the Mountaineer

1958

Seattle, Washington

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Entered as second-class matter, April 18, 1922, at Post Office in Seattle, Wash., under the Act of March 3, 1879.

Published monthly and semi-monthly during March and December by THE MOUNTAINEERS, P. O. Box 122, Seattle 11, Wash. Clubroom is at 523 Pike Street in Seattle. Subscription price of the current *Annual* is $2.00 per copy.

To be considered for publication in the 1959 *Annual* articles must be submitted to the Annual Committee before Oct. 1, 1958. Enclose a self-addressed stamped envelope. For further information address The MOUNTAINEERS, P. O. Box 122, Seattle, Washington.

The Mountaineers

THE PURPOSE: to explore and study the mountains, forest 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 outdoor life.

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Vol. 51, No. 4, March 1, 1958—Organized 1906—Incorporated 1913

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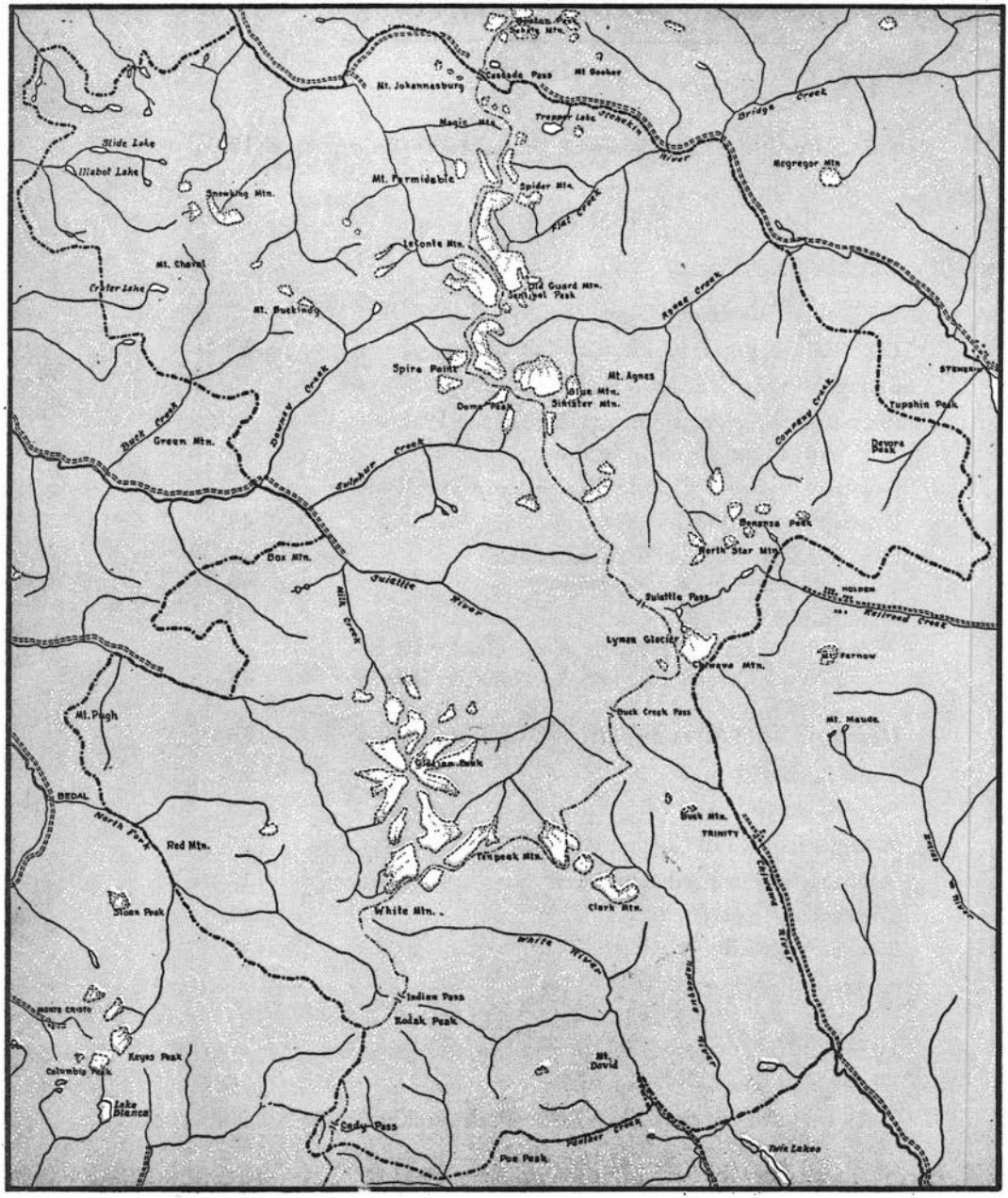

GLACIER PEAK AREA

JIM CROOKS

(See page 66 for discussion of *Mountaineer* proposals concerning this wilderness region.)

WILDERNESS WORLD

By GRANT McCONNELL

Etched into the sky eastward from Puget Sound there is a jagged and glittering horizon. Between those graceful, rounded and sometimes almost floating presences which from the beginning of history have stood as symbols for the region, Rainier and Baker, there are but a few land routes by which that horizon can be passed and finally left behind. All of these are in the uneven arc's southern part. In the north, however, the line against the sky is a barrier, a boundary rather, standing at the edge of a different world. The world thus marked off is folded, wrapped and twisted inside a maze of mountains.

For decades, this world, like that of the Alps which in ways it so much resembles, was almost unknown save to occasional hunters, prospectors and mountaineers. A few settlements developed inside, but these either withered as the prospect of sudden wealth that had brought them vanished, or became, like the world about them, separate, walled off from the flow of life beyond the barriers. Word from time to time was brought back by travellers of what lay inside. Often this was no more than a laconic remark like that of Gifford Pinchot, that here he had shot a goat. Sometimes, however, it was an eloquent statement, like those of William Lyman and Hermann Ulrichs, of the discovery of a mountain region unique among American mountains in beauty and grandeur. Nevertheless, the discovery went unrecognized except by a few, and first those few had themselves to explore and see. Generally the assumption persisted that in the north there were mountains like those in the south, fine, but not superb. The published elevations, mostly of peaks of eight thousand feet above sea level, seemed to indicate confirmation.

But in the span of a few years now just past there has been an awakening and a questioning of what lies inside this mountain world so touched with mystery. Some of those who know parts of the world have spoken and others have come in small groups or in large parties organized by the major outdoor clubs of the west and the word has gone out that in these mountains there is a climax to the scenic

grandeur of the nation. There have been echoes all the way across the continent. *The New York Times* has carried repeated discussions of the area and magazines of national circulation have had full stories. People have come from the East, the Middle West, from California and from across the seas. Some of these have returned already to look again. And in the Northwest, The Mountaineers and other mountain clubs have devoted special attention to study of the area north of Stevens Pass. A new organization, The North Cascades Conservation Council, has been formed to protect and defend what now is known to be of vast importance to the West and to the nation.

This change, fitting perhaps in the sense that one of the very greatest of the land's scenic areas should be the last to be discovered, is the product of several causes. The first of these is that the economic pressures of a society insatiate for raw materials have brought would-be exploiters here where long ago guards should have been established. The second is the eleventh-hour development in the United States of an understanding that to preserve the sacred places of the earth a positive choice is necessary. Belatedly, but perhaps not yet disastrously so, the people of the country are learning that nothing of the original heritage of beauty in wilderness which has so much been taken for granted will be spared unless the decision is made and defended that it shall be spared. The economic threats and the movement for conservation both have come to focus upon the northern Cascades.

Much has been learned about the region in the last few years. Nevertheless, the problem of understanding remains. It is a problem in perception — how is anyone to see the whole, to grasp it, to reconcile the contrast of light and darkness, of serenity and turmoil? To appreciate the nature of this problem, consider the aspect of the region as it appears from different approaches.

The approach from the air is in many ways simplest and most direct and gives the most comprehensive survey. By small plane — the large craft of the scheduled airlines avoid the region — the whole may be brought into view and much of it explored in a three-hour flight. The direction of the approach makes little difference, the effect is likely to be much the same. As the flight begins, the first necessity is to gain elevation. The start is necessarily low, for on neither side of the range is there any high plateau with unencumbered spaces. Very quickly, before more than a few hundred feet have been gained, the craft is inside a long, deepening and curving valley. Were it not for the valley's length there would seem no prospect of climbing above the walls alongside; the peaks mount in height far more rapidly than

the power of the small plane itself to climb. Gusts of turbulence toss the plane each time it passes the dark mouths of side canyons. This motion and the sight of the absurdly racing shadow of the plane upon the valley floor mock the presumption of the flight and of human presence itself. Only the mottled scars of patch-cut hillsides testify to any power of man.

But gradually, with succeeding miles, the valley floor below has been rising and then suddenly it steps upward over a cliff marked by the billowing spray of waterfalls. The plane too has risen and alongside it jagged buttresses of naked rock soar to nearby peaks covered with snow, pure but also austere and hostile. A quick turn and a breathless last steep rise puts the plane through the narrow gap of a summit pass. Suddenly there is space and, with a few circles, the whole panorama of the northern range is spread.

It is an awesome sight. As far as can be seen there is no end to the succession of ice-hung peaks. Those close by are more menacing, but they are so only because they are close; those far off are as sharp, as icy and as forbidding. It is a land in still and silent tumult. There is no pattern, no order, no serried ranks of ranges. The lines lead in no direction; they are not parallel, concentric, radial or any other design which might be conceived. This is the sea of peaks which so many travellers spontaneously have discovered on first looking out upon it from a height, a sea lashed by some cosmic storm, a sea heaving its surface into a multitude of curling, twisted, white-crested points.

In just one direction is there a focus. Here, rising above all the rest, and massive beyond comparison with anything else in sight, is the almost pure white form of a great volcano. Unmistakable as unexpected, it dominates the entirety of the turbulent scene. This is Glacier Peak, prosaically and ambiguously named with a name that would be as appropriate for dozens of other mountains in the vicinity. Yet this mountain is unique. It is unchallenged for size and majesty by any of its neighbors, but also unrivalled for its setting by any of the volcanoes of the Cascades' procession. And here, from the perspective of flight, Glacier Peak gives order, or if not that, orientation to everything in view. It is a beacon, a gathering point toward which the eye can reach for reassurance amidst the surrounding chaos.

But the plane cannot pause and as it turns away from Glacier Peak, there are details which suddenly preempt the gaze. These are details of a tremendous scale, but still details in the panorama. The floor of some unidentified valley has momentarily dropped into depths that are almost black. As quickly, the slope on the valley's other side

rises into a sheer face of granitic cliff and a stabbing blade of rock stops just short of the plane itself. Instantly, there is a wild wreckage of glacier falling in motion that has an illusion of visibility. The next ridge is as violent and the next and the next. Turning tightly within some one of the valleys there is a meandering stream, closer examination shows it to be a flooding torrent and at its head an ice-bound lake set amid bleak rock and cliff.

Minute after minute there is the same swift succession of crag and canyon, the same scene of the land in surging, violent upheaval. There are variations of form, endless ones, but they pass so quickly they can hardly be distinguished. Everywhere the effect is the same, except that cumulatively the slow tension-filled moments produce the impression of an utter savagery of landscape and the return to earth outside this mountain world gives a release that is completely welcome.

This is one perception and perhaps a valid one. However, there are other perceptions and they too are valid. Approach the region by foot, by one of the deep valleys of the western side. Within a short time of leaving the logged-off starting point, the forest has closed over the trail. One of the area's pioneer explorers has described the effect: "One's first impression, of being imprisoned in a deep green cavern, cut off from the open sky, deprived of all outlook and freedom of activity, eventually succumbs to their mysterious, brooding, and really unknowable quality, and in the end the experience of traversing them to the heights beyond comes to be treasured for its own sake. To penetrate these vast and silent reaches is to enter a world steeped in a perpetual cathedral twilight of dim gold and green half-lights. Great pillar-like firs, over 250 feet high, mingle with spruce and cedar, almost rivalling them in size. The undergrowth, particularly in the valley bottoms, is tropical in its luxuriance and impenetrability. Devil's-club abounds; but the greatest obstacles are the huge fallen trees, which in the moist climate, decay very slowly and frequently support several generations of young trees upon their prostrate sides."*

Here, in the Sauk or the Suiattle, hardly less than in the west-facing valleys of the Olympics, is the rain forest. Here is not naked rock but the luxuriance of life, form upon form, small ferns and leafy plants rising out of deep moss, and great trees towering above. This, too, is the world of the Northern Cascades, a world secluded, pristine and silent save for the undertones of water, a world moving to its own inner rhythms, with life, death and regeneration in perpetual and unfathomable balance.

Or start from one of the innermost recesses of the region's valleys, this time a bit to the east. It may not have been easy to reach. Trails are often poor and long neglected. Footlogs across the streams are apt after a year of heavy snow to have broken and been carried away in the June floods. But there is an open meadow at the trail's end. Waterfalls cascade and drop thousands of feet just a short distance away. Aspen limbs torn off in the avalanches of earlier years are easy to find for a fire and the meadow's deep grass is mattress enough.

Start when the first touch of dawn has colored the summits at the valley's end. Then break through the jungle-like growth of alder and vine maple to the point where there is suddenly a well beaten trail, one far steeper than any laid out by man, one leading steadily and relentlessly upward. Occasionally devious, but always for good reason, it passes through the life zones rapidly. The last Douglas firs are passed and the first Alpine firs take their place. There are now open spaces between clumps of white-bark pine, with lupine and paintbrush in the scattered tufts of the meadowed hillside. Gradually new peaks appear, not in dozens, but by twos and by threes. Steadily with the climb the great ridge across the valley lifts its height and more and more of the great glacier upon its face is seen. Then, perhaps some six hours from camp and more than five thousand feet above it, the slope levels off in an unexpected shelf, a cirque where long ago a now departed glacier carved out the mountainside.

This spot, seemingly never before reached by man, hidden from the valleys and unseen from the air, is covered with masses of flowers of all the alpine species. Arranged and divided by groves of alpine trees, it has many fields, one leading into the next, each textured and tinted differently than the last. A small stream drains out of the snowbank that is the only remnant of the one-time glacier and it gently ripples through these fields, clear, cool and quietly murmuring. It passes through a screen of tall, insubstantial larch and disappears, probably to dissolve in the mist of its fall to the valley.

Through the soft bright green of the larch at the edge of the unseen cliff there is a vista into a group of hanging valleys separated by sheer-walled crags. A large white peak closes the view in the distance. Through the tracery of the larch it is as though one were looking on some work of architectural design. Each valley is a repetition of the other, yet with individualized patterns of its own, and all tributary to the distant white massif and all in harmony. One of these valleys has a seldom-used trail, the others, so far as is known, have never been entered.

Or walk to a knoll above the stream. The land falls away to the

valley from which the morning's walk began. Across this mile-deep chasm one of the great panoramas of the nation appears. It is a succession of rocky spires rising out of ice falling in a vast Niagara. This great expanse of ice is divided by long sweeping buttresses into a number of glaciers, but one of these is a mile in width. It drops out of sight behind the highest of the buttresses, but the terminus of its neighbor can be seen overhanging the narrow sanctum of the valley's end.

The full paradox of the mountain world is here at an unnamed spot above the Agnes Valley. Violence and gentleness, the huge and the minute, the processes of life and those of death, are put each against each and instead of contradiction and conflict there is harmony, not chaos but order. It is an order at once obvious and subtle. It is an order in which all of the diversities depend upon each. Some of their relationships are plain and clear to be seen, but others are not and can only be guessed. And here, perhaps, are the limits of perception.

For many years a substantial area in the heart of this brilliant and brooding mountain land has been protected by a regulation of the United States Forest Service. The regional office of that service has marked out a Glacier Peak Limited Area. The tract so delineated was once much larger than it is now so that it included a very large part (although far from all) of the most superb portion of the North Cascade world. Under the supposition that mineral deposits of potential value existed in certain parts, large deletions were made from the Limited Area. Although these commercial possibilities have remained unrealized, the deletions have not been repaired. Now, however, a decision on the future of the remaining protected area is approaching. Since the category of "limited area" is one of only temporary standing and since the degree of its protection is only partial, the Forest Service is proposing to extend the category of "wilderness area" to some part of this region under the national regulations of the Service and proclaimed with the authority of the Secretary of Agriculture.

Although nobody familiar with the peculiar values of the North Cascades can be content with any decision that leaves such large areas of its best regions open to exploitation, the declaration of a Glacier Peak Wilderness Area is an important first step toward protecting the integrity of this splendid mountain world. The Mountaineers have recommended on the basis of the considerable knowledge of many of their members boundaries which should be followed in establishing the permanent wilderness area. The information used,

while far from complete, is sufficient to justify statements that within the lines marked out there are areas of real wilderness and of superlative mountain scenery. The lines laid out follow natural boundaries upon the land. They treat the area enclosed as a unit, so far as this is possible while taking only a part of the region, regarding the forests of the deep and narrow valley approaches as just as vital to the whole as the summit peaks and glaciers. Perhaps the most serious criticism made of these recommendations so far is that they include so small a part of this magnificent whole.

Nevertheless, in keeping with the unhappy and often sordid tradition that our public lands are to be made available on easy terms to those with an eye to private profit, there has been dispute where the boundaries of this limited Glacier Peak Wilderness Area should lie. As a result, the first boundary proposal of the Forest Service is a compromise between the claims for conservation and those for exploitation.

The most immediately important areas which seem to be in jeopardy as a result of this tentative official proposal are the Whitechuck and Suiattle Valleys on the west and the Agnes Valley on the east. Significant portions of these, portions important to the very unity of the region would be left open to logging and other exploitive uses by the present proposal. It would seem a truism that in any area of scenic magnificence foregrounds are as important as backdrops. Yet there appears to be little official planning for graduated protection for areas adjacent to the proposed wilderness area. Certainly if the frequently heard remark that splendid areas should be made accessible to those unequipped to walk or ride horses is sincere, those areas now accessible and of such a character should be preserved from spoliation by logging and other destructive uses. Yet there seem no present means for protecting the avenues of deep incursion from this sort of defacement. This problem is very serious in the Stehekin Valley and on the shores of Lake Chelan, the most dramatic water entryway to any of the American mountains.

Ultimately, the conflicts of use — and the trees of the narrow forested valleys could yield saw logs for houses, boxes and billboards, the meadowed hillsides could spew copper for wire and tubing — cannot be solved by any reference to statistics or quantitative weighing by mechanical means. Board feet could be set against man days of travel in the area, needs for material of a rapidly growing population against the needs for human maintenance and renewal of that same growing population. Yet the problem would remain. It involves a weighing and a careful assessment of one kind of value against an-

other. This part of the search for a decision in the public interest can only be carried out by the people themselves. As with war and the generals, this aspect of administration is too important to be left to the administrators.

The weighing and the assaying that must be done can occur inside no room. Maps may represent peaks and valleys, and serve as superficial guides for travel, yet at best they remain no more than paper, symbols and not the reality. The mountain public, no less than the administrators who participate in the decisions which are soon to be made have a special obligation to the nation to discover and to assess the values of this long-forgotten world.

The area is not difficult to visit. It is not remote, although it is perhaps elusive. A few hours' travel by car from the major highways bring one to the trails beginning on the Cascade River, the Suiattle, the Whitechuck, the Sauk, the White, the Chiwawa and the Entiat. The foot of Lake Chelan is touched by a major highway. None of these points is more than a day's travel from the major cities of the Northwest. From each one, there is a diversity of choice of route to the region's heart. Each has its own individuality of landscape and character of mood. Most routes lead ultimately to some point at which Glacier Peak is the dominating feature. This is particularly true of the approaches from the west. Yet, it would be a serious mistake to suppose that Glacier Peak is the whole, or even the climax of the area. From many of the very finest spots which, when discovered, will exert their singular and compelling hold upon their discoverers, Glacier Peak is invisible and unthought of. Some of the other great mountains of the area are even more spectacular and more dominating in their own settings than the big volcano. Bonanza, Dome, Johannesberg, even lesser and sometimes unnamed peaks of the region are as important within their own areas. It is a land of many climaxes.

But superb as many of the peaks of the region are, they do not hold the only values or constitute the only climaxes. Some valleys, some lakes, some of the undulating meadows are themselves climactic. To stand upon the untracked shore of Trapper Lake, to wander through the meadows of North Star Park or Middle Ridge, to pass through the rain forests of the western valleys, as much as to ascend an unclimbed summit, are experiences of culmination.

In truth, it will not be given to many to be the first to climb some mountain or to enter some hidden valley. And yet, the quality of discovery can remain. Just as so much in American life and history finds meaning in the frontier, so exploration has been a leitmotiv of our being. Sometimes it seems that the goal of exploration has been

entirely economic. Yet, that exploration has also been a search, a quest for other values. And ironically these other values have often crumbled at our touch. They disintegrate and vanish as we exploit and reshape what we have found. The areas which we have left unchanged are few and growing smaller, but they do contain the best the nation has ever had. Of these the inner Cascade world still holds the prospect of new perspectives and discovery, discovery not alone of rock and ice, but on occasion, perhaps, an oblique and fleeting vision of some forgotten facet of the human essence.

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*Hermann S. Ulrichs, "The Cascade Range in Northern Washington," *Sierra Club Bulletin,* Feb., 1937, p 71.

Expectations

The man is lonely in the gloom
    Of gray, thick, draping mist.
It seems to eyes but yards away
    That he does not exist.

Here crowds can be in solitude
    All looking for the light.
Here all is weird, and things are strange.
    No stars appear at night.

For days they wait with eager hope
    To witness sight with sounds.
With groping hands they search about
    For grandeur that abounds.

And when, great joy, one happy morn
    The warm sunlight shows through,
The clouds push back the damp, grey veil,
    The giants are in view.

MATHIAS ZAHNISER

BEFORE

WHITE MEN

By VIRGINIA MOHLING

Residents of the Pacific Northwest are continually reminded of the Indian culture that preceded them in the area. The hard-to-pronounce names of counties, towns, and rivers, such as Puyallup, Humptulips, Klickitat, Dosewalips, are sources of merriment as well as consternation to newcomers and tourists. Indian art motifs also have become familiar through their use in contemporary design. For instance, totem pole characters like the popular killer-whale are often incorporated into ceramic, mosaic, and fabric designs. It is well known that the creators of these names and art forms were the local Indians, often referred to as *Siwashes,* who are popularly thought to have led a very simple and lazy life eating fish. (The term *Siwash* is from the Chinook Jargon, which was a trade language incorporating words and phrases from several Indian languages as well as French and English. Siwash is a corrupted version of the French word *sauvage.*) Although relatively easy, however, their life was far from simple and was not solely directed toward the salt water. There were several tribes who lived high in the Cascade Mountains who had skill in mountain travel, endurance, and knowledge for 'living off the land' that would evoke envy in the heart of any mountaineer—especially a bivouacking one. The way of life—or culture—of these mountain Indians, although specialized in some respects, was typical of Northwest Coast Indian culture in general; therefore the following discussion will be devoted to a description of the most characteristic aspects of that culture as it existed before the time of white men.

The term Northwest Coast Indians refers to the many tribes west of the Cascade Mountains in an area extending from northern California to southeastern Alaska. All the tribes in this area shared similar traditions, but more important, they shared a similar economy. Their economy was based on hunting, fishing and gathering, which is the most simple and primitive type of economy known in the world. But the abundance of salmon, along with the knowledge of preserving food by smoking and drying, gave the Northwest Coast Indians, in

essence, a staple 'crop' comparable to that of more advanced agricultural or herding economies. There was an abundance of other completmentary foods such as edible roots, berries, shellfish, and wild game which, like the salmon, could be stored, and which added to the comfortable economic conditions. The result of this easy living was considerable leisure time; in fact the Indians worked only in the summer, catching and storing food, and had all winter in which to play.

The history of the development of civilization discloses that when the energy of human beings is released from economic responsibilities for long periods of time, the products of leisure time can be of considerable magnitude. It is leisure time which permits the development of both a complex society and the more intangible aspects of life, such as art, and religion. The development of these aspects of communal life is usually associated with more advanced peoples who possess the economic security of an agricultural system. But the Indians of the Northwest Coast, with their equally secure economy developed art, religion, and a complex stratified society to a degree truly unique among non-agricultural, primitive peoples.

Though all the tribes in the Northwest Coast area were similar in their economic base and in their general traditions, there was, in the use of leisure time, considerable difference in emphasis among the various tribes. The area may be divided roughly into two parts, northern and southern, with the boundary falling approximately along the Canadian border. The culture of the northern tribes is better known, and in fact is popularly considered the typical culture of the Northwest Coast. This is understandable since the northern tribes were a more spectacular people; but the less well-known southern tribes, especially the Puget Sound and adjacent Cascade Mountain tribes, had an equally rich and intense culture.

It was the northern peoples who carved the famous totem poles. In fact they were not carved indigenously south of Vancouver Island. And it was also the northern peoples, namely the Nootka on the west coast of Vancouver Island, who made the huge seventy foot ocean-going dugout canoes from which whales and seals were hunted. Wood carving in general received a primary emphasis among the northern tribes. This skill was revealed not only in structural wood working, as expressed in the canoes and large, communal, split-cedar plank houses, but also in the artistic use of wood carving. Literally everything was decorated: house fronts, canoes, storage boxes, tool handles, bowls and grave posts. The designs used in the decoration were similar to the characters on totem poles, and were, in composi-

tion, an abstract expression of mythical ancestors. Each family, lineage, and clan was named after its mythical ancestor. The decorations on household items were simply an expression of this heritage and may be considered as family crests, or 'coats of arms'.

The highly developed skills in wood carving also became part of the elaborate ceremonialism of the northern tribes. These ceremonies included rehearsed singers and dancers, complicated stage props, dramatic showmanship, oratory, and most spectacular of all, huge beautifully decorated masks. These masks, which again were usually an interpretation of mythical animal ancestors, were not only ornate, but often mechanically designed so that by pulling a string hidden in the costume, the whole mask would fly open and reveal another mask underneath. In general, the northern tribes had developed a pageantry of spectacular art forms truly unusual for a hunting, fishing, and gathering society.

Among the southern tribes, in contrast with the north, woodworking was employed almost exclusively for practical purposes. All tribes in the entire Northwest Coast area built the large communal houses made of split-cedar planks with shingled roofs. Equally common to the entire coast was the manufacture of small dugout canoes for use on rivers and inland waters. But among the southern tribes wood carving was not a common medium for artistic expression. Their art was closely associated with religious emotions, and it was expressed primarily through individual dancing and singing.

Religion was probably the most emphasized single aspect of life among the southern tribes. It permeated every act and thought. The particular religion of the area has been called a Guardian Spirit religion, referring to the fact that each individual had one or more personal spirit powers which helped him through all aspects of life. For example, if a person were a successful canoe maker, it was because he had a canoe-making spirit power; if he were wealthy, it was because he had a wealth power; if he were a completely unsuccessful, ineffectual person, it was because he had no spirit power at all.

The importance of acquiring a guardian spirit was stressed from early childhood, and both boys and girls were rigorously trained in the skills and attitudes necessary for successfully attracting a spirit. They were taught to endure physical hardships such as plunges in ice cold water every morning before dawn. They were taught that spirits liked only clean bodies, but the concept of cleanliness was rather severe when viewed by our practices. The outside of the body was scrubbed vigorously with fir branches, often until it bled; but the inside of the body was also cleansed by complete fasting coupled with

the use of emetics and physics.

By the time a child reached early adolescence and his elders perceived that he had the proper attitude of mind and was proficient in ritually preparing his body, he would be sent on formal quests for a spirit power. These would last for several days and consist of going to a lonely place, with total abstinence from food, water, and sleep, where the child would just sit and stare into a fire or perhaps dive repeatedly into deep swirling waters until exhausted. One can easily see how a weakened physical condition together with strong mental expectation would be sufficiently conducive to creating a state of trance or hallucination. And it was in a state of trance, referred to as a vision experience, that the novice received his spirit power. Most often the spirit appeared in the form of an animal, but sometimes in the form of a mythological beast as well, such as a dragon-like monster, or a supernatural person. During the vision, the spirit would indicate what power he was bestowing and teach the child a song. That song was the most sacred symbol of his spirit encounter and would be used for the rest of the individual's life. After the child awakened from his vision, he would return home but keep his experience completely secret.

After successfully acquiring the first spirit power through the formal quest, other spirits might appear spontaneously in dreams, or through unusual or dangerous experiences. For example, if a person were attacked by a large animal but managed to escape, he would probably later interpret that animal as a spirit-being offering a particular power—perhaps luck. By the time a person reached adulthood, he would usually have acquired several guardian spirits; but they were not yet truly his and actively working for him. They had still to be publicly validated at a Winter Dance ceremony.

It was during the winter months, when economic activities ceased, that the spirits were 'around', and would 'visit' their owners. A person who had not yet validated his spirit power at a Winter Dance was expected to become ill some winter during his middle twenties. A witch-doctor, or shaman, who had special diagnostic and curative spirit powers, would be called in and would diagnose the illness as "guardian-spirit-wanting-to-be-expressed." The only way to get well was to give a Winter Dance. Many people were invited to the ceremony which would last several days, with dancing and eating during the night and sleeping during the day. On one of these nights, the new spirit possessor, who was still ill, would begin to moan and wail. The song leader would come close to him and listen, trying to pick up the song emerging from the subconscious of the sick person. Finally the

song leader would 'get' the song and sing it loudly. All the other people would start singing too, and beat drums and planks. The song was supposed to be the same one that the spirit had given to the person in his vision experience years before. With all the people singing his song and 'helping him get his power,' he would suddenly leap to his feet, completely possessed by his spirit, and dance around the room. The gestures in his dance, as well as the words in his song, would suggest the kind of spirit power he had received. If the spirit were a bird, he might scatter down all over the floor and move his arms in a characteristic, bird-like manner. Some of the spirit powers, such as Warrior Power, were quite ferocious, and the dancer might run through the fire, or even slam himself against a wall in a state of frenzy; but he would never be burned or hurt. Eventually the dancer would fall completely exhausted, but no longer ill, and in complete control and possession of his spirit power. This state of self-hypnosis which allowed the possessed to endure severe physical trauma without visible after-effects has not been thoroughly studied and explanations of it remain speculative.

A Winter Dance was characterized by a general air of excitement in which many people might become possessed by their spirits and dance in order to rejuvenate or renew their spirit powers. In fact, these ceremonies would fill the winter months, and many people would spend the majority of their time attending one spirit dance after another and these ceremonies would fill their leisure time to a round of 'party life.'

A complex, stratified society is often associated with leisure time, and the social structure of all the Northwest Coast Indian tribes was stratified not only into classes but also included a special caste. This caste consisted of slaves who were captives of war. They were the same race, and often even spoke the same language; but once captured they remained slaves for life, as did their children. The fear of having 'slave blood' in one's ancestry was carried almost to ridiculous extremes. If a member of a family were captured but escaped and returned, he would hardly be welcomed back; he had been a slave and therefore carried that stigma. Before he could be fully accepted back into his family, he had to go through extensive purifying rituals in order to re-establish his social position and to avoid down-grading his family by introducing slave blood into it. Slaves on the whole were not badly treated, and were merely employed to do the more mundane household chores. However, they were considered property and were sold and traded up and down the coast.

The social *class* system, on the other hand, had a more complex structure. Essentially, it involved a distinction between 'noblemen'

and 'commoners,' but there was no sharp distinction between the two classes. Instead the social structure presented a gradient from low class to high class. Each family of a village occupied a particular place or niche in the social heirarchy. This position depended primarily upon the amount of prestige a family could acquire by a conspicious display of wealth through the mechanism of the highly competitive *potlatch*. (The word *potlatch* means 'to give' in Chinook Jargon.)

