoho National Park in eastern British Columbia on the Continental Divide. The valley lay between Whaleback Mountain on the north, and The President and The Vice President, with its glistening glacier, on the south. Westward were seen Mt. Kerr and Mt. Pollinger; to the east, the forest through which the trail led us into the valley. The river along which we pitched camp provided us with all-purpose water and refrigeration.

Records of the earliest expeditions in the Yoho area are sketchy and often missing altogether. Early explorers tended to avoid the valley, thinking it inaccessible because of the formidable peaks and steep glaciers. David Douglas, for whom the Douglas fir is named, made the first expedition. He traveled up an unnamed river that later was called Kicking Horse, then through Kicking Horse Pass toward Jasper. Some years later Sir George Simpson traveled through the pass named after him, on his east-to-west journey around the world.

In 1857 Captain Palliser and Doctor Hector led an expedition to investigate several passes in the water shed. In 1885 the Canadian Pacific Railroad was built through Kicking Horse Pass, bringing the earliest permanent settlers.

The honor of being the first to open up the valley goes to Jean Hable in 1897. After only seven days in the wilderness he came out with news of mighty waterfalls and glistening glaciers. His enthusiasm prompted the Canadian Pacific Railroad to clear a rough trail to Takakkaw Falls, from which point the valley became more easily accessible.

In 1900 James Outram climbed several smaller peaks in the valley. The following year he was joined by Edward Whymper and four Swiss guides: Christian Hasler, Joseph Bossonney, Christian Kaufman, and Joseph Pollinger. These names, too, are deeply etched in the Yoho area. Then, as now, the pack train and camp cook were the sine qua non of every expedition.

Most of the peaks we climbed in 1961, from whose heights we enjoyed a panorama of unutterable beauty, were conquered sixty years ago, and sixty years hence they will continue to challenge men from their rugged heights—because they will still be there.

From our narrow valley, carved out by ancient glacier and river, we looked in all directions at walls of some of the most ancient sedimentary rocks known to geologists. We noted the varying strata in these great layer cakes of stone, formed on the bottom of a vast sea that covered all this area more than a billion years ago. Here would be a layer of coarse pebbles and sand that had been laid down near the shore. Above it might be a layer of finely ground slate-like shale, indicating that the sea floor had sunk and the shoreline had moved far inland so that now there was deposited only the fine silt that could be carried far out to sea. Again the floor may have risen and there had been formed still a different type of deposit. Possibly there came a period of climate when shellfish and their like could grow and their calcareous remains could pile up for great depth under the sea, eventually to form into limestone layers. All this over and over again.

Gradually these layers upon layers sank low, and under the tremendous weight above them they were hardened into rocks—conglomerates, shales, slates, limestone. Nor was this pressure only vertical. Possibly from a shrinking of the earth's surface, tremendous horizontal pressures sometimes squeezed the rocks together and wrinkled them into humps and folds, or even broke blocks apart and slid older formations over on top of younger ones. Finally they were slowly raised up above the sea and immediately subjected to such erosion of themselves by water, wind, and ice as had originally ground off the sediments from which they had been built up. We

could study living, moving glaciers above us, with their lateral and terminal moraines and the beautiful cirques at their heads formed by the pressure of freezing water and the resultant "plucking off" of the rock wall. And we could observe our Little Yoho River tearing along burdened with silt grinding away at our own valley and bearing it off to the ocean.

The good weather made possible nine successful climbs. Summits reached were The President, The Vice President, Mt. Kerr, Mt. Pollinger, Mt. McArthur, Isolated Peak, Yoho Peak, Des Poilus (The Soldiers) and Whaleback. Kiwetinok Peak was attempted, but the summit not reached.

Each climb started from camp on the Little Yoho River at an elevation of about 6800 feet. Each climb was completed within 12 hours, except Des Poilus. This party sneaked out of camp with flashlights, and returned at dusk fourteen hours later.

Mt. Pollinger, 9008 feet, was scouted the first day, Monday, July 31, by a party of six. It is one of the subsidiary peaks on the ridge between Kiwetinok Peak and Mt. McArthur. The party followed the trail and cairns to Kiwetinok Lake and Kiwetinok Pass, lunched in the shelter of the pass, then proceeded to climb the ridge on the east side of Kiwetinok Peak. The last 30 feet was a steep, snow slope that required step-cutting and rope belaying. The summit was reached by following along the ridge.

A second climb of Mt. Pollinger was led by Ruth Ittner on Sunday, August 6, by a different route. They stayed on the east side of Kiwetinok Lake and climbed to the ridge up a steep gully, the most westerly one, as the ridge of the summit is faced. They returned by another route, rock hopping and descending as the terrain indicated until they arrived at the south end of the lake, where they took the trail back to camp.

The President, 10,297 feet, and The Vice President, 10,059 feet, were scouted first by a party of six on Tuesday, August 1, led by Jon Hisey. Leaving camp at 7 a.m. the climbers traveled west up the Little Yoho River, arriving at a point where the creek, coming down from the glacier between the two peaks, meets the river. They proceeded along the east side of the creek to the waterfalls, then crossed over to the west side and followed it up to the snout of the glacier. After roping up, the climbers continued on the west side of the glacier, staying out away from the high cliffs and possible rock fall, climbing in a south-southwesterly direction up to President Pass (9469 feet). The route to climb both these peaks is the same up to President Pass, and both can be climbed from this pass without the use of ropes.

To climb The President, the group followed up along the peak's northeast ridge to the summit. Climbing time for The President was five to six hours, with two to three hours back to camp. To

climb The Vice President from the pass, a party should anticipate rock falls and *climb abreast* up the steep west slope to the north-south ridge. After reaching the north-south ridge, it is followed in a northerly direction to the summit. The ascent and descent is about the same as for The President. Two more parties reached these peaks later by the same route. The view was spectacular in all directions.

The 9892-foot Mt. McArthur climb was led by Leo Gallagher on Wednesday, August 2, with a party of 22. He led the group up the slopes west of camp to the upper meadows, intending to climb Whaleback. However, the party reached a continuation of McArthur ridge. At this point a knife ridge was encountered, which was considered undesirable to continue with a large party. Leo led the group back a ways, dropping over the ridge to the west and following a snow valley which led up to the summit to McArthur. During the climb, and from the summit, this party watched the progress of climbers on The President and The Vice President. The McArthur party returned by dropping all the way down the snow valley to the Little Yoho River, then back to camp.

The first climb of Mt. Kerr, 9894 feet, was led by Jon Hisey on Thursday, August 3. The group followed the trail and rocky hillside along the Little Yoho River on the south side up to about 7750 feet (just above the waterfalls), and climbed the rocky slope in a southwesterly direction until they came to the glacier on the east side of Mt. Kerr. The party crossed the glacier in a westerly direction to the saddle on the north ridge of Kerr, and from the saddle, west on the plain to the west ridge of Kerr, then followed the easy slope north to the summit. Another climb was led on the last day of climbing by veteran mountaineer Amos Hand, with a party of eight, using the same route. Each climb of Kerr required four hours. No ropes were needed.

Isolated Peak, 9234 feet, was scouted by a party of seven on Tuesday, August 1, led by Bob Hewitt. The steep trail that leads to the high meadow north of camp was followed. After crossing the meadow, the group headed up the rocky valley toward Isolated Peak, then traversed around the base of the peak to the west and onto the ice of the glacier which lies between McArthur and Isolated Peak. From here, four of the party went up the steep rock to the saddle below the summit. The rest made the long swing to the west over the snow, continuing around a badly crevassed area, to the saddle. From here, by an easy rock scramble, the party reached the summit. The weather was clear, the views magnificent. All returned over the snow route. A very interesting trip, with spectacular crevasses, blue ice, lovely waterfalls. Not difficult if the route is not up the steep rock. Later Leo Gallagher led a second party to the summit of Isolated Peak.

Whaleback Mountain, 8569 feet, was perhaps the most popular climb. Only a few members of the outing felt unequal to it. Leo Gallagher and Joe Pullen led the early parties. One route followed the trail down to the junction of the Lake Celeste trail, took the switchback trail to the east end of the ridge, then made its way to the summit along the ridge. Another party followed the trail on which we had come into camp down to the first stream, crossed it, and then went up the steep slope through the woods to the upper meadows and up to the ridge, and along the ridge to the summit. Return trips were made following down the routes used going up, or running the ridge westerly, then dropping into the meadows and returning to camp via the trail. Most parties left camp about 9 a.m., allowing the day for the ascent, plenty of time for pictures, lunch, and the splendid panorama, descending and arriving in camp about 4 p.m.

The climb of Yoho Peak, 9056 feet, was made on Tuesday, August 8. Frank Shaw led a party of thirteen. It is approximately one and three-quarter miles due north of base camp, but was reached by a circuitous route. It started up the trail north of camp leading to the upper meadows, over the pass between Isolated Peak and Whaleback Mountain, across the moraine below the Des Poilus glacier, up the west slope of Yoho Peak on talus and slab rock, ending with a quarter mile of ridge running to the summit. Departure time was 8 a.m. and all the party reached summit at 2 p.m. Seen from the summit were Mt. Des Poilus, Mt. Collie, Mt. McArthur, and glaciers Des Poilus and Waptu. We were able to see the Des Poilus climbers throughout the day.

Although none of the route was difficult, it was slow and tiring due to the rock-hopping involved on the mile of moraine encountered after the party descended a snow slope below the pass between Isolated Peak and Whaleback. Two streams in the area had to be avoided by crossing bare ice where the streams emerged from the glacier. After descending the west slope of Yoho, the group turned south, heading for a snow-bridge spanning Twin Falls Creek a short distance above the falls. This provided a safe crossing and gave easy access to connecting trails which led back to camp. Return time was 6:45 p.m.

The climb of Mt. Des Poilus, 10,371 feet, was led by George Dragseth with a party of six on Tuesday, August 8. This mountain, located at the head of Wapta Glacier, is a twin-summit peak rising like an island out of the ice fields. The peak could not be seen from camp, being beyond both Whaleback Ridge and the Des Poilus and Wapta ice fields. The ascent, primarily a long glacier climb, started up the timbered slopes above the Canadian

Alpine hut before daylight. Daybreak threatened storms to south and east. The sun touched the summits and disappeared. The route to Isolated Pass crosses a rock field. The glacier was flat and smooth —a lap rug upon the mountain plain stretching to Des Poilus. Crossing flat ice fields was a new experience to all. The ice field surface of both glaciers had large numbers of meandering surface streams, necessitating a number of detours. The ice field was not badly crevassed; the streams supplied the obstacles, being narrow and canyon-like. Belaying for jumping these streams was difficult because of the smooth ice surface.

The route from the flat ice field to the summit saddle proved remarkably easy. Two major crevassed areas were crossed; snow bridges appeared whenever a need arose. A large schrund and holes were just below the saddle. A rock jumble led to the summit. The cloud layer was high with rain drops and occasional snow flurries. Dramatic storm clouds were in the area north toward the Columbia ice fields, and south toward the Mt. Victoria peaks. Because of the threat of bad weather and distance from camp, the lower summit was passed up. As the Yoho climbers watched us, so we also were able to see them descending, as we recrossed the ice fields, up over the pass at Isolated peak, back through the flower meadow, and down to home base.

The attempt of Kiwetinok Peak, 9522 feet, on Wednesday, August 2, was made with a party of four under the leadership of Jon Hisey. The party climbed to within a few hundred feet of the summit, but were stopped by a very steep rock wall. Since they were without ropes, they were unable to work out a feasible route. A rope team, it was felt sure, could have made the summit by going up the dormant glacier on the east side that faces Mt. Pollinger, even though that glacier is very steep. The weather was fine and the round trip took about eleven hours. Another attempt of this peak was not scheduled during the outing.

While from Yoho Valley some 20 peaks may be reached in a one-day climb by stout-hearted climbers, the area also has trails for those who need to limit their activities. Bob Bunn lead a group of eight to the lake below Kiwetinok Pass. The trail was fairly easy, with alpine meadows, rocks, interesting waterfalls and a close-up of glaciers. Even the ptarmigan came out and posed for a family picture. After reaching the lake, some crossed the snow patch to the pass for a breath-taking view of the Amiskwi Valley and distant mountain range in which nestled a small, blue lake. The glacier streams, easily crossed in the morning, were much higher now, but the party was able to cross without incident.

A favorite trip during the outing was a hike up the south rim across the river, a distance of about three miles. Here, too, the trail

led along interesting flower meadows and a lake. This lake was a favorite bathing place. The trail led to a large glacier and staircase rock formations near the base of The Vice President.

A trip to the top of Twin Falls was led by Bob Meade. The plateau at the bottom of Whaleback Ridge afforded a splendid view of the glaciers between and beyond Mt. Des Poilus and Yoho Peak, across the Yoho River Valley to the Waputik ice field. Flowers nodded in profusion. Cameras were clicking.

The Tea House, a distance of four and one-half miles, was a popular haunt. Formerly built by the Canadian Pacific Railroad, it is now privately owned, and this summer leased by a courageous young woman from Saxony for the brief summer season. She must needs pack in all her supplies about five and one-half miles. The chalet is at the foot of Twin Falls that roar down from a height of 328 feet.

For those who were unequal to these longer trails, one need walk only five or ten minutes out of camp, east or south or west, to find a sunny, grassy spot, and just sit there and stare. The rhythmic swaying of the coniferous tree top is fascinating. Always, flowers appear at one's feet and beg for recognition. If one sits quietly long enough, wild life will come near. The last morning after our dunnage was packed, I joined a friend on the west trail only three minutes away from camp. While we counted our beads, a ground squirrel flirted with us and dared us to come to her hideout. As we drew near, she disappeared, only to pop her head out of her back door.

Birds and squirrels ate out of our hands; elk ate out of our kitchen and supply crates! They liked salad greens, but preferred cantaloupe for breakfast. *We* invaded *their* valley; they reciprocated.

At the last campfire, Leo Gallagher was sharing with us his convictions on the need of conservation efforts. He was interrupted by a pair of elk who edged their way toward our circle; "to thank Leo for his efforts on their behalf," Dr. Rieben later explained.

Colorful flower displays were largely absent in the Yoho area. The coniferous woods were superseded by a very narrow band of meadow, then came the almost barren jumble of loose rocks and the glaciers. According to park wardens, the season had been early, hot, and dry. A few last blossoms of white rhododendron, yellow columbine, foamflower, Canadian dogwood and creeping raspberry were seen in the main Yoho and Little Yoho valleys as we hiked into camp. Glacier lilies and globeflower were in seed. Green dishmops of western anemone seedheads sprinkled the meadows; these came as a surprise since they were blooming at slightly lower elevations at Chinook Pass just one week before. Just as plentiful, but less conspicuous, were the small thimbles of northern anemone seeds that were beginning to fluff out and blow away except in a few late spots

where they were still blooming. Only a few heather blossoms were left—red, white and yellow. Valerian and bracted lousewort were fading. Patches of dryas with twisted plumes we could not identify as to color, but a few scattered white blossoms were left in many places; while the yellow Drummond's dryas was seen both at Takakkan Falls, when we arrived, and on the lower moraine when we climbed The President.

The best meadows were along the Skyline Trail, at the top of the steep trail between McArthur and Whaleback, and on the north side of the mountain along the Whaleback Ridge Trail. *Casstilleja occidentalis,* a low, creamy paintbrush, was the most common one in the meadows; the few tall, bright crimson ones *(c. miniata),* lent an accent here and there, as did large purple fleabane *(erigiro peregnimus).* Rosy patches of common fireweed, only about one foot high, often grew close to the more alpine broadleaved fireweed. Some of the broadleaved fireweed was white instead of rose. Fringed parnassia was everywhere, at the peak of its bloom. Only the sharp-eyed noticed the tiny lavender-purple gentians, northern gentian with a fringed throat and five lobes, and four-parted gentian which was less common. Alpine veronica was tiny and blue. Mountain sorrel seedcases were a colorful brick red. There were strawberry blossoms, Siberian aster, and glaucous-leaved cinquefoil. In our camp meadow, and above us, around the Alpine Club of Canada's Mitchell Hut, shrubby cinquefoil was covered with yellow blossoms. A clump of Alaska spirea in the meadow at the top of the steep trail was evidently an unusual find, as it was the only flower seen that was not listed in Ulke's *Flora of Yoho National Park.* Yellow composites were a prominent feature of the landscape from low to high elevations. There were several species of arnica, including heartleaf and alpine arnica. Arrowhead *senecio,* western golden ragwort, and Fremont *senecio* each had their place. Golden fleabane bloomed among the rocks, and a small goldenrod was widespread. Yellow mountain saxifrage was blooming on many rocky slopes, while redstem saxifrage outlined the water courses. Purple saxifrage, which is one of the earliest flowers to bloom in the Arctic, had already gone to seed on the ridges and peaks here. Other high climbers included moss campion, pink flowers on round green cushions, and its relative, the nodding bladder campion, that reminded us of a tiny Japanese lantern. Saussurea looked like a dwarf purple thistle. A tiny, white draba had gone to seed; a very few alpine chickweeds were blooming. Cutleaved fleabane, *Erigeron compositus,* was quite scraggly, but one plant on the pass near Isolated Peak had pretty pink petals. Alaska fleabane, *Erigeron unalaschensis,* was mostly notable for its black fuzzy calyx. A small plant resembling a dandelion in flower but not in leaf, we finally

discovered to be dwarf hawksbeard, *Crepis nana.* The rocky summits of the Presidents showed no signs of life except a few lichens encrusted on the rocks. Other peaks and ridges had larger lichens and small clumps of moss, as well as the flowering plants mentioned.

Four or five species of willow, of varied leaves and habit, growing in the meadows and far up on the moraines, aroused considerable interest. There was one with downy gray leaves, another with bright green net-veined leaves, a prostrate one with quarter-inch oval leaves; many leaves had bright red insect galls.

Whaleback Mountain was outstanding for its various types of vegetation. On its south face was a most floriferous scree slope, including silky phacelia, which we found nowhere else. On the meadows below, white thistle was plentiful. The steep rocky slope climbed by the Ridge Trail contained many bluebells, fading purple flowers of the only penstemon we saw *(P. ellipticus),* elegant zygadenus and green wormwood.