Potlatches were a cultural feature of the entire Northwest Coast area, but as one might expect, they were greatly elaborated in all respects by the northern tribes. Basically a potlatch is a 'big party' that might include over a hundred guests who may stay for several days or for several months, depending on the occasion. A potlatch was not given for its own sake—just to have a party—but was always associated with other important occasions, and actually served as a validating ceremony for these other occasions. For example, potlatches were given for the 'dedication' of a new house; they were part of marriage ceremonies; they accompanied the initiation of young people into adult status or into secret societies; and on a smaller scale, they were often given for the formal naming of new born babies.

The essential, or validating element of potlatches was the presentation of gifts to all the guests. It was here that the competitive factor was most obvious. According to the rigorously prescribed tribal etiquette, the guests received gifts in the order of their social status, with the man in first place receiving his gifts first and also receiving the most. Moreover, everyone knew how much the host himself had received from each person at previous potlatches. Thus, in order to maintain his social status, the host had to reimburse with interest each of his previous donors, the interest rates running as high as 100% in some areas. Now if the host failed to satisfy the expectation of the the crowd in recognizing both rank and debt among his guests, and if he did not exceed his rivals in general potlach splendor, he lost social prestige and accordingly would drop a notch in the village social scale. Among the Kwakiutl of northern Vancouver Island the rivalry between families vying for higher social positions virtually reached the point of mutual devastation. At a single potlach several *thousand* blankets might be given away; or instead of actually being given, property was often dedicated to a particular guest and then destroyed. Canoes would be hacked to bits, box after box of stored fish oil thrown on the fire, or perhaps even a slave killed. It should be added however, that potlaches, even among the Kwakiutl, did not reach these proportions until after European contact and the advent

of the Hudson's Bay trade blankets. Before trade relations began with Europeans, pelts and blankets of native manufacture were given away at potlatches; but these were never available in the tremendous quantities described above. During the early years of trading, and before the Canadian government suppressed potlatching, the Indians became quite prosperous; the easily accumulated Hudson's Bay blankets became virtually a 'potlatch currency.'

Potlatches among the southern tribes, although involving the same general principles, never reached the extremes typical in the north. In fact the idea of destroying property was completely "crazy" to them. One can see however, that the entire potlatch system was based on a surplus of wealth which is possible only in an area of economic abundance. Also such a system could only exist where there was considerable leisure time to devote to the problem of keeping track of who was where on the social scale, and of who gave who how much at each potlatch—this without the use of writing or mnemonic aids.

It is interesting to note that this system of relative social prestige took care of the problem of government. The men with the most prestige simply had the most influence—politically and otherwise. No appointed political leaders were necessary. Therefore it is technically wrong to refer to various individuals as 'chief', such as Chief Seattle. These men were entitled 'chief' by white men who observed that they seemed to execute the most power, but they did not recognize that the power came from prestige rather than authority. The 'chiefs' were simply the men whose families had been able to maintain enough wealth to "stay ahead of the Jones's" in the competitive social class system.

After European contact was permanently established the Indians became keenly aware of the 'get-rich-quick Johnny-come-lately.' Some men who had previously been 'commoners,' i.e. were in the lower half of the social scale, became relatively rich by taking jobs in fish canneries, or with logging companies. They would immediately begin to throw big potlatches in order to raise their social prestige. But these men did not have the necessary concomitant heritage to win true prestige. In other words wealth acquired with white man's dollars did not have the same significance as wealth inherited over generations. The son of a commoner, although rich from white man's salaries, was still the son of a commoner. Leadership then, was not simply a matter of buying social position but was intricately linked with a whole complex of inherited rights, privileges and status as well as material wealth.

It was mentioned earlier that not all of the Northwest Coast Indians lived on the shores of salt water and that some, in fact, lived high

in the Cascade Mountains. These tribes were called 'up-river' people by the coastal Indians and were considered to be more or less 'country cousins', or 'stick relatives'. The mountain Indians always lived along rivers, since their staple food was salmon. In comparison with the coastal tribes, however, their economy had a much narrower margin due to the more rigorous inland climate and the lack of important shellfish. The coastal people realized that their up-river relatives had a more precarious existence and that famine was not unknown to to them; but at the same time they had great admiration for their unusual skills and bravery in hunting big game and mountain goats.

The salt water Indians rarely ventured into the mountains. In fact they were superstitiously afraid of them. They believed, for example, that huge giants lived in the mountains who whistled to each other and threw rocks down the mountain sides at intruders—(marmots?). On the other hand they valued the pelts and wool from mountain animals, especially mountain goat wool. Since the mountain people were skilled in obtaining these, and in turn needed shellfish, active trade relations existed up and down the rivers and even across the mountains to the Plateau tribes. Mountain goat wool was in demand over a large area, but because it was relatively scarce, it was blended with shredded cedar bark, bear hair, and even dog hair from a specially domesticated native dog.

The mountain Indian tribes that were probably the most famous among neighboring Indians were the Nooksack and Upper Skagit. The Upper Skagit lived along the Skagit and Sauk rivers, and later the Suiattle. What is often referred to as the Sauk and Suiattle Indians were actually bands of Upper Skagit, and not distinct tribes. There were others who exploited the mountains for a livelihood, the Skykomish and Upper Stilliguamish, but they did not achieve fame for hunting skill or bravery equal to the northern Cascade tribes.

Interestingly enough the Indians considered the northern Cascades—i.e. from Glacier Peak north to approximately the Canadian border—to be a wilderness or wild area. The mountain range widens there, making it a more arduous trip to cross the mountains and a more lonely and dangerous venture to hunt there. (The few trails that are known crossed to Lake Chelan in the Cascade Pass area.) But it was the very wildness and remoteness of these mountains that explained the presence of big game and here the Upper Skagit and Nooksack hunted.

Relatively little is known specifically about the aboriginal culture of the mountain Indians. Within less than one hundred years after contact with white settlers their culture virtually disappeared. As

a result, no anthropologist actually saw the culture in operation. In fact there was hardly a chance for traders or missionaries, who traditionally precede anthropologists, to describe their way of life. Therefore all that is known of their culture is what has been pieced together or reconstructed from the stories told by very old people of "how life used to be". A reconstructed 'memory culture' such as this leaves many questions unanswered, and indeed they are unanswerable. To date, there has been very little reconstructive anthropology done in the area so that even data on the memory culture is scant. Almost nothing is known of the Nooksack tribe, and now there are only one or two individuals left who even speak the language, much less know the old life. More is known of the Upper Skagit, due primarily to the recent field work done by Miss Sally Snyder between 1951 and 1954. From the data she collected certain general aspects of mountain culture are known.

The basic culture of the mountain Indians was similar to that of the Puget Sound tribes, especially in its emphasis on the Guardian Spirit religion. But in the mountains class differences were much less important. There were practically no slaves up-river and therefore little 'slave blood' could be introduced into family lines to make them truly low class. Nevertheless there was some social stratification depending upon economic success—or ultimately upon the possession of strong spirit powers, since all success depended on them.

Probably the most valued spirit powers, with the possible exception of those of the shamans, were powers for hunting. Hunting was primarily an individual endeavor, with the hunter relying on aid from spirit powers rather than human companions. His knowledge of hunting skills and techniques, such as building traps and special fences, was believed to be a manifestation of his special hunting spirit power. For example one of the common ways of catching mountain goats, so we are told, was to fence in the whole top of a mountain where the goats were known to be. The goats were then killed with bow and arrows or spears. Considering the necessary size of the fence and the area covered, it was an impressive feat to be accomplished by one man. The knowledge for building this fence was bestowed by the most powerful of the hunting guardian spirits, and the few men who possessed those powers were highly respected in the society.

The game animals were treated, in some respects, almost as if they were spirits themselves. A hunter had to perform certain ritual acts before going on a hunt, some of which were similar to those accompanying spirit power quests. Also game was sought in the same kind of areas believed to be frequented by spirits. These were remote

lonely places uncontaminated by human habitation and were, therefore, considered sacred. Bacon Peak, near Baker Lake, is an example of a favorite hunting spot for mountain goats. When an animal was successfully caught, it was believed that the hunter's spirit power had given him a 'gift' in the form of the useful corporeal aspect of the spirit. From the Indian point of view then, one can see that it was absolutely necessary for the hunter to have guardian spirits.

The whole ordeal of the hunting expedition assumed an important religious significance. Being alone in the wild northern Cascades for several days, a hunter was continually confronted not only with hunting problems, but also with mere survival. The psychological condition brought about by loneliness, fatigue, and perhaps hunger, was precisely the same as the self-inflicted state in which spirit powers were received on quests. Thus additional spirit powers were frequently obtained by lone hunters. The knowledge of this and the hope of becoming even more 'powerful' provided the hunter with additional incentive to endure the physical hardships of solo hunting.

Hunters had surprisingly efficient mountain equipment and techniques. For instance it was common practice to hunt goats on Mt. Baker, Glacier Peak, and Bacon Peak, all of which are glaciated. In order to travel on the snow, the Indians used snow shoes with bear claws attached to the front which served as crampons. Also when decending a snow-covered mountain they slid on their feet, leaning on a long stick in order to control their speed. They protected their feet from the cold by insulating their moccasins with moss. The old Indians insist that these techniques were used long before contact with white men.

As one would expect, the closeness and importance of the mountains to the up-river Indians led them to create many stories about them. In fact the mountains and other prominent land marks often became personified actors in stories. For instance there is a rather interesting story of this type about Mt. Sauk and Whitehorse, as told by Lucy Williams, an Upper Skagit woman:

> "Sauk Mountain and the mountain above Hazel were sisters. Sauk Mountain was a strong ('powerful') person from east of the mountains. The other sister (Hazel) was from the Lower Skagits. Whitehouse Mountain at Darrington was their husband. In the early days these two women were fighting over their husband and that is why Hazel Mountain is all streaked up, from the other mountain fighting her. Sauk Mountain won because she was strong and she threw Whitehorse up there where he is now so she could see him all the time. The defeated woman is way

down below with a scratched face and a swollen head on one side. That is why the Indians from east of the Cascades come over here and marry—because Sauk Mountain was an east-of-the-Cascades-lady."

There are also some very good stories in which mountain goats, who live in great ice houses high on the sides of Mt. Baker and Glacier Peak, are the main characters. Animals were personified like the mountains in the story above, and were the most typical story characters. Within a single story, which might take several hours to tell, many different kinds of animals would appear. Each type of animal had a distinct personality that remained the same in every story. The practice of assigning both a personality and super-natural power to animals suggests the generally mystical attitude the Indians had toward animals.

The fate of the Upper Skagit Indians is typical of the all too familiar story of white man's oppression of native peoples. The up-river tribes were not contacted until relatively late in the period of white settlement in the Pacific Northwest. The Skagit River remained unexplored for many years partly because there were huge log-jams in the lower part of the river obstructing river travel. Until the 1870's when the log-jams were removed, only a few miners had penetrated the wilderness. But in that decade rumors of gold and the awareness of other exploitable goods, such as coal and timber, precipitated a terrific influx of white settlers. The sudden impact of the intruding homesteaders into traditional Indian territory so took the Indians by surprise that they did not realize the gravity of the situation, nor were they able to react effectively. The story of what happened to the Upper Skagit tribe as told by Leo Braun, an Upper Skagit, is typical of how the Indians themselves view the last hundred years of their history. (The following has been condensed from an article in the *Concrete Herald,* 1951 Anniversary Edition.)

In the 1850's, the up-river people heard that the salt water tribes had been making treaties with Governor Stevens; but the up-river people did not yet understand the purpose of treaties, since they had thus far only been visited and their lands not threatened. In the late 1870's railroad surveyors hired some of the Upper Skagits living on the Sauk River to help them survey the up-river country. When that survey was completed the surveyors urged the Indians to have their own land surveyed to protect it from white settlement. The Indians had this done, and when the survey was finished, the head surveyor said to the Indians, "We have finished this survey. This will always be your land". But the Indians did not make a formal treaty with the government.

Two years after the survey, a man from Puyallup came to the Indians living on the Sauk Prairie, and hired them to work in the hop fields. All the Indians left for this work. But when they returned they found that white claim-jumpers had moved into Sauk Prairie, burned or torn down several Indian homes, replacing them with their own, and had stolen Indian blankets, and cooking ware from the remaining Indian homes. "The white men protected their land with guns, but the Indians didn't want to fight; so they set up camps along the river. Many of the people were cold and they sickened and died."

The Suiattle River country had a very severe climate, with extremely deep snow in the winter. The Indians had always used this land in the summertime for hunting, fishing, and drying food, but there were no permanent villages along that river. They considered it "bad country". When all their other tribal territory had been taken from them however, the head man of the Sauk band, called Chief Moses, went to the governor at Olympia with an interpreter to ask for land along the Suiattle to be officially granted to his people. The request was granted, and every man, woman and child was given a land allotment. This was in 1901. In 1916 the Forest Service cancelled these allotments, ". . . and the Indians left."

Today, few original Indian communities remain in the Pacific Northwest. The pressures of modern life have tended to eliminate or replace the Indian people and their culture. Epidemics, brought on through contact with the white man, and the crowded conditions of reservation life have destroyed distinct tribal identities and traditions. Indeed, many tribes have completely disappeared. The old ideals, the values, the beliefs, and to a large extent the arts of the Indian people are virtually gone, except as they exist in the memory of a few, and in the scanty records which have been preserved. Out of the great complex of causes by which we can account for the steady diminution of Indian culture, the most significant has been the self-interest of commercial exploiters. If the question of Indian survival is no longer the main issue, that of the insatiable commercial appetite for his lands still persists, and, under this threat, the American people may well lose the few primitive and natural areas that remain.

I would like to thank Sally Snyder for the use of her field notes and for hours of consultation on the Upper Skagit Indians. An expression of gratitude also belongs to my Indian friends, Mr. and Mrs. Charlie Anderson of Upper Skagit, and Mr. Henry Allen of Twana, from whom I learned a great deal.

PLANT LIFE OF THE AREA SURROUNDING GLACIER PEAK

By EDITH HARDIN ENGLISH

Glacier Peak, a majestic mountain of volcanic origin, rises 10,528 feet above sea level and stands westerly adjacent to the crest of the Cascade Range at the east central border of Snohomish County, Washington. In all directions from this high landmark the various 5,000 to 8,500-foot mountains of the Cascades proper stand like a sea of peaks as far as the eye can behold. Of non-volcanic origin, these surrounding mountains have resulted from the erosion of the Cascade uplift which occurred during a period much earlier than that of the present volcanic formations.

The upper heights of this great wilderness may be approached on the west side of the Cascade Mountains by way of Pass Creek or up the Cascade, Suiattle, Whitechuck or Sauk Rivers. On the east side of the Cascades the entrance lies by way of the Chiwawa or White Rivers or up Lake Chelan. From Lucerne, on the west side of the lake, it is possible to go into the mountains by following up Railroad Creek. Still another route leads from near the head of Lake Chelan up the Stehekin River then on up Agnes Creek.

Whichever route is chosen, the impression of grandeur soon presents itself in magnificent proportions. Here is a naturally isolated realm of geology, geography and biology with ages of history behind it and, on an impressive scale, history still in the making. To see this great outdoor laboratory of natural science is to know immediately that it is well worthy of preservation. To travel its cool, clean, cloud-swept summits and study its many unique features is to know that this is a compact and relatively small piece of our country that justly fulfills the requirements of a wilderness area, namely, one to be "set aside to exist in perpetuity for the enjoyment of all but the exploitation by none."

The average height of the various peaks of this area is well over 5,000 feet. This attribute, together with their type of rock formation, abundance of glaciers, numerous active streams, hanging valleys, pre-

cipitous rock walls and attendant talus slopes, their moist meadows and jewel-like lakes, all play a part in determining the kind of plant life that can grow there.

On the western slopes the heavily wooded hills offer evidence of heavy rainfall. In the lower country are tangles of vine maple *(Acer circinatum)* and venerable old specimens of large-leaf maple *(Acer macrophyllum)* with moss-clad trunks fringed with the small but sturdy fronds of the licorice fern *(Polypodium vulgare)*. The western dogwood *(Cornus Nuttallii)*, perhaps the most admired of all our flowering trees, graces the semi-open woodlands with its white involucred heads. Red alder *(Alnus rubra)* thickets compete with rapid willow growth (various species of *Salix*) in filling the river bottoms and clothing any hillsides that have been denuded by fire. Weed trees they are often called because they prevent the more valuable conifers from becoming re-established there.

The great conifers stand like towering giants, their crowns often two-hundred fifty feet up in a sky-bound world of their own. Douglas fir *(Pseudotsuga taxifolia)* is the dominant species. Its common name calls to mind that venturesome young Scotsman, David Douglas, who left us such an exciting and sometimes breath-taking account of his plant explorations in the very early days of our Northwest. The western hemlock *(Tsuga heterophylla)* with its fine-textured foliage and handsomely patterned bark is second in abundance. True to its specific name, *heterophylla,* it displays needles of widely varying length. In places of dampness the giant cedar *(Thuja plicata)* reaches measurements that justify its common name. This is the tree that played so large a part in the lives of the Indians of the Northwest, supplying wood for their homes, dugouts, cradles and the hearth for their fire-drills; bark for their baskets, dishes, mats and clothing and, when shredded, for towels and padding for the baby's cradle; roots for use in basketry and sewing; soaked and twisted limbs of the tree for rope; and buds, leaves, bark and seeds for specific medicines. These and many other uses of the cedar are reported in Ethnobotany of Western Washington by Dr. Erna Gunther. Seldom does any plant have such versatile usage.

The ground cover under the trees of the lower forest is rich green with the sturdy fronds of the sword fern *(Polystichum munitum)*. Large is its part in helping to hold the heavy rainfall for the use of tall trees in making their mighty growth. Ferns and other vegetation of this kind play a very important part in holding the torrents of water that fall, thus helping to prevent the destructive floods that would result from too quick a run-off.

False Lily-of-the-Valley
Maianthemum dilatatum

Coral Root
Corallorhiza Mertensiana

In the moist shade along stream banks and bordering waterfalls the fingered fronds of maidenhair fern *(Adiantum pedatum)* give the setting an air of delicacy and refinement. As the generic name, *Adiantum,* suggests, the fronds, though sprinkled with spray, are never truly wet.

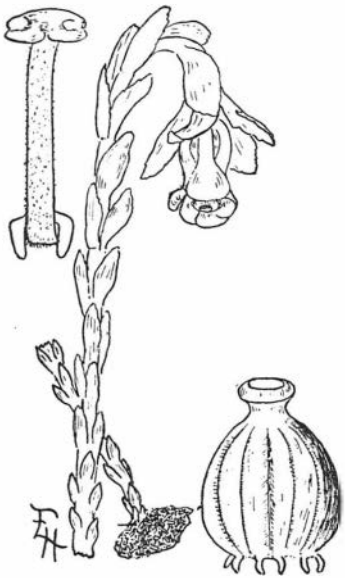
Intermingled with the ferns in less dense locations are the many springtime favorites of herbaceous nature. The lily family includes several: the trillium *(Trillium ovatum)* with three white petals and unforgettable fragrance; wild lily-of-the-valley (*Maianthemum dilatatum)* with bold, parallel-veined foliage and small, white flowers; the quaintly formed twisted stalk *(Streptopus amplexifolius)*; and the false Solomon's seal *(Smilacina racemosa)* with its small, creamy white flowers in a panicle at the end of the stem. The spring beauty *(Claytonia sibirica)* with pink flowers and almost fleshy leaves, the yellow-flowered violet *(Viola glabella)*, affectionately known as Johnny-jump-up, and the trailing, shiny-leaved, pink twin-flower *(Linnaea borealis,* var. *americana)* with its delicate but so delicious perfume, delight the hearts of all who visit the lower forest during this attractive season of the year.

Native orchids are well represented. The rattlesnake plantain *(Epipactis decipiens)* has neat, green foliage nicely patterned with white. The coral roots (various species of *Corallorhiza*) exhibit dull rosy color throughout, and no green leaves. The green-flowered, slender-stemmed rein orchis *(Habenaria sacatta)* likes moist meadows. The most amazing of all the native orchids of the area is *Habenaria orbiculata,* a shade-loving plant with greenish white flowers on a naked stem and two large, bright green basal leaves which lie prostrate on the ground.

Two other distinctive plants attract especial attention. One of these is a deep-shade inhabitant, the Indian ghost pipe *(Monotropa uniflora)* which is pure white or sometimes has a pinkish cast. Having no green leaves it obtains its nourishment from the decayed material of other plants. Because it is not too common and also because it turns a rather repelling black when picked, it is best to leave it undisturbed when it is found. The other plant is the pine drops *(Pterospora Andromeda)* which belongs to the same family as the Indian ghost pipe. However, it commonly grows three feet high, is dusty-rose color throughout and sticky to the touch.

The first of the open woodland shrubs to bloom is the Indian plum *(Osmaronia cerasiformis)* with its greenish white flowers in small, pendent racemes. Later its miniature plums are blue-black when ripe, then luscious yellow, apricot and scarlet as the season progresses. All of this attractiveness is entirely in vain so far as humankind is concerned, however, as the fruit, like the wood and foliage, is ill-tasting. Later in the spring comes the red-flowering currant *(Ribes sanguineum)* so enthusiastically loved by humming-birds that they zoom-dive in fierce little battles for the possession of a full-blown bush.

Where moisture abounds great tangles of vegetation are seen, produced to a large extent by the spiny-stemmed devil's club *(Oplopanax horridum)* which, if left untouched, is really attractive with its broad, palmate leaves and bright scarlet fruit. Together with the robust foliage of the skunk cabbage *(Lysichiton americanum)*, the over-all effect that these lush plants produce is one of tropical vegetation. As with the devil's club, the real beauty of the skunk cabbage is diminished by the unhappy application of its common name. It was as recent as 1931 that Dr. Eric Hultén and Dr. Harold St. John, through their combined study, differentiated our yellow-flowered skunk cabbage from the white-flowered, odorless, Asiatic species, *Lysichiton camtschatcense* and gave our plant a rightful name of its own, *L. americanum.*



Indian Ghost Pipe
Monotropa uniflora

Golden Monkey Flower
Mimulus tilingii

In the upper forest eventually the sticky-leaved mountain alder *(Alnus sinuata)* replaces its lowland counterpart. The tangled, arching trunks of this relatively small tree offer a most formidable barrier to climbers making their way up a steep, slippery slope.

In small colonies the noble fir *(Abies nobilis)* and the lovely fir *(Abies amabilis)* with their big, handsome, upright cones replace to a limited degree the Douglas fir. Under the trees of the upper forest the plants that form the ground cover constitute an assortment quite different from those of the lower forest. Here the common fern is the deer fern *(Struthiopteris spicant)*, interesting because it bears two kinds of fronds, one vegetative for food making, the other tall and slender, for spore production. Another fern which has this same physiological feature is the rock brake *(Cryptogramma achrostichoides)* which inhabits bold rock outcroppings. Several small, dainty ferns occur here, too, including the lovely oak fern *(Dryopteris Linnaeana)* which forms delicate green ground cover, and the beech fern *(Dryopteris Phegopteris)*, the long triangular fronds of which are found gracing shady crevices. The fragile fern *(Cystopteris fragilis)*, with fruit-dots covering most of the backs of its fronds, is found on rocky canyon walls.

Among the flowers of the upper forest one of the most admired is the queen's cup *(Clintonia uniflora)* with pure white, lily-like cups and two plump green leaves. It blooms on slopes, especially along water courses, just after the snow has retreated. Its fruit, surprisingly, is bright blue. The rosy-flowered and leather-leaved pipsissiwa *(Chimaphila Menziesii)* occurs here along with several species of wintergreen (*Pyrola*).

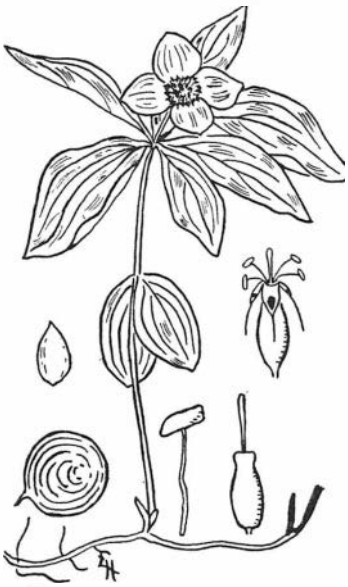
Frequently the forest floor is handsomely carpeted by the mat-forming Canada dogwood (*Cornus canadensis*). Its miniature dogwood flowering heads are characterized by four white bracts. In the fall of the year the bright red, clustered fruit gives it the name, bunchberry.

Suddenly and almost without anticipation, the upper forest gives way to that land of wondrous charm, the mountain meadows. This is a part of the high country that is dear to the heart of every mountaineer. Here it is in a setting of pure, clean sunshine, very blue skies, invigorating air and inspiring mountains, that the finest of flower shows occurs during the months of July and August.

Great dignity is provided the scene by the dominant tree, the subalpine fir *(Abies lasiocarpa)* which often arranges itself in small, park-like groupings throughout the mountain meadows. Like the noble and the lovely firs, the subalpine species is a true fir which has pitchy, upright cones that occur only on the uppermost part of the tree. Slender, spire-like, almost formal, this is a tree of more than passing beauty. Perhaps it symbolizes, in a sense, the effect that high mountain country has upon persons who go there: the feeling of wanting to strive upward in every sense of the word, to stand as straight as the trees, themselves, and to think in terms as big as the surrounding mountains.

Another handsome tree of the mountain meadows and neighboring slopes is the mountain hemlock *(Tsuga Mertensiana)* with informal type of growth, compact, short-needled foliage and large, purplish, pendent cones. Less often seen is the handsome Alaska cedar *(Chamaecyparis nootkatensis)* with branches of weeping habit.

Shrubby plants play an important part in the floral composition of the mountain meadows. Pink heather *(Phyllodoce empetriformis)* and the dainty white-flowered kind *(Cassiope Mertensiana)* intermingle and form the outstanding low plant growth of the region. On warm south slopes is found the most delicious of our native huckleberries *(Vaccinium deliciosum)* the tasty fruit of which has added many a zestful flourish to camp meals. Late in September and throughout October the huckleberry foliage turns the mountain meadows into



Canada Dogwood
Cornus canadensis

Mountain Rhododendron
Rhododendron albiflorum

a delightful carpet of brilliant color, making this one of the most thrilling periods in which to visit the mountains.

On knolls, frequently along with the mountain hemlocks, grows a very disappointing shrub, the fool's huckleberry. The camper watches a fine display of flowers mature, counting on a nice crop of huckleberries, only to observe that the fruit develops into a generous supply of very dry, unappetizing capsules. One of the loveliest of the mountain shrubs is the white rhododendron *(Rhododendron albiflorum)* which forms occasional thickets and half hides its handsome, creamy white bells under the foliage. This plant is one of the two native species of *Rhododendron* that occur in the state of Washington.

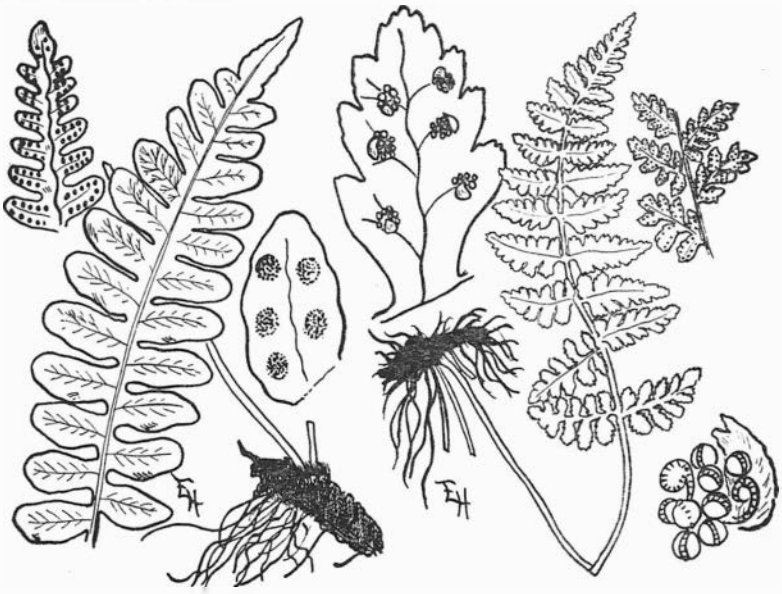
The flowers that form the colorful mosaic of the mountain meadows during the latter half of July and throughout August are many. Outstanding among the early ones are the gaily dancing avalanche lilies *(Erythronium)* and the big, creamy-flowered, western windflowers (*Anemone occidentalis*) which in August display drum major hats for seed heads. Both of these plants push their way up through the snow to bloom, melting little wells about their stems. Later, when most of the snow is retreating, come the red, crimson or mauve heads of the Indian paint brushes (various species of *Castilleja*), the

plants of which, interestingly, are partially parasitic on meadow grasses or on the mat-forming little partridge-foot (*Luetkea pectinata*). The white heads of the mountain dock *(Polygonum bistortoides)* wave almost constantly on long, slender stems, thereby staging a trial of endurance with any photographer who hopes to capture the wondrous color of the mountain meadows. Lavender-blue is much in evidence as supplied by the lupine *(Lupinus subalpinus)* and in lesser amounts by the small, alpine speedwell *(Veronica Wormskjoldii)*. Gold is plentifully furnished by the cinquefoil *(Potentilla flabellifolia)*, pink, lavender and white by the creeping phlox (*Phlox diffusa*) and white by the valerian *(Valeriana sitchensis)* which has most agreeable fragrance.

Water-dabbling plants offer a pleasing array both in color and in form. The Lewis monkey flower (*Mimulus Lewisii)* makes great splashes of rose along the stream banks, its generous-sized blossoms resembling snapdragons. A lesser cousin, the little golden monkey flower *(Mimulus Tilingii)* not only decorates the stream-sides but spreads widely into the wet meadows. In this same kind of habitat we find the white-flowered calthas *(Caltha leptosepala* and *C. biflora)* which edge small ponds and sometimes even grow in the middle of busy little streams. The pink elephanthead *(Pedicularis groenlandica,* var. *surrecta*) is always a great joy to find. Each little pink flower on the foot-high stalk resembles the trunk and ears of an elephant in miniature. The plant, itself, though it has efficient-looking green foliage, is partially parasitic. Grass-of-Parnassus *(Parnassia fimbriata)* likes to hide its kidney-shaped leaves down in the herbage of wet meadows while it extends its fuzzy-centered blossoms on long, slender stems. The alpine fireweed *(Epilobium latifolium)* is found along streams and around lake shores. The butterwort *(Pinguicula vulgaris)* which, upon first glance, is mistaken for a violet, likes real bogs with rocky surroundings. The romanzoffia *(Romanzoffia sitchensis)*, always a precious treasure to find, decks its foliage and lovely little white flowers with spray from dashing waterfalls, often being associated with the site of the water ouzel's nest.

The mountain traveler who finds enjoyment in the plant life as seen on the western approach to this mountain region will also experience a pleasant stimulation in response to the rich floral offering of the east side.

When progressing upward in the mountains it is interesting to look with inquisitive eyes at the great U-shaped valleys scooped out so symmetrically by glaciers of an ice age gone by and try to estimate how long ago it must have happened. It is even more thought-pro-



Licorice Fern
Polypodium vulgare

Fragile Fern
Cyptopteris fragilis

voking to realize that we well may be living in a period of climatic tranquillity between ice ages. If so, then some time in the hard-to-imagine future, another great ice age will send grinding rivers of ice down these valleys, destroying the vegetation that has managed to establish itself there. When certain plants, such as *Saxifraga oppositifolia,* are found only on the high, bleak, rock walls of various mountains, it is possible that they may have existed a long time ago on the intervening mountain terrain but were wiped out there during the ice age. Thus it is that the unique distribution of certain plant species may be understood.