Around camp the trees were Engelmann spruce and alpine fir. Moist areas in the woods hid green bog orchids and bronze bells of stenanthium. By the small pond between Lake Celeste and the Little Yoho was a colony of blue butterwort, a carnivorous plant whose sticky leaves were trapping gnats. In drier spots grew pink pyrola and the single white pyrola, or wood nymph, as well as patches of grouse huckleberry. The red berries of the latter were very scarce, as were the fruits of the tall black and blue huckleberries growing on the trail beside Laughing Falls, buffalo berry and black twinberry were seen on the lower trails, and twinflower was in full bloom along the main Yoho as we walked out.

These are but a few of the scores of plantlife in the Yoho area. In general, we found the flora quite different from the Cascades. Some of the plants were familiar; others were more typical of the northern Rockies and were therefore new to many. A large percentage of these flowers grow around the world in northern latitudes, and we felt that we were meeting old friends away from home.

The most abundant animal life about camp consisted of insects; friendly mosquitos, flies, ants large and small. On the meadows were many orange-yellow and yellow-and-black bumblebees, Monarch butterflies, and a small white butterfly. There were dragonflies by the streams, and a gauzy-winged insect resembling a katydid among the shrubby cinquefoil.

An elk herd invaded the kitchen and called at some private tents; two does wandered through camp at ease. Goats lived on the heights above camp, and conies (pikas or rock rabbits) lived on the rocky slopes. One person met a mouse; another saw a chipmunk; Rick Mack's party saw a wolverine, one saw a marmot. In the woods were warty toads, near the streams lived frogs. The meadows were heavily

populated with Columbia ground squirrels, most of the holes containing babies as well as adults, but all anxious to sit up and chitter at every passerby. Less numerous were the golden-mantled squirrels.

There were fox sparrows, song sparrows, russet-backed thrushes, Canada jays and chickadees. Water ouzels, some feeding large babies and some still carrying food to fledglings in the nest, were along the streams. Some quail called one day from a meadow above the Little Yoho. Hummingbirds fed on flowers in the meadows and on the ridges, and even paid court to a girl in a red coat. On the way to Kiwetinok Lake lived several families of ptarmigan, and at the lake were gray-crowned rosy finches and sparrows. A pine siskin was raising its family along the highline trail. One hiking party watched a small flycatcher feeding its four babies, perched on a limb. An albino Clarke's nutcracker visited the camp garbage pit. One day, in a fir tree on the Twin Falls side of the switchback trail over the shoulder of Whaleback Ridge, I watched chickadees, creepers, a small finch, a yellow warbler, and a Townsend warbler, each adult busy with its young birds, some of them frowsy and short-tailed, but all feeding and chattering, none of them afraid. Suddenly the entire assemblage flew away.

One bird, gray-mottled above, gray-striped below, came to live almost as soon as camp was set up. It walked about with a fine disregard of being stepped on; perched on people's heads, arms, and ***ATE***—ate constantly, anything that came its way, our food as well as the flies it caught for itself. No one was able to identify it. It flew away after campfire one evening and did not appear next morning. Too much wrong food? DDT? The yen to be just a bird again? Happy hunting!

When Inez Easton went afield, she settled down, blended with her environment until wild life moved in on her. In a fir tree she watched an afternoon tea party. A mother chickadee, a creeper, a finch, and a Townsend and yellow warbler, each feeding a frowsy youngster. And then—they all took off for home.

Dr. Rieben caught the spirit of Little Yoho Valley and the whole area, taking it away with him to share with his friends, all on some 200 feet of celluloid. From the scamper of the goats on Mt. Pollinger, as seen from camp, to the dance of the flowers at his feet. Every specimen of plant and wild life—all (except the wolverine which disturbed a keen shutterbug's nap) stopped before his camera, or flew gracefully before the lens, or played hide-and-seek with him among the rocks. Insects, birds, and four-footed friends, and even "people" were caught, unaware that they were posing for a character study.

The consensus seems to be that the Yoho area has everything required by the varying tastes of members making up a summer outing

party. The committee was especially pleased with the ease with which credit was established for commissary supplies. In addition, "the price was right," whereby every member profited by a substantial refund.

Several Canadian alpinists joined the outing for single climbs, and two moved in for the second full week. One English Liverpool University Mountaineer joined for the full time, and one Riders-of-the-Wilderness club member spent a week with us, resting from the walk in and getting up courage for the walk out again! Two came from New York State and one from Philadelphia. It was a camp of much give and take of experiences and friendships.

Summer outing members want to share with all mountaineers one of the readings from the Sunday, August 6 campfire.

I saw the mountains stand
Silent, wonderful, and grand,
Looking out across the land
When the golden light was falling
On distant dome and spire,
And I heard a low voice calling,
"Come up higher, come up higher,
From the lowlands and the mire,
From the mist of earth-desire,
From the vain pursuit of pelf,
From the attitude of self,
Come up higher. Come up higher."

—JAMES G. CLARK
From *Altars Under the Sky.*

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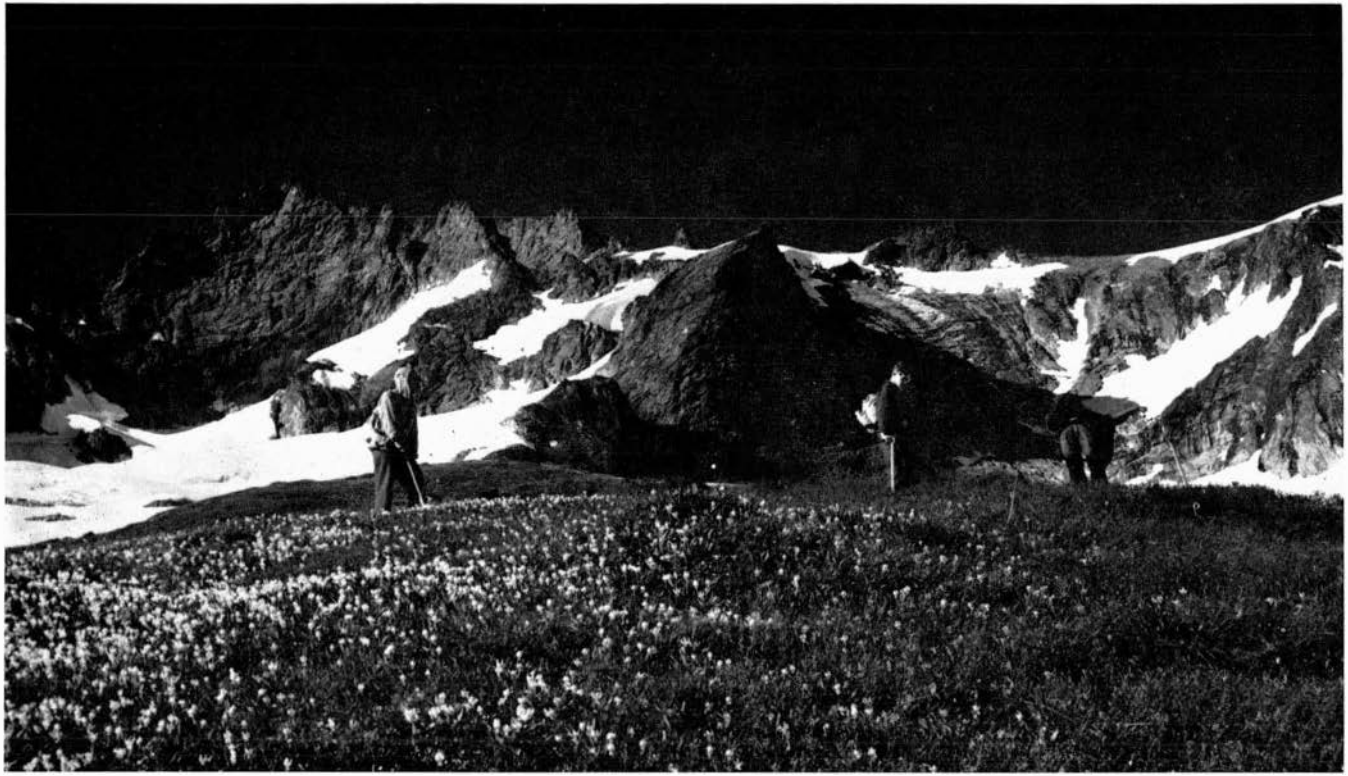
Looking eastward from Mt. Pollinger. Summer Outing, 1961. *Ruth Ittner*

Vice President (left) and President from Little Yoho Valley. Summer Outing, 1961 *Don Power*



Boston Basin *Ernest Rosenberg*

Stumpranch-type climber, 1912
(Just returned from a climb)

(1) Stumpranchers atop Rattlesnake Ledge, 1933
(Note the effect of annual typhoid shots)

The road to Cedar Falls, 1913
(Obviously, no rattlesnake could have made it, not from Ellensburg)

Rattlesnake Ledge and Rattlesnake Lake during the great Seattle City Water Flood, May 13, 1916
(Read about it in next year's Annual)

SNAKES

IN THE GRASS,

ALAS

Federal Way, Washington
November 8, 1961

Mr. Harvey Manning
Issaquah, Washington

Dear Mr. Manning:

Please consider this letter a formal protest against your presumptuous claims to "obvious firsts" among the "crags and towlders" of the Rattlesnake Watershed Area. ("Things to Climb When Mountains Aren't Worth It," *The Mountaineer,* 1960.)

Lacking such sophistications as summit registers, local residents of such areas often fail to suitably immortalize their accomplishments. I enclose a photograph commemorating an ascent of Rattlesnake Rock successfully completed in 1933 by the Devilsclub and Windfall Branch of the Cedar Falls Railroad Tie-Walkers Association. At the time the group was formally dedicated to an investigation of the mad genius who contrived to space railroad ties too close together for one step, and too far apart for taking two at a time. Adult pursuits stifled such worthwhile inclinations; to my knowledge the necessary research has never been undertaken and the problem remains unsolved to this day. The two rustics pictured on the left in photo 1 have defected to the prosaic ranks of PhD engineers, but the one on the right has upheld the dignity of the organization through such enterprising feats as climbing Baldy on foot to avoid paying the tow fee.

In the ten or more years that this group enjoyed association, every elevation within a ten-mile radius of Cedar Falls and Cedar Lake was surmounted. Trails were considered an affectation of the overcivilized, ropes and belays were unheard of, and seat-of-pants

descents replaced three-point suspension. Formal notation of the group's most distinguished accomplishments was suppressed to avoid parental recognition. One notable achievement was a rescue operation involving a hand-over-hand rope traverse over Cedar River in pursuit of a Seattle Water Department tramway cart inadvertently loosed from its moorings. A brilliant first ascent of the pipeline between Cedar Falls and Camp Two almost ended in tragedy when the group panicked on the steepest pitch and hung spreadeagled against the cold steel until the leader, in a masterpiece of psychological motivation, was able to coax us free from the rivets to which we were clinging.

In view of such accomplishments, I am sure you can appreciate the validity of prior efforts and will withdraw any claims to first ascents in the Cedar River-Rattlesnake Area.

Very truly yours,
/s/ (Mrs.) Marian Arlin

11 November 1961

Dear Mrs. Arlin:

Let me be the first to express admiration for your Cedar-Rattlesnake "ascents," if that is the proper term. I'm confident you will agree with me, however, that historical authenticity has priority over any individual egos that may be involved. It would be unfortunate if we who have explored the Cedar-Rattlesnake area should be divided by controversy. For my part, I would hate to see Rattlesnake Ledge become another Matterhorn, with all the nasty overtones of national rivalry, ropecutting, and so forth. There is, after all, enough glory on Matterhorn for both Whymper and Carrel. So, too, with Rattlesnake Ledge.

I do think we should more closely define our various explorations, so that the next edition of the *Climbers' Guide* can give fair space to each of our groups. As you may have noticed, the present edition devoted a number of pages to a single rock in Tumwater Canyon, but did not so much as mention Rattlesnake Ledge, which is much larger. If your group and mine can reach agreement, the editors may repair the omission next time.

Inasmuch as you raise certain questions concerning our "claims to first ascents," I know you will not take it ill if I request further information from you.

First of all, let us discuss the photograph. I can find no reason to disbelieve your claim that the two "rustics" became Ph.D engineers. Actually, it's foreshadowed in their faces. Furthermore, the chap on the right—staring antisocially outward into space—is the very picture of a person who will someday climb Baldy in protest against the tow fee. You have not explained the fourth person, nor have you explained who took the photograph.

Presumably you have good reason for evading these matters.

Laboratory examination has not uncovered any evidence that the photo is a fake. It would seem these people actually were atop Rattlesnake Ledge.

I am troubled, I confess, by your silence about the Cannonhole. I can't question your presence on the summit of the Ledge, but neither can I imagine a person being there without remarking upon the Cannonhole.

Even granting your presence on Rattlesnake Ledge—and possibly other local summits—please recognize that there is an important distinction between a "mountaineering first ascent" and "first people on top." Presumably you also climbed Herpicide Spire (or "Cedar Butt" as the brass summit plate has it) but I rather doubt you carried ice axes and ropes and Ten Essentials. We *did,* you know, and it makes a difference. The first people on top of that peak probably were Indians, but it's not the same thing at all. You won't find any Indians listed in the *Climbers' Guide.* Basically it's a matter of having a journal to climb for. If you haven't got a journal it doesn't mean much, history-wise. That's why you don't find many Indians around now, and why you find lots and lots of climbers.

Not that I'm classing your group with the Indians, but history does have to have a place to start, and for convenience we say history starts when it's written down. We published *our* ascents. But please don't interpret this as claiming *you* do not exist, and never did. I rather expect you wouldn't mind terribly if—purely for the sake of orderly historical records—we find it necessary to place, after your ascents, the qualification "claimed." This would not really make them inferior to our ascents, merely earlier—*too* early.

I mean, who knows what went on before history began? This is the realm of anthropology. (Would you take it amiss if we sent some people out from the University to measure your skull?)

You are, I'm afraid, on dangerous ground when you protest our claims to the "towlders." Certain of these are so obscured by bracken and alder that credibility is stretched to the breaking point by the claim *two* parties could have found them within the same century.

* * * * *

In conclusion, you must realize we have Ph.D's in *our* group, too. Also some MS's and a scattering of BA's and Phi Beta Kappas. We certainly hope you can substantiate your claims by circumstantial detail rather lacking, I fear, in your letter. Speaking for my own group, we are not egotists, we are *historians,* and *explorers.* If we seem to be questioning your integrity, I know you will agree it is our duty.

If you have any further evidence, please speak fully and frankly. As for me, I want very much to believe you, but I would be derelict in my duty if I accepted at face value the claims of every impostor that came along.

Sincerely,
/s/ Harvey Manning

November 26, 1961

Dear Mr. Manning:

Before proceeding to the details of your calumnious letter, I feel you should know that I enjoy a certain advantage in this exchange, although the more I think about it the more dubious the distinction becomes. Although I am safely anonymous, I know who you are. In one of my more depressing memories, which exhumes the Commonwealth Basin Snow Practice of 1952 in all its sodden misery, I find myself poised on the edge of a snowbank summoning courage to dive headfirst into the slush in order to afford my rope partners a satisfactory belay practice. Soaked to the skin, frozen, thoroughly hating Mountaineers in general and the Climbing Course in particular, I was exploring all possible avenues of escape. I had climbed out of my sleeping bag into a drenching downpour, slogged the fifteen miles (was it only two?) to Lundin, and spent at least five hours numbly practicing belays and self-arrests and other forms of torture while the rain continued to pour down and the snow underfoot became soggier and soggier. After an eternity of this, I surveyed

the future and realized that it held nothing but continued misery. Knowing that I could face the ordeal better if I knew exactly how much longer it would last, and feeling sure that it was almost time for lunch, I asked my companions to tell me the time. It was 8:00 a.m. I had discarded the possibilities of being struck by lightning, had made several ineffectual attempts at breaking my ankle and was finally contemplating falling on my ice axe when the entire group struck the colors and headed for home. As far as I could see, the only ones reluctant to leave were the exuberant teenagers and an unearthly apparition that looked like the Avenging Angel as it flapped its way up the hill in an enormous parka and which was identified to me as one Harvey Manning.

We might begin our discussion with a more definitive approach to the area in dispute, heretofore referred to rather ambiguously as the Cedar-Rattlesnake Area, the Rattlesnake-Watershed Area, etc. Whether Rattlesnake Lake is geographically a part of the Cedar River Watershed is subject to some question. I must admit, however, that most of the area I had in mind is comfortably surrounded by an imposing battery of fences, inhospitable admonitions to "Keep Out" and similar antisocial devises characterizing Seattle's Cedar River Watershed. By virtue of squatter's rights and sixteen typhoid shots (in as many years) we enjoyed a certain immunity to Sanitary Patrolmen and other climbers which permitted a leisurely acquisition of "firsts" that can hardly be challenged without courting a $25.00 fine (not to mention 90 days in jail).

If I failed to mention the Cannonhole, bear in mind that it is the "Cannonhole" only by your definition. However, as your suspicious nature has apparently caused the photograph to be subjected to scientific appraisal, I am surprised you did not notice the flashlight carried by one of the climbers. This obviously indicates that cave exploration was the order of the day, as a flashlight is only a hindrance when negotiating windfalls, vine maple thickets, and, possibly, trogs. (Incidentally, what is a trog?)

With further reference to the photograph, if I hesitate to identify the only female figure you must understand that I do have a certain position to maintain in the community. As the family camera was the only one large enough to fit the photograph, and as we were not allowed to touch this venerable instrument, much less wanted to since its dimensions roughly approximated a small suitcase, I must deduce that my father was the photographer. I make this observation with considerable reluctance, as such an admission obviously denudes the entire expedition of any air of reckless abandon.

As we are discarding social amenities in favor of TRUTH may I ask where you unearthed that whimsical bit of folklore about the rattlesnake? In the first place, even the roads existing in ought eleven would have necessitated a wide and tortuous detour to place a farmer from Ellensburg anywhere in the neighborhood of the Rattlesnakes—Ledge, Ridge, Lake, *or* Creek. I have it from an unimpeachable source that while Arthur Denny was poking about the foothills in company with the local Indians, he chanced to camp on a prairie between the lake and what is now called Rattlesnake Ridge. As they sat about the campfire they heard the wind rustling the dry grasses of the prairie, making a sound not unlike a rattlesnake. Knowing there were no such varmints about, they remarked jokingly upon the resemblance, and apparently having nothing better to do, thereupon christened the lake and the promontory.

You have obviously missed the whole point, which is that mountains belong to the people who live among them, most of whom wouldn't be caught dead carrying an ice axe. This principle applies whether the actual title is held by the Department of Agriculture or Weyerhaeuser. Outsiders and their paraphernalia are viewed with amused tolerance and no matter what may be the trail of climbing records and place names they leave behind, when they eventually get tired and go home things remain (hopefully) pretty much as they were in the beginning. This might be called the Stump Ranch Philosophy. The original Indians must have felt much the same, and had they been able to anticipate the hordes of goggled, roped, cramponed and essentialed climbers who were to eventually swarm over their routes and trails, they would probably have left original summit markers proclaiming "Klatawa!" which is the Siwash equivalent of "Yankee, go home!"

Yours very truly,
/s/ (Mrs.) Marian Arlin

7 December 1961

Dear Mrs. Arlin:

Now you're just trying to get on my good side, recalling Commonwealth, 1952. *There* was a Misery Trip! Better in its own way than the 1950 Commonwealth, when it snowed all Saturday night and about a quarter of the party arose at dawn, hiked to the highway,

and resigned from The Mountaineers. The lovely thing about 1952 was the gentle way the rain began to fall in the night, then harder and harder by degrees so that by 6 a.m. fully 90 percent of the party was soaking wet in their sleeping bags.

How well I remember the abject misery, the blue faces, the hopeless, shivering UTTERLY TRAPPED souls, some 150 of them, staggering off into the rainswept forests in that cold grey dawn, toward a day of sliding around in the snow.—Well, I'm just a sentimental old fool of an ex-Climbing Chairman, I guess, but my eyes dim remembering all that misery. That's one of the satisfactions of rising in the Climbing Course Hierarchy to a position of leadership, being able to make not only *oneself* miserable, but so many, many others.

Those of you who left camp first, in the Lundin Chute Group, were something of a disappointment to me, I confess. For one thing, having farther to walk than any other group, you got well warmed up en route to the practice area. Also, being at a higher elevation much of your precipitation was in the form of snow. Finally, the Groupleader, Cam Beckwith, was my Climbing Committee mentor, and even though in this situation he was technically under my command, he exercised independent judgment and cut the practice short at 11:30 a.m. Needless to say, had he not been my friend and teacher, I'd have fired him on the spot. Particularly since the entire Group, flinging itself homeward down into the Basin as I approached to see how the Group was shaping up, was so gay, so happy—very nearly hysterical.

By contrast, the North Kendall Group, which I visited immediately before the Lundin, reminded me of the Retreat from Moscow (those who didn't make it). At that elevation the precipitation was pure, unmixed, hard rain. The 50-odd climbers were clustered here and there on the slope in little groups. Occasionally an individual would climb wearily uphill, lie down in the snow and slide a ways, then get up and rejoin the tight group huddled together like range steers in a Norther. Some had given up every pretense and were simply waiting out the end under trees. I accosted the members of one such group, sternly crying "Who's in charge here?" None of the students were able to speak but their dull, staring eyes centered on one of their number whom I recognized as an instructor. I spoke to him very severely about Duty but he was beyond reach of words.

Actually, the most horrible suffering occurred very close to camp, in the Kendall Ridge Group. This practice area was about 15

minutes from camp, and I made my tour of that area at about 7:30 a.m. I found certain of the senior people there demonstrating unsuspected tendencies toward humanitarianism; a campfire had been built under a tree and those students diagnosed by an attending physician as being on the point of death had been excused from drill.—Needless to say, this was in direct disobedience of my orders.

* * * * *

Frankly, in view of all those typhoid shots (and Lundin Chute in '52), and the flashlight at the belt, I'm mellowing in my previous attitude toward your "ascents." I would like to make all due allowance for your background as a stumprancher, and give every possible consideration. I always remember what Kipling said about the "White Man's Burden." I must tell you, "cannonhole" is not *my* definition. This is *climber* language, and is related to such terminology as "assault," "conquest," "hurled back." Climbers who write articles for journals think of the business as *war*. If a mountain has a hole in it, that is a *cannonhole*.

As for "trog," that is climber language in New Zealand, but *hillwalker* language in America. You will not find "trog" in your Webster's Collegiate, but you will find "troglodyte" defined as "one of any savage race that dwells in caves . . . any person of primitive or degraded ways of living." We hillwalkers spend as much time as possible in trogs.

* * * * *

About the rattlesnake, I don't mind confessing that my chosen role is to test the ability of later historians by deliberately passing on and amplifying every vague rumor, tall story, and fantastic fabrication that comes my way. The cause of TRUTH can only be served by putting historians on their mettle. Though my range of action is far more limited than that of H. L. Mencken, I do believe that in my small way I've carried on the tradition of his famous Bathtub Hoax.

The "Rattlesnake" area has a tradition in misdirection. One of the major summits of the area, ingloriously called "Cedar Butt" on the USGS benchmark plate, was reported in the Mountaineer Monthly Bulletin as a first ascent some years ago, during the era when first ascents were being reported from many mysterious portions of the Cascades. However, it was reported under the name of "Herpicide Spire," a name derived from a patent medicine then being advertised for growing hair on bald heads.

The "first ascent" occasioned quite a lot of prying and spying among the "first ascenders" of that day; when they found out it was Cedar "Butt" they were not amused. They were shocked to discover there were climbers who would *make jokes about first ascents.*

* * * * *

Yes, I'm mellowing, that's certain, especially now that I know your father was on the ascent of Rattlesnake, carrying a huge camera; virtually all my venom about Rattlesnake Stumpranchers is gone.

But let's keep the "climber-stumprancher" relationship in focus. It's all part of the "Englishman-Swiss" problem of Whymper's day, the "European-Coolie" problem encountered in the Himalaya by Mrs. Fanny Bullock-Workman.

The local residents, whether they live in Zermatt, Kashmiri or Cedar Falls, take the peaks for granted until some tourist comes along. Only after the tourists get up a problem in their journals back home do the local people think about the peaks as anything but landscape.

—Despite all those typhoid shots, I rather think your family caught some backwash from The Mountaineers, and that's why you "climbed" the summits of the Rattlesnake Group. (Your later presence in Commonwealth Basin confirms my hypothesis.) Therefore I am willing to accept your ascents as "mountaineering" ascents, even though you were nothing but simple stumpranchers at the time.

Very best regards,
/s/ Harvey Manning

In Memoriam

Mildred E. Altes

Effie L. Chapman

J. W. Clise

Catherine Crayton

E. C. Goodman, Jr.

Mildred Granger

Mrs. Ben C. Mooers (Alice)

Mrs. Edward H. Murray (Sarah)

Rev. Raymond S. Proudfoot

Dr. Philip M. Rogers

Dr. Warren Spickard

James E. Smithson

PACKING

THROUGH THE PICKETS

By FRANK deSAUSSURE

Back when the 1960 winter snows were starting to thin and an occasional open patch of ground would boast early shoots of mountain Iris or Snow Plant; when everyone in the Sierras was wondering if there would be one more weekend of shirtsleeves-and-shorts skiing forthcoming, word came from Seattle that an expedition to the Picket Ranges in the North Cascades was taking form. The note from Joe and Joan Firey was accompanied by photographs of rugged summits festooned in cascading glaciers. It was time, they said, to leave Yosemite's hospitable walls and discover the multitudinous fascinations of mountaineering—those joys not to be found in pure rock climbing.

As winter gave way to spring, plans jelled. This expedition was to be blest by painfully acquired experiences of past years. Collectively more than a half century's knowledge gleaned from sore feet, stiff backs, and unfilled stomachs would be called upon to produce an expedition that would cause envy in the ranks of mountaineers and unabashed admiration among epicures. In point of fact the menu very early started to outrun other expedition resources.

By late spring we had settled all important issues. The final roster of party members was as follows: Joe Firey, Joan Firey, Tony Hovey, Don Keller, Frank deSaussure, and some 500 pounds of comestibles, viands, potables, and community equipment, (including Fizzies).

By astonishing good luck we were able to line up a helicopter. This marvel of engineering science would pick us up at Newhalem, waft us serenely to McMillan Creek, and set us safe and sound on the far side of trailess valleys and mountains boasting as splendid stands of Slide Alder and Devil's Club as any in the Northwest. Above our effortlessly reached camp the Northern Pickets would rise in a gentle curving arc while the coveted north wall of the Southern Pickets would soar abruptly from camp edge—and all the north faces offering first ascents. In minutes we would traverse ridges which would otherwise require days; precious climbing days lost

in joyless toiling over Hannegan Pass, Easy Ridge, Perfect Pass, Challenger Glacier, and Luna Pass.

By the morning of July 22 all seemed fair, all too fair as time would tell. As the morning jet flight neared Seattle I could see the Sentinel Peaks standing above the low cloud layer in the customary dazzling whiteness. To the north, east of Baker and Shuksan, rank after rank of serrated ridges marched into a Canadian haze. Some of these inhospitable ranges were to be home for the following two weeks, a slightly sobering thought amid the luxuries of near sonic flight.

The Fireys' greeting bore mixed news. We could expect exceptionally good climbing weather---excellent! But so could the Forest Service. Our hoped-for helicopter had been remanded to 24-hour fire watch. Our hour's trip had been lengthened to days by the clear, warm skies which would stay with us throughout the two weeks. I picked up my pack with ice axe protruding menacingly from the top (one could not but feel that United Air Line's 'Extra Care' had been extended to ice axes rather ungraciously) and we were ready for the Pickets at last.

Other plans had also gone astray. Tony was to be detained four days by business and would join us later. By a quick redistribution of goods we found supplies which would keep Tony alive on his one-day marathon to join us, and would also keep our meals reasonably intact. Contrary to Tony's accusations we did not leave him with all the items of specific gravity greater than 1.8, nor (as was hinted darkly by other members of the party) was he consigned only soda crackers and dried soups. Sadly, the packs were just plain heavy—we were spared ever finding out exactly how much we toted up and down those endless Cascades ridges. During a lunch stop in Burlington we added a last member to the party, replacing the fickle helicopter. It was a magnificent angel food cake which completed the trek to Hannegan Pass perched firmly atop my crampons, crowning an overstuffed Trapper Nelson packboard. That, incidentally, comprised the sole use of crampons in the Picket Range.

Entrance to the range was made via Ruth Creek from the west. Adding insult to injury the flies were remarkably abundant. Despite a late afternoon start we reached Hannegan Pass quickly, urged ever onward by the solicitous flies. Fortunately we left most of the ubiquitous airborne fauna west of the pass. Early next morning we dropped into the upper Chilliwack Basin, forded the chilly river, and started up the abandoned Easy Peak Lookout Trail. Until starting into the trailess area I had been attracted by the wild profusion of plant life in Washington's rain forest. Compared to the Southwest's sparse vegetation the flora seems to have gone berserk. A half dozen species contend for occupancy of every inch of ground space.

Attraction was soon replaced by dismay as we tried to make our way up the abandoned trail. It became evident that the sole purpose of every growing tree in Chilliwack Basin is to fall down hill over the Easy Ridge trail.

We camped on Easy Ridge in a nook of fir much favored by mountain goats who showed good taste in scenery as well as shelter. The hosts remained shy although we spotted one the following day below Whatcom Peak. We circumvented the Dike, an ominous gorge slanting down the ridge like an ancient wound, and pressed onward to that most inappropriately named Perfect Pass. It was there I discovered that one of the 'multitudinous fascinations' of mountaineering was doing third class climbing with an unwieldly pack over wet rock through slippery brush. I also learned that the mountaineer's version of a 'thank god' handhold consisted of the biggest fistful of heather available. No one could deny it was a change from Yosemite's elegantly firm granite.

Atop the pass we had our first view of the promised land. One sight of Challenger Peak and our aches were quickly changed to impatience to reach the far side of the Challenger Glacier, proposed campsite for all the Northern Pickets climbs. A few moments and several glissades later we were on the glacier, a place to become very familiar in the following days. As all roads lead to Rome, so in the Northern Pickets all routes lead to Challenger Glacier. During the prolonged warmth of the next few days we noted major changes in the snow-mass appearance. By evening we reached our Mecca, a timberline camp on the Challenger buttress.

There may be other campsites as impressive, but they are rare. On every side the buttress dropped away opening a remarkable panorama of the Pickets' north faces. Luna, the Furies, Phantom Peak, Crooked Thumb, and Challenger thrust black walls out of Luna Basin. Extravagantly sculptured glaciers poured whitely down the dark cliffs. Far below, rotting ice toppled into olive-green Lousy Lake, a most unappetizing body of water. Nor was the spirit alone served in camp. At hand were hot and cold running ponds, built-in coolers, and nearly self-service wood supplies. With such an ideal camp it became questionable whether we would ever muster energy for climbing.

In a mood of happy indolence we settled down, gratefully putting aside those cancerous appendages which bestrode our backs like evil genii. The morrow was to be a day of leisure, comparatively. We planned an unhurried pancake breakfast succeeded by a morning constitutional; viz., the ladies' route on Challenger.

Breakfast was languorous. A warm, windless sky, banks of purple and white heather, and the unexcelled view conspired to restrain any impulses toward activity. Then, too, we constantly interrupted

our tasks to rush to the cliff edge for a display of avalanches rumbling off the opposite walls. One hanging glacier on the Fury face could be depended to produce impressive ice cascades both day and night.

The climb became an afternoon constitutional, dull for the natives but not without interest to one uninitiated in glacial techniques. Weather, as on all our climbing days, was warm and pleasant. On the return the glissade—practically all the way from summit to camp—could not have been improved. Not even sun pits spoiled the fine quasi-skiing.

Following our easy day we tackled a new route on Crooked Thumb, an innocent-appearing chute on the east wall separating Challenger from the Thumb. This approach proved to be a training ground in a more sinister aspect of mountaineering, the necromancy of climbing rotten rock. The final hundred yards of the depression furnished all of us good nightmare material for years to come. The loose ridge to the summit was pure relief after our 'interesting' hour in the chute. The route was probably a new one. I heartily recommend it also be the last. We avoided the chute by returning around the west shoulder of Challenger and repeating the previous day's glissade.

Thursday was another easy day. Since we were to meet Tony at Perfect Pass that evening, we settled on an attempt at Challenger's West Peak. A dike of decaying yellow rock (mud?) plus the fleetness of time called a halt to the west ridge route. We descended amid a growing fog, prelude to the only storm of the trip. After wandering around Challenger Glacier like so many tippling ants we finally located Perfect Pass and a very weary Tony. He had traversed in a gruesome day and a half the same journey we covered in two and a half unpleasant days. We found him sleeping uneasily atop some flat rocks which he understandably mistook for a feather bed.

Though nature magnanimously lifted the fog, thus speeding our return across the glacier, it also undertook preparation of a storm for the night. What would a Cascades trip be without at least one night of damp discomfort? As the site of the community pavilion (better known as a garden variety oversized tarpaulin) was not carefully chosen with an eye to nature's stern command that water will seek its own level, we were fortunate that little ran fell. An evening that might otherwise have been dour and drear had its diversion supplied by the tarp's support arrangement. To save the material from undue wear, it was secured to the support ropes through an arrangement of rubber balls squeezed into metal shower curtain hangers, thus distributing the cloth strain over the area of the limber soft rubber balls. The curtain hanger was then secured to a convenient rock, tree, or heather clump.

In normal weather the arrangement worked excellently, but gusts of wind and moisture worked together to achieve periodic liberation of the compressed rubber balls. Since ice axes constituted the interior supports for this pleasure dome, the ensuing few moments after these sudden rearrangements of stresses resembled a bacchanal in a blacked-out London subway inhabited by maniacs and flocks of moulting geese. When morning light revealed no serious punctures of personnel or sleeping bags we counted ourselves lucky.

Despite damp and gloom we somehow started on the trek across Luna Basin and into the Southern Pickets. Enthusiasm for the trip ran at considerably less than a white heat, and we discovered in our midst a new and unexpected force, Joe Firey's powers of persuasion. At any one of several stops along the way one might have heard this dialogue:

Joe. "If we hurry up we can get started in half an hour."

X. "Joe, you're sick. We just got here."

Y. "I thought this was going to be camp."

W. "There ought to be some sort of a suitable flat place over there in the trees."

Joe. "Umm. I don't see anything particularly good. Now, if we just went up the ridge a ways. . . ."

Y. "Why don't we look this area over. With all the trees and water there must be several good spots."

X. "I'll go look in the rocks for a good level site." (Exits, looking worried) Time passes.

Z. "We might try this place over here in the rocks. It has a fine natural fireplace."

X. (Returns looking discouraged) "Well, there wasn't any place as good as Challenger camp, but. . . ."

Joe. (Slapping vigorously at a biting fly) "Few bugs around here. . . . It's only a couple of thousand feet to the top of the ridge and—"

X. "Come off of it, Joe. We're not going clear over that ridge today!"

W. "It actually is only one-thirty."

Y. "What's on the other side? We can't camp on the ridge, y'know."

Joe. (Tidying up his pack) "It looked promising from Luna Peak when we were there couple of years ago. Probably lots of places just down from the pass."

Z. "Pass? What pass? There may be a sheer wall on the other side."

Joe. "Well, maybe. Not likely though." (Slaps meaningfully at another mosquito) "It's well known that mosquitos like this side of the ridge better than the other."

W. (Doubtfully, scratching a recent mosquito bite) "We could go look. The route to the pass doesn't seem too bad."

X. "No more fifth class climbing with full packs?"

Y. "It is true that we'd save a climbing day by going on now."

Joe. "And the eastern exposure over the ridge would give good light for early morning starts."