Looking up Phelps Creek, near it headwaters, the erect spires of the subalpine fir are seen emphasizing the perfect U-shape of the great valley. In the valley floor the lush, thick growth of the mertensia *(Mertensia paniculata)* with its dainty pink and blue flowers, makes progress difficult. Both the gold and the rose-colored monkey-flowers *(Mimulus guttatus* and *M. Lewisii)* line the stream banks. Nearer the head of the valley, on higher, rockier ground, the big, creamy blossoms of the windflower *(Anemone occidentalis)* stretch as far as can be seen.

At the crest of the range just east of Chiwawa Mountain may be seen a grand assortment of alpine plants. Among the shrubby ones

may be found the creeping, matted crowberry *(Empetrum nigrum)* with its black fruit; the yellow heather *(Phyllodoce glanduliflora)* which is closely related to the pink heather; the rock-loving dryas *(Dryas octopetala)* an especially charming plant with white blossoms and tailed seed when fruiting time comes; a ledum *(Ledum glandulosum)* which, though a relative of our Labrador tea, lacks wool on the undersurface of the leaves; and the beard-tongue *(Penstemon Menziesii)* which makes handsome displays of large, violet-colored flowers on rock outcroppings. This plant is the namesake of Archibald Menzies, the surgeon-naturalist who accompanied Captain Vancouver on his exploration of Puget Sound and our Northwest coast in 1790.

Specific names of some of the herbaceous plants of this region also honor botanists who collected in the Northwest in the early days. Tolmie's saxifrage *(Saxifraga Tolmiei)*, a small fleshy-leaved plant with neat little white flowers, shows a definite preference for habitats that provide running ice water about its feet. It was named in honor of Dr. W. F. Tolmie, a surgeon with the Hudson Bay Company. He was the first botanist to visit Mount Rainier, having made the difficult trip to that great peak in the year 1837.

One of the most widely admired of alpine plants is the little gray-foliaged Lyall's lupine *(Lupinus Lyallii)*. Dr. David Lyall, for whom it was named, was the physician-naturalist with the International Boundary Survey party which established the line between the United States and Canada. To him plant lovers are indebted for the discovery of several of their favorites.

The valley floor below Lyman Glacier offers some especially interesting moisture-loving plants. The Jeffrey shooting-star *(Dodecatheon Jeffreyi)* grows at the water's edge and displays its rosy flowers on substantial stems. The gentian *(Gentiana calycosa)* has blue-violet flowers and likes the low, damp meadows. The rosy-flowered duck-bill *(Pedicularis ornithorhynca)*, a relative of the pink elephant-head, grows likewise in moist meadows or near mountain pools.

The region that includes Miner's Ridge, North Star Mountain and Bonanza Peak is the home of a number of distinctive alpine plants. Among these are several species of *Draba*, including *D. lonchocarpa* and *D. andina*. Along with the gray-leaved *Smelowskia americana* which, like the drabas, belongs to the mustard family, these plants are real mountain climbers. In company with a few lichens and a sprig or two of sedge *(Carex)*, they reach the last outposts of plant life in the alpine region. A mountaineer descending from a high climb welcomes their appearance as a sign of progress. It gives him a certain feeling of security to be down among living things again.

Grass of Parnassus
Parnassia fimbriata

Valerian
Valeriana sitchensis

Saxifraga oppositifolia, a saxifrage of unusual attractiveness, forms lovely pink-flowered mats on high, bleak rock walls. It formerly was considered quite rare. Now we know that it just hadn't been found in all the places where it grows. The Alaska heather *(Cassiope Stelleriana)* trails down over moist places in rock chimneys, displaying classically handsome little white bell-shaped flowers, each with distinctive red calyx. It is a relative of the white heather *(Cassiope Mertensiana)* which grows down in the mountain meadows. The Alaska heather is one of the mountain dwellers that is sure to warm the heart of a plant photographer because it has the habit of growing in such dramatic settings. The specific name of this plant commemorates the name of Georg Wilhelm Steller, the famous German scientist who, back in the early days, was employed by the Russian government to make the hazardous trip across Siberia and on by ship to visit Alaska.

Another interesting windflower *(Anemone Drummondii)* grows on alpine slopes and ridges in the rockiest kind of meager soil. Its almost white flowers are bluish-backed and its foliage is finely divided.

Lloydia serotina, a fragile-looking liliaceous plant with grass-like leaves, grows on moist rock ledges. A very green, mat-forming member of the pink family *(Silene acaulis,* var. *exscapa)* grows on rock faces and slopes and in blooming season is studded with tiny, bright pink flowers. *Phlox condensata* is seen as a low cushion plant on rocks or rocky slopes. These are but a few of the many plants of this region.

Considered as a group, plants of the high, alpine habitats show, in both color and form, less of the gay abandon observed in the flowers of the mountain meadows. However, the high alpine species have about them a certain appeal not to be found in any other group. Neat, compact, estimable in every character, they are like exquisite little jewels in a mighty setting.

If a visit is made to the locality of Lyman Glacier, or neighboring country, in the latter part of September or early October, a most wonderful color display will be in evidence. Then it is that the Lyall's larch *(Larix Lyallii),* one of our rarest North American trees, presents a show that is, indeed, almost beyond belief. In contrast with the lower country's well-known western larch *(Larix occidenalis)* which turns yellow in the fall before defoliating, the Lyall's larch, which grows at elevations up to 8,000 feet, turns deep orange-gold. Against the intense blue of clear, Indian summer skies the color effect is a never-to-be-forgotten sight.

The Lyall's larch, unlike so many of its conifer cousins, drops its needles after the color display, leaving its very limber branches bare to whip relentlessly in the fierce winds that sweep the upper country. Even very young trees, with their one-sided forms, point with unmistakable signs at the direction taken by these terrible winds. By midwinter, fortunately, deep snows protect at least the smaller trees. In spite of the relatively short annual growing season, some individual trees of Lyall's larch display trunks two feet in diameter. We can only conjecture as to how many hundreds of years have been required to attain such size.

The distribution of this rare tree extends sparingly up the east side of the Cascades in Washington from the Mt. Stuart region northward, then swings over into the high country of British Columbia and Alberta, then back in limited numbers into the mountainous regions of northern Idaho and Montana. It is unknown from any other part of the world. The importance of preserving, intact, the habitat of this remarkable species in Washington is a strong argument in favor of establishing adequate boundaries for the Glacier Peak Wilderness Area.

RESEARCH

ON

SOUTH CASCADE GLACIER

By MARK F. MEIER, U. S. GEOLOGICAL SURVEY

Objectives of the study

Glaciers change in size whenever the local climate changes. They are extremely sensitive indicators of climatic variation, because a very slight change in climate may produce a large change in the length of glaciers. Of additional significance is the fact that glacier variations leave an indelible stamp on the landscape in the form of moraines, terraces, and altered vegetation; from this record it is possible to infer what the climate was like in past years—or even thousands of years. These inferences are important from the academic point of view: for instance, it is interesting to know how climate has affected the evolution and spread of primitive man. Knowledge of climate in the past also has many very practical applications. As an example, the hydraulic engineer planning a large dam project needs to know in rather exact terms how the flow of a river during a period of historical record relates to the flow for a long period of past time. Furthermore, if the headwaters of the river are fed from melting glaciers, are these ice-locked reservoirs of water being depleted or growing larger at the present time? Because the study of glaciers can offer some answers to such important questions, it is not surprising that glacier variations have been measured in many lands.

Here in the State of Washington, glacier variations have been measured since the late nineteenth century. Much of this study has been focused on Nisqually Glacier, which is now one of the best known glaciers in the Western Hemisphere. Nisqually Glacier, like most of the glaciers in the world, was receding for at least fifty years. However, it was on this glacier that Arthur Johnson of the United States Geological Survey detected as early as 1945 a thickening of the ice at high levels. (Arthur Johnson, Nisqually Glacier, Wash. (Progress Report), 1953, manuscript report in open files of U.S. Geological Survey, 17 p.) This thickening was the first indication

of a climatic change that has now greatly altered the pattern of glacier recession in the Northwest. In the last few years, examples of glacier growth have been observed not only in the Northwest but elsewhere in the United States and Alaska, and there are now suggestions of a thickening at high levels in the Alps where glacier recession since 1890 has been very pronounced. Glacier variations are being watched in the Northwest with great interest, especially during the International Geophysical Year when similar observations are being made simultaneously over the whole world. It will soon be known whether the climatic change first noted on Nisqually Glacier and then observed generally in the State of Washington represents a world-wide change, or just an isolated anomaly in a limited region.

In view of the interest in a knowledge of the variations of all glaciers, or as many as possible, why should a scientific project be concentrated on only one isolated and rather small glacier? The answer lies in the fact that glaciers respond to climatic variations in a complicated manner, and the manner of response is not clearly understood by glaciologists. Either a winter of high snowfall or a summer of decreased melting may cause a glacier to grow. At the present state of knowledge of glaciers, summer and winter conditions cannot be separated in their effect on a glacier's regimen. Furthermore, it is usually a gross simplification to apply a single descriptive term such as "growth" to a glacier as a whole. For instance, Nisqually Glacier at the present time is retreating and thinning at its stagnant terminus, advancing at the front of a "wave" of active ice, thickening over a large area above this "wave," and perhaps thinning at the highest levels. Finally, it is not possible to relate climate to glacier length or shape in a quantitative manner at the present time. In order to do this one would have to understand exactly how the flow of a glacier adjusts to its annual supply of snow and ice.

A glacier can be visualized as a moving treadmill, continuously transporting snow and ice from an area of snow accumulation to an area of wastage. The speed at which the treadmill operates determines how far down valley the glacier can transport ice before it is melted. In order to predict the length, shape, or thickness of a glacier it is necessary to understand the dynamics of the flowing ice. This subject is a vital but still poorly understood link between glaciers and climate. Increasing our understanding of that link is a primary goal of this research program. It is essential in the pursuit of this goal to concentrate effort on the glacier that is best suited to yield reliable results.

Figure 1 — Sketch Map of Glaciers of the Sentinel Peak–Dome Peak Area, Cascade Range, Washington

Compiled October 1957 from air and ground photographs and Forest Service maps by Mark F. Meier.

0 ½ 1 mile
0 3000 6000 feet

NORTH

Recent moraine
Ice talus cone
Cascade crest

The project on South Cascade Glacier is to be a continuing investigation of the dynamics of flow, climatic environment, and hydrology of a typical mountain glacier. South Cascade Glacier was selected after considerable study because of a unique combination of simple shape, relatively safe surface for travel, potential fixed points on bedrock for surveying, simple and fixed limits to the drainage basin, and a good site for measurement of meltwater runoff. The program on South Cascade Glacier for the summers of 1957 and 1958 was set up to correlate with similar programs of the International Geophysical Year, and to initiate the collection of basic data on a permanent, annual basis. The main purpose of the long-range project is to increase our understanding of how glaciers can be used as indicators of climate, and how glaciers affect the hydrology of mountain drainage basins.

The area and the glacier

South Cascade Glacier lies in an area of great scenic beauty in the northern part of the Glacier Peak Wilderness. The area extending from LeConte Mountain on the north to Dome Peak on the south (fig. 1) is characterized by spire-like mountains, serrated ridges, deep valleys, and many glaciers. The bedrock is a complex of metamorphic and igneous rocks. The crest of the Cascade Range in this area receives the full impact of winter storms moving inland from the Pacific Ocean, and the average snowfall at high elevations is very great.

Among the larger glaciers in this limited area are some of the most beautiful ice bodies in the whole of the United States. LeConte Glacier (north and east of Sentinel Peak) and Dana Glacier (east of Spire Point) are high-level firn fields that terminate in spectacular walls of ice. These blue ice-walls are advancing over steep cliffs at the present date and enormous blocks of ice continuously crash down into the valleys below. The shattered ice blocks are building up large "talus cones" of ice below the cliffs. If the present-day advance persists, the advancing termini of the glaciers will encroach on the cones of ice debris, producing glaciers of complex structure. This has already happened to several large glaciers in the Inspiration-Eldorado Peak area. The large Chickamin Glacier, on the north and east flanks of Dome Peak, consists of a thick and highly crevassed apron of ice which feeds a valley tongue. The apron of ice has shown a spectacular growth in the last ten years; where snow tapered off against the rock in a thin featheredge in 1948, a high wall of crashing seracs appears in 1957. South Cascade Glacier itself is less im-

pressive than the three mentioned above because it is entirely confined in a valley and lacks any spectacular ice-fall. Other glaciers, some of which are quite vigorous and impressive, occur northwest of Spire Point and on the south and west sides of Dome Peak and Sinister Peak, and on the east side of Blue Mountain.

This area is rather difficult of access on foot. The best low-level approaches utilize Forest Service trails along Sulphur Creek, Downey Creek, the South Fork Cascade River, or the West Fork Agnes Creek. However, all of these routes involve considerable brush fighting and normally one must allow several days to get on to the glaciers. It is also possible to make high-level traverses along or near the crest of the range from either north or south. This area is shown on the old Glacier Peak topographic map (1:125,000, 1901). The Forest Service is in the process of publishing new plainimetric maps of the area. These maps are being compiled from air photographs and will be of excellent quality. Air photographs taken in 1954 and 1955 are available from the Forest Service.

South Cascade Glacier is a representative example of a small alpine valley glacier. It is about two and one-fourth miles long and ranges in width from about 1,000 to 3,500 feet. The glacier rises in a small firn (snow) field at an elevation of about 6,800 feet on the crest of the Cascades between Sentinel Peak and Lizard Mountain. It flows north-northwest, descending in a series of nearly flat reaches alternating with steeper slopes. The terminus is an ice front 1,000 feet wide which calves into a small but deep alpine lake. This lake, at an elevation of 5,300 feet, is the source of the South Fork Cascade River. The firn limit, separating the zone of snow accumulation from the zone of predominant melting, normally occurs at an elevation of about 6,000 feet.

The work accomplished

This is a progress report on a continuing project, and most of the data will not be completely analyzed for many months. Therefore few specific results or conclusions can be drawn at this time, but it may be of interest to indicate what sort of work was accomplished during the 1957 field season.

This is a project report of the Water Resources Division of the United States Geological Survey, under the direct supervision of the author and under the general supervision of C. C. McDonald, chief, Branch of General Hydrology. Hydrological installations and measurements were made by John Savini, hydraulic engineer. Robert K.

Fahnestock, Walker V. Frederick, Irven F. Palmer, and the late Eugene L. Todd assisted with the field work in 1957.

The glacier was first visited by helicopter on April 30 in order to measure snow accumulation. Unfortunately, the party was not completely prepared for the huge snow depths found (greater than fifteen feet at all sampling points), and only incomplete data were obtained.

The regular field operations began about July 1. Two men, equipment, and supplies were landed by helicopter at a campsite beside the lake at the terminus, and three men followed by hiking up the Downey Creek trail and bushwacking through vine maple and alder over the Downey Creek-South Fork divide. The whole party left the glacier on July 24. A two-man party returned to make ablation and streamflow measurements and service the hydrologic equipment on August 24 and 25. The main accomplishments of the summer field season are summarized as follows:

1. *Surveying.*—An accurate map is an important requirement for this project. A triangulation network of eleven fixed points was established on bedrock bordering the glacier. The distance between two of these was measured accurately, and positions of all other points were then surveyed by precise angle measurements using a theodolite having an accuracy of one second of arc. From these known points additional surveys were made to nearby mountain peaks and topographic features. An accurate, large-scale topographic map based upon aerial photographs will be constructed in the office utilizing these survey data for control.

2. *Movement studies.*—Thirty-nine holes were drilled up to twenty feet deep into the surface of the glacier, and velocity stakes were implanted. The stakes consisted of wooden dowels or aluminum tubes one-inch in diameter and ten to twenty-four feet long. These stakes move with the surrounding ice, and do not ride on the surface as does a rock. Brightly colored flags were attached to each stake for visibility and identification. Each of these stakes was surveyed from two of the eleven fixed points and thereby located in space to a high order of precision. By repeated measurements in the following summers it will be possible to compute the precise velocity vector in three dimensions for each of these stakes. The vertical component of movement was measured so that the amount of ice flowing up to the surface can be compared to the loss of ice from the surface by melting. The velocity data will be used to determine the flow properties of this glacier, its present condition or "state of health," its thickness, and the total amount of flowing ice at different cross sections.

3. *Accumulation and ablation.*—The mean level of the snow or ice surface below the top of each velocity stake was measured at frequent intervals. This affords a measure of the amount of ablation (wastage, by melting, evaporation, and erosion) during the summer. The amount of total snow accumulation on the glacier in the winter can be estimated by snow surveys conducted in April or May. The preliminary survey of this glacier in late April 1957 provided too few data for firm conclusions, and a more complete study is planned for the spring of 1958. The difference between the total accumulation and the total wastage of a glacier indicates whether the glacier is growing or shrinking. This difference is determined by measuring the amount of ablation of glacier ice below the firn limit during the summer, and the amount of snow remaining from the previous winter above the firn limit. Surveys were made of both these quantities during the summer of 1957. Snow accumulation was measured by three different methods (pit, snow-sampler, and coring auger) in order to test the accuracy of different procedures. A twenty-foot calibrated post was installed near camp, so that rough measurements of snow depth can be made from a light plane during the winter.

4. *Hydrologic studies.*—Almost all the snow and ice that melts from the glacier surface during an ablation season runs off in an outflow stream. Measurement of the runoff can be compared to the ablation and the total precipitation to determine if water losses (such as evaporation) have occurred. It is difficult to measure the runoff from glaciers because most glacial streams flow through porous gravel or cascade down steep ravines and cliffs, making accurate measurement difficult. Furthermore, the runoff from most glaciers is diluted by an appreciable amount of water derived from areas not covered by glaciers. South Cascade Glacier, however, is unique in that the drainage basin is watertight and includes very little area not covered by glacier or snowfield, and all runoff from the ice travels through a lake and then flows over a bedrock lip in a single channel. At times of high runoff the lake level rises so that more water goes over the natural dam and into the South Fork Cascade River. A record of the elevation of the lake at its outlet, correlated with measurements of water flow in the outlet stream, provides information for the determination of the meltwater runoff. A gaging station equipped with a continuous water-level recorder is operated at the lake outlet during the summer months. This installation is the only gaging station in the United States which measures streamflow from a glacier without a predominant dilution of water from other sources, and it is the highest gaging station in the State of Washington.

In addition to the streamflow measurements, samples of the glacial flour-laden water were collected for sediment-content analysis. Continuous records of air temperature and data on precipitation and the area of snow cover remaining on the drainage area also were obtained during the summer. These data will permit an evaluation of the hydrology of this glacier in its high-altitude drainage basin. Because many of the important streams for waterpower in the Northwest are fed by small glacier-bearing basins such as this, these data will be of considerable hydrologic value.

5. *The condition of South Cascade Glacier.*—Blocky, unvegetated moraines indicate that South Cascade Glacier has retreated more than 2,000 feet in the last few hundred years (fig. 1). It is premature to attempt to state whether the glacier is growing or shrinking at the present time. Preliminary results suggest that the terminus is still retreating, but that the glacier as a whole is nearly in equilibrium. Velocity data obtained next year will permit a detailed analysis of the equilibrium condition at many points on the glacier surface. A spectacular breaking off of huge icebergs from the terminus in August 1957 produced a sudden recession of the terminus which may not be compensated by forward movement this year.

Several glaciers in this area have been photographed from the air each fall since 1955 by E. R. LaChapelle, Austin S. Post, and the late R. C. Hubley. These valuable data have not yet been fully analyzed, but a preliminary inspection of the photographs indicates that most of the glaciers are growing. It is very possible that a wave of thickening is advancing down South Cascade Glacier but has not yet reached the terminus.

This Publication authorized by the Director, U. S. Geological Survey.

PTARMIGANS

AND THEIR PTRIPS

By HARVEY MANNING

When exploration of the North Cascades resumed after World War II the new generation of climbers had largely to be satisfied with second, third and fourth ascents, for in the last decade of peace before Pearl Harbor mountaineering had come of age in the Northwest. With few exceptions the great peaks had fallen, one by one and in clusters, before the assaults of a handful of climbers whose technique had become very nearly the equal of that practiced in any mountain range of the world.

The postwar explorers, revisiting summits that had not been attained for many years, were familiar with most of the names scribbled in rudimentary summit registers. The exploits of Anderson, Bauer, Beckey, Degenhardt, Hossack, McGowan, and other members of the Mountaineers, they had read about in *The Mountaineer*. They also recognized the names of prominent Mazamas and Sierra Clubbers, and were not surprised to find an occasional unexplained "loner" from no place in particular. However, one set of signatures recurred so often, and on such respectable summits, and so completely without explanation in published records, that campfire conversations revolved constantly around this mystery. Who were the men behind the ubiquitous names "Bressler, Myers, Cox, Clough, and Thompson?" Why did they so frequently scrawl in registers the initials GVRC? Was this a cabalistic symbol, an abbreviation for some order of British knighthood? What was the Ptarmigan Climbing Club? When had it started, what had it been, where had it gone? Mountains are fertile with legends, and here was material for a stirring legend indeed, since none of the names were anything more than that, their owners not close enough at hand to prove themselves human.

Enough time has gone by now that most of the first postwar generation of North Cascade explorers are retired from brush-fighting and glory climbing, content to view with alarm the exploits of their successors and enjoy milder high country pleasures. Therefore it is not

blasphemous to replace demi-gods with a group of energetic young peak baggers, and bring legend within the bounds of history.

In 1934 some of the older members of Boy Scout Troop 150, meeting in the Ravenna District of Seattle, formed the George Vancouver Rover Clan under the guidance of Wolf Bauer and Ome Daiber. Rover clans were envisioned by national headquarters as something along the lines of junior service clubs composed of boys who were getting beyond merit badges and needed broader objectives to sustain their interest. This particular clan—the first in the Northwest, and organized by boys with considerable hiking experience in both the Cascades and Olympics—was less than enthusiastic. Wolf therefore drew up a scheme for several hobby groups within the clan. One of these, and the only one to generate lasting enthusiasm, was devoted to climbing with Ome as counselor. In the same year that plans were made for a first presentation of the Mountaineer Climbing Course, The George Vancouver Rover Clan started scrambling in northeast Seattle on Big Rock, also known as Glacier Boulder, Wedgewood or Big Yellow rock. They read and discussed every scrap of climbing literature available, pestered Ome with endless questions, prowled sporting goods stores fondling equipment of European manufacture—and then gathered to fashion their own ice axes and pitons, for the depression was in full swing. Some alpine tools were beyond their manufacturing skill, but dealers certainly gained more education than money from the young Rovers.

In summit registers from Snoqualmie Pass northwards 1935 is a bumper year for the symbol "GVRC." There was always someone who could get use of the family car, and by sharing expenses transportation was usually about forty or fifty cents apiece, and rarely so much as a dollar. Dick Slater's Model T figured prominently, experimentation proving it could hold five passengers, three in front and two under the turtle-back, their packs tied to the fenders. With homemade gear and carefully calculated meals, climbing was an inexpensive sport. The Rovers were out in force every weekend, steadily extending their horizons. In that year, under the leadership of Ome Daiber, they constituted the party that discovered the fall of the Gibraltar Ledge on Mt. Rainier.

With a good taste of the high country and a winter for spirited planning, the season of 1936 was even more ambitious. Clan parties ranged farther north into the Cascades, assaulted the volcanoes with routine regularity, and began to sample the delights of virgin valleys and peaks. Calder Bressler, with Bud (The Phantom) Brady of the Mountaineers, penetrated the Chilliwack country but was stormed

out of an attempt on Redoubt. Will Thompson and Bill Cox mounted a campaign against the north side of Glacier Peak, a route then but once climbed. After two failures a third attempt was launched in early September. Transportation was simplified by Cox's recently acquired Model A, but the schedule was complicated by the fact he had also gotten a job, a very precious thing in those days. Leaving Seattle late Saturday after work the two Rovers, accompanied by two Mountaineers, made the approach up Milk Creek onto the ridge between midnight and dawn and continued climbing all day, reaching the summit at sunset Sunday. They descended more asleep than awake, and unfortunately attempted to drive home without rest. After several miles the Model A found itself free to do as it pleased and rolled over into a ditch. A nearby WPA crew righted the car but some ten miles from Darrington a tire blew out. While the remainder of the hungry party hitchhiked to civilization with an old Indian, Cox stayed with the Model A and finally got back to work Tuesday morning, fortunately being forgiven by his boss.

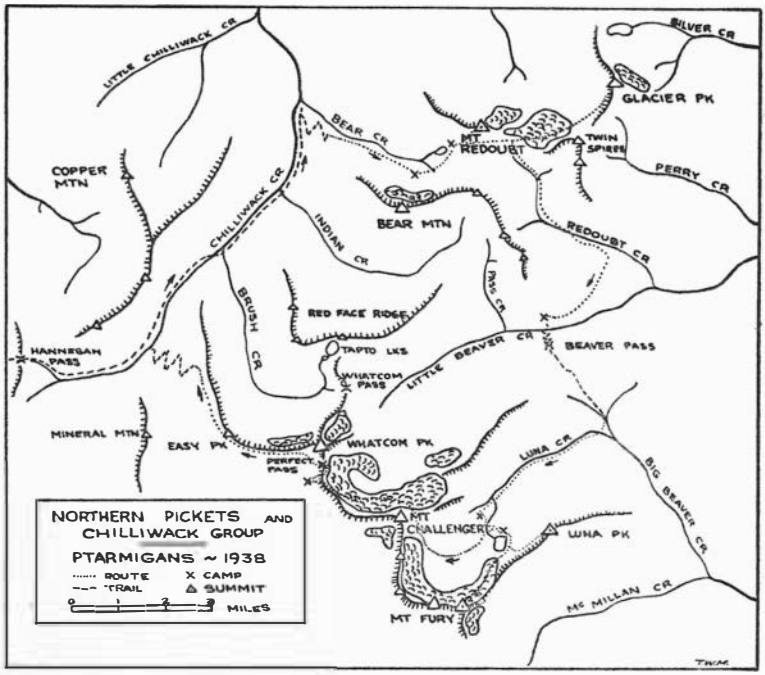
There were other epics that summer, and it was quite a hardened crew of peak baggers who strapped on their skis to extend the mountaineering season through the winter. However, all unknown to itself, the George Vancouver Rover Clan was nearing a crisis. Boy Scout Headquarters, curious about the success of the new Rover idea as embodied in the pilot group, asked the clan for an outline of their activities. Reading the report, they were horrified to discover what had been transpiring under their official sponsorship. There had been several well publicized climbing disasters recently, and a strict directive came down from headquarters stating exactly how far a Rover could rove upward into the hills. At a series of meetings the Clan debated whether it was better to be a sedentary Scout or an active peak bagger. Many voted for the latter, and in the spring of 1937 joined with some of the older members of Troop # 158, similarly well-initiated into alpine travel, and formally associated as the Ptarmigan Climbing Club, with Bill Cox as president and Ome Daiber as an honorary member and perhaps bemused spectator.

During the late days of GVRC, as the members reached a certain age, it became more and more common for girl guests to be invited on clan climbs. There was official objection to the practice, and so certainly for some there was additional appeal in the idea of a co-educational climbing club, since it was easier for a girl to become a Ptarmigan than a Boy Scout. The issue was not settled without storm and stress, causing major turmoil during the club's formative months. Those who could not bear to be separated from Scouting, or mingled with girls, left the group.

From the summit registers of 1937 the name "Ptarmigan" begins to replace GVRC, though often both identifications are found during the transition. By now the "hard core" of the group, the eight youths who were to establish the Ptarmigan name firmly in Northwest climbing annals, were experienced alpinists for whom the standard "major" climbs of the Cascades and Olympics were routine outings. A brilliant future was fittingly heralded at midnight of the Fourth of July when groups of Ptarmigans atop St. Helens, Adams and Hood simultaneously fired flares of one million candle power.

One of the two large areas of Cascade wilderness—then as now—extends north from the Skagit River to the Canadian Border, including the Southern and Northern Pickets and the Chilliwacks. Will Thompson, who on occasion went for long solitary walks to exercise his muscles and find subjects for water color sketches, had once taken a ten-day stroll from the Mount Baker highway over Hannegan, Whatcom, and Beaver Passes to Diablo Dam, and thence over Park Creek Pass and down the Stehekin to Lake Chelan. It seems unlikely that he did much sketching en route, but one section of the trip so stimulated his imagination that early in September of 1937 he talked Bill Cox into a ten-day excursion which ranks among the most energetic Ptarmigan efforts. After climbing Shuksan and driving the omnipresent indefatigable Model A to the end of Ruth Creek road the pair crossed Hannegan Pass and sailed down the Chilliwack Creek Trail, branching off up Bear Creek, then utterly without trail beyond the first two miles, to a first night's camp under the awesome north face of Bear Mountain. Continuing the account in a fairly free condensation of Thompson's story:

> "The second day we climbed Redoubt, finding a Canadian record on the summit. Evidently we were the first climbers from south of the border, and the second party up. That night we made camp at the superb hanging-cirque lake under Redoubt's southwest face. The next day we wove through icefields toward Glacier, but got into difficult rock climbing, at one point having to laboriously haul our heavy packs up a rugged cliff. A poignant memory of this pitch is the moment a hand-sewn pocket was ripped loose from Cox's pack, and a silver dollar, much out of place but a very precious thing in 1937, spun past my head down into the schrund. Giving up Glacier as a lost cause we waded down brush-choked Redoubt Creek on its bed of bare water-sculptured granite, noting handsome spires between Redoubt and Perry Creeks, but making no attempts since we had our eyes on the Fury group, which for years had been the subject of excited



bull sessions. Besides we had no hardware, never carrying it on such long journeys because several pitons weighed as much as a day's food—at least by our dietary standards. Also we felt that a small party so far from civilization has little business indulging in acrobatics. When Redoubt Creek finally plunged downward out of its hanging valley we reluctantly took to the brush but luckily found a game trail and dropped easily to the leanto on Little Beaver by nightfall.

"The fourth day we followed the trail up to Beaver Pass, and then made the gross blunder of descending a mile or so towards the valley bottom of the Big Beaver, leaving the trail to angle off into the horrors of Luna Creek, here spread into a broad flood plain laced with small willows as blindly dense as an old laurel hedge. Stumbling and shoving, scratching our legs and falling into old stream channels masked by brush, sweating and itching, we ploughed half a mile up the valley floor in two hot hours. We were in a mood to abandon such foolishness when we found a cottonwood whose shade had somewhat thinned the brush and gave a momentary respite for lunch. Climbing the cottonwood to find out what was next I saw that just a few yards ahead was a belt of timber, and the next mile and a half went fairly rapidly

through woods and along gravel bars, with only several passages through nightmares of avalanche debris. Challenger, domed with smooth ice, loomed over the valley ahead. Fury, we knew, was up there someplace. Luna was immediately to our left, hidden by its own spurs. However, Luna Creek had not finished with us. Around a bend, alder came streaming down into the valley on old talus slopes, and several times we had to climb all the way to the apex of the talus cone, then down the other side, following the narrow alleys between talus and cliff. As nightfall approached we at last emerged from vegetation, pausing to admire the 4,000-foot wall of Luna Creek Cirque, draped with blue rags of shattered ice, castellated Fury rising as one outpost, Challenger as the other, between them a serrate ridge of poised pinnacles scarcely lower than the two climactic summits. Immediately ahead of us was an immense terminal moraine, and with high hopes of finding dammed behind it a pea-green lakelet brilliant with floating ice we raced up the gravel in day's last light—and atop the moraine looked down on a very pig of a glacier, rooting in boulders, stagnant and buried deep in its own debris. We submerged our disappointment in a good supper and soft beds of heather. During the night our sleep was broken regularly by avalanches roaring on the headwall.