W. "Speak not of your bloody early morning starts. What we need is more late morning sack time."

Z. (Resignedly) "Since we've come this far. . . ."

X. (Feigning outrage) "You're not going to desert to the enemy?!"

Z. "No, but we would like to get to the Southern Pickets."

W. "It's what we originally planned, true."

Joe. "It would be nice to set up the other base camp today and not have to do more packing tomorrow."

X. "So we can have another easy day like today?"

Joe: "We could spend tomorrow resting up for the Fury traverse Sunday and then make the bivouac trip to the Southern Pickets Monday and Tuesday, and. . . ."

And so it went. Before long we would be underway, as helplessly pursuing dreams of first ascents in the Southern Pickets as Coronado chased his golden cities of Cibola.

In this manner we descended into Luna Basin, climbed up past Luna Lake and crossed the ridge at its low point. From there we dropped several hundred feet to a fair campsite on a small buttress. The camp on Typee Tower offered an awesome panorama—the entire east end of the Southern Pickets and McMillan Canyon. If the north face of the Northern Pickets is impressive, its Southern Pickets counterpart is formidable. Firmer rock gives rise to higher and steeper cliffs decorated with tortuous glaciers.

The campsite had fair water and wood, the latter partially garnered en belay from hemlock and fir trees jutting out of the cliff faces. In the zeal of flattening out sleeping spots an iceaxe handle was broken. What at first appeared to be near tragedy turned out to provide an evening of impromptu blacksmithing. Some whittling, pounding, burning, sawing metal with a fishscaling knife, and several hours of jocularity produced a new short handled axe—the only Aschenbrenner Führerpickel ever hand-hafted for a midget. The fact that the midget stands six-foot-two in his bare feet disturbed no one.

The next day was an easy day, a recognition that the projected Furies traverse might require full energies. The only event of note was naming of the campsite. A member of the party dropped our last roll of toilet paper over the edge of the privy. This priceless item was recovered several hundred feet below in a gurgling mountain

torrent. The roll was painstakingly unraveled from the center outward and left to dry in the warm sun, giving camp a truly festive appearance as well as a name.

These two minor setbacks preluded the third and real tragedy. Reconnaissance by the Fireys revealed that any climbing in the Southern Pickets was probably unfeasible from this camp. We decided to make but one climb from the camp, the Furies traverse.

Early Sunday morning we started up the Fury southeast glacier. Except for crossing one avalanche area the ascent of east peak was straightforward. We then started over the traverse of the three central points to the west peak. Tony, suffering from mal de montes, stayed behind at the first tower. Disgusted by the rotten rock, I stayed atop tower number three. Another hour and a half brought the Fireys and Don Keller to the summit of West Fury. Despite rotten rock on the ridge this may be the shortest and safest route to West Fury. Snow chute or traverse routes in the Northern Pickets appear to be generally safer than face or chimney routes which often become brutally dangerous because of the crumbling rock. Traverses at least minimize danger of loosing tons of debris on some hapless climber below.

Our minor objective achieved (the major one having metamorphosed into the '63 Pickets expedition), we moved base camp back across Luna Basin to that excellent camp beneath Challenger. Passing below Luna Lake on a stretch of steep and exposed glacier which had caused us some uneasiness on the way over we encountered a massive new avalanche track, the residue of millions of pounds of ice, rock, and trees crumbling down the East Fury face and grinding a path of desolation all the way to Lousy Lake. It is sobering to realize the same forces that quarried these rugged cliffs are still active even as climbers work their careful and wary way up the faces.

A second attempt was launched against Challenger West Peak on Tuesday. After rejecting an interesting-looking route on the fifth class east ridge, we moved around to the south ridge via a pass to the west of the peak. On the way around to the south we encountered a huge rock buttress recently collapsed onto the glacier. Don earned immortality by commenting, "Darn, there goes another good climbing route." Surprisingly the southern approach provided the most uniformly solid rock and enjoyable rock climbing of the trip. We were turned back some four pitches from the summit by lack of time. Should this route be completed it might prove to be the best rock climb in the Northern Pickets. If nothing else, the ridge provides remarkable exposure for Hero Leader photographs—spectacular enough to satisfy the most exacting armchair adventurers.

The final climbing day found us back where we started, Challenger Peak, but this time traversing the Challenger Ridge from south to north. Crossing the main ridge west of the peak we circled around to the south side to that point where the infamous chute separating Challenger and the Crooked Thumb intersects the ridge. Unhappily, we found Challenger ridge fully as rotten as that leading to the Thumb. We picked our way along the arete, one lead on solid gneiss, the next on crumbling mudstone. The climb was nonetheless enjoyable and much animated by the sound of the leaders kicking tons of rotten rock down the sheer walls whenever safety permitted or demanded it. As everyone had their turn leading, a good time was had by all. By way of after-thought, it would be wise to forbid more than one party per day on any Northern Pickets climb.

Though we had one or two days' food left, everyone agreed they had their fill of the range. The Ghost was the only peak remaining unclimbed, and it would entail a long traverse over Crooked Thumb, something no one was eager to repeat. Since no one in the party had ever packed over Whatcom Pass, the usual approach to the basin, it was agreed that we would return via that route. Joe Firey, on a one-day climbing trip, had come that way in the late '40's and found a rock passage between Whatcom Glacier snout and the cliffs at the head of Little Beaver Creek. We hoped to cross the Whatcom massif that way as listed in the guide.

Try as we would, we could not gorge ourselves sufficiently at that last supper. We burned part of the excess food and cached the less perishable. Some happy soul may yet stumble across a treasure of sour balls and fizzies at Challenger Camp.

With packs considerably lightened from those carried in we were steeled for Whatcom may. The hike to the glacier snout involved a little third class climbing, but less than either Luna or Perfect passes. Once there, however, the passage below the glacier was found to be blocked by the advancing ice of recent years. After some narrow brushes with falling ice from the glacier, we were forced to negotiate the heavily cravassed lower glacier. Considering the normal breakup on a hot day it should come as no surprise that we traversed this chaotic ice at a full trot. At the other side we were almost to Whatcom Pass.

A strange sensation overcame me at the pass. For a moment I wondered what could cause that odd uneasiness. True, the trees were much taller than we had seen for two weeks, and the plant life consisted of iris and azalea rather than mountain heather and low growing shrubs, but that would not account for the mystification my body tried to express. That was it! For the first time in two weeks my feet were flat on the ground, the entire boot sole contacting firm

earth without so much as a kick to establish a foothold. And all around were other flat places where the feet could plant themselves without thought or effort. The shock was too great for them. Where hitherto they rendered faithful and strenuous service on snow, rock, and cliffside, they now fell all over themselves with the relief and abandon of school children let out for an unexpected holiday. Turning around I noticed everyone had an unmistakable lackadaisical air signifying the end of the trip.

And so it was, despite another full day of backpacking to be done. The descent to the Chilliwack River and crossing of Hannegan Pass were anticlimactic. We had visited the magic mountain, lived with the shining peaks, and heard the dark rumblings of living ice. Having given ourselves over to the gentle madness of mountaineering, we had now to return to the frenzied madness of the sane world armored only with memories—black spires poised above ice rivers—and dreams for tomorrow—the insatiable hunger of mountaineering.

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THEN AND NOW

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CLIMBING

NOTES

Edited By JOAN FIREY

MOUNT TORMENT—EAST RIDGE

On June 17, we made the first ascent of the east ridge of Mount Torment. This peak, often neglected, offers some of the best climbing in the Cascade Pass area. As of this date there had been eight routes made on it although it had been climbed only eleven times.

After hiking up snowfields from Boston Basin, our climbing began at the bergschrund beneath the southeast face. We crossed easily on the right and kicked steps 300 feet up late-remaining snow slabs. After two stiff Fourth Class pitches of rock and ice we were at the east col which separates the peak from the ridge to Forbidden.

"Torment Tower," the large gendarme immediately above the col, was the most difficult problem of the climb. Beginning from the northeast side we climbed Fifth Class cracks to an overhang which required several aid pitons. A piton traverse right took us to a notch in the ridge from where the tower was easily finished.

The ridge rises up steeply again above the tower but good holds were found on the north side and we moved steadily on to the east summit over beautiful Fourth Class rock. The narrow and exposed ridge is solid granite everywhere except on the traverse to the higher west peak.

The climb was made in a relaxed seven hours from camp at timberline. Descent was via the southeast face in two hours. Two rappels were made at the bottom.

INGALLS EAST PEAK—SOUTH FACE

On September 10, we made what appears to be the first complete route on the south face of Ingalls East Peak. Heretofore other routes have connected with the east ridge or have begun in the couloir west of the face.

Approaching from Ingalls Lake we got on the lower part of the face beneath the two chimneys crossed by a white dike. Easy scrambling took us up to the chimneys, both easy Class 5 rock. We climbed the one on the right as another party was in the more convenient one to the left.

Above, we traversed 200 feet obliquely left to a prominent gendarme in midface. Immediately above this an extremely rotten

overhang was negotiated and a short scramble brought us to a broad, sloping ledge which joins the east ridge.

Crossing the ledge and climbing up and to the left we found a gully leading to the summit block which was an interesting "boulder problem" with the last handhold being the highest point on the peak.

The climb was mostly Class 4 over extremely variable rock. We descended the west ridge and continued on the very enjoyable traverse to the main peak.

DAVID HISER

FIRST ASCENTS IN THE NEEDLES—OLYMPICS

The first ascent of the Citadel (7378) was made August 28, 1961. From one and one-half miles on the trail below the Royal Basin ascend one-half mile west, then follow easy scree slopes to the low point between the Greywolf ridge and the Citadel. Traverse the ridge top south then up easy chimneys and slabs to the summit. Time: Four and one-half hours from Royal Basin.

A first ascent route was made on Martin Peak (7550) on August 26, 1961. From the terminal moraine of the Surprise Basin ascend an adjoining chute keeping left of the prominent arrowhead. This is the most direct route on Martin, Class 3 and 4. Time: Four hours from Royal Basin.

Belvedere Peak (7528) was ascended on August 27, 1961 by a new ascent route. Descend from the Sundial Summit or ascend via the Adelaide Peak route into a glacial valley which lies north of Belvedere and Sundial. From this valley ascend to the lowest notch between Belvedere and Adelaide. Climb an exposed Class 4 slab for 300 feet keeping to the north edge until the ridge top is reached. Ascend ridge southeast to the summit. Time: Four hours from Royal Basin.

The Needles were climbed in four days in addition to Fricaba and Mystery on the way in. Travel time both ways was one and one-half days each way, using the Del Monte Ridge route as follows: hike to within one and one-half miles of Constance Pass (Sunnybrook Trail) and from here contour west up a talus slope to the top of the Del Monte. Traverse the ridge nearly to Mystery Peak then drop into the upper Heather Creek Basin. Do not traverse high on Mystery as it is too steep for full packs. Hike through Mystery Pass into the Deception Basin, then cross to another high pass between Deception and Fricaba, and once through this pass you are into the upper Royal Basin.

JOE MUNSON

SAWTOOTH RANGE—SOUTH FACE OF THE GRAND AIGUILLE

Since the original ascent of this "unclimbable" granite monolith in 1948, all subsequent ascents have been done by the chockstoned chimney on the west face or by an easier detour to its right. Because

of its proximity to Redfish Lake the Grand Aiguille has become a popular climb.

We made a reconnaissance of the longer south face, and decided to make a serious attempt on July 2. Three leads of fourth and fifth class climbing on somewhat friable red granite above the southwest gully brought us to solid, and really steep rock. Using chromalloy pitons driven into loose, crackless rock, I did a partial pendulum around a blind, vertical corner to a sentry-box platform that was at the base of a crack line that worked upward for about 250 more feet to a tree. Then the crack worked left, still difficult. Eventually, we found a new crack system going onto the summit wall, but had to make a dangerous traverse to reach it. Pitons were wholly unreliable, and I found this lead hard on the nerves and fingers. Two moves had very little for the feet and not much more for the hands. Once in the crack system the rock again became wonderful. Two and one-half leads of jamming and chimneying took us to within a few feet of the regular route. We did the final one and one-half leads to the summit by staying right, on the crest, finding this a rewarding variant. The climb had been very interesting, at times difficult and strenuous. Piton requirements varied from tiny knife-blades to four-inch Chouinard aluminum bong-bongs.

MOUNT ADAMS—NORTH WILSON GLACIER

While all the major exposures on Mount Adams had been climbed many years ago, the broad expanse of the great east face is so extensive that several route opportunities still existed, as Dee Molenaar recently pointed out in an article in *Summit* Magazine. On one exploration toward the east faces of Mount Adams a group of us were turned back by snow blocking access roads and a closure to travel through an Indian Reservation. About a week later we drove to Killen Creek on the north side of the mountain, just as the road was opened. We hiked to timberline and camped.

In the morning we hiked up endless lava and snow slopes, then crossed the north ridge to begin a long southward traverse on the flanks of the Lava, Lyman, and Wilson Glaciers. By the time we had climbed to the crest of an 8000-foot ridge it was very late in the morning. It was also very hot, and we feared both avalanches and rockfall danger on the spiked ridge we had first considered as a route possibility above the South Wilson Glacier. From photographs, and from this excellent vantage on a spur ridge, it was evident that there was still one major unclimbed glacier and icefall on this face of the mountain—the North Wilson, which was wedged tightly between lava cliffs on the south and a cleaver between it and the Lyman Glacier on the north.

From below, we had serious misgivings about our chances of getting through the major ice cascade of the glacier, as it plunged steeply between the two parallel rock walls at about an elevation of

10,500 feet. There appeared to be further crevasse problems until 11,000 feet, then the glacier widened to allow more mobility. Once on the main cascade, however, every ice wall encountered seemed to have a good route solution. Our crampons bit well as we zigzagged a tedious but steep course up serac walls, ice bridges, and fragile crests. We did some step chopping, but did not need our ice pitons. Once above the cascade, route finding was the only problem, and several times immense crevasses forced us into long detours. We reached the summit as it was definitely chilling, about two hours before sunset, and immediately set off for a quick descent of the north ridge.

PAPOOSE ROCK

On our first visit to the west face of Papoose, we did not have time to climb more than one-third of the wall. Due to several long traverses, the climb turned out to be longer than we anticipated, and on a final headwall we had to use four bolts to negotiate a blank section. The route featured an interesting combination of aid and free traverse on a very vertical wall of the fourth lead. On a traverse on the sixth lead pitons were pulled out by hand by the second man because of a badly bottoming crack. We used thirty-three pitons and five bolts on this extremely interesting direct ascent.

NEW ROUTES ON ROCK

There were a number of new rock routes completed in the Pinnacles, Castle Rock, and Snow Creek Wall. Leo Scheiblehrer and Fred Beckey did a fine friction climb in the Pinnacles, the "Austrian Slab." Fred Beckey and Dave Collins did a new free route on Jello Tower. Virtually all the routes in the Pinnacles are now set with improved and more reliable bolts. Eric Bjornstad and Fred Beckey made a new route on the north face of Grand Central Tower, and did several sixth class routes free. The "White Fright" route on the Snow Creek Wall was repeated, all fifth class, and continued above the Great Traverse Ledge to its natural conclusion in three leads of mixed fifth and sixth class climbing. The Chumstick Snag was re-climbed several times this season and a good summit rappel bolt installed.

FRED BECKEY

IDAHO

CHIMNEY ROCK—EAST FACE

This lone sentinel of Northern Idaho in the southern edge of the Selkirks offers a pleasant compromise between high country alpine climbs and low country rock climbs, with its firm granite and gentle alpine setting. It was a pleasure to return to this country with Dave Hiser to make another attempt on the east face. Charles Bell acted in support. In June, 1960, an attempt by Ron Niccoli, Gordon Thompson, and myself using the fixed rope technique had

consumed two days and had failed at an apparent long bolt section less than halfway up the face. Now our climbing philosophy had changed with improvements in technique and equipment, and sacrificing weight for speed, we decided to attempt to finish it in one day.

In two hours we reached a point that had taken us almost six hours the year before, by climbing free (Class 5 to 6) rather than with artificial techniques. We quickly reached our previous year's high point, where an exciting hanging belay was set up. A piton crack was found that allowed us to bypass the difficult section that had previously stopped us. This was climbed with aid. Somewhat above this we climbed forty feet *INSIDE* the face behind a giant detached portion. We could not understand why it remained balanced there, since throughout the climb on the face the "stone test" showed that a stone held at arm's length fell free to the ground. The upper portion of the face, though still steep, presented a good system of interconnected ledges and cracks. Surpassing a two-foot overhang just below the top free style, we found that the climb had taken about eight hours. A wide assortment of pitons, from knife blades to giant wide angles, were employed, and the four bolts left from the 1960 attempt were not used.

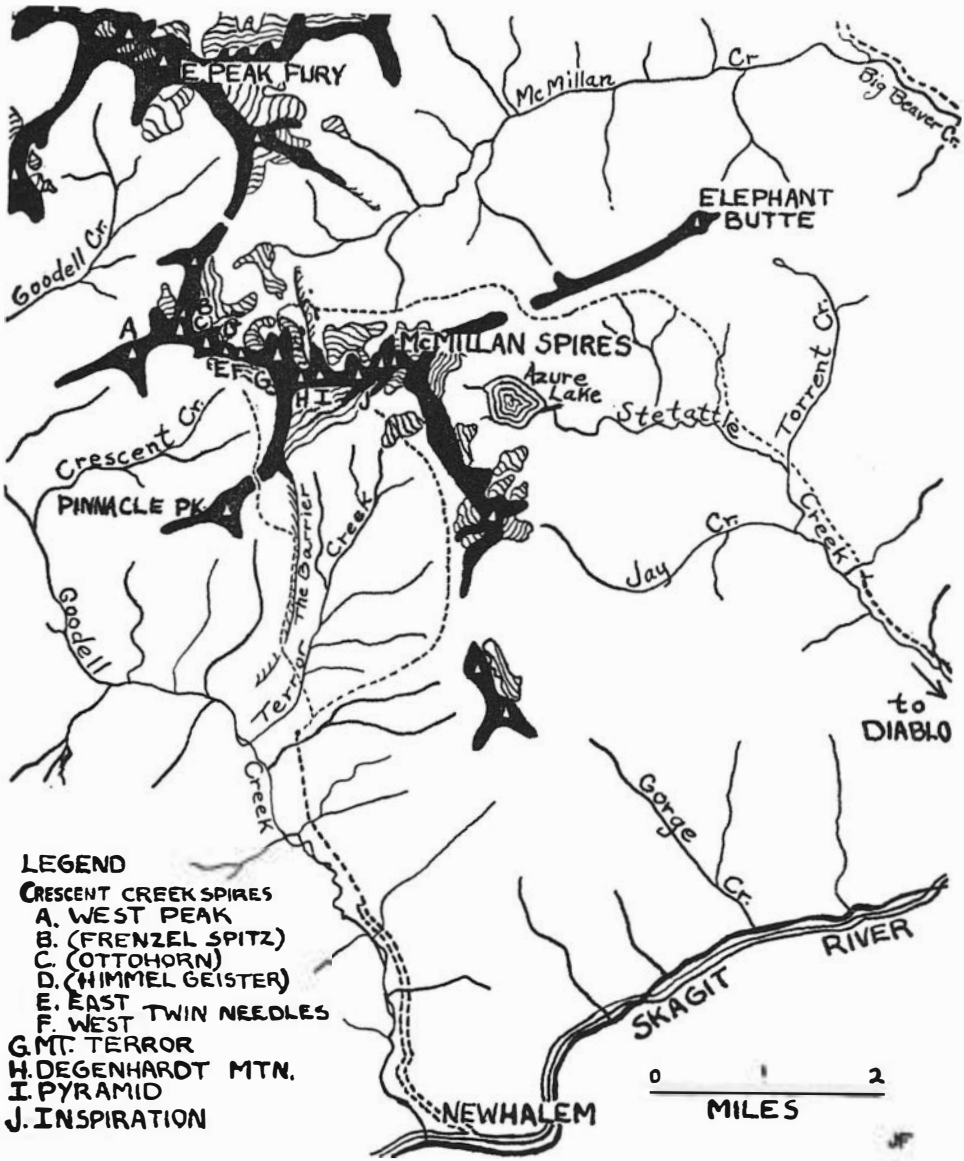
CASCADE PEAK—NORTH FACE

Almost lost near the great mass of the north face of Johannesburg is Cascade Peak, with a small hanging glacier at the 6000-foot elevation below its north face. In mid-September, Glen Denny and George Whitmore of California, and I approached it via Cascade Pass with below freezing temperatures on the sunless north side prevailing, despite 80-degree Indian Summer weather in Seattle.

We attacked the prominent north rib directly from the permanent snow patch at its base. The first 350 feet went well over sloping slabs (Class 3-4) until the last pitch before the first step sloped back, which was interesting for a chin-up on a clump of moss (pitons—Class 6, non-aid.) The remaining 1500 feet to the summit were mostly Class 3-4, the rock, for the most part, being only fair. Upon arriving at the summit we found our ascent, surprisingly, to be the second since the first up the south side in 1950. Having no clue to the original route of descent on the south, we angled towards the Johannesburg Cascade Peak col, where a rappel on two 120-foot ropes down a 135-foot, slightly overhanging cliff got us down.

FIRST ASCENTS IN THE SOUTHERN PICKETS

Were I to vote for the most alpine range in the United States, outside of Alaska, the Southern Pickets would receive my vote. No one who has seen the panorama of the north side can fail to be impressed by the McMillan Creek Cirque with its steep walls, hanging glaciers and ice couloirs separating the jagged peaks. It seems


E. PEAK FURY
McMillan Cr
Big Beaver Cr
ELEPHANT BUTTE
Goodell Cr
McMILLAN SPIRES
Azure Lake
Stetattle
Torrent Cr
Crescent Cr
PINNACLE PK
Terror
The Barrier
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Jay Cr
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CRESCENT CREEK SPIRES
A. WEST PEAK
B. (FRENZEL SPITZ)
C. (OTTOHORN)
D. (HIMMEL GEISTER)
E. EAST TWIN NEEDLES
F. WEST
G. MT. TERROR
H. DEGENHARDT MTN.
I. PYRAMID
J. INSPIRATION

strange that in the year of 1961 there were still unclimbed peaks, but such proved to be the case. I had the privilege of visiting the Southern Pickets twice this summer; in early July making the first crossing of the Southern Picket range via the first ascent of the north face of Mount Terror, and in middle September making three first ascents in the western group of the Southern Pickets. New approaches were used on both trips which should be useful to future parties visiting the area.

An approach to the northern side of the Southern Pickets had been attempted several times before via the McMillan Creek valley, but the thick brush in the valley floor had discouraged such a route. On our approach to the northern cirque wall, we left from Diablo Dam and hiked six miles up the Stetattle Creek "trail" which ends in the eastern headwall of the McMillan Spires, the eastern bastion of the Southern Pickets. The first three miles of the trail are relatively good, then it virtually disappears at a creek soon after the three-mile mark. Blazes were cut early in the summer of 1961 on the next three miles through brushy areas and may be followed, with some difficulty, to the six-mile mark. At this point one encounters a solid cordon of brush in a giant slide area and then 4000 feet are gained going straight up the hillside to the right, keeping left of the cliffs encountered. The divide between Stetattle Creek and McMillan Creek is crossed at a pass at about 6000 feet between McMillan Spire and Elephant Butte. After dropping 1000 to 1500 feet in elevation on the north side to the level of the shelf-hanging glaciers below the north walls, a party is in position for any number of excellent climbs. It takes about a day and a half to reach this point, 9 to 14 hours.

Early in July, Mike Swayne, Charles Bell, Dave Hiser and I traversed from here under one of the hanging glaciers until we reached the "Barricade" which is The Barrier's counterpart on the north, dividing the Southern Pickets into eastern and western portions, as The Barrier does on the south side. The Barricade descends from the summit of Pyramid reaching down to the McMillan valley floor. Once this was crossed by way of a short face and a deep, prominent gully the only remaining difficulty in reaching the north face of Mount Terror was negotiating a crevasse which required a rappel into, and climbing out the other side. Early in the afternoon we gained the face via a steep slope several hundred feet high on the right side of the face. We found the climbing enjoyable beyond description. Steep, weathered granite offered excellent firm holds and we made rapid progress, for the most part unroped, until we found a fair bivouac halfway up the face. We anchored in to our sloping ledges with pitons for an airy night far above the glaciers. We reached the summit late the next morning having encountered only one Class 5 pitch when we got off route on the left side of the face. Failing to find the normal route, hidden by the false summit, we made a series of four very steep rappels down the east corner of the mountain.

We were too tired at the time to ascend high on Degenhardt Mountain in order to cross The Barrier and make the usual descent down Terror Creek, and so dropped to a lower pass above Pinnacle Peak which was easy to reach. From here we continued down a forested ridge to the west of Terror Creek as we found it quite impractical to drop down into Terror Creek basin.

On making this approach to the western group of the Southern Pickets, separated from the eastern group on the south by The Barrier which culminates in Degenhardt Mountain, it is best to start up the trail cut by the Mountaineers from the spar tree at the end of the overgrown Goodell Creek logging road. This trail is followed to the upper right edge of the logged-off area (some 300 feet) where it is necessary to contour about one-quarter mile above Terror Creek, gaining height slowly, until a feasible way is seen to ascend to the top of the ridge on the other side of the creek. This is the most crucial part of the route, as there are many cliffs on the opposite hillside, and much time will be lost or saved depending on the place Terror Creek is crossed. Once the ridge crest is gained, it is just a long walk up the forested rib of The Barrier to timberline where camp can be made in the small basin headed by Pinnacle Peak. In order to gain access to the western group from camp, an easy climb of about 1000 feet to the second pass to the right (north) of Pinnacle Peak and a subsequent descent of 300 feet into the Crescent Creek Basin is made. It takes about one full day (8-10 hours) to reach camp.

In the middle of September, George Whitmore and Glenn Denny of California, and Joe and Joan Firey and myself of Seattle, visited the area by this route, in a spell of Indian Summer weather. We did not know, nor did anyone else in the Seattle area, which summits of the Crescent Creek spires had or had not been climbed; only the Twin Needles having been climbed for sure. We took as our first project the peak immediately west of the West Twin Needle. This peak did not look at all promising from either the west or the east notches, but the west notch being easier to reach, we climbed to it. Upon reaching the notch the peak still looked more difficult than our resources at hand could cope with, but following a ledge conveniently leading onto the north face we found a Class 4 route, not at all visible from the notch. This peak would have been much more difficult by any other route, but I had found that the north sides of peaks in this part of the Cascades frequently offer steep, though well-broken routes, while the south sides are often slabby. There was some suspense as we approached the summit, but no trace of a cairn was found and we realized we had made a first ascent. This peak, which we named "Himmelgeisterhorn," (I refuse to take responsibility for any of the names given on this trip!) was the second highest peak west of Mount Terror, being only slightly lower than the West Twin Needle. The first ascent of "Dusseldorferspitz," a minor but spectacular pinnacle to the east of the summit of "Himmel," was also made.

The next day, a rest day, while the Fireys and George Whitmore made the fifth ascent of Mount Terror, Glenn Denny and I climbed Pinnacle Peak by a new route. We ascended to the base of the north ridge, diagonally traversed the northwest face and reached the summit via the west ridge. The giant cairn on top had remained undisturbed since the first ascent in 1932 by Bill Degenhardt and Herb Strandberg, pioneers in climbing in the Cascades.

First ascents of "Ottohorn" (Class 3 via the east ridge from the "Otto-Himmel" col) and "Frenzelspitz" were made the following day. Frenzelspitz, a very beautiful and symmetrical peak, is located off the main chain of the Southern Pickets, actually being on the ridge joining the Northern and Southern Pickets, though close under the north face of Ottohorn. A descent of 400-500 feet was necessary before gaining access to Frenzelspitz.

Although the Pickets have not seen such activity in ten years there are yet many challenging projects and I'm sure all of us who visited the range this summer hope to return in the near future.

MOUNT INDEX—EAST FACE OF MIDDLE PEAK

To the climbers of the Pacific Northwest the three peaks of Mount Index have always presented a challenge. A series of remarkable and difficult ascents beginning in 1929 culminated with the ascent of the west face of the Middle Peak in 1960. The only remaining problem, and certainly the most challenging, was the east face of the Middle Peak. This is the most isolated of the three peaks, rising over 2000 feet from the west, and almost 3000 feet on the east face above Lake Serene. Not only would the ascent be a problem, but this would have to be followed by ascents and descents of either the North or Main Peaks.

We set off early on the morning of August 18th, circled Lake Serene, and approached the wall equipped, if necessary, to spend three days. Our intention was a continuous ascent without fixed ropes, even though they were used on the shorter east face of the North Peak. We climbed several hundred feet up the southern edge of the east face of the North Peak before roping. After two Class 5 pitches we were at the extremely deep 2000-foot couloir separating the North and Middle Peaks. Crossing this rock-strafed couloir, we continued up the rock buttress to the left. After some 600 feet of easy and moderate roped climbing, with some very difficult brush, we arrived at a vertical step in the rib at 5:00 P.M.

The piton cracks in this step were poor, and the rock brittle. One knife-blade piton shattered the apparently solid rock almost like an explosion, and both rock and piton vanished into the abyss. Another piton took half an hour to place. At the end of the rope I found myself still 30 feet below a ledge. I partially wedged one leg behind a giant, loose block, and anchored to a small and insecure bush. Bivouac was made on two separate, sloping ledges, fifty feet above.

An incident occurred the next morning which would have had most serious consequences had I not been wearing a hard hat. A large rock quite unnoticably wedged under a bush came loose and fell about 70 feet landing squarely on my head. Both straps of the hard hat broke, and the hat itself was cracked. It is fortunate that the rock landed squarely on my head, for a rescue here forced by a broken arm or shoulder would have been difficult, due to its inaccessibility.

Some 500 feet above our bivouac we came to giant steps and towers in the rib. We passed the first 300-foot tower on the right, and while regaining the notch on the other side encountered an extremely rotten artificial pitch. The next tower was also bypassed on the right by an indistinct ledge system that we had studied from below. Regaining the ridge we ascended the remaining 500 feet, arriving at the summit early in the afternoon. This was only the fourth ascent, each being by a new route. We descended to the notch between the Middle and Main Peaks, where we rested and replenished our water supply. Following a bivouac on the north face of the Main Peak, we arrived on the summit the next morning, bringing our adventure to an end.

MOUNT ADAMS—EAST FACE

On the Fourth of July weekend we approached the east face of Mount Adams via the Killen Creek trail, climbing to about 8000 feet on the north ridge where it was easy to contour the Lava Glacier. We were completely taken by surprise with a spectacle of savage ice cliffs and crumbling volcanic walls. The route up the face, if there was one, would be any route that could ascend someplace on the rock amphitheater and reach the summit without being subject to the artillery barrage of the immense overhanging ice cap. The right portion of the face appeared to have a break in the ice cliffs.

As seen from below we ascended to the wall and entered the third ice-filled gully to the right. The névé below the rock wall was pitted with rock fall and scattered large ice blocks. We passed the bergschrund to the left and traversed its very steep upper slope back to the right until we reached the ice-filled gully we had chosen. Here, Class 4 pitches covered with ice were encountered, with a close call from a large falling rock and a wind-impelled shower of ice particles from above to increase our uneasiness. At the top of the gully we encountered a steep névé slope which we crossed, approaching the ice cliffs that had been above us all along. We found a fairly wide passage through them to the left and descended via the north ridge after retracing our steps from the northwest face in the marginal weather that prevailed. It is our opinion that without the cloudcap, which created very cold conditions high on the mountain and prevented the sun from touching the east face, the climb would have been unduly dangerous.

MOUNT ADAMS—LAVA RIDGE

On September 21 we ascended Lava Ridge which is the cleaver separating the Lava Glacier headwall and the Lyman Glacier. Conditions were excellent for cramponing though the snow was so hard that it would have been impossible to stop had we slipped on the 30-35 degree slope where the rock ridge, some 2500 feet in height, merged with the summit ice cap.

BRITISH COLUMBIA
THE SQUAMISH CHIEF

Improved techniques in rock climbing and in equipment, particularly as practiced in Yosemite Valley in recent years, have brought within the realm of possibility such climbs as the face of the Squamish Chief (previously referred to erroneously as "Goose Rock"). Located some thirty-five miles north of Vancouver at the head of Howe Sound, it rises directly from Highway 99 in a 1700-foot vertical sweep.

Several routes have been done on the face (the north and south gullies and adjacent ridges), but the flawless face above the highway held our interest. In May, we set up base camp in an abandoned dynamite shack at the foot of the Chief. During the next three rainy days we cut a trail to the bottom of the face, packed up equipment, and climbed the first two pitches in varying degrees of dampness. The first lead proved to have the best piton cracks of the entire climb, although it seemed difficult to us at the time, and the second lead was the easiest, as one of the two non-artificial leads of the entire climb.

Piton cracks disappeared at the end of the second lead and the remaining distance up the "apron" to the bottom of the "grand wall" (at the 450-foot level) required the use of many bolts. With our proximity to the road, many spectators were attracted, and the town of Squamish sponsored us with a hotel room, new boots, our choice of restaurants and 1500 feet of badly needed nylon rope which greatly facilitated our climb.

After two weeks, interrupted by some bad weather, we had the first 850 feet of fixed rope in. Only a few piton cracks during the entire climb were encountered *into* the face, almost all of them being behind flakes of varying sizes: the most notable being the "Split Pillar," a 200-foot column which could be seen through, the "Sword of Damocles" flake which vibrated like a 200-foot gong, and "Detached Flake" just below the tree ledge. "Split Pillar" split from the wall even further when pitons were placed behind it, causing lower pitons to loosen and some to come out.

When the weather improved enough a week later we started on the final five-day assault. Temperatures in the nineties created problems of thirst and exhaustion entirely unanticipated. After surmounting the somewhat overhanging "Detached Flake" we reached the tree ledge in the late afternoon of the second day. Climbing only

in the early part of the next two days because of the heat brought us on the fifth day to the chockstone at the bottom of the "Roman Chimney." I climbed the flaring overhang at the top of the chimney and saw the final fifty-foot vertical crack which had been hidden from view from below. We had available only a few pitons that fit the crack and Jim climbed it by removing the lower piton and placing it higher, being anchored to the center piton. At 6:00 P.M. we stood together looking down the last fifty feet, the remainder of the route hidden from view, and we could now relax for the first time in a month. One-hundred-thirty-five bolts and some two hundred pitons were used during our ascent.

PAPOOSE ROCK

Of the many satellite rocks near the Squamish Chief, the Papoose is one of the most important. It rises above the ferry dock some four miles south of Squamish, and can be seen in profile against the much larger Chief from the road. We made an abortive attempt on the 400-foot west face one rainy day early in May. In August we returned. We decided to try the same route—a series of cracks and ledges on the right central portion of the face leading to a 150-foot diagonal overhang leaning against the 75 degree face.

We bypassed bolts from an earlier attempt by the use of knife blade pitons and gained the tree ledge. From here we worked up and to the right some 175 feet on mixed artificial and free climbing until reaching the diagonal overhang. Pitons were placed upside down underneath it, with a belay from an insecure dead tree halfway up. Above the overhang the remaining short distance to the summit was Class 3 and easier. About 25 pitons were used on this six-hour climb.

A second party also climbed the Papoose, via a route of about the same length on the left central portion of the face.

ED COOPER

MOUNT BAKER—CRATER ROUTE

An ascent of 10,100-foot Sherman Peak (the south peak of Mount Baker) in 1959 gave us a view directly down into the summit crater separating us by three-quarters of a mile from the 10,778-foot main peak. A traverse of the crater's west rim gave excellent views of the Crater Glacier and we vowed some day to return and have a real close look at that dirty, belching hole at the bottom.