"We woke next morning just as the peaks caught the first flame of dawn, and after breakfast hauled our packs across the moraine and up talus slopes to Luna Lake in the high cirque between Luna and Fury. Luna disappointed us by revealing a long easy ridge to the summit, but Fury indicated no such weakness of defense. Leaving our packs at the lake we rigged for heavy climbing and set out for the glacier which clings to Fury, a two-tongued mass of ice draped over a buttress with one lobe pointing at the lake and the other tumbling directly into Luna Creek. On reaching the glacier we took to the moat between cliff and snow, the ice grumbling too frequently with serac falls and avalanches to suit our nerves. Sometimes stemming, sometimes scrambling along the rock, and sometimes creeping down into chilly caverns which dropped away into blackness under the glacier, we made our way along the ice edge the better part of a thousand feet. When the rock grew steeper and the ice less chaotic, we cut out onto the glacier and for several hours chopped a slow and tortured route around tottering seracs, across crevasses or bridges, and up steep slabs of blue ice, belaying when we could. At last we reached the smooth, domed upper névé, and for a little while

had easy step-kicking to the saddle between the buttress and Fury's upper battlements.

"From the uppermost tip of the glacier a steep couloir thrust upward, cresting to the left of Fury's final summit tower. In the couloir we had a delicate passage along thin snow lying precariously against polished rock. At length our trust of the snow patch was lost altogether, and we moved over onto adjacent cliffs, for some two hours exulting in clean and exhilarating rock climbing. As we neared the crest, the rock deteriorated and the ledges became choked with scree, but fortunately the angle lessened and we were able to unrope and scramble over the rubble. The last passage to the col was in the bed of the couloir, where we had a strenuous moment cutting through the cornice.

"From the col we saw what we thought was Fury's summit just above us to the right, and went blithely up an easy snowfield—with much self-congratulation, for from the moraine this snowfield had been invisible, and we had for many hours been musing with consternation on the overhanging wall that apparently awaited us. As so often happens, the next summit over was the true one, and arriving there we spent considerable energy exploring among the boulders, tearing apart every heap of frost-wedged fragments that might conceivably be a cairn. We were not surprised to find no record of a previous climb, for nowhere in Luna Creek had we seen any trace of human visitation. After leaving a note and eating lunch we started the descent, pausing between the two summits to gaze down the tremendous couloir which drops abruptly and interminably into the cirque bottom. A careful climb down the rocks and through ice much safer now that it was stabilized by shadows brought us to the talus above Luna Lake just as the sun vanished behind the gigantic headwall.

"Next day we galloped up Luna Peak at a terrific pace, impatient to be headed home. Though highest of the Pickets, Luna is one of those mountains boys claim they can 'run their grandmother up in a wheelbarrow.' Inscribing the register for Luna, Bill suddenly remembered he had dated the record on Fury '1938' rather than '1937.' It was rather late to remedy the error, but we left a note of the fact on Luna.

"Getting home was another adventure. Despite the lowering clouds we were absolutely and unanimously agreed that never again in our young lives would we suffer Luna Creek brush. Having read Dickert's article in the 1936 *Mountaineer,* we had

already tentatively planned to make our exit via his entrance, and therefore we blundered in fog and rain over the Challenger Glacier, puzzling about in a maze of crevasses trying to find landmarks. We came to a Pass that was less than Perfect, crossed it and dropped down onto as grim a precipice as one could wish, spending the night tied to cedar trees on the headwall of Mineral Creek. Next day we wearily climbed back up the cliffs and found the true and correct Perfect Pass and the route out along Easy Ridge. The Pickets gave us one last scare with a rock avalanche below Whatcom Peak, but the remainder of the trip was mainly a matter of using up the oatmeal, since everything else was gone. In our first relaxed feast we later computed an intake per individual of 8,000 calories of oatmeal, not counting the raisins. We were a day late in starting classes at the University, and quite tired and sore, but on the whole well satisfied."

Above all others 1938 is the year of the Ptarmigan legend.

It was a dry year in the Northwest. Forests began burning in the spring and during most of the summer smoke dulled the sky, on many days irritating nostrils even in downtown Seattle. One morning in July the Dabop Peninsula fire blew up, and that evening thousands of Seattleites stood on the beaches of Puget Sound gazing across miles of water at the tall billowing column of smoke which nowadays would be likened to a mushroom cloud. From July into September, for sixty days, there was no measurable precipitation. Altogether a very poor summer for trees and glaciers, but a sublime summer for the climber, who usually in the Cascades must dash quickly and nervously for his peak during a lull in the year-round storm.

The mountains had the weather and the Ptarmigans had the time. 1938 was a depression year, and Bill Cox, Ray Clough, Tom Myers, and Calder Bressler hadn't been able to find jobs. Since it was cheaper to roam the hills than sit at home, each of the four scraped up a few pennies for gasoline and food and set forth on an expedition that had long been close to their thoughts—a complete traverse of the Cascade Crest from Dome Peak to Cascade Pass. As the crow flies it's a matter of only some fifteen miles. It is doubtful that any crow has ever had a reason to fly the route, and certainly no man had ever walked it. Parties had reached the crest at two points along the line, storming up valleys guarded by brush and canyons, but most of the country was terra absolutely incognita, sketchily mapped and never visited. Indeed, even now, nearly twenty years later, this portion of

the Cascades is still one of the wildest of all American wildernesses.

At Darrington the Ptarmigans filled out forms for campfire permits and after scanning them the ranger, who had lived and worked all his life in rough country, announced with almost tearful sincerity that their proposed route was utterly and absolutely impossible for members of the human race. In the words of Calder Bressler, whose story of the trip is freely rendered hereafter, "we had considerable respect for his judgment, but we thought we would find out for certain."

"The first day out of Seattle we rattled in the Model A up the Suiattle River Road to Sulfur Creek, and after saddling up our exceedingly heavy packs tramped along that foul-smelling valley as far as there was trail, and then thrashed a little distance more. spending the night on an island in the middle of the creek. Next morning we struck directly upwards out of the valley, toiling through brush, timber, and meadows for 7½ hours. At about 7,000 feet on the shoulder below the Southwest Peak of Dome we found snow for cooking our gruel and made camp.

"The third day we kicked steps up a snow finger on the Southwest Peak, then spiralled west, reaching the summit by the north face. Here we discovered the East Peak was higher, and had a pleasant scramble along the airy connecting ridge, keeping close below the crest on the south side. We descended from the East Peak north along the west side of Chickamin Glacier, crossing to the nameless glacier on the west slopes of Dome, and from there over a snow col onto the Dana glacier, which led us to the base of Spire Point, climbed for the first time earlier that summer. After the brief but steep and exposed ascent of the east face, we returned to our camp under Dome.

"The fourth day was one of travel rather than climbing, though in that rough and icy country one must do some climbing to do any traveling. We retraced our steps across the Dana and the west glacier of Dome, traversing the headwaters of the West Fork of Agnes Creek to a camp on an alpine knob at the head of the South Cascade Glacier. Next morning six mountain goats investigated us as we lay in our sleeping bags, stirring us to action. Hoisting packs we tramped over the South Cascade onto LeConte Glacier immediately north of Sentinel Peak. Sentinel gave us a struggle in the bergschrund, but no other difficulty. We had sufficient energy in the afternoon for Old Guard, a northward saunter to the top of LeConte, and down to a campsite at timberline. LeConte being our *first* first ascent, we were quite

exhilarated by the novelty. Feeling a celebration was in order next day we sacked out in the meadows, drank water, and allowed ourselves an extra festive prune for supper.

"Refreshed and stimulated, the seventh day we rambled along the divide above Flat Creek to the col between Spider and a peak we called Daiber, though Formidable has come to be the accepted designation. We first tackled Formidable, which gave us a good climb on sound holds, for diabase dikes by eroding more rapidly than the country rock have formed staircase gullies. Spider is a very different sort of peak composed of crumbly arkosic sandstone. Near the summit, handholds disintegrated at a touch and we virtually shoveled our route upward, acutely distressed by the utter absence of anchors. We were delighted to get safely down off Spider, which by general agreement was the most dangerous portion of our trip. Shouldering packs once more we proceeded north on the crest. At one point the ridge was split by a precipitous notch some twenty feet across, and it took a little time to climb down into the notch and rope our packs up the far side. Though the day had been long when we found a good sleeping-meadow, we still had a bit of energy left over, and since Magic happened to be above us just to the east, in the long afternoon shadows we ran up it and down it.

"Beginning the second week our packs were considerably lighter and we all were in excellent condition to cover ground, though our fingers were rather roughened and split. Climbing over Cache Col we dropped down to Cascade Pass and leaving our packs at a good campsite south of the pass set out for the peak we called Elsbeth, now named Johannesburg. We traversed the talus beneath the Triplets gaining altitude gradually, traversed and climbed most of the north face of Cascade Peak, arriving at last on the col between Cascade and Johannesburg. By now it was late in the afternoon, but any qualms we might have had were dispelled by the mountain goat which appeared suddenly to guide us. Climbing the cliff west of the col we followed the goat, who kept at a uniform distance of 200 feet, leading us to the summit at 6 p.m. Though now we had a few second thoughts, and moved with all possible speed it was dark before we regained the col. Rather weary and desperate we attempted to descend the hanging glacier that drops away on the north side of the col, and none of us came away from that evening with any love for clawing around on steep ice by flashlight. We were finally stopped by a gaping crevasse that spanned the entire

width of the narrow ice torrent, and gave it up as a bad job. Back over the col we groggily struggled, and bivouacked in a sparse meadow on the south slope, huddling all night over a small twig fire, scorching our hands and faces while other portions of the anatomy froze. At first light we carefully conducted our stiff bones the long way to Cascade Pass, circling on the south side of Triplets and descending a snowfinger between Triplets and Mixup to our camp. The remainder of that day we spent dozing and swatting horse flies.

"Our tenth morning we quickly reached the top of Sahale, and continuing north under the east face of Boston Peak shortly found a steep and rotten route to the summit. Once down off this horrid heap of low-grade ore we traversed the Boston Glacier to the north face of Buckner. The cliffs gave fairly good climbing until we ran out of rock some five hundred feet below the west summit. Cox was elected for the lead, and manfully hewed 150 steps up steep ice while we rested and offered sage advice and commentary on his technique and choice of route. Imagining the west peak to be slightly the lower of the two we took a few moments along the easy ridge to visit the east peak, then glissaded long snow slopes down to Horseshoe Basin. One most interesting attraction which we explored is a mine tunnel which bores clear through Buckner and right under the Boston Glacier! Out of miner's night into climber's afternoon shadows, we pulled 2,500 feet out of the Basin onto Sahale Arm and in splashes of sunset color sauntered along the meadows above Doubtful Lake, and dove down the switchbacks to Cascade Pass in last light.

"Taking stock of our situation over campfire, we found that so many nails had been strewn between Sulfur Creek and Buckner that there were not enough tricounis among us to equip one safe climbing boot. Therefore, though our dream-plans for this trip had always included Logan and Goode, discretion seemed the better part of valor, and the eleventh morning we began the long haul home. Before starting we shared out all the remaining salami for it had long since passed its reasonable life expectancy. Cox gulped down his ration, but the rest of us, famished though we were, could stomach only small portions. A sample was enough, and all of us but imperturbable Cox were ill, and burped our way down the Stehekin to camp at Bridge Creek. Next morning we met some hikers from Seattle who told us they had cached some food up the Agnes Trail, and freely gave us full property rights. The vision speeded our steps, but 22 miles later

we were disillusioned to find the cache consisted almost entirely of jello. A quart apiece gave our shrunken stomachs enough solace to allow sleep. The thirteenth and last day we stormed over Suiattle Pass, down Miners Ridge, down the Suiattle valley, stirring the volcanic dust into great choking clouds that required us to walk at intervals of a hundred yards. As always the final mile was interminable, but at last we spied the Model A, and with one more breath of Sulfur Creek fumes we were on our way back to civilization and our first meal deserving of the name since Cascade Pass."

Editorial comment is scarcely needed. Anyone who knows the country will marvel at thirteen days of such sustained energy, even if the weather was perfection itself. A relaxed mountaineer boggles in particular at Day 3, with ascents of both peaks of Dome plus Spire Point; Day 7, with ascents of Spider, Formidable, and Magic; Day 10, with ascents of Sahale, Boston, and Buckner. There was only one true rest day in the journey, unless one adds the afternoon of horsefly swatting after the Johannesburg bivouac. Statistically, the party made the first traverse of the peaks of Dome, first ascent of the east face of Spire, first ascents of LeConte, Spider, Formidable, Magic, Johannesburg, and Boston, the first ascent of Buckner from the Boston Glacier and first traverse. Spire, Sentinel, Old Guard and the Southwest peak of Dome were second ascents. Dome was a third and Buckner a fourth ascent, Sahale probably a fifth or sixth. More interesting to the wilderness mountaineer than the peak-pioneering is the feat of following the Cascade Crest all the way from Dome to Buckner. Not until 1953 was the crest between Dome and Cascade Pass again traversed in its entirety (see *Mountaineer* 1953), repeated again only last year. However, the totalling of statistics is misleading. As Will Thompson says, "Most of us had little interest in face climbs and gendarmes. New country interested us more for its own sake than for the first ascents."

Ralph Clough recalls a trip in 1939 into the Southern Pickets with his brother Ray, Mitzi Metzger and Chuck Kirschner: "It was one of the finest of my Ptarmigan trips. Terror was our objective, climbed only once before and never from Terror Creek Basin, our proposed route. The first night we camped on the bank of the creek. Next day brought us near Terror Glacier to high meadows we called Blueberry Ridge, being so lush with fruit our sleeping bags still bear the stains. The ascent above Terror Glacier was over steep rotten rock. It was slow and treacherous going and we were delighted to reach the col

and solid slabs leading to the summit, steep but pleasant climbing. Descending en rappel I dislodged a foot-square boulder which bounced off my brother's head. He swayed a moment, then recovered. Exceptional hardness of skull is a valuable asset for a mountaineer."

That year Bressler and Thompson returned to the Chilliwack, this time by way of Indian Creek. Both had been fascinated on previous visits by the north face of Bear Mountain. From scaling off distance on a photograph Bressler computes the wall as being overhanging for 1,750 feet, then nearly vertical for another 1,500 feet to the head of the hanging glacier, the whole face extending some 4,000 feet from Bear Creek to the summit. Following—against his advice—a route scouted nearly to the top by Max Eckenburgh, the pair enjoyed a pleasant first ascent of Bear Mountain by way of the westernmost couloir on the south face, followed by a short steep pitch and a scramble to the top. After "a rather unnecessary bivouac on the descent due to the miscalculations which seem to beset first ascents" they traversed the head of Bear Creek to a camp in the alpine meadows above Redoubt Creek. The next day an attempt on the higher peak of "Twin Needles" (Mox Peaks) via the southwest abutment was called off late in the afternoon at 8,000 feet on viewing the tottering slabs of gneiss balanced on a knife ridge leading to the summit pinnacle.

In 1940 Calder Bressler, Ray Clough and Will Thompson returned to the Northern Pickets, entering via Easy Peak and Perfect Pass. After climbing Challenger, a third ascent, they walked east over the glacier through millions of ice worms, down into Luna Creek and up the far side, and in the meadows below Luna Peak met the Beckey brothers fresh from first ascents of Phantom and Crooked Thumb, seconds of Challenger and Fury and Luna. The Ptarmigans took "thirds" on Luna and Fury, and attempted the West Peak of Fury but ran out of time. It is not surprising, for every later party has also run out of time, and at this writing the West Peak of Fury remains the current Last Great Problem of the Cascades.

There were other pioneering Ptarmigan excursions during these years. One member, Wayne Swift, participated in the first ascent of Bear's Breast. The Clough Brothers and Bressler made a first ascent of the North Peak of Cowlitz Chimneys in Mt. Rainier National Park. Ray Clough and Chuck Kirschner climbed the West Face of the Tooth, a probable first that gave them considerable strenuous pleasure, occupying all of a long day into the shadows of evening. The difficult West Face of Guye was a favorite playground when time was too short to venture farther from the highway. There were innumerable club climbs of Cascade peaks easy, moderate and respectable, with

small parties and with large social parties that included friends and girl-type Ptarmigans—some of whom organized their own all-girl climbs.

Purely social parties cannot have been a Ptarmigan forte. Bressler describes the members as "ready to argue at the drop of a cornice." Myers reflects on the group spirit: "The Ptarmigans, especially the hard core, were as varied a collection of rugged individualists as you would be likely to find anywhere, bound together closely by a common love of the high country and a burning desire to climb mountains. As an example of their individuality, on one winter trip with the objective of traversing Baker from Kulshan Cabin to Baker Lodge, a severe storm blew up at about 9,000 feet on the Coleman Glacier. Opinion as to the best course of action was equally divided between: (1) continuing on; (2) going back; (3) bivouacking on the spot. From the foregoing it should be obvious the party consisted of three members."

Bressler cites another instance, a memorable July 4th ascent of Spire Peak. Beyond the trail a discussion led into an argument, with Bressler and Thompson going one way up slippery slabs, at the top of which they heard yells from the Opposition, Cox and Slater, stuck under an overhang. "Rejoining forces we speedily and nervously assaulted the ridge crest, for like most July 4ths it was foggy and threatening a drizzle. After about five gendarmes and still no register Cox and Thompson roped up and led off to reconnoiter. Shortly we spied them through rifts in the fog—Cox on one needle, Thompson on another, the rope looping downward into the gulf between them. Typically-Ptarmigan they had disagreed and gone independent ways. Luckily their objectives lay within the length of a climbing rope or one of the most horrible and least comprehensible of Cascade climbing tragedies would have been recorded." Though it was highly uncertain that they had found the summit of Spire, Cox, among his friends a notorious misanthrope, expressed in the vilest language his opinion of trying any more gendarmes. Near the trail the still-exasperated Cox commenced a tirade on the necessity of safe climbing, which was interrupted when he attempted to break the sound barrier in a standing glissade of a dirt bank and crashed into a pile of rocks. Arising bruised and battered from mud and alder he sensed he had lost moral command of his audience, and it was a quiet hike to the Model A.

Since so many Ptarmigan expeditions fall in the "marathon" category it is worth tracing the ancestry of their special predilection. Without question responsibility goes back to the fact the Boy Scouts of America was framed with eastern forests in mind, not the Cascades

and Olympics. The handbook standards of achievement—the normal number of miles per hour and per day expected of a Scout—when transposed to rough and steep country of the West drove boys into fantastic exertions. Olympus was considered a four-day round trip from Sol Duc Hot Springs, climbing over the High Divide and dropping into the deep hole of the Hoh, rushing up the mountain and back down into the Hoh and back over the High Divide—a total gain and loss of about 14,000 feet of elevation and a round trip distance of roughly 55 miles. If the weather was good party honor demanded that Mount Tom, two miles west of Olympus, be added to the bag. This background explains such Ptarmigan climbs as that of Baker late one May. Leaving Seattle Saturday morning the party hiked the ten miles to Kulshan Cabin in the afternoon, intending to spend a night there and climb the next day. However, the snow was in such good condition for step-kicking everyone marched right on past the cabin, admired the sunrise from Baker's summit, and returned to the road still in the dawn of Sunday. Only then did someone note that the party had been in motion for 23 hours.

Most Ptarmigans were year-round mountaineers. The club never split into two separate groups, climbers and skiers, but for some skis were merely a way to get around the hills in winter while others enjoyed skiing for its own sake. Ralph Bromaghin, Jerry Perry, Mitzi Metzger, Ted Leber and Dick Ludwig were pioneer ski instructors in those early days of skiing as a mass sport, often joining with the more peak-minded members for ski mountaineering. Baker was climbed on skis in January from Kulshan Cabin, and in March via Camp Kaiser. There were two winter trips to Hannegan Pass, during one of which Ray Clough and Calder Bressler made a ski ascent of Ruth Mountain. In the early spring of 1941 Kirschner, Clough, Thompson and Bressler skied from Baker Lake to Anderson Peak Lookout. In 1942 Slater, Bressler, Kirschner and Clough made a five-day ski trip to the Goat Rocks, climbing Old Snowy. In addition there were innumerable ski tours and climbs in the Snoqualmie area. Twice Ptarmigans entered that earliest of classic Northwest competitions, the Mountaineer Patrol Race from Snoqualmie to Meany. They failed to distinguish themselves but it is not surprising, for in its last years the Patrol Race was invariably won by teams from the ski competition clubs then being organized, as distinguished from ski mountaineering clubs like the Ptarmigans and the Mountaineers.

Time and world affairs caught up with the group. Summertime jobs, school and careers had already begun to interfere with trips, and World War II put an abrupt end to Ptarmigan history.

Membership was never a fixed or regular matter. From 1937 to 1942 there were always about 25 or 35 enrolled members, but always also girl friends and boy friends, kid brothers and sisters who attended occasional meetings and climbs. Bressler says, "One thing that kept our membership down was the stern, strong individuality of the hard core. We had many visitors who were amazed and nonplussed by our knockdown dragout arguments, administering fearful beatings to Robert's Rules."

The "hard core" that was maintained from GVRC into Ptarmigan, and continued active throughout the life of the club, were Manning W. "Bill" Cox, Calder T. "Tup" Bressler, Charles "Chuck" Kirschner, Ralph "Rid" Clough, Ray "Uni" Clough, Charles "Mitzi" Metzger, Will F. Thompson, and Thomas "Wimpy" Myers Jr. Honorary members and advisors were Ome Daiber, Wolf Bauer, Jim Borrow, Max Eckenburgh and Arnie Campbell. Ralph Bromaghin, whose tastes ran to music and skis, was killed in World War II. So unobtrusive yet effective was his leadership and well-beloved his personality some Ptarmigans are confident the club would have survived the war had he also done so.

Others who were active at one period or another were Carl Altenburgh, Hugh Bauer, Hartwell Bressler, Loodie Christofero, Robert Cox, Bob Craig, Jim Crawford, Jack Curran, Roger Dunham, Gus Erikson, Reidar Giske, Louis Graham, Jackson Harby, Bob Harding, Pierre Jacobson, Al Lambuth, Ted Leber, Dick Ludwig, Neil McConnell, Ray and Leon McCoy, Jim McKinnel, Jud Murray, Bernard Pearson, Jerry Perry, Bob Phipps, Jack Rodewald, Cliff Schmidtke, Dick Slater, Wayne Swift, John Thompson, Howard Waldron, and Duane Woods. Never formal members but appearing occasionally on climbs were Fred and Helmie Beckey, Jim Crooks, Andy Hennig, and Otto Trott.

Among lady Ptarmigans were Erlene Davenport Kirschner, Gertrude Harby Ettel, Harriet Clough Waldron, Jean McRae Erickson, Jean LeGrande Cox, Sue Hall, Jean Ahrens, Marion Heston, Katherine McKean Thompson, Joy Ahrens Pickering, Helen Burkheimer Gardiner, and Lou Campbell Ransdell.

Short was the history of the Ptarmigans, but important in the exploration of the North Cascades, and had not World War II come along undoubtedly there would have been farther-ranging Ptarmigan expeditions, for many members looked on their Cascade ramblings merely as a prelude to serious exploits on the great mountains of the world. Operations had long been planned in British Columbia and Alaska, but first the depression lack of money and then the boom-

year jobs and consequent lack of time prevented travel beyond Model A range. The farthest afield a Ptarmigan ever roamed was when Ralph Clough in 1936 went as an exchange student to China, and en route climbed Fujiyama, plus Yari and Hotaka in the Japanese Alps — very likely the first person from Seattle to make these ascents.

Will Thompson says, "I think we would all have been perfectly happy to have had that period go on forever. Many details of those trips are as clear in memory as if they had taken place last week rather than twenty or more years ago." Chuck Kirschner speaks not only for the Ptarmigans but all climbing groups when he says, "The most gratifying feeling is not from the climbs themselves, but the friendships that were made, which never will be lost if never another climb is made." The strength of attachment to the hills formed in those years is indicated by the fact that Cox, Kirschner, Bressler and Hank Waldron became geologists, while Thompson went into physical geography and now spends as much time as possible on mountain studies.

Thompson amiably scoffs at any notion their exploits were heroic, saying, "On most of our trips we managed to avoid any real adventures. Safety was our badge of good workmanship — accidents and adventures were failures." Bill Cox disagrees: "It was a serious group, yet one given to what I would now term 'foolish' adventures (my definition of an adventure is a hazardous unanticipated occurrence, probably preventable by better planning)." To which Thompson rejoins: "Cox is indulging in a perverse streak, the skunk. Nowadays he even claims to hate skiing, but his friends know he says such things just to stir up an oldtime Ptarmigan argument." In this typical Ptarmigan discussion, carried on by correspondence, one notes that the old spark of individuality still glows, and notes moreover with approval that the group studied well the wilderness philosophy of Vilhjalmur Steffanson, who in one of his books says, "An adventure is a sign of incompetence." There were bruises and scratches and many sore feet but no major Ptarmigan accidents. Bressler fell down a waterfall on the north side of Whitehorse in 1942, but aside from missing graduation exercises at the University of Washington the only damage was a broken tooth.

The Ptarmigans were no different from the small climbing units forming now as always, both in and out of larger organizations, holding together for a few dramatic seasons and then with the responsibilities and second thoughts of maturity seeking different values in the high country, tamer perhaps but no less deep. However, for each such peak bagger and hill walker the "seasons of glory" are a life-climax,

and necessarily endure both in memory and in the personal orientation to society and the physical universe. That the Ptarmigans deserve lengthy treatment demonstrates the way history is made — by the right people being in the right place at the right time. Mountaineering was new in the Northwest in the thirties, and there was much untouched wilderness of ice and rock and brush. The dozen youths who rode the Cox Model A to the ends of many mountain roads and marched into the back country, lived a splendid chapter in the story of North Cascade exploration, not for the sake of climbing journal recognition or remembrance by posterity, but all in the course of seeing what lay around the next bend in the valley, beyond the crest of the next ridge, on the summit of the next peak — and on all the summits of all the peaks on all the horizons.

PROPOSED

GLACIER PEAK

WILDERNESS AREA

The superb scenic and recreational quality of the Cascades from Stevens Pass north to the Skagit and Ruby Creek was recognized by the United States Forest Service as early as 1931. At this time the *Glacier Peak - Cascades Recreation Unit,* including the area (360 square miles) surrounding and immediately adjacent to Glacier Peak, originated. Chief Forester F. A. Silcox, with the advice of Robert Marshall in 1939, recommended establishment of a *Glacier Peak Limited Area* (1,240 square miles) from Lake Wenatchee to Ruby Creek. Acting Chief Forester C. M. Granger modified this recommendation drastically (reduced to 540 square miles) in 1940, approving the present *Glacier Peak Limited Area* which lies entirely within and covers most of the area shown in the map (pg. 6).

In 1955 the *Federation of Western Outdoor Clubs* recommended that the U. S. Forest Service, in its reclassification of the Glacier Peak area from a Limited to Wilderness status, establish boundaries as proposed by Chief Forester Silcox in 1939. The "*Mountaineers'* Recommendations for the Proposed Glacier Peak Wilderness Area" (1956) suggests modification of the current Limited Area by (1) substituting topographical features for section lines as boundaries; (2) south of Cascade Pass, by moving the boundaries outward from 1 to 8 miles to the position shown on the map (pg. 6); (3) north of Cascade Pass (area not shown in map pg. 6) by including the area bounded by the Cascade, Stehekin and Skagit Rivers, Ruby, Canyon, and Bridge Creeks, and section lines between Harts Pass and the headwaters of The Twisp River, as proposed by F. A. Silcox in 1939. This would be an area approximately 25 miles wide and 75 miles long covering 1,400 square miles.

The newly organized *North Cascades Conservation Council* recommended that the Forest Service establish the Wilderness Area essentially as outlined by *The Mountaineers* with the possible addition of the Phelps Creek, Rock Creek, Entiat River Area. The *Sierra Club,* with the broad aim of providing lasting protection for both the wilderness and non-wilderness recreational resources of the Cascades, has urged National Park status for a much larger region, including the Lake Chelan area as a central feature (Sierra Club Bulletin, pg. 13, June, 1957). Only through such action can the threat of mining be removed and the pressure for logging and hydroelectric power be effectively counteracted.

A National Park Service Committee concluded in 1939, "From a national standpoint, the area is unquestionably of national park caliber, is more valuable used as such than for any other use now ascertainable, and should receive park status under the National Park Service as the agency set up for providing highest conservational use and protection . . . Such a Cascade park will outrank in its scenic, recreational, and wildlife values, any existing national park and any other possibility for such a park within the United States. Establishment of this area as one superb park is an inspiring project to fire the imagination, worthy of the Nation's effort."