On July 9, 1961, a party of eleven, primarily members of the Everett Branch of The Mountaineers, established a timberline base camp at 5,600-foot elevation near the south base of the Easton Glacier, on the south side of the mountain. A north-northeast route traversing up and across the Easton Glacier, at times involving steep ice, eventually brought us to a high notch at 9,600 feet on the Easton-Boulder Glacier Cleaver.

At this point one makes a decision whether to go on or to go back, depending on ice or avalanche conditions. This is because the one route into the 9,400-foot crater notch involves a one-quarter mile gradually descending traverse northward on 60-degree snow slopes which have 1,000 feet of exposure below, eventually dropping off into the Boulder Glacier Icefall. After one hairy hour of continuous belaying, we entered the crater outlet, where lava must have once spewed forth, to within 50 feet of that belching hole in the very bottom of the Crater Glacier. The glacier forms a small icefall on three sides of the opening and continually feeds it with ice blocks and melt-water. The crater responds with a steam locomotive-type gurgle and an unbearable stench.

From here we ascended one-half mile north up the Crater Glacier directly toward the main peak, and fortunately found the only ice bridge still intact across the summit bergschrund. Ascent time with stopover at the "cave" was eleven hours.

MOUNT FORMIDABLE—SOUTHWEST RIDGE

This route had been eyed by numerous climbing parties over the past several years, but never tackled because of the indirect and brush-cluttered approach route. From road's end on the Cascade River South Fork, an old trail continues south about one mile to a crossing at the Middle Fork and then another two miles along the South Fork where it is frequently cut by 100-yard stretches of thick brush and vine maple. A final one-quarter mile of vine maple leads to the foot of the southwest ridge, which is primarily steep timber mixed with Grade 4 bluffs.

On July 2, 1961, Dr. Gene Mason, Dr. Bill Myers, Bob Briggs and Kenn Carpenter established a 6200-foot camp high on the ridge via this route, and the following day started northeast for the summit. A narrow notch at 7300 feet on the west end of the summit ridge was gained by traversing right of the first large tower and climbing a 400-foot couloir of 55-degree ice. Another one-quarter mile of exposed Class 3 and 4 rock along the sharply crested, but broken and tumbling ridge brought us to the 8350-foot summit for a new route and only the eleventh ascent of the peak.

KENN CARPENTER

PITON TOWER

Piton Tower was the scene of two new routes, on the west and north faces, and a free ascent of the route previously requiring artificial aid.

The Tower's west face, which is the one directly opposite the normal route and the longest on the tower, was first climbed July 16 by Stan Shepard and Dan Davis. This climb required the continuous use of pitons (including some knife blades and "rurps") for direct aid and one bolt for safety only, when it was felt that too

many of the pitons were insecure. The route went generally up the center of the face except near the bottom where it first diagonalled left and then right to take advantage of the few piton cracks, and included the surmounting of one short overhang.

The Tower's north face, which is the one with the tree ledge, was first climbed December 9 by Dan Davis while belayed from below by Rich Fleming. This route also was continuously direct aid and required the use of three-quarter-inch bolts and several pitons, including two knife blades. The route started at the left base of the face and angled slightly up the face to the tree. The route was made more interesting, especially near the top, by the winter weather conditions in which it was climbed.

The free ascent of the normal route on the overhanging east face was done June 29 by Eric Bjornstad and Dan Davis, with the main difficulty being the placing of safety pitons.

MOUNT TEMPLE—SOUTH FACE

On September 3, Fritz Zimmerman, Stan Gregory and Dan Davis made the first complete ascent of the south side of Mount Temple. The route started from the western end of the Snow Lakes and went up a long system of slabby but easy gullies to the southwest corner of the summit pinnacle. At the base of the south face of the pinnacle, there is a large flake separated from the pinnacle by a narrow cannon hole. This cannon hole was the key to the climb, as we were able to crawl through it to its opposite end and then climb up onto the spacious ledge formed by the top of the flake. Here we roped up and, with the aid of about five pitons, climbed a single vertical crack above the right side of the ledge to a smaller ledge about 30 feet above. The route then went up some wider cracks and broken rocks to the summit, a short distance above.

DAN DAVIS

YELLOWJACKET TOWER

From the ridge at the south base of Yellowjacket Tower the team Stella Degenhardt and Frank Fickeisen traversed west on the south face on a good ledge system leading to the base of a chimney. The chimney, which widens at the top and has a chockstone about two-thirds of the way up, was climbed to the base of the summit block. This is believed to be a new route. Take two wide-angle pitons for protection on the chimney lead.

FRANK FICKEISEN

THE TALON

This spire (ca. 4000 feet) lies across the canyon from the White Pass highway about five miles east of White Pass. Driving past Clear Lake to below the Talon the car was left below the 1500-foot talus slope on the south side of the canyon. The first lead over loose rock on the south side of the spire reached a belay point on the south-

east corner. The next lead went up this corner to a horizontal crack on the east side, then up a steep open chimney to a tree. From here the final lead was across and up the east side to the north ridge which is quite narrow and exposed for thirty feet to the summit. On descent a 240-foot rappel was used from the tree. Class 5 climbing, two pitons used.

LOWER ARGONAUT SPIRES

The serrated ridge from Sherpa Pass to Argonaut Peak has a number of impressive looking spires on it near Argonaut, as viewed from below. The three lowest (ca. 7500-8000 feet) were climbed on September 4 by two Sherpas, Fred Dunham and Gene Prater. All routes were on the down-ridge side as each spire has an easy Class 3 descent on the up-ridge side. A number of pitons were used on the Class 5 routes.

YELLOW LICHEN TOWERS

These towers (ca. 6800 feet) are located one-half mile west of Ingalls main peak. They were first ascended on October 1 by Fred Dunham, Jim Wickwire and Gene Prater. They can be reached by descending from the 7000-foot saddle between main peak and the south peak or by following Teanaway road to its end and taking the Fortune Creek trail, descending north 300 feet on an old trail to Lake Ann ca. 6000 feet. Thence north over meadow country to the three towers.

The East Tower was climbed on the west side from the notch between it and Middle Yellow Lichen Tower (fifty feet of Class 3). Middle Tower was climbed from the east (sixty feet, one piton, Class 4 with a rappel bolt on the summit). The rock was loose and badly fractured.

West Tower was climbed on the southwest side. Traverse across lower face to a large chockstone, or boulder, in a wide crack. Another crack runs up gently to the east and a wide crack continues up to the ridge above; sixty feet over good holds, although the rock tends to fracture out. The climb was eighty to one hundred feet total with a good belay at the chockstone, which is solid.

MOUNT FERNOW—NORTH FACE

A party of four from Ellensburg and Ephrata—Fred Dunham, Jim Wickwire, Bill and Gene Prater—climbed the ice finger on the north face of Mount Fernow on September 16 and 17. The approach was via Big Creek, upstream from Holden on Railroad Creek. After crossing Railroad Creek, a miners' trail was followed up the side of Dumbell Mountain for about 1000 feet before traversing into Big Creek, which has extensive alder and no trail. Game trails were followed on the Copper Mountain side to where the

side stream draining the ice finger and the cirque between Copper and Fernow comes in from the east. A camp was made at about 5500 feet by clearing out the creek debris, as there are no meadows in this part of Big Creek and alder grows thickly where there are not conifers.

The creek was followed to above timberline, though a rock slide north of the creek was used on descent. Crampons were used on the firm ice which lacked snow on the surface at this time of year, and our twelve-pointers were useful on the upper 1000 feet to eliminate step cutting, as the 30-45 degree slope was water ice, and a number of pitons were used for safety and belay anchors. A crevassed section about 500 feet above the last rock island in the ice provided better belay positions and near here a traverse to the right brought the party to a prominent buttress on the rock wall of the mountain. The rock was well fractured and was followed the last 500 feet to the summit ridge, being about Class 3 and offering no problems other than rolling rocks. Four or five rope lengths east along the ridge brought us to the summit. Descent was via the rocks bordering the ice finger on the west. A climb earlier in the year would present easier conditions on the ice finger than we encountered.

GENE PRATER

GOTHIC PEAK—WEST FACE

The Sultan Basin road goes by the base of the west face of Gothic Peak, long an objective of mine. On July 9, we started up through the brush until we hit a stream bed which led us rapidly up to the prominent but easy slabs directly below Castle Rocks. From here we angled to the right, then over a snow shelf to a steepening rock gully. Climbing to the right we went up over alternating patches of rock and steep heather to the summit. The climb is easy though somewhat long. We descended via a rib parallel to Gothic about one-half mile south, which took almost as long as the climb.

VEGA PEAK

This peak lies directly north of Morningstar Peak and is prominently seen from Headlee Pass. On September 4, Paul Williams, Klindt Vielbig and I took the Sunrise Mine trail from the Mountain Loop highway up to the cabin and faced the dismal prospect of clambering over and through the wet brush that now dominates the section of the trail into the basin under Sperry Peak. From here we had a fine view of our peak and plugged on up to the base of a gully leading to the ridge just below the final summit. The going went well with a chockstone and moist walls giving a little excitement. From the notch we scrambled up to the top and immediately set to work building a suitable cairn.

MOUNT SHUKSAN—WEST FACE

On August 27, Don Keller, Mike Forney, Eric Zahn and I left camp at Lake Ann at 3:15 A.M. with a full moon breaking through a thin layer of low clouds. Our proposed route was from the Lower Curtis Glacier, up the center of a prominent rock face and over the Upper Curtis Glacier, rejoining the regular route at Hell's Highway. On the previous day we made a reconnaissance up into the face and found, to our delight, that the upper ice fall appeared solid and that the rock face itself would give us good protection.

As we reached the flat Lower Curtis the sky was clear and the moon, outlining the pinnacles and flooding the cirque, gave the scene a wondrous quality of serenity and grandeur. We moved up over the lower rocks through the darker shadows to the base of the rock face directly under the center of the upper ice cliff. Here we roped up for the first pitch, going up a leftward standing ledge to a short vertical wall and then to a good belay spot. The rock went easily from here as we moved directly upward, the first light giving better visibility. At all times we found the rock extremely solid and having a favorable lie to its strata. About 100 feet below the upper ice cliff we had a second breakfast on a prominent ledge which gave us good protection. From here we went to the right through a stream and up the rock to the ice. We climbed along its base until we reached a corner, lying just above a prominent pinnacle, where we put on crampons and had several enjoyable pitches over the first section of the cliff. This was followed by an area of easy, shattered ice following us to proceed rapidly to the final wall. After some leaping about the key was found, and the party emerged on the flat, brilliantly sunlit upper Curtis Glacier. From here we went to the summit on the regular route.

This route probably has varying conditions depending on the season and particularly the stability of the upper ice cliff.

TONY HOVEY

KLOOCHMAN ROCK—MAIN SUMMIT

Near the north end of the prominent tree-covered ledge on the southwest face of Kloochman, there is a short chimney headed by a chockstone, which lies between two tree groups. An inside face on the left of the chimney is followed by a short left traverse to a similar face which leads to a gully system gaining the summit.

—SOUTH TERRACE ROUTE

About 200 feet east of the start of route one, a short westerly scramble reaches an open chimney; thence a westerly traverse on a terrace of steep slabs leading to a second terrace. Traverse westerly past a chimney system to a single open chimney ending in an easy gully to the summit. Moderate difficulty.

LEX MAXWELL

CLIMBING

HAZARDS

By HUBERT BELANGER

The end of the 1961 climbing season brought to a close the second year of a continuing program of study sponsored by the Safety Committee of the Mountaineers—the Climbing Hazard Reports.

What exactly is this program and what has it accomplished in two years? Briefly, the program is a system of filing reports on mountaineering accidents and climbing incidents that have a high accident potential.

The aim is to compile a yearly record of these, with the ultimate view of establishing accident patterns, thereby alerting club members to particular dangers they should be ready to meet.

Any such program, of course, is effective only if based on an accumulation of statistics and end results cannot be gauged by initial response.

With Climbing Hazard Reports received for only two climbing seasons, it is too early to come to any specific conclusions as to particular dangers most characteristic of the climbs members of the club are likely to undertake.

But broad conclusions can be drawn on the basis of reports that we do have. The major conclusion is that the Ten Essentials, good climbing boots and 120 feet of good climbing rope may not be the only "musts" for the Washington climber who finds himself on rock a good part of the time. The day well may come when another "must" will be added to the list—the hard hat.

Why so? Because of the peculiarly unstable type of rock to be found in this state—the handhold that doesn't hold, the rain-loosened slab of rock that ricochets from side to side down the gully one is climbing.

The Climbing Hazard Reports for the past two years indicate that safety consciousness should in large measure be focused on the rockfall problem facing Washington climbers.

Falling and loose rock play an uncomfortably prominent part in many of the 38 Climbing Hazard Reports which have been turned in thus far.

There were ten accidents definitely resulting from rockfall. As a result, one climbing party had a fatality and another party had a seriously injured climber, suffering a skull fracture. Two other head injuries were reported as caused by rockfall. In addition, there were three fatal accidents in which rockfall, or hand and foot holds pulling out may have been contributing factors.

The thoughtful climber will immediately come to the conclusion that the head seems to be particularly vulnerable in rockfall incidents. Unfortunately, that is a fact.

How do head injuries occur? They may be the result of spontaneous rockfall—the loose rock plummeting from a face after being weathered free—or the product of human activity—the block kicked loose by a boot, or the 10-pound rock balanced precariously on one hand as a hand hold pulls out. In any case, the rockfall can be deadly.

Possibly the spontaneous rockfall is the more dangerous, since the only warning usually is the whistling of the rock as it hurtles down. On the other hand, the climber-induced rockfall should under all circumstances be accompanied by a loud call of "Rock!"

Protection of the head is vital under such circumstances. Nature has endowed us with a built-in helmet, the skull, to protect the brain, but with the acceleration a rock picks up in only a few feet of fall, it can cause considerable damage to both skull and brain.

Another type of accident, also makes it imperative to consider head protection for the climber. This is a climber fall, possibly of only a few feet, in which the climber's head strikes the rock. A pendulum, despite a classic protective belay, very well could produce such a situation.

How to achieve maximum head protection while climbing has involved considerable thought among climbers and the solutions run from homemade helmets, such as military-helmet liners, to specially designed fiber head gear.

Without a detailed analysis of the stresses that such helmets will withstand, it is impossible to say that this type or that type is much superior to the other in withstanding the shock of falling rock from this or that distance, but indentations on various helmets which have been subject to rockfall on climbs give a good idea of the damage to the head that can be prevented by wearing them.

Possibly quoting from three of the Climbing Hazard Reports can best point up the desirability and advantage of wearing hard hats.

One incident occurred on Chair Peak, not exactly famous for the adhesive quality of its rock. The climber was on a lead above his belayer when "a rock, about four inches in diameter was heard falling and warnings of 'Rock' were shouted. Unable to move and with the rock coming directly at me, I ducked my head.

"The rock simply bounded off. My hat is aluminum of the type commonly used by construction workers. . . . Had I not had a hard hat, I probably would have been injured seriously."

Another incident involved a family returning from a three-day trail trip. A falling rock, probably loosened by rain, fell down a steep hillside, hitting one of the members of the party on the head. Twelve sutures were needed to close the head wound. To the question of techniques which would have helped prevent the accident, the answer given simply was—"hard hats."

The above incidents present the two environments in which rockfall can be expected on a climbing trip. Surely we can forget the hard hat for a snow climb, one might say. Unfortunately, not very many of our peaks offer what can be termed pure snow climbs. Some rock climbing or scrambling usually is encountered.

One of our "majors" presented a fine example of the advantages of the hard hat, even on so-called snow climbs. A September climb of Mount Olympus brought a large party without incident to the foot of the summit pyramid.

In the process of getting rope teams up the rock, a large piece of rock was dislodged, sliding down and striking a climber on the head and arm. Subsequent events disclosed that he had a bad skull fracture and a broken arm, requiring evacuation by plane to a hospital.

A hard hat would by no means have completely prevented the head injury, but it is highly probable that the results would have been much less serious.

Another member of the same party reported having been hit on the head by another rock at the same place. In this instance, the only injury was a small laceration, but, as the report noted, "a hard hat would have prevented this."

With the prevalence of rockfall and the protection to the head presented by hard hats, why is it that more local climbers don't make use of them? The expense cannot be taken into consideration seriously, since a good climbing rope is worth about $20, boots cost from about $15 and a hard hat can be purchased from somewhat below $10.

The weight and inconvenience of a hard hat while climbing probably are the great deterrents to their general use, but when weighed against the inconvenience and expense of hospitalization or worse, this argument loses considerable force.

With a program such as the Climbing Hazard Reports spotlighting the prevalence of rockfall and head injuries in Washington State climbing, it may well be that our climbers of the future will never take to the hills without their Ten Essentials and the Three "musts" of their sport—boots, rope and hard hat.

ADMINISTRATION

AND COMMITTEE REPORTS

November 1, 1960-October 31, 1961

Club membership continued its growth during 1961. Total membership increased from 4,051 October 31, 1960, to 4,338 October 31, 1961; including 148 in the Everett Branch and 383 in the Tacoma Branch.

Administrative Division

A By-Laws amendment to increase the dues so that an executive secretary could be obtained was voted on by the membership in March. After the defeat of this amendment, the Board of Trustees referred the problem of dues increase to sustain necessary income back to the *Finance Committee* for further consideration. The *Budget Committee,* acting on a recommendation of the *Finance Committee,* recommended in their June 8, 1961 report that the excess of income over expenses (which is less than depreciation) should be funded in order to accumulate money for the future replacement of worn-out assets. Funding of amounts equal to depreciation is in accordance with a June 27, 1960 (corrected September 8, 1960) Board of Trustees resolution. Funding of the surplus in the budget for the year ending August 31, 1962 was waived by the Board of Trustees. The Finance Committee also recommended to the Board that the activities and the lodges that are income producing should be charged a fair and reasonable percentage of the general and administrative expenses of the club.