PATRICK D. GOLDSWORTHY
Conservation Committee

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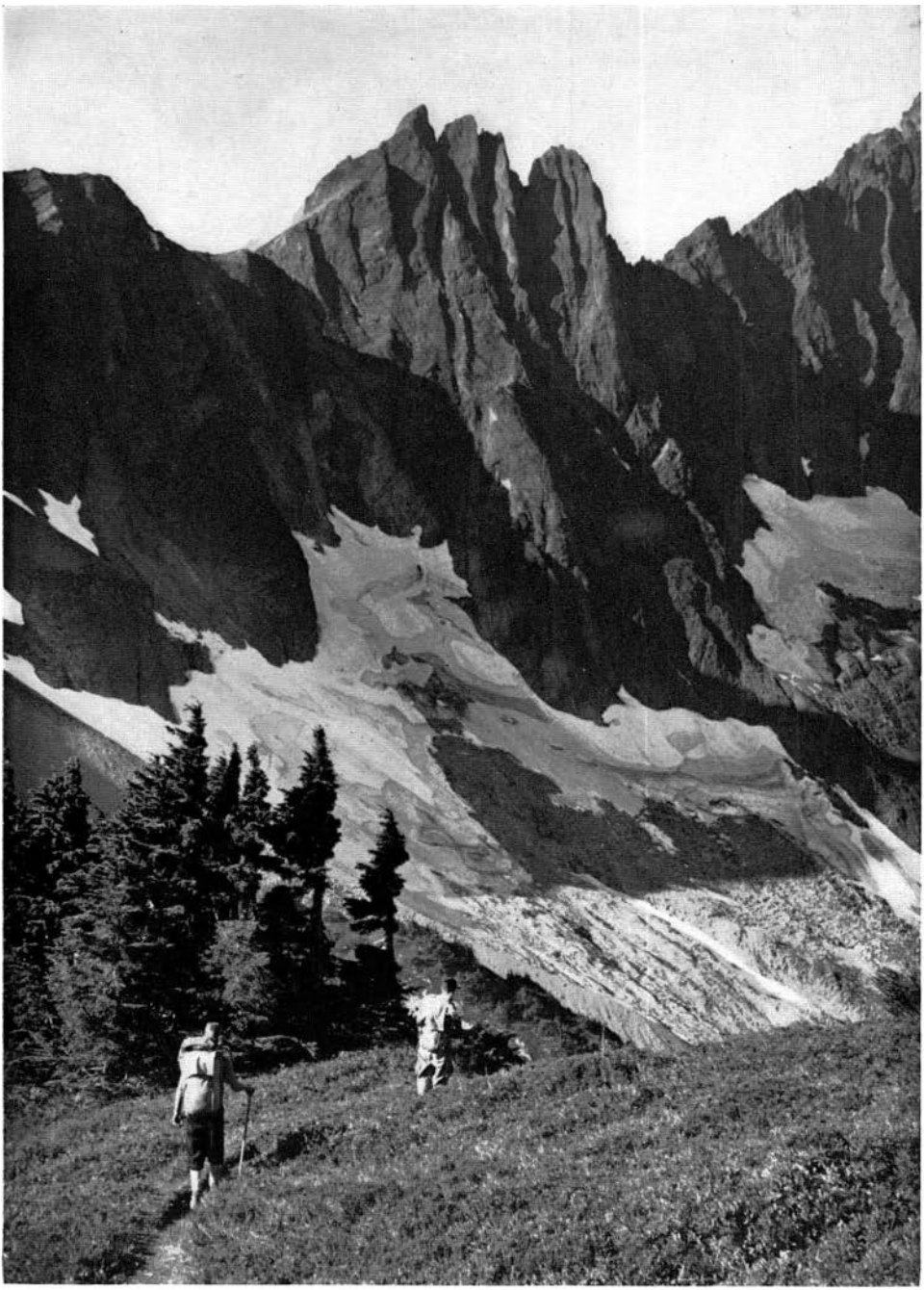
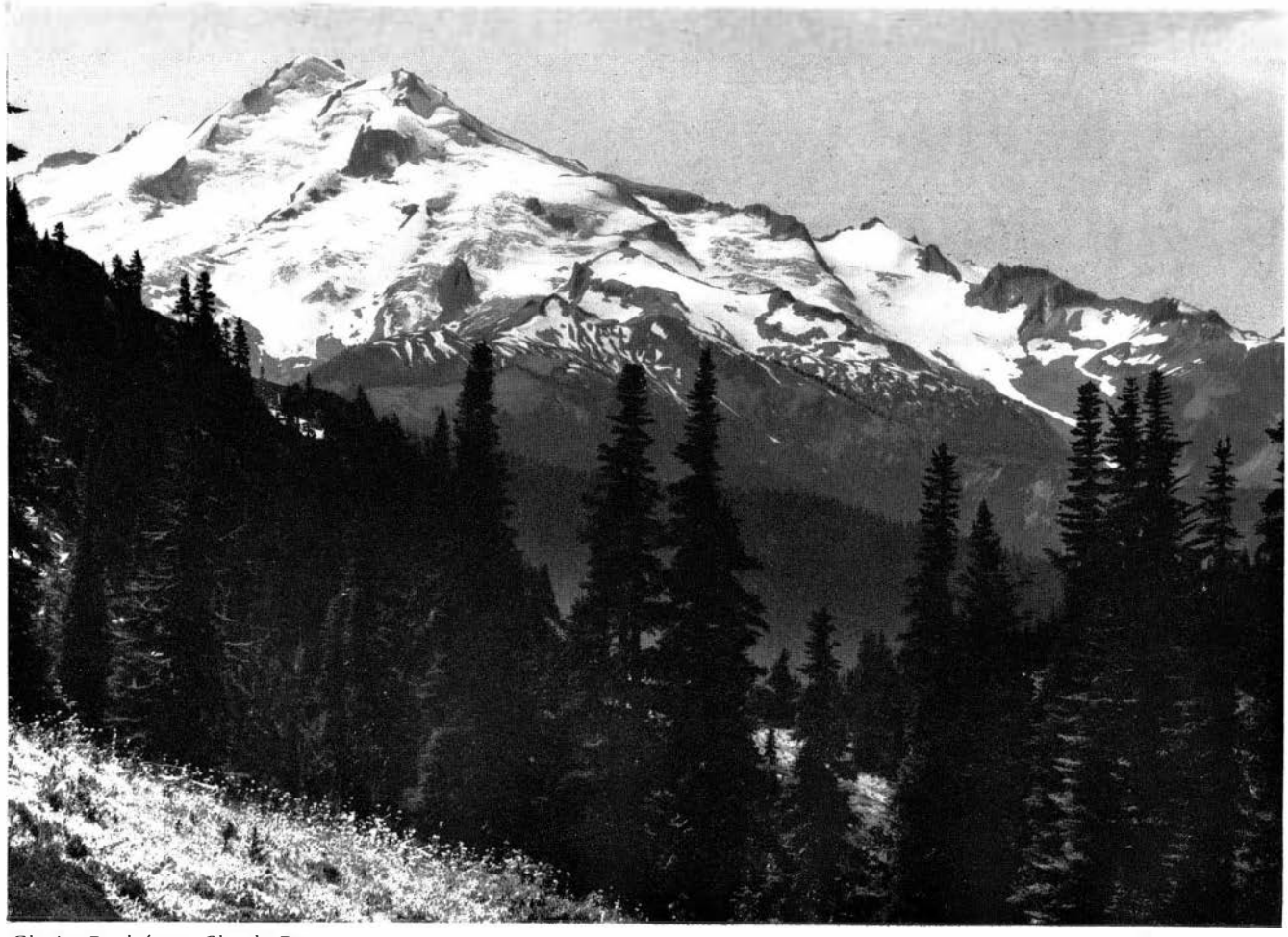
MOVIES

Skiing Cascade Wilderness. Photographed by Charles D. Hessey, Jr. 16mm Magnetic sound. Filmed at Lyman Lake in Lake Chelan region. Color. Approx. 35 Min.

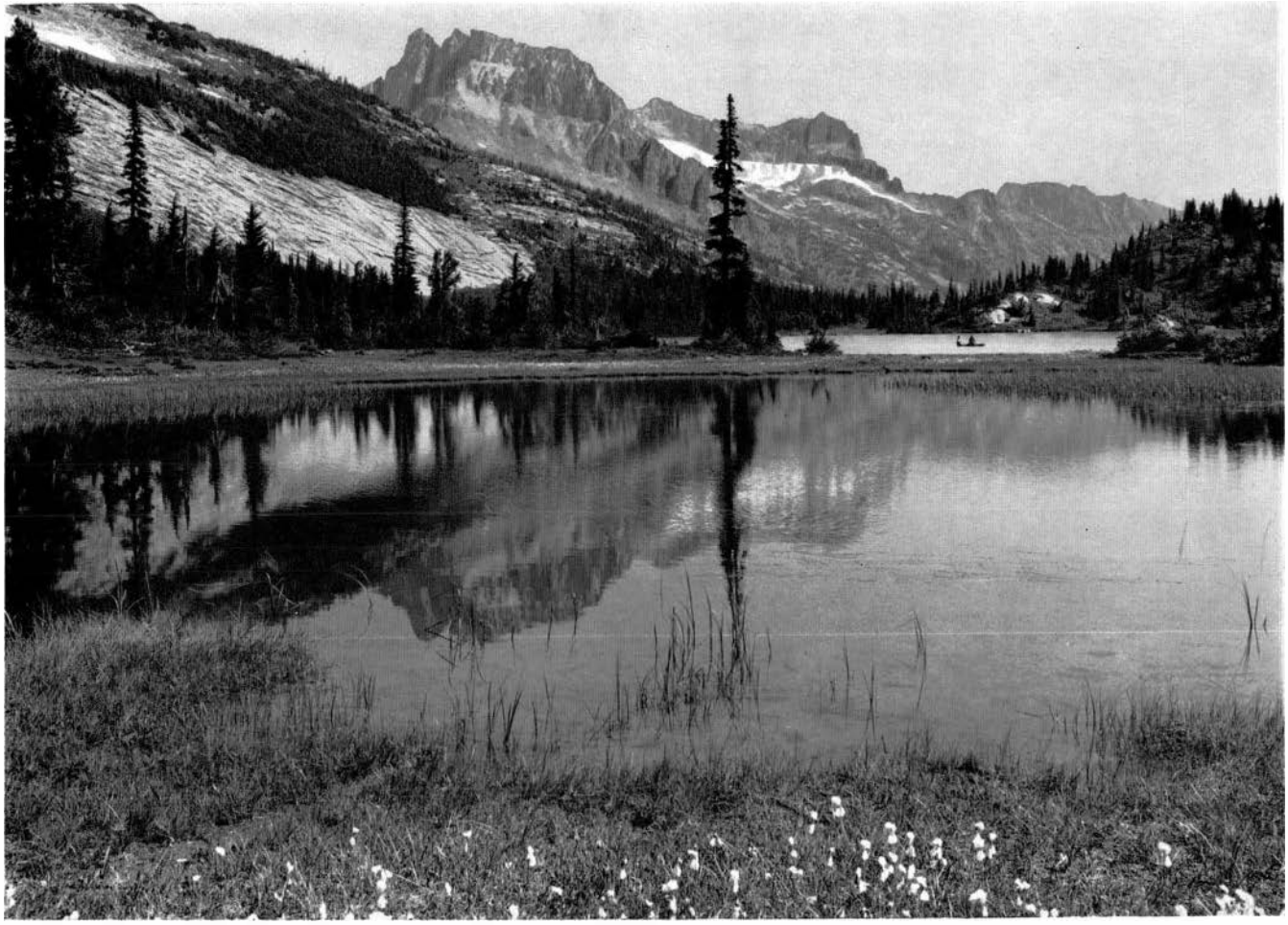
Glacier Peak Holiday. Photographed by Charles D. Hessey, Jr. 16mm Mag. sound. Napeequa Valley, White Pass, Red Pass, Pyramid Peak, Lake Chelan, Cascade Pass, Cache Col, Kool-Ade Lake, Mt. Formidable. Color. Approx. 25 Min.



The Triplets — *Tom Miller*



Glacier Peak from Cloudy Pass — *David Simons*



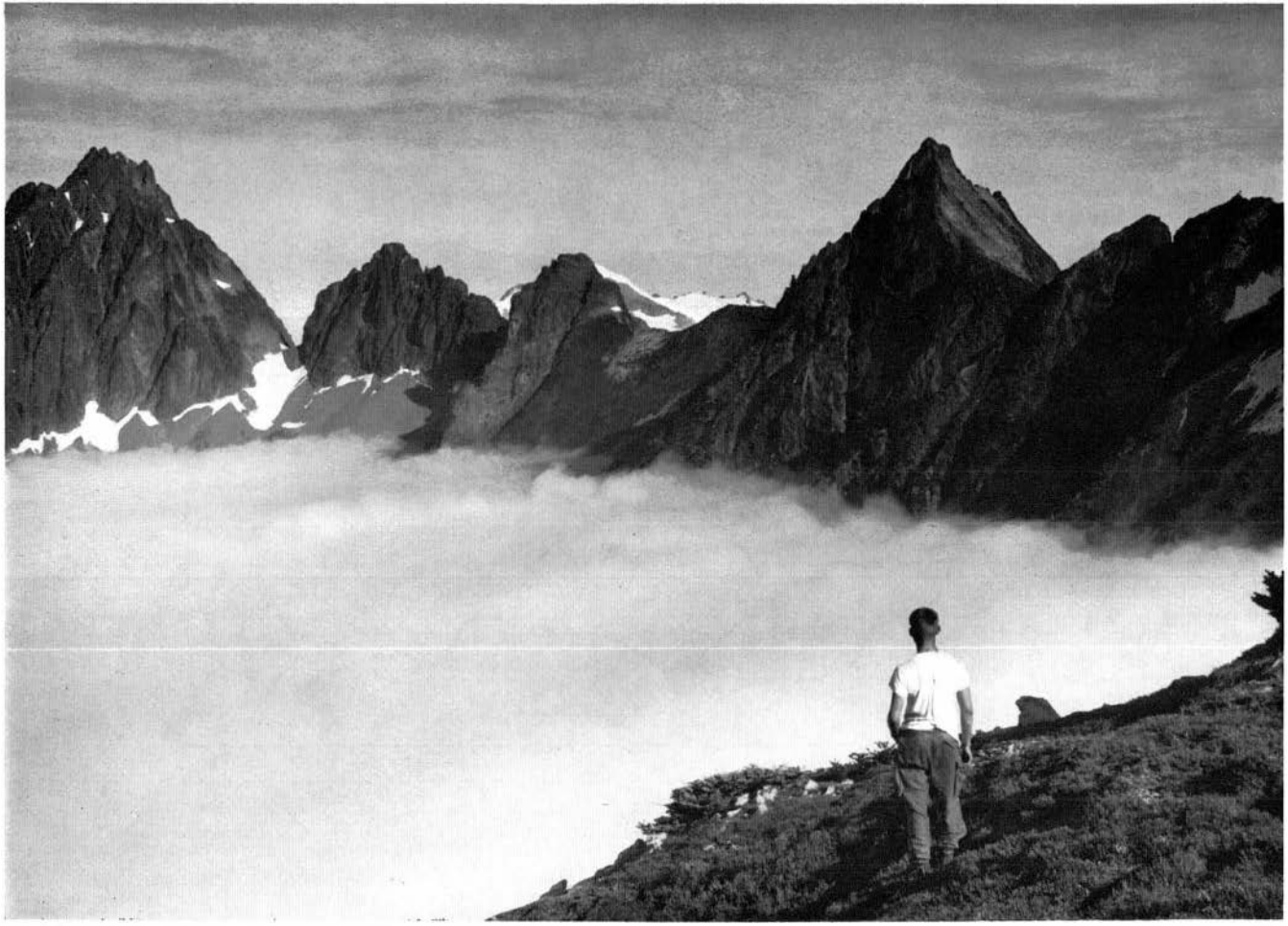
Lyman Lakes *Philip Hyde*

Le Conte Glacier on Sentinel Peak

Bob and Ira Spring

Chocolate Glacier on Glacier Peak — *Bob and Ira Spring*

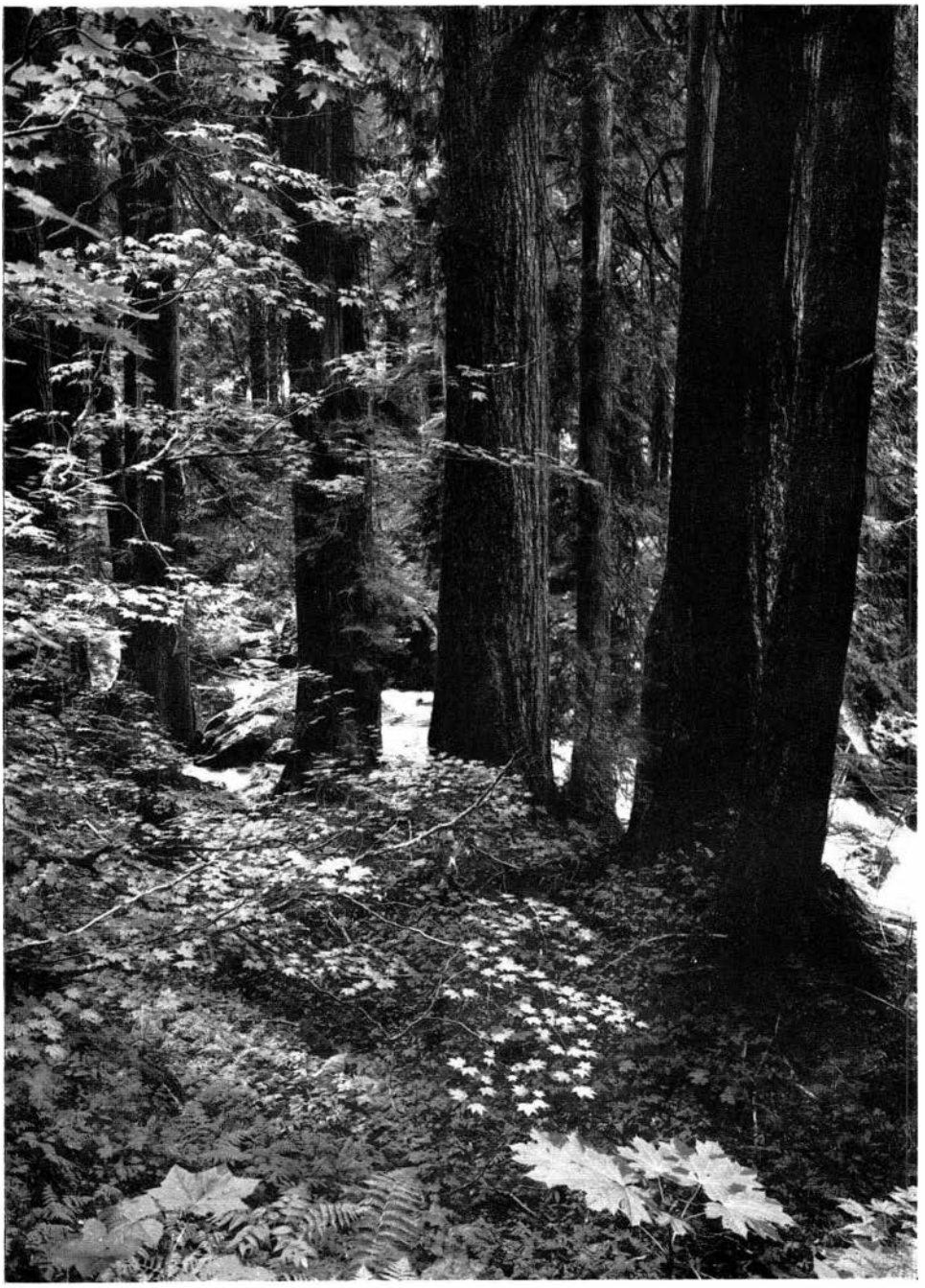
Forbidden Peak *Tom Miller*



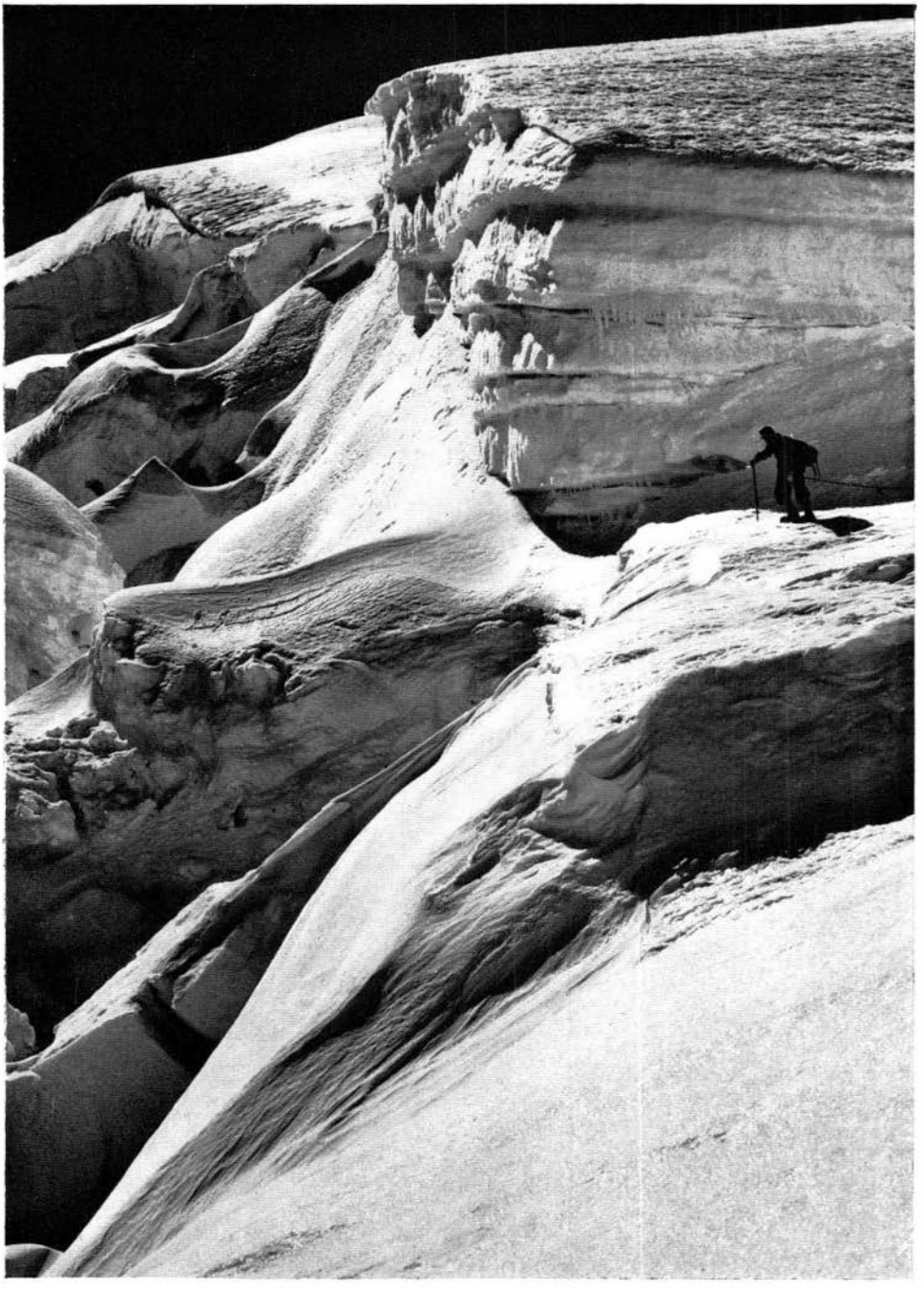
South face—Johannesburg, Cascade, Triplets, and Mixup *Tom Miller*

Suiattle River Valley and Ten Peaks Area *Philip Hyde*

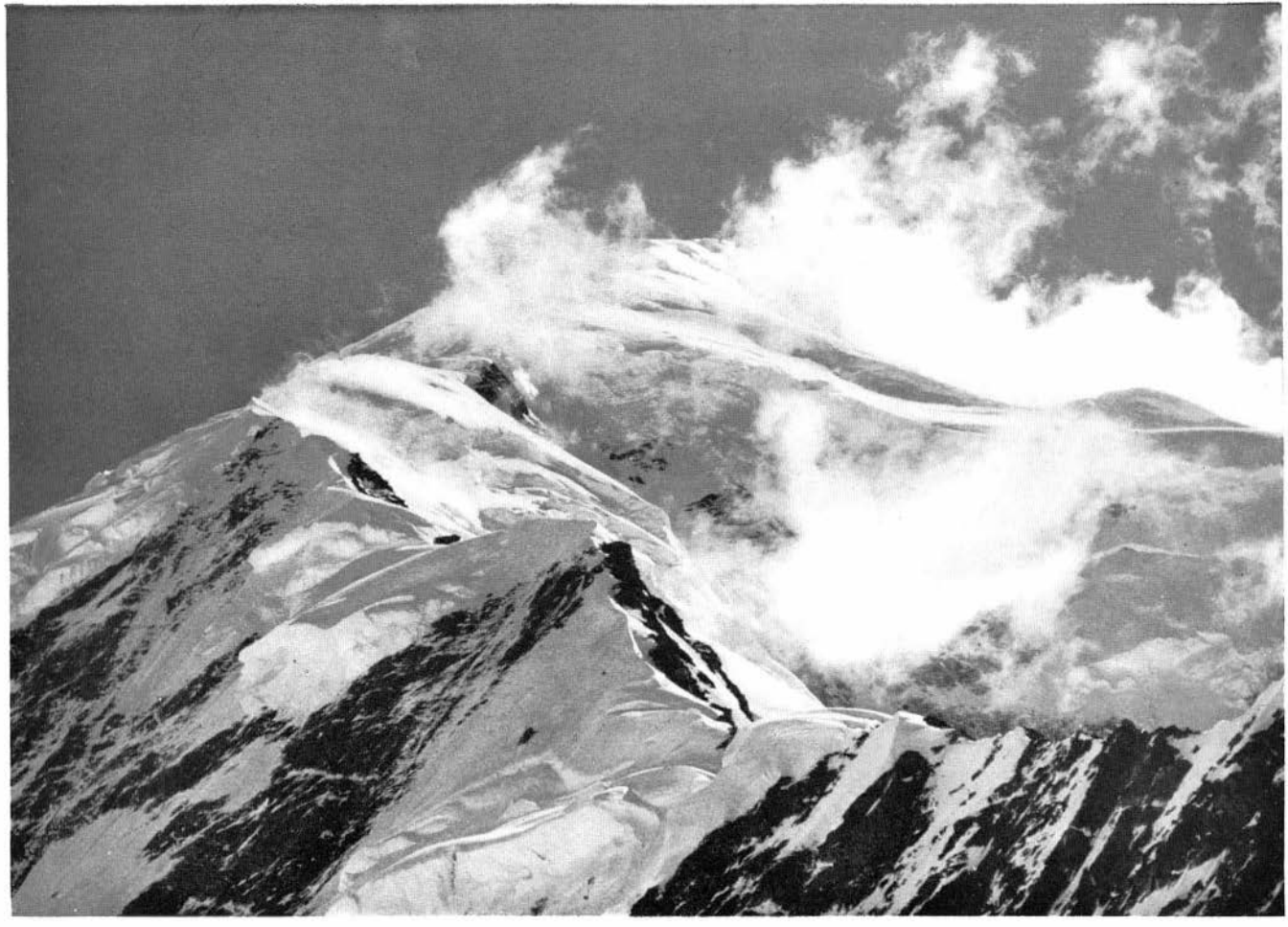
Mt. Clark above Napeequa Valley *Dick Brooks*



Trees—Sauk River Forest *Philip Hyde*



Icefall on Glacier Peak *Bob and Ira Spring*



East Ridge of Mt. Logan *Dave Collins*

ACCESSIBLE POINTS AND FEATURES OF THE GLACIER PEAK— NORTH CASCADES REGION

By PHILIP H. ZALESKY

I. WEST SIDE

A. MOUNTAIN LOOP HIGHWAY---enter at Granite Falls or Darrington.

1. North Fork Sauk River:
   Camping by auto at Sloan Creek.
   a. Sauk Trail - spectacular forest.
   b. Red Mt. Trail - first mile excellent; rest of way goat trail and blazes; good place for goat photographs.
   c. Lost Creek Ridge - high alpine meadow approach to Byrne Lake.
   d. White Pass - reached via beautiful 9 mile trail, panoramic views; climb of Glacier Peak usually starts from here.
   e. Blue Lake Trail - 14 miles.
   f. Cougar Creek Trail - leads to Sloan Creek; approach for climb.
2. Whitechuck River:
   Auto camp at junction of Sauk and Whitechuck Rivers.
   a. Meadow Mountain Trail - 7 miles to Meadow Mountain; trail remnant to Fire Creek Pass.
   b. Lake Byrne - 6,000 foot elevation; outstanding view of Glacier Peak.
   c. Kennedy Hot Springs - 5 miles; hot spring available to bathers.
   d. Fire Creek Pass and Mica Lake - 9 miles from Kennedy Hot Springs.
   e. Glacier Basin - 9 miles from Kennedy Hot Springs; nearby is Whitechuck Glacier, a unique ice-field.

B. SUIATTLE RIVER ROAD:

1. Downey Creek Trail - trail extends about 6 miles, brush fight the next few miles; an approach to the Cascades most rugged and spectacular areas.
2. Sulphur Creek Trail - conditions approximate the Downey Creek Trail; approach to Dome Peak.
3. Sulphur Mountain Trail - 5 miles.
4. Miners Ridge and Image Lake - 14 miles up Suiattle River Trail to one of the Cascades' most photogenic lakes.

5. Milk Creek Trail - approach to Mica Lake, Fire Creek Pass, and Glacier Ridge Trail.

CASCADE RIVER ROAD:

1. Jordan and Illabot Lakes - approached by way of Rockport; trails in poor condition.
2. South Fork Cascade River - poorly maintained trail; a rugged approach to the area south of Cascade Pass.
3. Cascade Pass - at the headwaters of the Cascade River; superb mountain scenery; Doubtful and Trapper Lakes nearby; outstanding rock and glacier climbs of such peaks as Sahale, Eldorado, Boston, Buckner, and Forbidden to the north, Magic, Spider, Formidable, LeConte, and Johannesburg to the south; excellent outing area for limited sized parties.

D. NEWHALEM AND ROSS DAM AREA:

1. Colonial and Snowfield Mountains - advise a four day trip; beautiful but easy climb.
2. Thunder Creek - 18 miles to Park Creek Pass; a nice Douglas fir forest.
3. Fisher Creek - follows under Ragged Ridge before breaking into open country.
4. Granite Creek Trail - a forested approach to Rainy Pass.

II. EAST SIDE

A. LAKE WENATCHEE:

1. Little Wenatchee River - trails go up Cady Creek and up the Little Wenatchee River to "poet" mountains, Indian Head Pass and White Pass, Meander Meadows and Blue Lake.
2. White River - trail takes off to Mt. David lookout and up White River to White Pass. A branch trail will take you to the Napeequa Valley from the White River.

B. CHIWAWA RIVER ROAD:

1. Napeequa Valley - arduous 8-mile trail over Chiwawa Ridge into this Shangri-La of the Cascades; an approach to climb Clark Mountain.
2. Schaefer Lake - 4 miles of trail.
3. Estes Butte - 10 miles round trip with scenic panoramas from the lookout.
4. Buck Creek Pass - an outstanding outing region for both climbers and hikers. Trips can be made to Suiattle, Chocolate and Honeycomb Glaciers, Middle Ridge and even Miners Ridge; excellent climbing available including Glacier Peak, Buck, Fortress, Liberty Cap Mountains and Helmet Butte.
5. Phelps Creek Trail - offers the hiker an approach to the Lyman Lake country over spectacular 7,000 foot Spider Pass.

III. LAKE CHELAN

All trips from Chelan require a scenic 55-mile boat trip up Lake Chelan with a round trip ticket costing approximately $5.50. Ray Courtney of Stehekin is an outstanding packer in this region.

A. HART LAKE AND LYMAN LAKE:

Superlative as an outing site; disembark at Lucerne; 4 miles to Hart Lake and 8 miles to Lyman Lake from ghost mining town of Holden. Crag climbing, glacier travel, and panoramic hiking offered; outstanding climbs include Bonanza Peak, North Star, Sitting Bull, Chiwawa, Red, Plummer and Dumbbell Mountains; hiking available to Lyman Glacier, Phelps Creek Meadows, Miners Ridge, Image Lake, Agnes Creek, Cloudy Pass and Suiattle Pass.

B. STEHEKIN RIVER ROAD:

1. Agnes Creek - part of Cascade Crest Trail system; trail leads to Suiattle and Cloudy Pass (14 miles); side trips include Swamp Creek Trail with its 300-foot Swamp Creek Falls; West Fork of Agnes Creek and its approach to such outstanding peaks as Dome, Lizard, Sentinel, and Rim Rock Ridge and the impressive Chikamin and Dana Glaciers.
2. Park Creek Pass - another outstanding area for outings, especially for the climber; several peaks around 9,000 feet which is high for the Cascades; excellent climbs include Goode, Logan, Buckner and Booker; Park Creek Pass itself excels in scenic grandeur.
3. Bridge Creek - offers entry into such scenic country as Twisp Pass, Heather Pass, Ann Lake and Rainy Lake.
4. Company Creek Trail - not well maintained but is an approach to Bonanza Lake and Hart Lake.
5. McGregor Lookout - scenic vistas of the Stehekin Valley, Agnes Creek Valley and Lake Chelan.
6. Cascade Pass - (See West Side, C-3). This approach takes off from the confluence of Stehekin River and Park Creek and follows an abandoned, washed out mining road; scenic valley.

SOURCE MAPS:

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Glacier Peak Quadrangle, 15 minute (1950)
Stehekin Quadrangle, 30 minute
Holden Quadrangle, 15 minute (1950)
Forest Service Maps (U. S. Forest Service, P. O. Box 4137, Portland 8, Oregon)

PACKERS (List incomplete):

Ray Courtney, Stehekin, Washington
Herman Rhode, Marblemount, Washington
George Miller, Twisp, Washington

HIGHEST

IN THE YUKON

By DAVID A. COLLINS

Making the first ascent of a 19,850-foot peak on the North American continent is a bit uncommon nowadays, and for most of our five member expedition it was unique to attain that elevation. Our ascent of the East Peak of Mt. Logan, completed on July 19, 1957, was the first climb of this summit and the first time the entire massif had been ascended from the east. The Center Peak of Logan is slightly higher than the East Peak and is over two miles from it, separated by a saddle. This central summit was first climbed in 1925, and also twice in 1950, for a total of three ascents.

Mt. Logan is located in the St. Elias Range about twenty miles from the Alaskan border, lying in the corner of Yukon Territory formed by the boundary after it sweeps down the 141st meridian and then turns eastward through the St. Elias Range. It is second in height to Mt. McKinley on the North American continent.

Our group gathered at Yakutat, Alaska in the last week of June with the party roster reading as follows: Gil Roberts, San Francisco, California; Cecil Ouellette, Yakima, Washington; Kermith Ross, China Lake, California; Don Monk, Danville, California; Dave Collins, Seattle, Washington.

Kermith was the first man to be flown from the Yakutat airfield eighty-five miles northwest across the Yukon border to a landing on the Hubbard Glacier, about 6,000 feet in elevation and ten miles east of the beginning of our East Ridge route. The pilot was Ken Loken of Juneau, flying a Super-Cub equipped with hydraulically operated skis. Ken, thoroughly experienced and competent at flying a ski plane in Alaska mountains, had balked at landing any higher and therefore closer to Logan, since the air that day was extremely turbulent in the cwm between Logan and McArthur Peak.

Meanwhile I was flown from Yakutat in a Cessna on wheels carrying a full load of equipment and food. Our intention was to drop supplies as close as possible to the base camp site under the East Ridge.

It was a great thrill jumping ridges and skimming over crevasses as we made successive passes over the area.

We made an all-out effort to get the whole party and all the supplies onto the glacier on the same day, June 25, and succeeded shortly before midnight after two air drops and three ski plane flights. Alaska weather conditions near the Pacific are unpredictable enough that an attempt to spread the airlift over two days might easily have caused the job to be extended to a week or more.

So finally we five found ourselves sitting in the snow with a pile of food and equipment to take up-glacier to the mountain. Our transportation problems were made comparatively easy through the use of an aluminum frame ski sled which was rigged for pulling with a rope from the front and a handle in the rear for pushing. Kermith had fabricated this very sturdy, easily assembled sled, adding the pushing bar in back to the design used by the 1953 expedition which attempted Logan's East Ridge. We found this addition indispensable for traversing slopes and crossing snow bridges.

Only two days after landing we had picked up the air drops and moved on to establish Base Camp at about 7,500 feet beside the end of the East Ridge. Above here was our first big problem; relaying our hundreds of pounds of food and equipment up extremely steep slopes onto the crest of the ridge. Anticipating this difficulty, we had brought aluminum sheaves and a great length of manila rope—a 2,000 foot coil for use here and for fixed ropes above. Don and Cecil, carrying a minimum load, took three hours to reach the crest by a rock and snow route. The other three of us loaded the sled, threaded through a crevasse pattern to the edge of the glacier, and thence up moderate snow slopes to a bergschrund, above which steep ice slopes impeded any direct route to the ridge four hundred feet above us. The two on the crest lowered a nylon parachute line to which we attached the middle of our three-eighths inch manila rope, which was hauled up and fixed in a sheave. This sheave had been rigged up on an A-frame made with rappel pickets and anchored to ridge-crest rocks. Now came the toil of hauling everything onto the crest by pulling hand over hand on our long continuous rope. On the second day of this activity, June 30, we completed the task and donned crampons to surmount the steep rise ourselves. We climbed directly over the upper lip of the schrund and on up the steep ice, using double hauling rope for a hand line.

Gaining the ridge at approximately 8,400 feet elevation, just a few feet from Camp 2 where Don and Cecil had spent two nights, we all began relaying loads up the easy bare rock to the site for Camp

3, only thirty minutes away. This site was virtually an advanced base camp, with a good sized stockpile of canned foods and extra equipment. We wanted these things to be available without moving off the ridge in case of a later forced evacuation from higher up.

Two days more saw Camp 4 established at 11,000 feet by Kermith and myself. We planned to scout ahead while supplies were carried up from Camp 3. However, a storm which plastered our bare rocky crest with a deep layer of powder snow cancelled any load carrying activity. During the second day of the blow, Kermith and I forced ourselves out with very light packs to make a route toward Camp 5.

Before this storm the ridge between Camps 2 and 4 had offered bare rock along the crest, dropping steeply on each side to glaciers. In one section, perhaps four hundred feet long, a sharply defined snow crest required us to rope up, as did the steep rocky rib just above it. However, most of the route between these camps was easy scrambling with only moderate care necessary on the friable granite diorite. The south facing side of the ridge was bare and extremely rotten and steep, while the north side presented high angle snow and ice. These conditions limited the climbing route to a line within a few feet of the crest until we were above Camp 5.

Just out of Camp 4 the two of us arrived at the icy notch which the 1953 expedition attained, and which was the highest point previously reached anywhere on the east end of Logan. At this notch the higher angle technical climbing began, and we spent the entire stormy day chopping steps, placing ice pitons, and setting up fixed ropes in order to gain just over a thousand feet. Before reaching a reasonable site for Camp 5 we wedged the small amount of food and equipment we had carried behind a rock outcrop, and headed down.

The third day of wind and snow was the worst yet, and we remained in a well closed tent to read from our share of the five volume library, assuming that those in Camp 3 were doing the same. Noon on the fourth day brought a general clearing. We peered below and eventually spotted three figures moving up, so Kermith and I departed for an afternoon relay of loads up-ridge to the cache of two days before.

With the expedition assembled again in one camp, we concentrated on completing a route to Camp 5, the last portion of which was a terrifying two rope lengths along a veritable cleaver of hard ice. The camp itself was a most comfortable and well protected one on snow where the ridge widened out into a shelf before becoming steep again. Carrying our outfit from one camp to the next higher meant usually three or four trips for each man, and the loads varied from forty-five

to seventy pounds, depending on the climbing difficulty. On occasions we made two relays in one day, but normally the pack up and light trip down consumed a full day.

With Camp 5 established at 12,300 feet, we sat out one more storm before beginning the push on to Camp 6, another twelve hundred feet higher. Between these two camps the big obstacles were a long treacherous pitch of icy down-stabbing rock, another knife-edge of snow-covered ice which took us an hour's shoveling and a storm which cost us a half day. Camp 6 occupied a reasonably flat, narrow, and airy lower lip of a crevasse. There were no qualms about leaving this spot to move on. Just above was an ice slope two rope lengths long on which we had misspent quite a few hours chopping steps and placing rappel pickets for fixed ropes, only to find after ascending easy slopes for another hundred yards that a huge crevasse separated us from the main ridge. This troublesome crevasse was unusual in that it cut down a slope almost in the fall line. Our route therefore had to be done over again on the far side of the crevasse, keeping as near to it as possible for purposes of avalanche protection.

One of the definite advantages of ascending a ridge route is the relative safety from avalanches and falling rock. Our only brush with an avalanche was in the face traverse off the crest to get around the vertical crevasse mentioned above. During the descent from the first relay to establish Camp 7, Cecil was leading down beside this crevasse, when the entire slope to a depth of nearly three feet sheared off above Don, carrying him for a few feet. Fortunately he somehow regained control before either Cecil or I on the rope ends felt the impact. Both of us had managed to anchor in a narrow band of snow which had clung to the lip of the crevasse.

A minor icefall on the now broadened ridge was the other factor requiring a bit of time to negotiate in the route to Camp 7. This camp we placed on another broadened lower lip of a crevasse at 14,300 feet, almost on a level with unclimbed McArthur Peak north across the cwm.

It had now been three weeks since our landing on the Hubbard Glacier and we were still better than a mile vertically below our objective. From a study of our maps and aerial photographs it appeared that two more camps would place the expedition in position for a summit attempt, and our food situation was such that we could sit out a short storm or two and still make the try in safety. Since leaving the Hubbard we had not even glimpsed the summit peak because a large snowy dome, which marked the joining of the East Ridge with the principal mass, blocked our view.

There were no weather troubles now, and we labored through deep, heavy snow under a bright sun for quite some time after leaving Camp 7 before getting onto wind crust. Despite the heavier packs resulting from our wish to get everything to Camp 8 in only two carries, we pushed on to the top of the "big dome," dropped loads, and went back down to bring up the rest the same day.

It was a great treat to see at last our summit goal and an advantage, of course, to be able to plan a route up the four thousand foot summit pyramid, which at this point lay roughly seven miles away. Here it was cold and calm, despite evidence of high winds on the snow surface. Our camp on top of this dome at 15,200 feet was the only one of the expedition thus far that did not require the leveling of a tent platform.

By morning, wind direction in the upper atmosphere was from the south. It began to snow. We were determined to set up Camp 9 that day. Since this meant only a long plod across miles of easy slopes in a great basin to gain eight or nine hundred feet, we packed everything we needed for a summit attempt along with six days of food and started out. The result was a truly backbreaking day. Soon after leaving camp we came into the lee of a small satellite peak and for the remainder of the day we were poking steps into deep snow at an altitude which made it seem all the more like work.

Around 16,000 feet the general feeling was that we were high enough to make camp for the summit attempt. After some milling around, we stomped down a platform in the fresh and still falling powder, and set up the tents—a Logan and a Makalu. Our plans had been to make a midnight start for the summit so that the whole middle part of the day would be useful for warmth in climbing on the summit ridge, but there was no hope for leaving on this particular midnight. Even with a camp in this ideal position morale was a bit low that night.

Morning showed no improvement until nine, when suddenly a general clearing gave us blue sky all around. Before leaving for the summit, we debated on the advisability of starting so late in the day. However, even the darkest part of the night would give enough light for climbing, and the cold would be the primary problem if the next night found us still out. Afraid that if we waited for another midnight start the storms would roll back in on us, we departed for the summit ridge.

We had selected the southeast ridge for our route up the summit pyramid. The face route was much too complicated by crevasses and steep slopes and the north ridge threatened by cornices. Getting to

the base of the ridge involved trudging a few miles across easy snow slopes to the col. This went unbelievably fast, both because the new snow was somewhat wind packed and because of our increasing enthusiasm. Near the col a pitch of snow-covered ice slowed the pace until we reached the patch of rocks near the bottom of our ridge. Here we rested and admired the wonderful view which had opened to the south. St. Elias and Augusta thrust above the minor peaks. Previously everything in that direction had been screened from view by ridges. Returning to the uphill pull, we found no difficulty on the final ridge and moved up steadily on crampons, walking either on soft snow or on crust and at times threading through rocky outcrops.

At four in the afternoon we all strode onto the summit, but cautiously, as a prominent cornice had been visible from Camp 9. It was July 19, exactly two dozen days since we had been flown in to the start of the ascent. We were blessed with a clear day for our summit view, and I did not complain about the few clouds which obscured the bases of peaks to the north or about the moderate wind which was blowing out of the northwest. The whole world seemed brilliant while we gazed on the delectable mountains about us. St. Elias loomed below us in the southwest, and swinging around to the south and east we saw Augusta, Cook, Vancouver, Hubbard, and Alverstone. Northward were Lucania, Steele, and Walsh. The whole view comprised the most magnificent glacial scenery that I have ever witnessed.

Forgetting the altitude we romped around the summit taking pictures and doing our best to get the climbing ropes hopelessly tangled. Logan's Center Peak appeared to be only slightly higher than we, but there was no particular temptation to think about setting up more camps in order to climb it. After a half hour on top we started the long descent. When we arrived back in camp at 7:00 p. m., the temperature was minus eleven degrees Fahrenheit. Our thermometer was not taken to the summit. However, calculation of the temperature at that altitude using an average lapse rate would make it approximately minus twenty degrees.

Life in Camp 9 was a bit sluggish on the morning of the 20th, but after a certain amount of disjointed activity, we found ourselves fed and the necessary equipment packed for the descent. The Logan tent was left standing, still containing material we could do without on the evacuation. At each camp we had previously established we would find food bags, and at three of the camps there would be tents left standing in anticipation of the return. That same day we descended through Camps 8, 7, 6, 5, and on to 4 for a long sleep. Back on bare

rock again, we headed on down to 3 next morning. Here, where all the heavier delicacies were cached, we almost got sidetracked for the remainder of the day; but after considering our record of the previous day, we decided to go on after eating only a two-pound canned ham, a can of corned beef, one of roast beef, five cans of mandarin oranges, Logan bread and Pilot biscuit with peanut butter and jam, a sack of candy, and all available sardines.

The 450-foot rappel off the ridge and into the bergschrund was not as much fun as it would have been without heavy packs. Fair weather had been with us for the entire descent of the ridge, but once in Base Camp, a snowstorm hit, confining us to the tents for a day. This made our trip down to the Air Drop Camp rather miserable. From here we began the 90-mile walk out to the Pacific coast where we would be picked up by plane. Without radio equipment, we had been unable to make arrangements for the ski plane to come in for us on the glacier, as a result of our indefinite scheduling.

Pulling a heavy load on the sled, we struck out eastward down the Hubbard Glacier, taking a day to reach the bottom of Water Pass, which would take us over the Logan-Vancouver ridge and onto the Seward Glacier. In two more days we pulled over the pass and twenty miles southwest across the broad Seward to the head of Seward Trough, which funnels the glacier down between Mt. Augusta and the foothills of Mt. Cook. Many hours were lost threading back and forth on the corridors among countless tremendous crevasses marking the transition to the more active part of the glacier. Kermith would observe one of the larger crevasses and remark, "Gad, what a yawning cazoom!" In the Trough itself we traveled much faster, moving down to Point Owen and across to Point Glorious. There a Yakutat-based light plane spotted us on July 28, our first outside contact in almost five weeks.

The Seward is so broken up in the lower half of the Trough that travel on its surface is virtually impossible. Our route lay along the edge of the glacier on relatively dead ice with many detours required over ridges which extended out into the jumbled maze of ice blocks. The way seemed as arduous as the summit climb had been. Each trip up over a point of land meant unloading the sled and putting the weight on our backs again.

Where the Seward broadens out to feed the fifty-mile-wide Malaspina Glacier we dropped into a rift between Seward Rock and the Hitchcock Hills to get down to the level of the Malaspina. We set off on a compass bearing of 150° magnetic toward the beach rendezvous point thirty miles away. Somewhere in the middle of the Malas-

pina we discarded Kermith's wonderful sled, since the glacial surface now was strewn with long curving lines of moraine hills which necessitated carrying the sled as well as the packs. Within ten miles of the beach the tiring pressure ridges gave way to a series of exasperating ice hills covered with sliding scree. They seemed endless, but about three miles from the Pacific they fell away before one of the most definite problems of the entire trip. Channels of water cutting deeply into the ice lay parallel with the coast and extended for many miles, connecting large lakes together to form a barrier to ordinary travel. Other mountaineering parties who had traveled through on the Malaspina had located a corridor linking the coast with the main glacier on our present compass bearing. We had tentatively spotted this present corridor from the air during the flight to the mountain. I had taken notes and made a quick sketch during the flight. However, now the corridor appeared to be split by channels of iceberg-studded waters, and we remembered dubiously the long hilly miles around either end of the water channel as a possible route to the coast.

With food supplies becoming short, we reached the end of the corridor after Don and Gil had scouted a roundabout way. It involved jumping narrow stretches onto moving small bergs, swimming a longer stretch on air mattresses, relaying loads across some of these and rigging rope systems to swing them across others, chopping steps up and around the taller bergs, and in one long shaky stretch running along a line of small bergs fast enough so that none had a chance to submerge. Needless to say, there were a few instances of dunkings in the icy water other than the intentional swim.

A few hours of much easier going took us to the Pacific beach at the pickup point nearby a sixty-year-old Japanese wreck, the three-masted Satsuma Maru. While waiting for transport, we gorged ourselves on food which had been cached there for us by Yakutat fishermen. Then two Cessnas landed on the sand to carry the "filthy five" back to the fleshpots of civilization.

Memories of those 39 days in congenial expedition companionship and of an ambition realized will remain vividly with me. My hopes are that future trips may be as successful in every way.

See page 84 for photograph of East Ridge of Mt. Logan.

CLIMBING

NOTES

Edited By MARY KAY TARVER

NEW ROUTES ON MT. RAINIER
1957

Mowich Face: The steep ice slope rising above the head of the Edmonds and North Mowich Glaciers, was climbed June 22-23, 1957 by Fred Beckey, Don Claunch, Dr. Tom Hornbein, John Rupley, and Herb Staley. The descent from Liberty Cap was made the same way.

Kautz Cleaver: The steep rock ridge separating the Success and Kautz Glaciers was climbed for the first time on August 31-Sept. 1, 1957, by a party including George R. Senner and Charles "Bud" Robinson, via the approach from Christine Falls and Van Trump Park. The descent from Point Success was made the same way.

Ascent of the Wilson Glacier Headwall

There had been a storm on the mountain the weekend preceding July 20-21, 1957. Snow had sifted into the rotten rock cracks of the mountain and the upper open slopes were covered. Thawing and refreezing during that week had welded Mt. Rainier, greatly reducing the hazard of rockfall. It was the right time for a new route in an exposed area. The weather was perfect, and the crevasses were still not too far open to be a detriment to travel. The party, including Dee Molenaar and Pete Schoening, began the climb under ideal conditions.

Leaving Paradise Inn at 2:30 p.m., we crossed the Nisqually Glacier and initially followed the regular Kautz route. The new route then jogged across the head of the Wilson Glacier to the east side to facilitate crossing the glacier bergschrund. The Wilson Glacier headwall is divided into two main gullies. We selected the right side-gully and proceeded upward, ascending a rock step at 10,200 ft., and on to a small rock ledge at 11,000 ft. for the bivouac at 8:30 p.m. Continuing the ascent at 3:30 a.m. across the headwall to the Wapowety Cleaver and then upward, we intersected the regular Kautz route, reaching the summit at 6:15 a.m.

Although the Wilson Glacier Headwall route is relatively easy, fast and direct, had the conditions been normal there would have been considerable rockfall. Minor amounts were encountered even with these perfect conditions.

PETE SCHOENING

Curtis Ridge

This is the areta between the Willis Wall and Russell Cliffs, separating the Winthrop Glacier on the east and the Carbon Glacier on the west. Of all the possible summit routes on Rainier, this one has long had the worst reputation as a suicide ridge due to rockfall. The section from 10,500 to 12,500 ft., according to others who had tried it and had been turned back, was supposedly blocked by high, rotten cliffs and the already-mentioned rockfall. There is nothing that weakens a climber's determination quicker than the thought of climbing where there is rockfall, and especially when doing it on rotten rock. One's fear of height and steep terrain can be controlled, but rockfall cannot.

July 20, Marcel Schuster's original plan was to camp at Steamboat Prow Saturday night, and make a quick dash before sunup from there across the Winthrop Glacier and up snow slopes to 10,500 ft. which is studded with gendarmes and dropoffs. This would save some time and get the summit party started up the difficult section of Curtis Ridge without using a lot of energy scrambling around the gendarmes.

After some scouting by Bob McCall, head of the support party and myself, who with Schuster would go to the summit, it appeared that the snow slopes from the Winthrop to 10,500 ft. were broken at the bottom enough to cast doubt on the feasibility of the route. With 50 or 60 other climbers camping on the Prow, it was decided to traverse the Winthrop from St. Elmo's Pass, and camp on lower Curtis Ridge.

Camp was made at a tiny lake at about 8,500 ft. Saturday afternoon, where Marcel hit the sack, since he had gotten off the night shift and packed into camp without sleep, and Stan Butchart and Herb Buller of Seattle, who completed the party, ate and rested. Bob McCall and I scouted the route to 10,000 ft. and McCall located a good spot for the rappel off the first vertical step. The outlook was anything but encouraging, with some fog drifting past the 2,000-foot section of Curtis which presented the difficulties. I would have gladly traded places with anyone else, but after some good food and cocoa at camp, regained my courage and re-decided I still wanted to go. There was no evidence of rockfall on the clean, white snow on the ridge at any spot.

The climb began at 4:30 a.m. Sunday, and the rappel was in a "clean" spot where no loose rock was knocked down by the rope, although both of us wore hard hats. Some traversing on moderately steep snow and ice brought us to a buttress up which we climbed over shattered rock and got on the crest of lower Curtis just beyond the big dropoff at 10,000 ft.

There were no real problems to 10,500 ft., although we had to descend off the ridge and traverse below two more vertical steps, but the big gendarme was passed on the east with no trouble. The first of the two breaks in the snow route we had picked for the ascent is just at 10,500 ft. where the ridge starts up from the last gap in lower Curtis Ridge, and this was our first real problem.

Using a shoulder stand, Marcel got on the first ledge of the 75-foot cliff, where he found an old piton and carabiner, which he reset, snapped into and tried the next pitch. The handholds being just beyond his fingers, he brought me up to utilize my longer reach, which didn't quite work. Setting a piton and using a stirrup, this slightly overhanging pitch was ascended, plus about 50 feet of steep, rather loose rock to a good belay platform, where I belayed Marcel carrying both rucksacks up.

After a rest, we started up gentle slopes toward the second cliff, which is seen from Steamboat Prow as a spot where there is extensive rockfall. The rockfall all goes down to the Winthrop Glacier. We realized that even one more cliff climb like the first one would just about exhaust us, so we tried an obvious and simple traverse which bypassed this cliff on the Carbon side. More gentle slopes led us up a gully system about 500 feet high or so, which wound in and out and brought us around the head of a steep, snow gully leading down the Russell Cliffs, and out above the last rocks of Curtis Ridge onto continuous snow and glacier at 12,500 ft. at 1:30 p.m. Here we took a good rest, stowed the hardware and drank our last water.

The work began here, since there were no more problems ahead and we began to think about fatigue. A puddle of water in an ice-cup at 13,000 ft. quenched our thirst, and soon we were over the ridge east of Liberty Cap and dropped down to the 13,500-foot gap between Liberty Cap and the summit.

The support party, after waiting a long time till we were past the first cliff, returned to camp, had lunch, and Bob climbed for the third time to 10,000 ft. just in time to see us go over the top of Liberty Cap. He pulled up the rappel rope, returned to camp and the support party immediately started out to St. Elmo's Pass.

At about 13,800 ft. I waited for Schuster while he made the climb to the summit, reached at 5:30 p.m. After descending the Emmons in dark during the Liberty Ridge Trip, I felt it was more important to sacrifice the summit, since Schuster was moving faster, than get to the top and descend after dark.

The summit and support parties met at the foot of Inter-Glacier shortly before dark. It had taken only two hours to descend from the summit to that point! Ranger Jack Davies served us hot tea and cinnamon rolls when we pulled in to White River camp ground; a real good man.

Conditions were very good on this trip. A snowstorm a week before had dropped temperatures enough so the section of Curtis above 10,500 ft. hadn't thawed out by the time we climbed. This is a setup the alert climber on the tough routes of Rainier should wait for when attempting a climb. Although there are places which appear to be rotten enough to release plenty of rock during a long, hot spell, the rockfall danger of Curtis has been overemphasized greatly. There was none whatsoever during our climb, and the freezing level climbed to 13,000 ft. or so that day, and we didn't clear the rocks till afternoon.

Although this will never be the most popular route on Rainier, it

is a challenging route which many climbers could enjoy if they pick their climbing date according to the weather.

GENE PRATER
ELLENSBURG, WASH.

THE NORTHERN PICKETS REVISITED

An indication of the rugged and inaccessible nature of the Northern Pickets is the fact that only four or five parties have ever climbed there extensively. Our party of four, Tim Kelly, Dale Kunz, Tom Miller, and myself, found the area to be very pleasant indeed—that is once we had found routes to the heads of the Beaver and Luna Creek Cirques. The first party into the Luna Creek Cirque approached from below; but that is a route seldom to be repeated, and even they found a different way out. By staying entirely in the high country, however, we found travel to be moderately easy.

Leaving the Hannegan Pass road one August morning in 1956, we spent two days packing in to Whatcom Pass, a distance of 17 miles. Another short day brought us to Challenger Arm with only two climbing obstacles along the way. To pass the first of these, the Whatcom Icefall, it was necessary to rope up and use crampons. The second problem was to find a suitable route down to the Challenger Glacier. Luckily a break in the cliffs above the lakes at the snout of the glacier was found. A short rappel at the bottom was necessary when we ran out of convenient angling ledges. Then once onto the glacier we considered ourselves officially in the upper Beaver Creek cirque.

The pack up to Challenger Arm was straightforward with several possible routes available. From the crest of the arm we contoured to the south keeping above the lowest part of the saddle. After a short distance we were greeted by one of the most splendid sights in the Northern Cascades—the upper Luna Creek Cirque. Dominated by the spectacular East Peak of Fury, this cirque offers an array of hanging ice and steep rock walls that would impress the most calloused of climbers.

To properly enjoy the Luna Creek Cirque one must have a well located camp. From our first viewpoint of the cirque we headed directly towards Mt. Fury and glissaded down about 300-400 feet to just such a camp. Situated on an extremely steep hillside, this camp was fifty feet square, flat, grassy, and sunny from 5 a.m. to 4 p.m. It was a perfect mountain camp.

From the Challenger Arm campsite we were able to climb Challenger Peak in five leisurely hours. This was a good climb for practicing steep snow technique; in so doing we better prepared ourselves for climbing Fury. Upon returning to camp we decided to pack down into the bottom of the Luna Cirque since we suspected that Fury would be a long climb.

There are good campsites in the trees above Luna Lake, but lack of time prevented us from going this far. The ice-walled Lousy Lake was our alternate choice, and about all that one can say for this

campsite is that it has water and a good view of Fury. The terrain between Challenger Arm and Lousy Lake is steep and treacherous, with brush covered cliffs scattered over the hillside. We were able to avoid all of the dangerous going by making a descending traverse from the Challenger Arm campsite to the head of the Luna Cirque. This took about two hours.

The next day we climbed Fury by a new route. We discovered this route by climbing to a low point in the Luna Peak-Fury ridge. Here we were first greeted by a view of another of the tremendous cirques in this area—the even less accessible McMillan Creek Cirque with the Southern Pickets capping its south wall. This 4000-foot wall, split at one point for its entire length by the Inspiration Glacier, makes the Southern Pickets appear virtually unclimbable from this side.

Returning our attention to the Northern Pickets and Mt. Fury, we decided to climb along the ridge as far as possible. We quickly reached a high point from where the whole northeast side of Fury could be studied. The large N.E. Fury Glacier looked to be the most feasible summit route and it could easily be reached by a traverse. This glacier is quite steep and we often found ourselves on high-angle slopes above crevasses. At one point we had to cut about four rope lengths of steps in a 45° ice slope. This was the only major difficulty, however, and ten hours after leaving Lousy Lake we were on the summit. This was the fourth ascent of the East Peak of Fury and the first since 1940.

Next to the Challenger Arm campsite the best place to camp in the Northern Pickets is at Perfect Pass—naturally. We packed over from Lousy Lake to Perfect Pass in one day, staying high on the Challenger Glacier after leaving Challenger Arm. Perfect Pass is well named. It has ponds, trees, heather, and spectacular scenery.

We climbed Whatcom Peak on the way back to Whatcom Pass, since a good backpacking route is to go up onto the snowfields of Whatcom in order to get above the band of cliffs which border the lower Challenger glacier. We intersected our approach route after glissading down a snow field to the east of Whatcom.

We have noticed that weather is an extremely important consideration in the Northern Pickets. Travel is especially difficult in a storm and the beautiful Challenger Arm campsite would not offer much shelter on a snowy, windy day. In 1955 the Northern Pickets greeted our party with ten days of snow, wind, and rain; we were pinned under tarps on an exposed hillside for five days while waiting for a break in the weather. Our 1956 trip had eight days of perfect weather. (See map of Northern Pickets, p. 52.)

FRANZ MOHLING

MT. SHUKSAN

On July 20, 1957 the N.E. couloir of Mt. Shuksan was ascended by a party which included Bob Working and Ed Cooper. An excellent view of this route is obtained from Mt. Baker Lodge. A long snow finger which enlarges to a snowfield with crevasses near the top of the face, and splits into two fingers before terminating just below

the Price Glacier, it lies parallel to, and to the right of, the massive Northwest buttress, pointing almost directly to the highest point of the summit pyramid.

Approaching the north or northwest side of the mountain, it is better to start from a logging road that leaves the Mt. Baker highway a mile or so below the lodge, rather than from the lodge itself. This saves a discouraging drop that an attempt to contour the north side of Shuksan Arm from the lodge entails. Stay high on Shuksan Arm as long as possible before dropping down to reach the northwest side of the mountain, to avoid a series of most unpleasant gullies filled with slide alder. When dropping down it will be difficult to avoid some brush. It would be a wise idea to go into the area early when much of the brush is covered with snow.

The snow couloir averaged about 40° for over 2,000 feet. Near the top of the northwest face the right snow finger was followed until rock was reached. The rock (mostly class 3) was followed to a point overlooking the Price Glacier, and then north on the other side until a spot was reached where it was feasible to climb the ice cliffs. One-hundred-fifty-feet of climbing on 50° ice at a most exposed place brought us up on the Price Glacier, which was crossed to the base of the summit pyramid. At this point it was decided to return by way of the Fisher Chimneys because of the lateness of the hour and the threatening weather. From this spot, the summit pyramid could be climbed either directly, or by way of the Hourglass or Hell's Highway.

EDWARD COOPER

MT. BAKER—COLEMAN GLACIER HEADWALL

The Coleman Glacier headwall is a series of cascading ice cliffs bounded on the right by the unclimbed N.W. arete (the Roman Nose), and on the left by a long rock and snow rib. It rises from about 8,300 ft. to 10,500 ft. where a gradual leveling to the summit plateau occurs. Altogether there are over two thousand feet of slopes averaging 45°.

On August 18, 1957 the headwall was climbed by Phil Bartow, Ed Cooper, Don Grimlund, and Dave Nicholson. A belated 6:00 a.m. start was made from a camp set the previous day at about 8,100 ft. on the Coleman Glacier. The avalanche cone leading between the two prominent rock islands was followed; a crevasse was encountered almost immediately, and steep hard snow traversed toward the rock island on the right. Here the choice was offered of traversing further to the right over a steep (70°) and exposed slope, to reach a gentler portion which led up, or climbing an initially very steep short section, and then working through a series of short ice cliffs. The latter was chosen with the hope that an easy way could be found through them. Both routes came together 300 ft. above, near the top of the rock island. The initial pitch was negotiated by chopping hand holds and footholds, and ice pitons were driven for amusement. After some 200 ft. more of moderate climbing more

difficult climbing was again encountered. After some sixty feet of 60° slopes, one man finally reached a belay spot with standing-room only in a crevasse. The knife edge ridge of the lower lip of the crevasse was traversed to the point where the two lips joined, and Bartow surmounted a 5-ft. near-vertical section. Several hundred feet of 40-50° snow slopes were climbed to a point beneath the great upper ice cliffs. The slope was contoured to the right (S.W.) to the two large crevasses which bisect the upper southwest portion of the face, above which a long thin rock outcropping was followed for several hundred feet. The slope then eased off to the summit plateau, and the summit was reached at 5:45 p.m. The view was magnificent, the sun emphasizing the western aspects of the peaks to the east, the peaks to the west silhouetted against the low sun. Descent was made by the regular route, leaving it at about 8,500 ft. to contour slightly down and to the right to camp. The night was spent there, and the descent completed the next morning.