The Board of Trustees accepted the February 9, 1961 report of the Finance Committee which recommended that the $100,000 Educational Fund proposal not be accepted. However an alternate proposal for a Mountaineers Foundation was accepted in principle and the Finance Committee was asked for a further report. The author of the Educational Fund was warmly commended for his generosity and philanthropy.

Recommendations of the *Membership Committee* were accepted October 5, 1961 by the Board of Trustees: (1) Orientation Lectures be dropped as of January 1, 1962 on a trial basis. (2) Revision in processing membership applications be made. These include a letter of warm greeting from the President to each new member, and a letter a year later inviting them to take part in club committee work. W. Montelius Price, Howard Zahniser, and Edward W. Allen were made honorary members.

The *Future Clubroom Committee* issued a report in January 1961 containing an analysis of clubroom needs in light of the present operations of The Mountaineers.

The *Insurance Committee* has re-written and adjusted insurance policies to coincide with the club's fiscal year. The fidelity bond on Club members handling significant amounts of club money was raised to $5,000 with $15,000 excess coverage on the President and the Treasurer.

The *Typing and Duplicating Committee* now has a new mimeograph machine. The *Legal Advisory, Operations Manual, and Auditing Committees* also fulfilled their functions.

Conservation Division

Division members continued their studies of numerous conservation problems in cooperation with other groups and public agencies. A number of recommendations were submitted to the Board of Trustees for club action. An appeal for intensified support of the Wilderness Bill was made through a telephone committee, mailing of circulars, and appearance of a club representative at a public hearing held by the Senate Interior and Insular Affairs Committee in Washington, D. C. on February 27, 1961.

One member represented The Mountaineers at a public hearing in Idaho in support of reclassifying the Selway-Bitterroot area to Wilderness Status. An attempt was made to maintain the integrity of the National Parks System by objecting to proposals to open National Parks to public hunting, and to relaxation of motor-boat regulations in Yellowstone Park. Appeals were made to government leaders to protect Rainbow Bridge National Monument from impairment by the waters of Glen Canyon Reservoir. The club's position opposing a road in the Olympic Ocean Strip of the National Park was reaffirmed.

Members assisted other groups in appealing for state billboard regulations to protect our scenic highways. These regulations were passed. Another member attended State Interdepartment Committee meetings concerning state recreational-type lands. This group reviews each piece of state recreational-type land for possible inclusion in the state parks system in lieu of its being sold into private ownership. Several desirable beach areas have been saved for public use as a result of this committee's action.

The Division continued its efforts to obtain a study of the North Cascades to determine its potential for National Park status. As guests of the Forest Service five members participated in a field trip into the Cougar Lakes area with Forest Supervisor Barrett to study the recreational aspects of the area. A committee was appointed to study the possibility of publishing a *Preservation Primer*. Preliminary drafts of the subject matter to be covered are now being reviewed.

The 30th annual convention of the Federation of Western Outdoor Clubs, held on the San Jacinto Mountains of California during the Labor Day weekend, was attended by several club members;

including William Zauche (as the Mountaineer representative) who submitted a number of resolutions for consideration. A convention report and review of most of the 31 resolutions passed were included in the October, 1961 *Mountaineer*.

Indoor Division

The *Annual Banquet,* with 198 persons attending, was held on April 14, 1961 at the Carpenters' Hall. Dr. N. Chavre, originally from India, gave an address on "Russia and the East," which was full of original and pertinent observations on the world today. The annual *Service Award* was presented to Harriet K. Walker, who became a Mountaineer early in 1929, has been actively associated with the Players ever since, had two terms on the Board of Trustees, and has served on several of the committees of the Club.

The following committees provided programs regularly during the nine months of September through May. *Bridge* sessions were generally held on two Monday evenings a month, attended by an average of 15 players. The monthly *dances* were very well attended and greatly enjoyed. *Dinner Meetings* at the Ben Paris restaurant drew an average attendance of 30 persons, with a great variety of presentations of slides and motion pictures of travel and other interesting subjects. Most of the *Monthly Meetings* of The Mountaineers have been held in the Post-Intelligencer Auditorium, and they, too, have provided varied and interesting programs. Perhaps the outstanding meeting of the year was that of January 13, 1961, when our guest was Dr. Howard Zahniser, Executive Secretary of the Wilderness Society.

Panama and Frank and Al Capp's rollicking satirical "Li'l Abner" was presented by a cast of 65 *Players* on May 28 and June 3, 4, 10, and 11, 1961, before a total of some 4,000 persons in the Forest Theater, under the direction of Earl Kelly and Robert Cathey, turning in a net of $1,200 to the Club treasury, thanks to perfect weather for every performance. Thirty-fifth in the long series that began in 1923 (four war years excepted), "Li'l Abner" stands out as possibly the finest—certainly the most ambitious—production of all.

Outdoor Division

The *Campcrafters* Gypsy Tour explored Vancouver Island from July 29 to August 13, with 79 members participating. The year started off with a potluck dinner, followed by seven weekend trips with an average attendance of 23. A Gypsy Tour reunion ended the season.

The *Climbing Committee* had 222 basic students in the Climbing Course, with 98 graduating. Only 13 passed the rigorous requirements of the Intermediate Course, which had 37 students and 42 auditing. Scheduled were 59 experience climbs, nine intermediate climbs, 32 one-day roped climbs, an ice climbing training session, and a comprehensive compass course. Four seminars of interest to

climbers were offered during the winter. Highlighting the season were two climbers' outings, with 24 climbers spending two weeks in the St. Elias Range and 25 hiking and climbing in the Mt. Robson area.

It was an active year for the *Photographic* group, although several field trips were rained out. In October this committee was transferred to the *Indoor Division.*

The *Safety Committee* prepared and issued a "Climbing Hazards Report" compiled from data submitted in 1960. This program is being continued. Posters illustrating the Climbing Code were prepared and presented to the Climbing Committee for display during the Climbing Course lectures. Two fatalities occurred during the year: one on Mox Peak and one on Guye Peak, both being private climbs. The emergency equipment caches located at Ranger Stations were surveyed and found to be in good condition.

A combination of good weather and hardy Mountaineers allowed 16 of the 19 trips scheduled by the *Ski Tours Committee* to be held. Trips included two attempts on Mt. Baker and many overnight outings. Two clubroom programs were also presented.

The *Trail Trips Committee* was overwhelmed when over 100 turned out for the Annual President's Walk. In all, 37 trips were scheduled with a total of more than 1,000 attending.

It was a plodding start for the *Viewfinders* this year, with 18 snowshoe trips which over 300 attended. After the snows started to melt, 30 trips allowed many others to enjoy the view.

Publications Division

Early in 1961 it became evident that the 5000-copy first printing of the club's book, *Mountaineering: The Freedom of the Hills,* would be sold out during 1961. A second 5000 copies were ordered in the spring and delivery began in October shortly before the initial printing was exhausted. The first printing brought gross receipts estimated at $21,000, and since its production and promotion costs were approximately $15,450, the net gain may be assumed to be $5,550.

In June 1961 the Board of Trustees formally recognized the desirability of furthering club objectives through an expanded publications program by placing the proceeds from *Mountaineering* in a newly created *Literary Fund* to be used only for educational publishing, such as the second printing of *Mountaineering* and also such books, pamphlets, and other educational material as is approved by the Trustees. All proceeds from publications financed by the Literary Fund go into the Fund. Further, the Fund may receive loans and gifts.

The agreement with the printer of the 1960 membership *Roster* was designed to encourage him to arrange for a relatively large amount of advertising. While this resulted in a significant monetary saving, the gain was overbalanced by loss in quality. This experience

led to retention of control over printing of the 1961 issue, to less advertising, and to a return to near the prior level of unit cost.

The rising public interest in preserving scenic resources was reflected in an increasing number of articles on conservation matter in the monthly issues of *The Mountaineer*. New books of scientific interest as well as many on mountaineering and skiing were added to the *Library*. The *Annual* included a comprehensive article on the history, present status, and possible future of federal and state wild and park lands in the state of Washington, and the story of the first ascent of Masherbrum.

The Mountaineer—Annual, Bulletin, and Roster—was budgeted at approximately $11,000.

Property Division

Improvements to the *Clubroom* during the year included complete repainting, new drapes, and new lighting fixtures.

Mt. Baker Lodge enjoyed increased attendance during the November to July skiing and ski-mountaineering seasons. Summer work parties continued cabin improvements including interior finishing and addition of an exhaust system.

At *Meany Ski Hut* the snow-tractor operation proved so successful during the first months of use that the Board of Trustees approved the purchase of the tractor which had been rented initially on a lease-with-option-to-buy basis. Good use was made of the large numbers turning out for work parties by completely overhauling the light plant, rebuilding the front porch and stairs, and putting a new cabin on the snow tractor.

The ever-present encroachment of civilization exacted its toll on the *Rhododendron Preserve.* The Natural Gas Transmission Company was granted an easement to construct and maintain a natural gas transmission pipeline through the preserve (North of the Seabeck Road) in consideration of payment of $476 to the club. The Flett Cabin continued to be occupied by Olympic Junior College students.

With the increase in family skiing, *Snoqualmie Lodge* facilities were utilized more than ever. The many persons attending work parties were able to install the "Peanut Tow" for beginners, continue the hill improvement program, and make alterations in the kitchen.

The increased attendance at *Stevens Hut* may be attributed to expanded evening programs or to the steady lessening of physical effort involved in visits to this area.

The traditional Thanksgiving Dinner summarized the year at *Irish Cabin,* which offers nothing but the club traditions of fellowship and a comfortable base camp for mountaineering throughout the year—winter tours on ski and snowshoe, summer climbs on foot, and family picnics beside the Carbon River any day, any time of any year.

Juniors

The *Junior Representative* was given voting privileges during her 1960-1961 term on the Board of Trustees.

The Juniors' project on August 19-20 was a clean-up work party at Trout and Copper Lakes.

Tacoma Branch Report

Generally good weather favored the hikers and climbers this past year, encouraging large turnouts for the traditional trail trip events like the January Prairie Walk and the Salmon Bake (200 attending). The first annual Trail Trippers' weekend at Irish Cabin brought out 55 Seattle-Tacoma members, swelling the total attendance at the trail trips and special outings for the year to 438.

The 1960-1961 climbing season included the Basic Course, turning out 49 graduates; the Intermediate Course with five graduates; a Winter Climbing Course; several seminars; and some 24 successful climbs. Tacoma Juniors added to these climbing achievements by scaling Mt. Olympus during their nine-day Hoh Valley outing.

To keep the Campcrafters in good trim there were ski trips to Snoqualmie in the winter, with beach hikes and mountain outings in the summer. Supplementing these trips were seasonal parties and potluck dinners at the Clubhouse. Largest single turnout (68) was for the Easter Egg Hunt.

In spite of a rather rainy ski season Tacoma ski enthusiasts enjoyed overnight trips to Baker and Meany lodges and arranged tours to favorite areas.

The new Bridge Section organized last January held five meetings, the last one a party which netted enough to buy several card tables. Other additions inside the Clubhouse included four large folding tables and a new bulletin board. Biggest outside improvement was the new lawn surrounding the building. Irish Cabin, too, dressed up with a new coat of sunny kitchen paint and kitchen curtains besides two improved entrances.

In addition to the meetings and traditional events which the Social and Program committees arranged—picnics, boat cruises, Christmas party, and Annual Banquet—they staged an Old-Timers' night. Charter Mountaineer member L. D. Lindsley ("Silent Lawrie") from Seattle was honor guest. At the Christmas party the Music Section provided leadership for carol singing, and in addition enjoyed seven evenings of recorded music during the year.

Conservation and photography interests also added to the Branch's busy schedule. The Photography Section participated in a slide study circuit organized this year by the Northwest Council of Camera Clubs.

Everett Branch Report

The Annual Banquet of the Everett Branch was again held at the Yacht Club with a slide lecture concerning Mt. Rainier following.

The climbing group again made available the basic fundamentals of mountaineering, with Everett Junior College cooperating. Enrollment reached a record 72, with 42 completing requirements for Junior College graduation certificates. Four Mountaineer diplomas were awarded.

Thanks to good weather and enthusiastic climbers, summits were reached on all eight scheduled climbs.

Family outings included the Annual Steak Walk, the Salmon Bake, and the Greens Walk.

The hikers were almost as ambitious as the climbers with five ski and snowshoe trips, four beach walks, and nine hikes to upland lakes or mountain areas.

The Social Committee rounded out the year's activities with several potluck dinners and a liar's contest. The committee also served refreshments at all regular meetings, which are held in the Everett Public Library's Auditorium.

ELLEN BROOKER
Secretary

The Treasurer's Report for the year ending October 31, 1961, (Art. V, Sec. A—Bylaws) was not received in time for publication in the 1962 Mountaineer Annual.

BY-LAWS

OF

THE MOUNTAINEERS

AGREEMENT OF ASSOCIATION

FOR THE PURPOSE OF FORMING A SOCIAL AND EDUCATIONAL CORPORATION UNDER THE NAME OF "THE MOUNTAINEERS"

THIS AGREEMENT, Made and entered into in triplicate this fifth day of June, 1913, in the City of Seattle, County of King, State of Washington.

WITNESSETH: That the undersigned subscribers hereto do hereby associate themselves together for the purpose of, and with the intention of, forming a corporation under and in compliance with the terms and provisions of the laws of the State of Washington in the premises, and particularly with the terms and provisions of that certain act (together with the amendments thereto) entitled "An Act to provide for the incorporation of Associations for Social, Charitable, and Educational Purposes" which said act was approved March 21, 1895, and constitutes Chapter CLVIII of the laws of 1895.

The name of the association shall be "The Mountaineers."

The purposes for which the association is formed are:

To explore and study the mountains, forests, and water-courses of the Northwest; to gather into permanent form the history and traditions of this region; to preserve by the encouragement of protective legislation or otherwise, the natural beauty of Northwest America; to make expeditions into these regions in fulfillment of the above purposes; to encourage a spirit of good fellowship among all lovers of out-door life.

To hold real estate and personal property and to receive, hire, purchase, occupy and maintain and manage suitable buildings and quarters for the furtherance of the purpose of the association, and to hold in trust or otherwise funds received by bequest or gift or otherwise to be devoted to the purposes of said association.

The association shall be located in the City of Seattle, County of King, State of Washington, but may have branches elsewhere.

The association shall have no capital stock, shall never be conducted for purposes of profit or gain to its members, and shall never declare dividends.

BY-LAWS OF THE MOUNTAINEERS

A CORPORATION

ARTICLE I

Place of Business

SECTION 1: The principal place of business shall be in the City of Seattle, King County, State of Washington, but the association may establish branches anywhere within or without said state.

ARTICLE II

Membership

SECTION 1: There shall be six classes of membership: Honorary, Life, Complimentary, Regular, Spouse, Junior.

REGULAR MEMBERS: Any person of good character, 21 years of age or older, who is in sympathy with the objects of this organization shall be eligible for Regular membership.

JUNIOR MEMBERS: Any person of good character who is in sympathy with the objects of the organization shall be eligible for Junior membership, subject to the following limitations:

1. There shall be two types of Junior Membership, Group 'A' and Group 'B.'

a. Group 'A' members shall be 18 years of age or over, but less than 21 years of age, and shall not exceed 13 per cent of the total membership of the organization.

b. Group 'B' members shall be 14 years of age or over, but less than 18 years of age, and shall not exceed 7 per cent of the total membership of the organization.

2. The Trustees shall have authority to change from time to time the above quotas for Group 'A' and Group 'B' members, so long as the quotas do not exceed the percentages set forth above.

3. These percentages shall apply separately to each branch of the organization, except that the Board of Trustees may raise or lower either percentage applicable to a branch provided the total of Groups 'A' and 'B' in the branch does not exceed 20 per cent.

4. Honorably discharged members of the Armed Services and children of members of The Mountaineers shall be eligible for membership at all times regardless of quota limitations. However, these members shall be included when computing Junior Membership quotas.

LIFE MEMBERS: Any person eligible for Regular membership shall be eligible for LIFE MEMBERSHIP upon payment of ONE HUNDRED FIFTY DOLLARS, plus $4.00 initiation fee for non-

members, which payment shall exempt such member from all future dues.

SPOUSE MEMBERS: The spouse of any REGULAR or LIFE member shall be eligible for a SPOUSE MEMBERSHIP.

COMPLIMENTARY MEMBERSHIP: Any person of good character eligible for membership who is in sympathy with the objects of the organization shall be eligible for COMPLIMENTARY MEMBERSHIP. Such memberships shall be awarded for a specified period of time. Length of period at the discretion of the Board of Trustees.

HONORARY MEMBERSHIP: Any person eligible for regular membership shall be eligible for Honorary membership, provided that the number of Honorary members shall not at any time exceed twenty in number.

WAR SERVICE STATUS: The Board of Trustees shall have the authority to extend the period of membership, without payment of dues, of any REGULAR or JUNIOR member who is in the Armed Services of the United States, extended period of membership not to exceed four years. This extended period of membership shall be regulated by the Board of Trustees at its discretion.

During this extended period of membership the member will not be entitled to any publication, except such as are authorized by the Board of Trustees.

SECTION 2: Election to membership in any class shall be by unanimous vote of the Board of Trustees, but when membership is approved, it shall become effective and date from first day of month of admittance.

Application for membership must be in writing and, except petition of application for SPOUSE, HONORARY, or change of classification must be endorsed by at least TWO members of one year membership eligible to vote, except that only one member of a family may endorse applicant. All applications must be accompanied by the annual dues and initiation fees, if any, except those from JUNIORS limited by quotas. HONORARY members shall be elected only upon the written petition of TEN MEMBERS.

SECTION 3: PRIVILEGES: Members of all classes, except as herein otherwise provided, shall have the same rights, privileges and obligations.

(A) VOTING: JUNIOR members shall not have the right to vote or hold office, except that the Board of Trustees may, if it sees fit, make ONE JUNIOR member an ex-officio member of the Board.

(B) PUBLICATIONS: SPOUSE and JUNIOR members shall not be entitled to any publications, except such as are authorized by the Board of Trustees.