We feel that, upon meeting the initial crevasse, had we traversed further to the right toward the rock island before climbing up, we could have avoided some of the interesting sections we encountered, as did a party which made the second ascent of the headwall a short time later. For a fine ice climb, this is certainly one of the most accessible in the Cascades, and could be climbed completely in one day by a strong party with an early start from Kulshan cabin.

EDWARD COOPER

THE NORTH FACE OF MT. MAUDE

The north face of Mt. Maude is a massive rock and ice face, rising 4000 ft. above the head of the Entiat, and is connected to the peaks of Seven Fingered Jack and Mt. Fernow in a large ice-streaked cirque. It is a spectacular setting and the small pocket glaciers and steep walls would be popular with climbers were it not for the unsound rock and the long approach.

On June 15, 1957 John Rupley, Fred Beckey, Herb Staley and I approached Maude by way of the Entiat River Trail. At the eight-mile point the trail forked, and we chose the left branch which leads to a high divide between the northeast side of Maude and Spectacle Buttes. We thus hoped to have easier access to the north face, as well as avoid much labor that would be involved in an attempt to climb out of the Entiat meadows at the river's head. We camped in total darkness some three miles further up. Next morning we arose early and found that the approach to the divide was a tedious climb up two to three thousand feet of brush and snow slopes. We arrived rather beat several hours later at the beautiful Ice Lakes along the crest.

We descended some 500 feet on fairly steep snow slopes to a snow passageway leading up directly to the hanging glacier on the face. Climbing slightly upward and across on the glacier we were at last directly below the 2,000-ft. ice-sheet on the north face. A large bergschrund at the base of the sheet was bypassed by ascending an avalanche tongue. Snow conditions were excellent and the weather perfect. Though careful belaying was called for in places, the sheet

was by no means as steep as anticipated, and progress was rapid. We climbed nearly two thousand feet of 40-50° snow slopes, Fred and John on the lead rope, kicking steps all the way. The Entiat Valley was finally at our feet, and our struggles rewarded by a splendid vista of the rugged country just east of Glacier Peak. The pile of ice pitons lay untouched. It would be a completely different problem later in the year, with the snow cover gone, a real test to any climber. A quick descent of the easy east slopes brought us down to our approach valley, and a good thirteen-mile walk took us back to the end of the Entiat River road.

DON CLAUNCH

NORTH RIDGE OF FORMIDABLE

Over Labor Day weekend (1957) a party of ten Seattle Mountaineers made the fifth ascent of Formidable by a new route. The ascent took seven hours from Kool Ade Lake.

Leaving Kool Ade Lake at 5 a.m. we crossed below Art's Knoll using the key "red ledge" to gain access to the far heather meadows. Beyond the meadows we dropped down onto the Middle Cascade Glacier at a point where it levels out before making a final plunge to its snout. We then crossed beneath hanging ice towards the north ridge. This part of the climb could only be done in the early morning before the sun could release any avalanches.

There is a steep glacier which flows just below and to the east of the north ridge of Formidable. We climbed up this glacier to the highest point from which the north ridge could easily be reached. The ridge has a prominent notch at this point. A little bit of dirt grubbing was necessary to get from the glacier to the ridge. From the notch we crossed the top of a broad snowfield which lies to the west of the north ridge and climbed another very steep snowfield above. At the top of this snowfield we were able to take off our crampons and start rock climbing. This was about 1,500 feet below the summit.

The remaining part of the climb was all on class 3 rock and no ropes were required. The route followed the north ridge, varying to either side when necessary. Since loose rock always rolled down to the west, rockfall danger was minimized by keeping the party spread out along the crest of the ridge.

We descended Formidable on the south side returning to the Middle Cascade Glacier through the Formidable Col. A simple route from the col down to the heather slopes between Art's Knoll and the Middle Cascade Glacier had been found earlier in the summer by Rowland Tabor, a member of the party. This was, essentially, to travel east along the ridge to a point about halfway between the col and Art's Knoll. From here it was just a matter of rock scrambling down to the meadows and then contouring back around to the "red ledge" and Kool Ade Lake.

FRANZ MOHLING

THE S.W. PEAK OF DOME—SOUTH FACE

A rather inclement August morning found four climbers, Duke Watson, John Holyoke, Pete Taft, and Warren Spickard sitting mournfully on a sodden alp at 6,200 ft. on the southwest ridge of Dome Peak. A debate was raging on whether to continue the retreat down Sulfur Creek or make an attempt on the south face of the S.W. Peak of Dome. A sudden break in the clouds revealing somber gray battlements above settled the issue and at 11 a.m. we were slogging upward. The glacier was crossed passing to the right of the cannon hole from which a series of ledges on the west ridge constitutes the regular route to the summit. At one p.m. we crossed the moat at the center of the south face with the summit looming 650 feet above. Exchanging our boots for tennis shoes we spent two hours of pleasant chimney climbing on excellent granite, which brought us to an airy ledge beneath an overhang. After much pounding of pitons and unkind words John announced that he was unable to reach the southeast ridge to our right. At this point the summit lay 200 feet directly overhead. Duke tried an alternate route to the left using an elbow and thigh jam crack. Some high-angle slabs and three pitons brought us to the crux of the climb, a tension traverse across a steep holdless slab to a small ridge. Easier scrambling led us to the final obstacle, a 40-foot layback crack ending in a small overhang. A long reach to the left and up followed by a muscle-up put Duke on the ridge. Within five minutes we were enjoying the wan evening sunlight and halooing to our comrades who were already climbing down into the swirling mist. A perusal of the contents of the summit cairn revealed no record of an ascent by this route. Four rappells brought us back to the chimney system. Our descent, spurred by the oncoming darkness found us trudging across the glacier at seven p.m. The cheery twinkle of a campfire and some hot stew prepared by our fellow climbers was a fitting climax to a new route well worth repeating.

WARREN SPICKARD

MERCHANT IN MAY

A new route was discovered by Mike Hane, Dale Kunz, Tom Miller, and myself in descending Merchant; as an ascent route it would be easier than those normally used. Essentially the route is a straight line from the summit to the Barclay Creek Trail. In May, almost the entire mountainside can be glissaded with the exception of about 200 feet of scrambling halfway down. As this is about a 3,500-ft. drop, it is easy to see that Northwest climbers have been missing a splendid early spring trip.

The route is a little tricky to find. It starts at the five mile point on the Barclay Creek Trail, where the trail crosses the creek to the north side—by wading, foot log, or cable car. At this point there is a large avalanche gully which ends a few hundred feet above the

creek. The route follows this chute about halfway up the mountain, to where the chute bends to the left past a towering south wall. Here a waterfall comes down from the right. The route leaves the chute at the waterfall and leads to snowfields above.

To reach these upper snowfields one must follow a sloping dirt ledge underneath the south wall, which leads diagonally up to the right. This ledge, which is virtually a cave, it not at all obvious either from below or above. Between it and the upper snowfields there is a small amount of brush. The upper snowfields are broad and gentle, and lead easily to the ridge east of the summit. In May, there is usually continuous snow all the way to the top.

FRANZ MOHLING

SOUTH FACE OF HALF MOON

Projecting up from the center part of Kangaroo Ridge in the Methow Range, Halfmoon Peak was climbed for the first time in 1942 by a route on the north side. The peak, just short of 8,000 feet, was not touched again until October 20, 1957, when John Rupley, Fred Beckey, and I made the ascent by the South Face. The area was approached from the south, using the trail up the North Fork of the Twisp River for about five miles before turning north into the valley which swings around parallel to, and just south of, Kangaroo Ridge.

After a traverse under the face itself we scrambled unroped for 75 feet; from there sixth-class double-rope technique was called for over most of the remainder of the route. John made the first lead which required eight pitons and 1½ hours. The next pitch I led, using one bolt and a piton to get out from under the slight overhang at the beginning, then a couple more pitons to get on a secure ledge for belaying. Easy scrambling up a sloping ledge for a half rope length got us to the final pitch under the ridge. Fred used a shoulder stand for the beginning of the lead, then placed two pitons in a steep, wide chimney to gain the ridge from which the summit was easily reached.

DAVID COLLINS

DUTCH MILLER GAP FROM WEST

Extension of the Middle Fork of the Snoqualmie River Road to a point two miles beyond Goldmeyer Hot Springs makes feasible an approach from the west to the Dutch Miller Gap peaks. The last two miles of road is rough and may not be passable for some cars and/or drivers. With the end of the road at 2,200 ft. and only eight miles from the gap by a fair trail, most of the peaks are accessible for week-

end climbing. Overcoat Peak and Summit Chief Mountain are most accessible, but Chimney Rock, Little Big Chief, and Bears Breast are also possible. On June 23, 1957, Duke Watson, Dick Merritt and Vic Josendal climbed Overcoat Peak, 7,400 ft., in one 16-hour day from the car. A backpack would shorten the climbing day.

V. JOSENDAL

MT MCKINLEY—THE MULDROW TRANSFORMED

On June 25 an eight-man expedition, sponsored by The Mountaineers and consisting of Jon Hisey, Jerry Cate, Alan Van Buskirk, Larry Heggerness, Aldon Haug, LeRoy Annis, Larry Annis, and the writer as leader, arrived at McGonagall Pass eight days from Wonder Lake, en route to Mt. McKinley by the conventional Muldrow Glacier route.

Three of the eight days were used crossing the mile-wide McKinley River whose illogical antics caused several near tragedies. Some 20 channels across its width were between two and five feet deep, and their depth changed seemingly by the hour as the swift current ate out one and filled up another. Equally frustrating was the irregular water level which rose 16 inches in a 20-hour period, and at one time four inches in two hours. Since rainfall was negligible, the strange run-off can only be attributed to the phenomenal glacier activity on the Muldrow.

At McGonagall Pass *a new* and disheartening Muldrow Glacier stretched for miles before us. Where last year's photos had shown a relatively smooth glacier, there was now a continuous maze of jumbled seracs and huge crevasses, some 300 feet wide and stretching half a mile across the glacier. In many places the glacier had dropped hundreds of feet,, as if a huge melt cavern underneath had collapsed, leaving a 500-ft. ice cliff clinging to the north valley wall, the ridge on which we were standing.

With dimmed hopes we selected a route up the glacier edge, always traveling on top of the hanging ice cliff with the ever present dropoff on our left. Eight miles up the glacier and four days later we unanimously called it quits. Beyond this point the route would have to go up the glacier proper because of impending rock cliffs, but there was no feasible route through the maze. In addition, the hanging ice cliff we had just traveled was deteriorating daily. Gigantic chunks of ice, some the size of a small house, would break off with regularity and go booming to the glacier below.

On the return, two days were spent at Gunsight Pass making observations. The low point of the main glacier here was 830 feet below the pass, with the ice cliff consisting of an upper 260-ft. pitch and a lower 250-ft. pitch separated by a shelf 350 feet wide. From the pass we climbed Gunsight Peak on the north, and on June 30 the first main peak on the ridge to the south. Thirteen gallons of kerosene were cached at Gunsight Pass.

Subsequent investigation of the glacier snout indicates an advancement of between 20 and 30 feet per day, at least 3.8 miles advance

from its position in the fall of 1956 and a considerably thicker ice layer, usually smooth but now also presenting a surface scarred and jagged with crevasses and 100-foot high pinnacles of blue ice. Much of the age-old ice-cored moraine has been broken into tremendous blocks and incorporated into the moving ice.

Similar Alaskan glacial activity has occurred on the Black Rapids in 1937-38, Yanert in 1941-42, and the Yakutat Bay area in 1899-06, but never such a major disruption moving so much ice.

KENN CARPENTER

ROCK CLIMBS IN THE CASCADES

Prusik Peak: A new route via the west bridge was made by John Rupley, Don Claunch, Fred Ayres, and Fred Beckey on May 25, 1957. This is a fifth-class rock on an arete of several steep "steps." The rock climbing included a delicate slab wall, a strenuous layback, and a narrow chimney, all on most excellent granite.

The Temple: (Kangaroo Ridge) A new route on the south face was made by Don Claunch and Fred Beckey, Oct. 8, 1956. This climb of about 400 ft. begins on a steep rib, then traverses left into a deep chimney which knifes into the south wall. Eventually a "cannonhole" brings one through the difficulties to the summit slab.

The Mole: A new route via the east face was ascended by Bob Lewis and Fred Beckey on August 7, 1957. This climb began on the north side of the great notch chockstone on the east side of The Mole, and involved a certain amount of sixth class climbing on some sparse cracks just right of a line of pitons and bolts left from several attempts of other parties. The second pitch went up a narrow chimney, the upper part of which overhung, and was climbed with the aid of large pitons and wooden wedges. The final summit pitch was easy.

Piton Tower: A new route via the east face was climbed by Dave Collins and Fred Beckey, on Sept. 29, 1957. This climb involved the use of pitons and five bolts for aid, the studs of which are still in place (3/16" Rawls).

Castle Rock: (Tumwater Canyon). A number of new routes and new variations have been made in the spring of 1957. There is very little vertical acreage that has not yet seen the hammer of the rock climber. A short climbing guide will soon be available in mimeographed form to aid climbers in the selection and description of all of the known routes on the lower and upper portion of Castle Rock.

Midnight Rock: (Tumwater Canyon). This is a newly visited rock wall, above and slightly east of Castle Rock. The rock is excellent, massive, and offers some fine sixth-class opportunities. The central route involved a direct-aid crack, a tension traverse downwards, a steep crack requiring giant angle pitons, a chimney with a rope-throwing problem, and a final pitch that required wedges and bolts. The chimney was reached on the first attempt by John Rupley, Don Claunch, and Fred Beckey; the climb was completed

one rainy afternoon and evening—and finished in the dark; the final pitch done in the wet darkness with the help of a string of clothes of the support party—hence the name "Midnight Rock"—a wet and amusing finale.

FRED BECKEY

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.

Judgement 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 the *Mountaineer's Handbook* 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.

BOOK

REVIEWS

Edited By PAULINE DYER

SOUTH COL. By Wilfrid Noyce. Wm. Sloane Associates, Inc., New York, 1955. 297 pages, 5 maps, 4 colored plates, 71 photographs, 16 drawings. $5.00.

To those who seek a fresh approach to mountaineering literature and who desire more than the usual narrative of the physical accomplishment itself, and to those who feel an uneasiness over their growing boredom with the innumerable statistical accounts of high conquests, this fine book by Wilfrid Noyce is to be highly recommended.

It is indeed fortunate that Colonel John Hunt selected as a member of his 1953 Everest team one so well endowed with the ability to put into words and to bring to the world, the final act in the dramatic play which has held man's interest for the past thirty years. Wilfrid Noyce, a schoolmaster by profession and a writer-poet by nature, succeeded in bringing a large group of heavily laden Sherpa porters to the South Col and in doing so was the first of the expedition to reach this important jump-off point for the two succeeding summit assaults.

The most exhilarating quality of the book is the author's ability to record the "thoughts of the moment" which help carry the reader up the mountain with him in spirit and mood as well as in deed. Noyce's personality sketches of each member of the party is more thorough than most and reveals a keen insight into human nature and character which is not always apparent in books on this subject where the main attention is usually focused on the mountain itself. The author does not go into great detail on equipment, much to this reader's relief; so much has already been written on the logistics and mechanics aspects in Hunt's fine book. Instead, Noyce brings clearly to us the "feel" of being on a big mountain, with the big and small moments of human experience; the hopes, frustrations, and the intense moments of joy over physical exertion and accomplishment below, followed with the lethargy and boredom of exertion above; the philosophizing over the adventure as seen through the eyes of a single member, with musings over his relationship to the whole effort. The idea that members of Himalayan expeditions are continually obsessed with thoughts of their greater goal is dispelled through Noyce's lucid descriptions of the day-to-day slogging up broken icefalls and windswept slopes. The reader may easily feel that

he is looking at this swirling and cold, yet enchantingly beautiful, white world from beneath the author's own parka hood, or that he too is struggling to attain a comfortable position in the cramped corners of a small tent, or dopedly and unsuccessfully experimenting with breathing methods by racing up slope without heed to proven rest-step rhythms.

To receive the first impressions of victory through the eyes of one not directly involved in its final attainment, gives us even more clearly the "on the spot" feeling of being there when Hillary and Tenzing returned to the Col, and it is perhaps more realistic to us through Noyce's viewpoint for this reason. The author's account indicates that the party was barely conscious of the significance of the deed; Noyce's own first impressions, dulled by the slowness of all motion at that altitude: " . . . The top. That meant Everest climbed, job done. Good—*wonderful*. Now we can go down. No more problems."

The return down the mountain, with each succeeding camp seemingly so much more like home than the last is brought out clearly. Consciousness of the importance of the ascent of Everest comes gradually as lower elevations are reached and Nepalese village outposts of civilization are contacted by the returning party. Noyce handles well the harsher aspects of the victory—the sudden tumultuous welcome of Tenzing as the hero of the climb, and the distasteful growing publicity over who was the first to stand on the top, with the almost inevitable let-downs of return to a news-hungry and glory-conscious world.

Noyce completes his book with a selection of short poems written during the climb; the poems become shorter and simpler as higher altitudes are reached, testimony to the gearing down of thought processes up high. *South Col* is a very personal account of one man's exposure to Mount Everest. The reader who wants to become a living, feeling part of this successful expedition should read this book .Those who have had similar experiences on high peaks will envy Wilfrid Noyce's fine perception and knack for recording the finer moments of mountaineering.

DEE MOLENAAR

ARCTIC WILDERNESS. By Robert Marshall. Edited by George Marshall. University of California Press, Berkeley and Los Angeles, 1956. 171 pages, 6 maps, 30 photographs. $3.75.

Whether the reader wishes only to engage in the vicarious enjoyment of wilderness or is actually planning a trip north of the Arctic Circle he will find that *Arctic Wilderness* is both a source of excitement and practical knowledge. He will feel the thrill and sense of high adventure such as that experienced by climbers high on the slopes of unconquered peaks. The literary excellence of the author is evident by his ability to describe the stark and awesome wonder of the Brooks Range with its deep canyons, dangerous torrents, knife sharp ridges, scarce vegetation, abundant mosquitoes and prevailing leaden sky.

From 1929, for the last ten years of his life, Bob Marshall takes the reader deep into the fascinating blank spaces on the map of northern Alaska. His writing adequately displays his great love and intimate understanding of this beautiful yet treacherous country and the happy friendly natives with whom he shared his experiences. Scattered throughout the book are details of arctic survival from modes of summer and winter travel by foot, horseback and sled to successful methods of preventing frostbite and outwitting the ferocious northern mosquito. Marshall was the first to record his exploration of much of this territory and to name many of the peaks which now bear the names he gave them. His explorations occurred in the upper Koyukuk River basin northwest of Fairbanks. Through the "Gates of the Arctic"—Frigid Crags and Boreal Mountain—lay the towering Brooks Range which dominated the scene and constantly attracted him to its crest. From this Range he looked out onto the bleak desolation of "another world" across which all rivers drained north into the Arctic Ocean.

You will finish this book with real understanding of the value of wilderness to man, an irresistable desire to visit the Brooks Range yourself and a fervent hope that a portion at least of this Alaskan wilderness be left for others to enjoy as did Mr. Marshall.

PATRICK D. GOLDSWORTHY

INTRODUCTION TO MOUNTAINEERING. By George Alan Smith. A. S. Barnes & Co., New York, 1957. 128 pages, 54 photographs. $3.75.

As its title says, this book is "an introduction to mountaineering" and not a treatise as is, for example, Young's "Mountain Craft." It is written from the viewpoint of an experienced climber describing the sport and its general techniques to a person unfamiliar with mountaineering.

The author gives a brief history of mountaineering and follows with discussions on physical conditioning, equipment and clothing, principles of rock and ice climbing, belaying, and the philosophy of safe mountaineering. The sections about clothing and equipment, leadership and mountaineering safety are excellent. The portions of the book dealing with rock and ice climbing are good, but incomplete. For example, although the dynamic belay is described, little is said of the ice axe belay or the self arrest. A good general bibliography of mountaineering books is included.

Although lacking much in describing the technical aspects of climbing, *Introduction to Mountaineering* does fulfill its objective of giving a general answer to the curious asker of the eternal "Why?" and of the general "How?".

ROBERT LATZ

A SAND COUNTY ALMANAC And Sketches Here and There. By Aldo Leopold. Oxford University Press, Inc., New York, 1949. 226 pages, 33 illustrations by Charles W. Schwartz. $4.00.

In his varied career Aldo Leopold was a member of the United States Forest Service in Arizona and New Mexico, Associate Director of the U. S. Forest Products Laboratory at Madison, Wisconsin, a founder of the wildlife management profession, and a professor of game management. Along with Robert Marshall he was the instigator in the U. S. Forest Service's implementation of wilderness areas. He was well equipped to write this book.

A Sand County Almanac shows the real measure of the man. He was a naturalist; he was a poet; he was an ecologist; but most of all he was a philosopher who chose the natural scene as his subject. This book, thus, has become a biblical text for all who are appalled with the evidence they see of man's avaricious attitude toward the land and the natural fauna that inhabit the land.

In the socializing of man, moral codes have been placed before us on the relationship of individual to individual, and individual to society. Aldo Leopold points up the need for a land ethic between man and nature. This must be based on more than the economic self-interest of the individual owner. "When we see land as a community to which we belong, we may begin to use it with love and respect."

To imply that this book is nothing more than a philosophical treatise on the land is indeed misleading. This collection of the writings of Aldo Leopold is a work of art. His poignant sketches contain an inner richness which combined with irony and a delicate yet forceful style results in pathos.

It seems only logical that all books on nature should be compared with America's first naturalist-philosopher, Henry David Thoreau. Comparison is out of the question since they belong on the shelf together. Thoreau is a philosopher turned naturalist. Leopold is a practicing naturalist turned writer-philosopher. Thoreau turns to the basic of existence in his philosophy; Leopold's philosophy jars us from our complacency about the future of mankind because of man's attitude to the land that supports him. Leopold makes the more interesting reading for his deeper understanding of nature makes his stories more absorbing.

A *Sand County Almanac* will be an important book for many years to come. The only thing that will prevent this is a revolution in man's concepts to the land.

PHILIP H. ZALESKY

TRAVELER IN THE WILDERNESS. By Cid Ricketts Sumner. Harper and Brothers, New York, 1957. 248 pages, map and end papers. $3.50.

Traveler in the Wilderness is a chronicle of a river trip with a slant slightly different from the usual enumeration of rapids and the methods used to get through them. Cid Sumner was sixty-four years old when she took her first river trip by rubber raft down the Green and Colorado Rivers. She went with the Eggert-Hatch expedition, whose purpose was to photograph these matchless canyons before they

are filled by dams and lost. Many of us saw the film, *Canyon Voyage,* and gained an impression of the trip from it.

Rather than describing the river by rapids, the author gives the moods and feelings—the hot, sullen, dull days, the deep, brooding canyons, the vicious wind laden with sand, the bright dancing river with small, bouncing rapids, the tremendous force—all intermingled with character studies of the members of the expedition as well as a very interesting picture of herself. She shows how, in spite of the tremendous differences in points of view, background and age, the shared experience of a group drew its members together in a remarkable way and gave them a feeling of kinship.

The book is sincerely written, with a light humorous touch that still conveys a sense of strain at times, discouragement and weariness, as well as good times and excitement.

This book is of vital importance in that Cid Sumner shows with great clarity what is to be lost by the damming of our rivers, lost not only to the young and strong but also to those who are older and less strong but still have the desire to see some of our great natural wilderness areas. It is important, too, in that it shows a way of river travel (rubber rafts, canoes, foldboats) just beginning to be recognized in the United States, which makes it possible for more people to share the hiker's joy of getting off the beaten path away from crowded highways and speeding automobiles.

The descriptions of the way people, places and situations affected Cid Sumner, and her reactions to them, make *Traveler in the Wilderness* an adventure in the philosophical as well as the physical sense.

SUSAN MERIDITH

JOHN MUIR, Father of our National Parks. By Charles Norman. Julian Messner, Inc., New York, 1957. 186 pages. $2.95.

Although written for young people from twelve to sixteen years old this biography is inspiring reading for any age. In his late twenties John Muir rejected the promise of his inventive genius for the life of a naturalist. He embarked upon a one thousand mile journey through the United States which brought him finally to Yosemite Valley and the Sierra of California. Here, Muir's pioneer work in geology and botany eventually attracted world-wide attention. His subsequent fight to save Yosemite Valley and the giant Sequoia stands was an integral part in the National Park movement. To those previously unacquainted with John Muir and his vital leadership in bringing recognition of the need to leave some of the face of America unchanged Mr. Norman gives a delightful introduction. It is impossible to read this book without catching some of Muir's inexhaustible enthusiasm for life.

RICHARD BAYNE

AUTUMN ACROSS AMERICA. By Edwin Way Teale. Dodd, Mead & Co., New York, 1956. 363 pages, 49 photographs, end papers. $5.75.

Edwin Way Teale traveled 20,000 miles through twenty-six states to capture the mood of autumn, the loveliest of seasons. Starting at Cape Cod, he moved west across the season's advancing front, and ended at Point Reyes, California. *Autumn Across America* is a travel book by a naturalist. The spirit of this season of brilliant color and great activity is caught. The author describes the infinite variety of autumn among the eastern hardwoods, in the mountains, by the sea, in the deserts, in the Olympic rain forest. Man is harvesting crops and thinking about going to Florida; animals are preparing to hibernate or moving to winter feeding grounds; birds are migrating along the four great flyways; monarch butterflies are heading toward Pacific Grove, California; even lady bugs and wooly bear caterpillars are finding their winter homes.

The trained eye of the naturalist saw many things that others do not know exist. The most delightful parts of the book are the stories of the lives of plants and animals as varied as Kirtland's warbler, coneys, sea otters, wild rice, pitcher plants, tumbleweed, and sea anemones. The observations and reflections of the author make one aware of the importance of the little as well as the spectacular changes that are occurring during autumn.

NEVA KARRICK

AMERICA'S NATURAL RESOURCES. Edited by Charles H. Callison. Ronald Press, New York, 1957. *v* + 211 pages. $3.75.

America's Natural Resources, prepared for the Natural Resources Council of America, is a "must" reading for both amateur and professional in the fields of conservation. Each chapter is ably written by authorities in the several categories of conservation; viz: parks and wilderness; wildlife; soil; water; grasslands; forests. Each writer covers in realistic style the interrelationships of the ecological concept, effectiveness of the citizen attitude and the vital necessity of coordinating all agencies in an effort to cooperate with nature in the best interests of mankind. So well has each authority, unknown to the others, related his material to the overall nature plan that a similarity of thinking is paramount in each chapter.

The book presents in a brief and compact manner an understanding outline of past experiences, present exigencies and future planning in conserving our renewable natural resources. It is equally adaptable for the uninitiated as for the professional. For the former it is invaluable as a background source and for the devoted conservationist it is splendid reference material.

EMILY HAIG

A PICTURE HISTORY OF MOUNTAINEERING. By Ronald W. Clark. The Macmillan Company, New York, 1956. 350 illustrations. $5.95.

Although by no means a broad interpretation of mountaineering history, this book still makes a worthy addition to any climber's library. Inherently, such a pictorial history must be small in scope. The number of pertinent, reproducible pictures surviving through the years, and eventually reaching the author, is a definite limitation. Because mountain exploration rapidly became world-wide, a practical book must confine itself within geographical boundaries, and even to some extent within national frontiers. An author's choice of pictures, and his approach to his subject, naturally reflects to some extent his own particular climbing philosophy. Within the framework of these limitations Mr. Clark portrays, in 350 pictures and a brief, well written text, many facets in the development of mountaineering as we know it.

He touches lightly on the little known, random flashes of interest shown by individuals during the later middle ages. His story really begins with the first ascent of Mount Blanc in 1786. From this core, interest in mountaineering radiates outward, until within some eighty years the major peaks of Europe all have been climbed. This early period is recorded only in the sketches and drawings of those climbers having artistic talent; some works are almost photographic, others are fanciful and even comic.

Earliest photographs appear in the 1850's, mostly mere portraits of climbers, because thirty pound cameras with glass plates and heavy developing laboratories make poor climbing companions. However, glacier scenes photographed in 1860 are startling in their clarity, and a panorama from the Matterhorn's summit in 1882 is excellent. These early shots rival the work of the best of our modern small cameras.

After the conquest of the Matterhorn in 1865, climbers seek fresher fields in Africa, the Caucasus, the Himalaya, New Zealand, North and South America, or wherever difficult mountains remain unclimbed. Nearer home attention turns to new routes, better techniques and equipment, and to the conquest of seemingly impossible faces and pinnacles. The author chooses a few pictures to depict each of these facets and each climbing region, as well as some of the people who led the way in their development.

The emphasis is on British contributions to mountaineering; the author is British, and he has drawn heavily upon sources close to home. The great pioneers are here—Whymper, Young, Smythe and others—and the book culminates in the 1953 ascent of Everest. In spite of such emphasis, the author also covers many other important phases of mountaineering, even the competitive, nationalistic concept with which he so obviously disagrees. One feels that this book is but a thumbnail sketch of mountaineering history, yet its pictures should have a universal appeal among all people who love mountains.

WARD IRWIN

ROADS AND TRAILS OF OLYMPIC NATIONAL PARK. By Frederick Leissler. University of Washington Press, Seattle, 1957. 84 pages, 19 photographs, 17 maps. $1.75.

This little paper-back book on the *Roads and Trails of Olympic National Park* offers an excellent reference source and guide for those who love the Olympic Wilderness. Through years of experience in Olympic National Park as a park ranger and back country explorer Mr. Leissler has become intimately acquainted with the many miles of trails and roads described.

The book is divided into three major sections conforming with the geography of the park. The east side, "dry" and rugged, the north side, including park headquarters, and the verdant western "Rain Forest" and rugged Olympic Ocean Strip comprising the third. Each of these major areas is further subdivided into sections suitable for convenient presentation of the text material. Detailed maps indicating roads and trails with accurate mileages between major points of interest, geographic locations and trail shelters are provided for easy reference. Contour lines are omitted due to space limitations and for those desiring details a topographic supplement would be useful. Each map is discussed fully within the text of the book, and besides indicating important mileages between major road and trail points the author has added a brief summary of important factual information useful for the prospective traveler. Such information as condition of roads, trail hiking times between points, suggested side trips, fishing and natural history interests are all included giving the reader an excellent summary of important details necessary to appreciate and enjoy the wonders of Olympic National Park.

In the opinion of this reviewer the book is most useful as a reference for trip planning. Due to its cost one should think twice before subjecting the book to the rigors of backpacking. Placement of up-to-date information on another map suitable for trail use would be more satisfactory. *Roads and Trails of Olympic National Park* is the most complete and accurate publication available and those interested in the park or planning trips by road or trail would find it a most valuable resource.

WILLIAM E. BROCKMAN

LONELY CHALLENGE. By Hermann Buhl. Translated from the German by Hugh Merrick. E. P. Dutton & Co., New York, 1956. 318 pages, 3 maps, 19 photographs. $5.00.

Considering the reputation that the author earned in his thirty-three years of life, I find this book an amazing contradiction. The impression it gives does not coincide with my opinion of "Buhl", and many of us have an opinion of him. It is not normally a flattering one, although often the feeling is of begrudging respect. With Buhl's recent death in the mountains to substantiate such feelings, any attitude toward his mountaineering altered in a positive direction will

probably find little partisan support. Reading *Lonely Challenge* will change your mind, though. Whatever his approach as a climber, Buhl has no difficulty in communicating his love for the hills. He *did* have a deep passion for the physical existence of mountains, for their ridges and faces and connecting valleys. Above this, he was a man with a singular dedication to an awesome quest: What are my limits? Each day seems to have prepared him for his pinnacle of life, the forty-one hours of solitary battle high on Nanga Parbat. In that struggle, when his body was no longer prepared to continue, two drives provided the strength needed: one, a simple love of life; two, having never learned his ultimate capacity for endurance, he could not believe he had reached that point.