(C) The wife or husband of any member shall have all the privileges of members except the right to vote; to receive notices or publications of the association; to hold office; or serve on committees.

SECTION 4: Any member may be expelled by a three-fourths vote of the entire Board of Trustees.

SECTION 5: When a membership ceases, from any cause whatsoever, all rights and interests thereunder revert to the association.

Article III

Government and Election of Trustees and Officers

SECTION 1: The entire management and government of this association except as otherwise expressly provided herein shall be invested in the Board of Trustees. The Board of Trustees shall consist of ex-officio trustees herein provided for, ten trustees elected by and from the members of the association eligible to vote, and one trustee elected from each branch of the association.

SECTION 2: The PRESIDENT and RETIRING PRESIDENT, for one year after his term as PRESIDENT, the VICE-PRESIDENT, the SECRETARY and the TREASURER shall, if not otherwise members of the Board of Trustees, be ex-officio members of the Board.

SECTION 3: Trustees at large shall be elected to serve for a term of two years beginning November 1 following the date of their election. Five shall be elected each year.

SECTION 4: Trustees shall hold office until their successors shall have been elected and shall have qualified.

SECTION 5: Trustees at large shall be selected by nomination and election. The nomination of trustees at large shall be as follows:

The Board of Trustees shall at their regular May meeting appoint a nominating committee consisting of three members of the association eligible to vote who are not members of the board. The nominating committee shall select five or more, but not exceeding ten nominees, for the office of Trustee and shall submit the names of persons selected by a report which shall be published in the September bulletin of The Mountaineers and shall also submit their report at the regular September meeting of the association. At the September meeting, the membership of the association may present five additional nominees from the floor. No person shall nominate more than one person. If the nominations from the floor exceed five names, the members shall immediately ballot on the names so presented and only the five receiving the highest total of the votes cast shall be considered as nominated.

SECTION 6: Election of Trustees at large shall be by printed ballot from among the candidates nominated as hereinabove provided. The Secretary of the association shall within fifteen days after the monthly meeting of the association in September, mail to each member of the association who is eligible to vote an official ballot containing the names of the candidates arranged alphabetically. All ballots shall be returned to the Secretary of the association with the name of the voter on the outside of the envelope before 12 o'clock noon of the Wednesday following the second Tuesday in October. The said ballots thereupon, with seals unbroken, shall be turned over to a special committee of tellers previously appointed by the President, of which the Secretary shall be Chairman, which committee shall proceed that day to count said ballots and submit a written report of the results of said election to the October monthly meeting of the membership. No votes shall be counted excepting those of eligible voters upon the official ballots and for nominees appearing on the official ballot. The election of the Trustees from each branch shall be in such manner as each branch shall determine.

SECTION 7: The Board of Trustees shall meet in Seattle on the Thursday following the first Tuesday in each month, September to June, both inclusive. Special meetings of the Board of Trustees may be called by the President, the Secretary, or by three Trustees. Five Trustees shall constitute a quorum.

SECTION 8: The Board of Trustees shall fill all vacancies on the Board, or in any office to which they have power to elect, except that any person appointed to fill the unexpired term of any Trustee at large shall serve only until November 1 following the next annual election of Trustees at which time the person or, if more than one vacancy exists, the persons having the highest number of votes of the candidates who failed of election at the annual election shall succeed to any vacancies in unexpired terms.

SECTION 9: No person shall be ELECTED to the Board of Trustees for more than two consecutive terms.

Article IV

Officers

SECTION 1: The Board of Trustees within fifteen days after their election shall meet and elect from their number or from the members of the association, the following officers who shall serve as such, both for the association and the Board, to-wit: A President, Vice-President, Secretary, and Treasurer, which said officers shall assume office November 1 following their election and serve for a period of one year or until their successors shall be elected and qualified.

SECTION 2: Any officer may at any time be removed from office by a majority vote of the entire number of Trustees. No person shall be eligible for re-election to the same office except the office of Treasurer for more than two consecutive terms.

ARTICLE V

Duties of Officers

SECTION 1: The President shall perform the duties usually devolving upon his office. He shall appoint, subject to confirmation by the Board of Trustees, all committees, except the Nominating Committee, and subject to like confirmation, shall fill all vacancies in committees.

SECTION 2: The Vice-President shall act in place of the President in his absence and during the President's absence, shall have all his powers and duties.

SECTION 3: The Secretary shall, in the absence of both President and Vice-President, have all the powers and duties of the presiding officer. He shall perform the usual duties devolving upon the office except as otherwise provided by the Board. He shall have prepared a report on the year's activities, which shall be published in The Mountaineers' Annual.

SECTION 4: The Treasurer shall be the custodian of all the funds of the association, which funds shall be deposited in such banks as shall be designated by the Board of Trustees. A small working balance may remain in the hands of the various committees as authorized by the Board of Trustees. The Treasurer shall pay out money only on the order of the Board of Trustees. The Treasurer shall submit in The Mountaineer Annual a duly audited report covering the finances for the year. The Treasurer shall be bonded for the faithful performance of his duties in such sum as may be fixed by the Board of Trustees but not less than two thousand dollars. The Treasurer shall each month prepare for each regular trustees' meeting, or, if no meeting, for the President, a financial report in which the following information shall be set forth:

a. Cash balances in all checking and savings accounts, including committee accounts.

b. A statement of all disbursements made, including committee disbursements, which statement shall show the payee and the amount of disbursement and for what.

The Treasurer shall have the responsibility of securing fidelity bonds for such persons as may be required by the Board of Trustees.

The Treasurer shall, as directed by the Trustees, secure at the expense of Mountaineers such insurance as may be necessary to protect the association.

All committees authorized to handle funds of the Mountaineers shall appoint a secretary who, under the direction of the Treasurer, shall be accountable for such funds and shall keep such records relative thereto as the Treasurer shall direct. The Treasurer, relative to all committee funds, shall require of all committee secretaries:

a. That all money received by the committee (except for transportation which is collected for others) be deposited in the bank immediately.

b. That no disbursements be made except by check.

c. That no disbursements be made which are not first authorized by the committee chairman.

d. That where possible no disbursements be made until an invoice is received.

e. That all bank statements be sent the Treasurer.

No withdrawals shall be made from any savings account except upon the signatures of the Treasurer and two other officers.

Article VI

Committees

The Board of Trustees may delegate the management of any of the properties of The Mountaineers and the performance of its several activities to such committees or committee as it sees fit.

All committees, except the nominating committee, shall be appointed by the President, by and with the consent of the Board of Trustees as expressed by a majority present at any regular or special meeting of the Board of Trustees, except as hereinafter provided. The committee secretaries accountable for funds shall be selected as provided in Article V, and the Board of Trustees may delegate to a committee chairman the selection of other committee members.

The President, subject to the approval of the Board of Trustees, shall appoint an auditor or auditing committee to audit all accounts, including the Treasurer's annual report.

Article VII

Publications

SECTION 1: The association shall publish an annual magazine and monthly bulletins, and such other publications as the Board may direct.

Article VIII

Meetings

SECTION 1: The annual meeting of the association shall be held in Seattle on the Friday following the second Tuesday in September of each year.

SECTION 2: A regular monthly meeting shall be held in Seattle on the Friday following the second Tuesday of each month, September to May, both inclusive.

SECTION 3: Twenty-five members shall constitute a quorum.

SECTION 4: Special meetings of the association may be called by the President or the Board. Due notice of such meetings shall be sent to all members.

ARTICLE IX

Dues

SECTION 1: There shall be an initiation fee which shall accompany all original applications for membership, except petition for HONORARY or SPOUSE membership. The initiation fee shall be $4.00 for REGULAR and LIFE members, and $2.00 for JUNIOR members. Initiation fees received from members of branches shall be remitted annually to the branches.

SECTION 2: All REGULAR, JUNIOR and SPOUSE members shall pay annual dues in advance as follows:

(a) The dues of JUNIOR members shall be $4.00 per year.

(b) The dues of SPOUSE members shall be $2.00 per year.

(c) The dues of REGULAR members shall be $7.00 per year except that the dues of members residing outside of King County or a county in which there is a branch shall be $6.00 annually.

One year's dues shall accompany all applications for membership, except JUNIORS limited to quotas, and thereafter dues shall be payable annually in advance. All dues shall date from the first day of month of admittance.

LIFE members shall not be obligated to pay annual dues but shall at the time of application for LIFE membership pay $150.00.

If any application for membership is not accepted, all initiation fees and dues shall be returned to the applicant.

A member who has been a REGULAR dues-paying member for a period of twenty-five consecutive years, may, by notifying the executive Secretary of such desire, have his or her dues reduced to $3.00 per year.

A former member of the association who has been a REGULAR dues-paying member for a period of twenty-five consecutive years, may make application to rejoin without payment of an initiation fee. The application to rejoin must be accompanied by one year's dues, either at the regular or at the reduced rate.

SECTION 3: Two dollars of the annual dues of REGULAR members shall be set aside as the subscription price of the annual magazine and bulletins.

Where a REGULAR member is a member of a branch, the treasurer shall retain only four dollars of such member's dues and

remit annually the balance received to the treasurer of the branch to which said member belongs.

SECTION 4: Notice shall be sent to members when their annual dues become payable. If any member is in arrears at the end of one month thereafter, such member shall be notified and if such dues are not paid during the following month, the membership shall automatically cease. Members so dropped may be reinstated by the Board of Trustees, within six months thereafter upon payment of back dues, and upon payment of $1.00 penalty.

ARTICLE X

Permanent Fund and Permanent Building and Improvement Fund

SECTION 1: Two funds shall be established and maintained, namely, the Permanent Fund, which shall be maintained and limited to $5,000.00, and the Permanent Building and Improvement Fund.

The Permanent Fund shall be maintained by placing therein, at any time that there is less than $5,000.00 in the same, all life membership dues, $1.00 of each initiation fee, except initiate's fees of members of branches, gifts (unless otherwise stipulated by the donor), and such amounts from the organization's funds as the Board of Trustees may direct.

All sums received by The Mountaineers as aforementioned in excess of the amounts necessary to maintain the Permanent Fund at $5,000.00 as above provided, and all income earned by the Permanent Fund, and any amounts in the Permanent Fund at any time in excess of $5,000.00 plus $1.00 per year from the dues of each member, and such other amounts from the organization funds as the Board of Trustees may direct, shall be allotted and paid into the Permanent Building and Improvement Fund.

The Permanent Building and Improvement Fund shall be used only for permanent building and permanent improvement, as authorized by the Board of Trustees, in the following manner:

a. A motion shall be made and presented in writing at a regular or special meeting of the Board of Trustees, signed by two Trustees, stating clearly what the money is to be used for.

b. This motion must be printed in The Bulletin in its entirety and may not be voted on until the next regular or special meeting of the Board of Trustees, and in no event until one week after it has appeared in The Bulletin.

SECTION 2: Future investments of the permanent fund and of the permanent building and improvement fund shall be limited to the United States Government Bonds or savings deposits in any mutual savings bank operating under the laws of the State of Washington; that is, under the Mutual Savings Bank Act of the State of Washington.

Article XI

Branches

SECTION 1: The Board of Trustees shall have authority to create a branch in any locality in which twenty-five members or more reside.

SECTION 2: Each branch shall annually elect a chairman and secretary and such other officers as it may see fit, and may adopt such local rules and regulations as are not inconsistent with the general rules and regulations of the association.

Article XII

Privileges of Members

SECTION 1: No member shall be entitled to vote in the meeting of any branch of which he is not a member; otherwise, there shall be no discrimination whatsoever between members of the association by virtue of residence or membership in any branch.

Article XIII

Rules of Order

SECTION 1. Roberts' Rules of Order shall govern in all parliamentary matters.

Article XIV

Amendments

SECTION 1: Any member may submit to the Board of Trustees a proposed amendment to the By-Laws. The President shall appoint a By-Laws Committee to consider the form of the proposed amendment. If the By-Laws Committee approves the form, the same shall be returned to the Board of Trustees with their approval, otherwise the Committee will consult with the sponsor and attempt to reach an agreement with the sponsor as to the form of the amendment. Following the next regular meeting of the Board of Trustees at which the amendment was submitted, the sponsor may circulate the proposed amendment among the members and if endorsed by the signatures of thirty voting members, the same shall be returned to the Board of Trustees to be submitted by them for the consideration of the entire membership as herein provided.

SECTION 2: The proposed amendment shall be published in a monthly bulletin and be subject to the consideration of the entire membership at the first regular monthly meeting of the club and its branches immediately following publication, or at a special meeting of the club and its branches called for that purpose.

SECTION 3: The proposed amendment shall thereafter be submitted by written ballot to the membership for consideration and unless two-thirds of the Trustees voting at any meeting direct otherwise, the proposed amendment shall be submitted to the membership at the same time as ballots for the election of trustees are distributed to members, all as provided in Section 6, Article 3 of these By-Laws.

SECTION 4: The President shall appoint a committee to consider the arguments for and against any amendment to the By-Laws and to draft a statement in brief form setting forth said arguments, which statement shall accompany the ballot.

SECTION 5: In order for the amendment to pass, it must receive a majority of the total vote cast; provided, however, the total of votes cast for and against must equal at least 20% of the total membership eligible to vote.

Article XV

Federations and Associations

SECTION 1: The Board of Trustees is hereby authorized in the furtherance of the general objects of The Mountaineers, to-wit: In the furtherance of mountaineering, skiing, exploration, and conservation, to cause The Mountaineers to become affiliated with such mountaineering, skiing, exploration, and conservation leagues, societies, federations, associations, or clubs as the Board of Trustees sees fit and to bind The Mountaineers, to abide by the by-laws, rules, and regulations of such associations or federations, subject to the limitations hereinafter provided.

SECTION 2: The Mountaineers' financial obligations to any such associations or federations shall be fixed on a definite periodic basis without liability or obligation for any assessments except such assessments as may be approved from time to time by the Board of Trustees of The Mountaineers.

SECTION 3: The Trustees shall not cause The Mountaineers to become affiliated with any association or federation which is not incorporated or organized in such a manner as to exclude The Mountaineers from any legal liability for any wrongful or negligent acts of the agent or agents of any such association or federation.

SECTION 4: The By-Laws or rules of membership of any federation or association with which the Board of Trustees wishes to cause The Mountaineers to join must provide a reasonable means for the termination of the membership of The Mountaineers in such federation or association.

ARTICLE XVI

Motor Vehicle Transportation

SECTION 1: No trustee, officer, or committee of The Mountaineers shall ever collect from the members or guests of the association any sum of money for the transportation by motor vehicle of members or guests on Mountaineer outings which is not turned over to the owner or driver of the car in which such member or guest is transported.

Members or guests in accepting transportation in the cars of other members or guests do so at their own risk, it being understood by all members and guests that The Mountaineers in arranging transportation for members or guests do so at the request and for the accommodation of said members or guests and with the express understanding that any person requesting transportation releases The Mountaineers from any liability whatsoever arising out of said transportation.

By-Laws and Constitution
of The Mountaineers
Organized—1906
Incorporated—1913
Amended 1956

COMMITTEE CHAIRMEN

ADMINISTRATIVE DIVISION

Jesse Epstein

Auditing ..... Louis Baroh
Finance ..... Bob Yeasting
Future Clubroom ..... Leon Uziel
Insurance ..... John F. Fuller
Legal Advisory ..... Phyllis Cavender
Membership ..... Daniel Streeter
Operations Manual ..... George McDowell
Typing and Duplicating ..... Ruth Bartholomew

CONSERVATION DIVISION

William Zauche

Conservation Education ..... Emily Haig
FWOC Representative ..... E. A. Robinson
Rhododendron Preserve Planning ..... Art Winder

INDOOR DIVISION

Harriet Walker

Annual Banquet ..... Harry Connor
Bridge ..... Winifred Mullane
Dance ..... Yolanda Landon
Dinner Meetings ..... Hazel Anderson
Photography ..... Elmer Hike
Players ..... Daniel S. Barash
Program Meetings ..... Ed Chalcraft

OUTDOOR DIVISION

Stella Degenhardt

Campcrafters ..... Kenneth Freece
Climbing ..... Sherman Bissell
M. R. C. Representative ..... Frank Fickeisen
Outing Planning ..... Maury Muzzy
Safety ..... Philip Bartow
Ski Tours ..... Cal Magnusson
Summer Outing ..... William Andersen
Trail Trips ..... Jane Durbin
Viewfinders ..... Henry Shain

PROPERTY DIVISION

Harvey Mahalko

Building Policy ..... Gay Lenker
Clubroom ..... Mrs. Irving Gavett
Irish Cabin ..... Edward Freeman
Meany ..... Don Volta
Mt. Baker Cabin ..... Gordon Logan
Rhododendron Preserve ..... Robert Landon
Snoqualmie Lodge ..... John Penberthy
Stevens ..... Robert Sexauer

PUBLICATIONS DIVISION

Paul W. Wiseman

Annual ..... Nancy Miller
Book Promotion ..... Howard Miller
Bulletin ..... Grace Kent
Library ..... Helen Bucey
Roster ..... Donald C. Johnson

TACOMA CHAIRMEN

Bridge ..... Marjorie Goodman
Campcrafter ..... Edith Delzell
Climbing ..... James Farren
Clubhouse ..... John Freeman
Landscape Subcommittee ..... Alice Bond
Conservation ..... James Holt
Historian ..... Keith Goodman
Irish Cabin ..... Edward Freeman
Junior Representative ..... Miles Johnson
Junior Advisors ..... Thomas and Linnea McGehee
Membership ..... Mary Fries
Mountain Rescue Representative ..... John Simac
Music ..... Laura Folz
Phone ..... Olive Otterson
Photographic ..... Marjorie Robinson
Program ..... Stella Kellogg
Publicity ..... Winona Ohlson
Rentals ..... Floyd Raver
Ski ..... Eugene Faure
Social ..... Val Renando
Assistant Social ..... Ann Vis Chansky
Trail Trips ..... Ray Bruns
Budil Fair ..... George Munday
Fiftieth Anniversary Planning ..... Harry Connor
Crystal Mountain Cabin Feasibility ..... Ferd Bondy