Driven initially by a sense of inferiority, Buhl developed himself into a great mountaineer. The fanatic singlemindedness of this effort had one regrettable effect. To a large extent Buhl lost the ability to communicate the justification for his climbs to his fellow climbers. The reasons, the answers, become clear and understandable in the course of this book. He speaks little of his companions, and when he does, there is little insight. His story tends to be a paean of self praise. He writes well, though, with a sense of the dramatic and a unique generosity toward his contemporaries. His tone is graceful; his sincere love for the mountains is undeniable. Although it was foreordained by the forces within him, Hermann Buhl's death is no less a profound loss to the climbing world..

DAVID A. SOWLES

EAST OF EVEREST. By Sir Edmund Hillary and George Lowe. E. P. Dutton & Co., New York, 1955. 70 pages text, 3 maps 48 plates. $5.00.

This is a pleasantly concise account with excellent photographs of twenty-three peaks, nineteen of them over 20,000 feet, in the area between Everest and Makalu. Participating in this adventure were eight members of the New Zealand Alpine Club and two English guests of the Expedition—Dr. Charles Evans and Dr. Michael Bell, To this expedition are credited the first ascents of Baruntse (23,570, ft.), Pethangtse (22,080 ft.), the first direct crossing of the Barun-Imja watershed, and significant surveys of hitherto blank or inaccurate areas on the Himalayan map.

"Finis" on page seventy leaves the reader wishing for more, a too rare experience in mountaineering annals. The authors give promise of satisfying that wish: "Nau Lekh (21,422 ft.) was a great finish to the climbing and the exploring . . . and enabled a great deal of the survey to be tied together. And, of course, it also gave *tempting views of still further blanks on the map* that are still to be surveyed."

HELEN BUCEY

ALPINE SKI TOUR. By Robin Fedden. Putnam & Co., Ltd., London, 1956. 93 pages, 24 plates. 30*s*. $6.00.

Alpine Ski Tour takes the reader on a ski mountaineering trip over the High Level Route, primarily between Chamonix and Zermatt, the longest and most dramatic of the ski tours of the European Alps, which roughly parallels the Swiss-Italian border. The Route's seventy mile length threads its way through the Pennine Alps, passing such great peaks as Mont Blanc, Mt. Velan, the Matterhorn, the Gornergrat, and Monte Rosa, and crosses many impressive glacier passes.

Alpine Ski Tour accomplishes three purposes. First, the history, geology, flora and fauna of the area traversed by the Route are briefly explained. Second, the author delves into the practical matters of making the tour—what time of winter affords the best passage, what food and equipment to carry, and other details necessary to achieve a successful tour. Third, Robin Fedden gives a factual description of his trip over the Route.

For the person who contemplates taking the High Level Route through the Alps this book will serve as an excellent text or guide book. Unfortunately, the author leaves much to be desired in describing the magnificent scenery encountered, and the two dozen excellent photographs whet the appetite for further description. Although the use of many European language terms and digression on details unimportant to a ski mountaineer detract from the narrative, *Alpine Ski Tour* will afford the experienced skier and the neophyte an evening of interesting reading.

JOHN M. HANSEN

STARLIGHT AND STORM. By Gaston Rèbuffat. Translated by Wilfrid Noyce and Sir John Hunt. E. P. Dutton & Co., New York, 1957. 189 pages, 1 map, 32 plates. $5.50.

Late one afternoon in the summer of 1953 four of us stood awestruck as the light of sundown paused on the great west face of the Dru. Unnoticed for the moment, hidden in shadows far up the glacier, was a greater mountain, Le Grandes Jorasses. We didn't think of either mountain for ourselves, our hearts were set on the Grepon. However, as evening approached, I sat on a stone wall and wondered about the mountaineers who climb such faces. The ice on the Pointe Walker of the Jorasses flashed in the sunset; was that sort of climb worth the effort it involved?

Gaston Rébuffat has done that climb and through him I have my answer. *Starlight and Storm* will answer the same queries concerning the great North Faces of the Alps. He has climbed them all; they have all been triumphs of the spirit however the body may have rebelled at the intervals of cold and fatigue. Actually the reader is submitted to very few instances of difficulty. The ascent of the

Eiger is the one exception, and for this one reason, my impression of this book is mixed. I am grateful for the feeling of exultation that pervades its pages. The atmosphere is uniquely French, and the esprit with which Rebuffat and his companions approach each major problem is exciting, guaranteed to convey the extraordinary emotional power that mountaineering can have. But it tends to be a matter of hindsight, vaguely false in nature. The human mind is thankfully unable to remember the exact quality of pain, and mountaineers have a tendency to exhibit this characteristic. With a rush of strength, Rébuffat has surmounted the blankness of the Badille; the despair of the bivouac is gone as the sunrise fills his sight. It is simply a forgetting, natural, and not really harmful to his book. However, it is terribly misleading, especially so for the novice. Yet, perhaps the final impression is the correct one: Gaston has successfully climbed the great routes of the Alps and has done so with an élan that is enviable. Surmounting the obstacles with grace of mind and body, he has returned to write of them with equal balance. It is an enjoyable book, the pictures are impressive—and, as you read, sit in a draft, turn off the heater, and remember the night *you* spent out.

DAVID A. SOWLES

ADMINISTRATION

AND COMMITTEE REPORTS

NOVEMBER 1 1956 - OCTOBER 31 1957

For the first time in many years club membership declined slightly during the year. Although 558 new members were admitted during the period, totals dropped from 3,570 on October 31, 1956 to 3,444 on October 31, 1957. Standards for honorary membership in THE MOUNTAINEERS were recommended by the *Membership Committee* and adopted by the Board of Trustees on February 7th, as were provisions regarding complimentary and 25-year members. In the election of Trustees 1,117 ballots were returned.

New committees created were: *Natural Science*—to work with the University of Washington Extension Service on courses for outdoorsmen, scheduled by the University at the request of THE MOUNTAINEERS. The first three held were Geology, Marine Biology and Meteorology with an average attendance of 42 each; *Tax Status*—to collect and submit to the Department of Internal Revenue information supporting a request for tax exempt status for the club; *Future Clubrooms*—to consider all short and long-term aspects of meeting and office space needs of the club and to make recommendations on suitable quarters; *Insurance*—an advisory group of five members with rotating terms to study all club insurance and make recommendations to the Trustees; *Budget*—to compile criteria for an annual budget to serve as a guide to future budget committees; *Book Promotion*—to recommend methods of financing publication and promoting the textbook "Mountaineering" and repayment of this cost; also to promote, sell and distribute the book. Committees were appointed to assist the Librarian and the Auditor.

On May 9, 1957 the Board adopted a statement on the basic duties and obligations of Trustees: have a working knowledge of the Bylaws; have an active interest in the purposes of the club and its management; attend and participate in regular and special board meetings; serve on special committees as needed; and participate in a variety of club activities.

Junior Mountaineers assisted the Forest Service in building picnic facilities at Cascade Pass, thereby increasing capacity of the area.

Walter B. Little was awarded the *Service Plaque* for outstanding service as an officer, trustee, committee chairman, leader and worker in lodges and in many other ways.

Dr. Cyrus E. Albertson, First Methodist Church, was the featured speaker at the annual banquet, held at the Norselander Restaurant on Friday, April 12, 1957. Two-hundred-fifty persons attended.

Climbing Committees in Seattle, Everett and Tacoma reported a successful season with a total registration for the three basic courses of over 300. Seattle had 203 Basic students and 88 registrants for the Intermediate Course. Thirty-five experience climbs were scheduled and six advanced climbs. The experiment of holding two practice trips (Intermediate Hard Snow and Rescue Methods) in late summer worked out well. Last copies of the Climbers Handbook, published in 1948, were sold. A 3-lecture First Aid course was offered in the fall of 1956, followed by two seminars for Climbing Course graduates. A Trail Work Party in September re-opened the Weden Creek Trail in the Monte Cristo area.

Viewfinders program expanded considerably with seven snowshoe trips during the winter months, a trial series of 13 Saturday climbs in addition to 14 Sunday climbs, three overnight trips and one three-day climb of Mt. Adams. Total participation on all trips in the program was 450.

Hiking and Camping Course was presented for the third year. The four lectures and one field trip making up the course provided fundamental information designed to aid persons participating in Campcrafter and Viewfinder activities and private trips.

Thirty-eight *Trail Trips* were planned, including joint hikes with Tacoma Branch, snowshoe-and-ski trips with Viewfinders. The annual President's Walk in September took 70 people to Indian Henry's Hunting Ground in Mt. Rainier National Park. The committee sponsored a three-day trip to Copalis Beach and a Trail Trip reunion party.

Safety Committee investigated seven mountain accidents, five of which involved club members. Reports of these accidents were published in the May, October and November, 1957 Bulletins. A scrapbook of news clippings on mountaineering accidents was maintained.

Nine *Ski Tours* from February through June averaged 13 skiers per tour.

One-hundred-thirteen persons attended the *Summer Outing*—sixth in the club's history to be held in the Glacier Peak area. Starting July 20, the group traveled by bus and boat to Holden and from there by foot and packhorse. Camps were made at Lyman Lake, Image Lake (where there was a fine view of Glacier Peak but few level tentsites), and—for the second week—Buck Creek Pass. Buses were boarded again at Trinity Mine for the return to Seattle. Eleven ascents were made on the outing, including a 40-man-and-woman climb of Glacier Peak from Buck Creek Pass. Nights were frosty but wild flowers were unusually bright and beautiful. The Six-Peak Banquet on August 1st saw eight new pins awarded. Following the Outing two letters were received from Forest Service officials complimenting outing personnel on the unusually clean and undisturbed campsites which were left.

At its May, 1957 meeting, the Board approved a policy relating to refunds to Summer Outing participants providing a stated sum remained after deductions for equipment and general funds.

On the recommendation of the *Lodge Operations Committee* the Trustees approved (July 11, 1957) a statement of policy on ski lodge operation which set up a basis for determining rates to be charged and (October 3, 1957) that members attending lodges may be required to furnish proof of Mountaineer membership or be charged guest rates.

Building Policy Committee was primarily concerned with plans for the proposed lodge at Mt. Baker. These plans were approved (July 11, 1957) and funds appropriated from the Permanent Building and Improvement Fund to initiate construction. Cabin-capacity work parties during the summer got all the foundation blocks poured.

Mt. Baker cabin was open for skiing from Thanksgiving through May and averaged 22 persons per weekend.

The relocated tow at *Meany* provided better access to lanes and eliminated the necessity of digging out the upper part of the rope. The big social event of the season was the dedication of the new tow to Walt Little.

Stevens Ski Hut was open 22 weekends during the 1956-57 ski season, plus Christmas vacation periods. Hut sign-ups totalled 1,208 and 2,357 meals were served. Work parties finished the main-floor interior with knotty pine wall paneling and fire-proof, acoustical ceiling tile. This year and last Stevens Hut committee, with U. S. Forest Service approval, has devoted a couple of weekends in late fall to cutting trees to form deep-snow ski trails.

Snoqualmie Lodge reported an attendance of 3,141 persons on 29 days of operation. It became increasingly apparent that day skiers carry the Snoqualmie operation. Increases in tow, lodge and meal fees were approved and a revised method of tow supervision instituted. Removal of trees on the Summit Ski area left a narrower screen for the Mountaineer hill. Additional bulldozing put the "bunny" hill in excellent condition for the use of beginning skiers. Night skiing proved a successful innovation.

With completion of a practical architectural plan and the help of three masons and other members, considerable progress was made on the *Linda Coleman Memorial Shelter*.

The *Mountaineer Rhododendron Preserve* has enjoyed increased use by both Mountaineer and other approved groups—Boy Scout and church groups have visited the property and Olympic College has used it as an extension classroom for botany studies.

Mrs. Florence McComb Speers deeded three acres to The Mountaineers for inclusion in the Rhododendron Preserve. This land, with a further six-acre acquisition, brings the total Mountaineer property in Kitsap County to approximately 160 acres. Unauthorized logging was discovered on Mountaineer property and legal action was instituted to recover damages. The project of marking the boundaries was nearly completed.

Kitsap Cabin hosted several large groups of Players as well as Play audiences, annual greens walks and the Halloween Party.

Players presented "Teahouse of the August Moon" on June 2, 8 and 9. The comedy of the American army of occupation of Okinawa proved an ideal selection for the Forest Theatre where the sets blended naturally into the trees and ferns of the outdoor stage and the rhododendrons cooperated by blooming on play weekends. The combination of good script, excellent direction and fine cast made "Teahouse" a successful production which netted $1,500. Good weather brought out 3,000 persons for the three performances.

All new books on mountaineering and skiing which appeared in bookstores during the year were added to the *Library*. Other purchases included nature studies and related subjects of value to various club groups.

Campcrafters continued to schedule family camping and climbing trips—from a clam-digging expedition to the ocean in May to a September walk to Paradise Ice Caves. Labor Day weekend saw 75 persons camped at Chambers Lake on the north side of Mt. Adams. Climbs of Old Snowy and Mt. Gilbert were made in the Goat Rocks Wilderness Area. On August 3rd, 25 cars of Campcrafters left on the annual Gypsy Tour—this time to Glacier Park, Waterton Lakes and, for a week-long camp, Canada's Kananaskis area, returning by way of Lake Louise, Columbia Ice Fields and Jasper.

Canada also called the *Special Outings* with two of the four trips going north of the border: to Victoria, B. C. and vicinity in May and to Garibaldi Provincial Park over the July 4th period. Cruises in the yacht "Winsome" provided opportunity for fishing and clam-digging.

At the recommendation of the *Conservation Committee,* the Board of Trustees took the following actions:

. . . Reaffirmed its stand opposing invasion of the Arboretum by approaches for a second Lake Washington Bridge (1-3-57);

. . . Endorsed a State Legislature Memorial on establishment of an adequate Glacier Peak Wilderness area (2-20-57);

. . . Empowered the Conservation Committee to consider the proposed Glacier Peak Wilderness Area and invite interested organizations and individuals to a meeting (2-30-57). The North Cascades Conservation Council was organized at this meeting.

. . . Approved publication of a brochure on the Glacier Peak area. 25,000 copies of this brochure were prepared for distribution to members, interested groups and individuals.

. . . Sent letters to Seattle City Council and Mayor of Seattle commending their stand relative to the proposed second bridge across Lake Washington (2-20-57);

. . . Expressed opposition to the proposed Bruces Eddy dam;

. . . Authorized support of the Sierra Club at a preliminary hearing on the establishment of a wilderness area in Southeastern Alaska (4-4-57);

. . . Appointed Mrs. John (Polly) Dyer representative to the Federation of Western Outdoor Clubs convention in California over Labor Day weekend;

. . . Aproved the resolutions passed by the F.W.O.C. Convention (9-26-57).

Highlights of the Conservation Committee's activity for the year include study of U. S. Forest Service wilderness area proposals for the Glacier Peak area; salvage logging in Olympic National Park; Mission 66 proposals for Mt. Rainier National Park; and preservation of the University of Washington Arboretum.

Everett Branch membership reached a total of 117 on 10-31-57. The branch sponsored an expedition to Mt. McKinley, Alaska, in the summer of 1957. Three Everett and two Tacoma members made an unsuccessful attempt on the mountain while many more helped in packing supplies and other preparation. Probably the largest turn-out of branch members on a single activity during the year was the Labor Day campout for climbers, hikers and their families at Twin Lakes in the Mt. Baker area. Climbs included American Border Peak. Fifteen summit climbs were put on the calendar, including Mt. Rainier—first time "The Mountain" has been scheduled by Everett branch in several years. Annual greens walk, salmon bake, a weekend at Possession Point and snowshoe climbs rounded out a full year's activities in Everett. The Everett Branch presented the club with the late Dr. Hinman's slide collection.

Tacoma Branch membership increased during the year to 344—a gain of 22 members from 10-31-56 to 10-31-57. Highspot of the year was opening of the clubhouse, with the March monthly meeting the first to be held here. Climbs scheduled included Mt. St. Helens (on skis), Mt. Hood, Mt. Adams, and 17 lesser summits. Annual events such as snowshoe and ski tours, Christmas party, greens walk, hot rock steak hike, beachfires and picnics, and cruises were planned. A Carnival of Nations helped raise funds for the clubhouse, as did the sale of Mountaineer identification buttons. Maynard Miller brought his movie "Search for Wonders" to Tacoma and the branch sponsored showings of "Himalayan Adventure" and Audubon Screen tours.

Committees were active in the following fields, providing entertainment and/or service to the membership of the club: *Achievement Records, Annual Banquet, Annual, Bridge, Clubroom Custodian, Dance, Dinner Meetings, Expedition, Irish Cabin, Monthly Meeting, Photographic, and Typing and Duplicating*

THE MOUNTAINEERS
STATEMENT OF FINANCIAL CONDITION
August 31, 1957

ASSETS

General Fund		
Cash		$13,057.71
Accounts Receivable	$ 89.09	
Due From Expedition Committee	66.47	
Advances to Mountaineering Book Fund	1,272.18	
Due From Other Funds	50.59	1,478.33
Property & Equipment - See Schedule		22,654.25
Unexpired Insurance & Prepaid Expense		1,039.93
		$38,230.22
Permanent Building & Improvement Fund		
Cash		$ 8,763.24
Due From General Fund		1,175.84
Tacoma Clubroom Construction Loan		3,349.00
		$13,288.08
Mountaineering Book Fund		
Cash		$ 4,030.00
Due From General Fund		156.00
Pledges Receivable		4,014.00
		$ 8,200.00
Permanent Fund		
U. S. Government Bonds - at Cost		$ 3,000.00
Due From General Fund		2,000.00
		$ 5,000.00
Linda Coleman Memorial Fund		
Cash		$ 649.08
		$ 649.08
Seymour Fund		
Cash		$ 285.11
U. S. Government Bond - at Cost		1,000.00
		$ 1,285.11
Junior Memorial Cabin Fund		
Due From General Fund		$ 54.94
Kitsap Land Acquisition Fund		
Due From General Fund		$ 116.73
Snoqualmie Hill Fund		
Due From General Fund		$ 172.76
COMBINED TOTALS		$66,996.92

LIABILITIES AND FUNDS

General Fund		
Accounts Payable	$1,014.54	
Dues & Initiation Fees Allocated to Branches	202.00	
Due to Other Funds	3,676.27	$ 4,892.81
Balance of Fund		33,337.41
		$38,230.22
Permanent Building & Improvement Fund		
Principal of Fund		$13,288.08
		$13,288.08
Mountaineering Book Fund		
Note Payable		$ 4,000.00
Due to General Fund		1,272.18
Pledges Subscribed		4,170.00
Principal of Fund		(1,242.18)
		$ 8,200.00
Permanent Fund		
Principal of Fund		$ 5,000.00
		$ 5,000.00

Linda Coleman Memorial Fund	
Due to General Fund	$ 12.59
Principal of Fund	636.49
	$ 649.08
Seymour Fund	
Due to General Fund	$ 38.00
Principal of Fund	1,247.11
	$ 1,285.11
Junior Memorial Cabin Fund	
Principal of Fund	$ 54.94
Kitsap Land Acquisition Fund	
Principal of Fund	$ 116.73
Snoqualmie Hill Fund	
Principal of Fund	$ 172.76
COMBINED TOTALS	$66,996.92

THE MOUNTAINEERS
Statement of Income and Expense
For the year ended August 31, 1957

INCOME

Dues and Initiation Fees			
Seattle		$16,604.00	
Tacoma		1,788.00	
Everett		563.00	$18,955.00
Less Allocations:			
Tacoma		$ 657.00	
Everett		202.00	
Bulletin subscriptions		4,706.00	
Permanent Building and Improvement Fund		3,151.50	8,716.50
			$10,238.50
Sales of Publications		$ 5,381.38	
Less Cost of Publications:			
Monthly Bulletin	$3,899.52		
Annual	6,517.23	10,416.75	(5,035.37)
			$ 5,203.13
Other Sales		$ 349.95	
Less Cost of Sales		139.92	210.03
			$ 5,413.16
Committee Operations:			
Conservation		$ (696.66)	
Dinner Meetings		45.45	
Natural Science		2.31	
Safety		(46.30)	
Other - See Schedule		2,251.74	1,556.54
TOTAL INCOME			$ 6,969.70

EXPENSES

Bank Charges and Box Rent	$ 79.31	
Clubroom Expense	251.02	
Depreciation - Other than Lodges	367.02	
Insurance Expense - Other than Lodges	434.08	
Office Supplies and Expense	223.90	
Rent	1,460.00	
Salaries	3,286.83	
Stationery and Postage	350.56	
Payroll Taxes	165.80	
Telephone	421.39	
Donations	330.00	
Legal Expense	569.46	
Miscellaneous	472.24	
TOTAL EXPENSES		8,411.61
EXCESS OF EXPENSES OVER INCOME		$ 1,441.91

THE MOUNTAINEERS
Schedule of Property and Equipment
August 31, 1957

	Recorded Value	Accumulated Depreciation	Net
Rhododendron Preserve (Kitsap)	$ 4,040.88	$ 3,293.65	$ 747.23
Meany Ski Hut	7,923.79	4,930.80	2,992.99
Mt. Baker Cabin	417.80	41.78	376.02
Snoqualmie Lodge	13,094.48	6,771.50	6,322.98
Stevens Ski Hut	8,886.59	2,904.75	5,981.84
Clubroom Furniture and Fixtures	2,723.50	1,413.57	1,309.93
Library	2,876.08	1,630.63	1,245.45
Photographic Equipment	1,442.37	1,054.23	388.14
General Equipment	1,968.10	971.32	996.78
	$43,373.59	$23,012.23	$20,361.36
Construction in Progress:			
Linda Coleman Memorial		$ 130.39	
Mt. Baker Lodge		1,062.50	$ 1,192.89
Land			1,100.00
		NET	$22,654.25

Report submitted by Richard G. Merritt, Treasurer.

AUDITOR'S REPORT

THE MOUNTAINEERS

Seattle, Washington

I have reviewed the accounts of The Mountaineers consisting of the reports of the Treasurer and the clubroom secretary. The reported receipts were properly accounted for, the disbursements were supported by properly approved vouchers or invoices and the bank accounts were in existence as reported.

The foregoing financial statements of The Mountaineers were prepared from the records and, in my opinion, present fairly the financial condition at August 31, 1957, and the results of operations for the year then ended, on a basis consistent with that of the preceding year.

JULIUS SCHMIDT

THE MOUNTAINEERS
COMMITTEE OPERATIONS
For the Year ended August 31, 1957

INCOME

	TOTAL	Annual Banquet	Campcrafters	Climbers	Dance	Meany Ski Hut	Mt. Baker Cabin
Receipts	$17,508.30	$779.95			$1,618.00		$415.76
Registration Fees	586.90			$586.90			
Trail and Other Fees	439.10		$152.10	287.00			
Charges for:							
Meals Served	6,408.75					$3,024.75	
Use of Hut or Lodge	3,160.05					803.45	
Use of Ski Tows	2,397.95					641.00	
Miscellaneous and Unidentified	488.57		19.50	3.55		384.47	
	$30,989.62	$779.95	$171.60	$877.45	$1,618.00	$4,853.67	$415.76

EXPENSES

Food and Services	$11,454.13	$680.80			$ 149.80	$2,671.33	
Speaker, Program, Orchestra, Entertainment	647.47	89.47			558.00		
Climbing Ropes	214.52			$214.52			
Printing, Postage, Tickets, Stationery & Supplies	300.17			144.14			
Rent	602.20				434.20		$168.00
Taxes (Other than Property)	290.90				156.56		
Hut, Lodge or Building Expense	1,603.28					490.81	
Tow Expenses	1,463.96					549.13	
Committee Expense	265.91					43.96	
Music, Scenery and Properties	207.38						
Costumes and Make-up	66.61						
Playbooks and Royalties	118.43						
Director's Fees and Expenses	327.75						
Pack Horses and Transportation	5,379.99						
Refunds	259.53						
Insurance	811.69					249.04	22.73
Property Taxes	317.00					9.73	
Depreciation	1,696.43					210.55	41.78
Cash Over and Short	39.96						
Miscellaneous	2,670.57	8.21	115.26	24.01	116.00	437.52	225.66
	$28,737.88	$778.48	$115.26	$382.67	$1,414.56	$4,662.07	$458.17
NET INCOME - (LOSS)	$ 2,251.74	$ 1.47	$ 56.34	$494.78	$ 203.44	$ 191.60	($42.41)

COMMITTEE OPERATIONS, Cont.

INCOME

	Players	Rhododendron Preserve	Snoqualmie	Special Outings	Stevens Ski Hut	Summer Outing	Trail Trips
Receipts	$2,651.26	$ 59.00		$1,097.12		$10,813.16	$74.05
Registration Fees							
Trail and Other Fees							
Charges for:							
Meals Served			$1,883.70		$1,500.30		
Use of Hut or Lodge			1,350.10		1,006.50		
Use of Ski Tows			1,756.95				
Miscellaneous and Unidentified			65.85		15.20		
	$2,651.26	$ 59.00	$5,056.60	$1,097.12	$2,522.00	$10,813.16	$74.05

EXPENSES

Food and Services			$2,536.36		$1,519.53	$ 3,896.31	
Speaker, Program, Orchestra, Entertainment							
Climbing Ropes							
Printing, Postage, Tickets, Stationery & Supplies	$156.03						
Rent							
Taxes (Other than Property)						134.34	
Hut, Lodge or Building Expense		$ 95.83	714.62		302.02		
Tow Expenses			914.83				
Committee Expense			40.16		94.00	87.79	
Music, Scenery and Properties	207.38						
Costumes and Make-up	66.61						
Playbooks and Royalties	118.43						
Director's Fees and Expenses	327.75						
Pack Horses and Transportation						5,379.99	
Refunds						259.53	
Insurance		74.93	248.10		178.28	38.61	
Property Taxes		163.83	143.44				
Depreciation		83.03	645.55		715.52		
Cash Over and Short			39.96				
Miscellaneous	111.81	217.09		1,095.19	51.10	268.72	
	$ 988.01	$634.71	$5,283.02	$1,095.19	$2,860.45	$10,065.29	
	$1,663.25	($575.71)	($ 226.42)	$ 1.93	($ 338.45)	$ 747.87	$74.05

THE MOUNTAINEERS—TACOMA BRANCH

Statement of Financial Condition
August 31, 1957

ASSETS

Current Assets		
Cash in Regular Bank Account		$ 1,199.27
Investment in U. S. Government Bonds (at Cost)		600.00
Irish Cabin Property (estimated values)		
Land	$ 200.00	
Cabin	1,900.00	
Furniture and Equipment	400.00	2,500.00
New Clubhouse		
Land	800.00	
Buildings—cost to date	11,375.23	
Furniture (estimated)	500.00	12,675.23
TOTAL ASSETS		$16,974.50

LIABILITIES

The Mountaineers—Loan	$ 4,000.00
Surplus	12,974.50
TOTAL LIABILITIES	$16,974.50

Statement of Income & Expense
For the Year Ended August 31, 1957

INCOME

Interest on U. S. Bonds		$ 15.00
Clubhouse Donations		613.03
Clubhouse Ways and Means		1,224.63
Committee Operations:		
Climbing	$181.20	
Trail Trips	113.15	
Irish Cabin	13.96	
Membership	(20.00)	
Nominating	(23.37)	
Social	1.86	266.80
TOTAL INCOME		$ 2,119.46

EXPENSES

Clubhouse Operation	$181.90	
General	129.36	
Rentals	61.50	
TOTAL EXPENSES		$ 372.76
EXCESS OF INCOME OVER EXPENSES		$ 1,746.70

THE MOUNTAINEERS—EVERETT BRANCH

Statement of Financial Condition
August 31, 1957

ASSETS

Cash	$244.17
Dues and Initiation Fees Receivable from Mountaineers	202.00
Investment in U. S. Government Bonds (at Cost)	504.00
Interest on Bonds	27.20
SURPLUS	$977.37

Statement of Income and Expense
For the Year Ended August 31, 1957

INCOME

Dues and Initiation Fees		$165.00
Repayment on Loan		100.00
Committee Operations:		
Climbing and Hiking	$77.83	
Salmon Bake	11.86	89.69
TOTAL INCOME		$354.69

EXPENSES

Hall Rental	$ 42.00
Loan—Mt. McKinley Expedition	303.00
Administration and Miscellaneous	71.51
TOTAL EXPENSES	$416.51
EXCESS OF EXPENSES OVER INCOME	$ 61.82

Committee Chairmen

Achievement Records ..... Frank Perry
Annual Banquet ..... Helen Stoody
Annual, 1957 ..... Nancy Bickford
Auditing ..... Harry Pedersen
Book Promotion Committee ..... Allen Robinson
Bridge Group ..... Mrs. Joseph T. Hazard
Building Policy ..... William Gardner
Campcrafters ..... Dewey Engeset
Climbing ..... A. L. Crittenden
Clubroom Custodian ..... Mrs. Irving Gavett
Coleman Memorial ..... Harriet Walker
Conservation ..... Robert Latz
Dance ..... Leon Uziel
Dinner Meetings ..... Joy M. Spurr
Expedition ..... Richard McGowan
F.W.O.C. Representative ..... Philip Zalesky
Future Clubroom ..... John Hansen
Insurance ..... Hubert West
Irish Cabin ..... Raymond E. Bruns
Library ..... Kinuye Jitodai
Lodge Operations ..... Richard Feringer
Meany Ski Hut ..... Tom Van Devanter
Membership ..... Lois Irwin
Monthly Meeting ..... Virginia Bratsberg
Mt. Baker Building ..... Gordon Logan
Mt. Baker Cabin ..... Frank Moon
Natural Science ..... James Lea
Operations Manual ..... Paul W. Wiseman
Players ..... George Iverson
Photographic ..... Richard Salo
Recording Secretary ..... Mildred Hoffman
Rhododendron Preserve ..... Robert L. Landon
Safety ..... Varnel E. Denhem
Seattle Trail Trips ..... Marion W. Wallace
Ski Recreation ..... James Martin
Snoqualmie Lodge ..... George Acedo
Special Outings ..... Andrew Bowman
Stevens Hut ..... G. Donald McClellan
Summer Outing ..... Wm. J. Chalupny
Typing and Duplicating ..... Eleanor Hisey

Service Award Recipients

A. E. Smith	1922	P. M. McGregor	1942
Wallace Burr	1923	L. A. Nelson	1943
Joseph T. Hazard	1924	F. Q. Gorton	1944
C. A. Fischer	1928	Leo Gallagher	1945
Charles B. Browne	1929	C. G. Morrison	1946
Harry R. Morgan	1930	Charles L. Simmons	1947
H. Wilford Playter	1931	Burge Bickford	1948
Margaret W. Hazard	1932	Lloyd Anderson	1949
William J. Maxwell	1933	George MacGowan	1950
Herbert V. Strandberg	1934	Jack Hossack	1951
Marjorie V. Gregg	1935	William A. Degenhardt	1952
Laurence Byington	1936	Mary Anderson	1953
Clarence A. Garner	1937	T. Davis Castor	1954
Arthur R. Winder	1938	Mrs. Irving Gavett	1955
Linda M. Coleman	1939	Lee Snider	1956
Ben C. Mooers	1940	Walter B. Little	1957
None	1941		