

THE GLACIER PLAYFIELDS - of the - MT. RAINIER NATIONAL PARK

Joseph T. Hazard

The Glacier Playfields

of the

Mt. Rainier National Park

by

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formerly

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at

Paradise Valley

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Land of the Open Spaces

O uplifted land of the great open spaces,
O land near the stars and the free higher air,
Where riseth wild echoes from glacier-torn places,
From summit to summit — thy God's primal prayer!

As clear silver bells, a sweet music is chiming,
A music new rivers forever prolong
When heaven and earth are eternally rhyming,
O nature melodious—God's oldest song!

In gleam of the crag or in gloom of the hollow,
Yea, even in awe when the storm thunders roll,
Abideth a lure, O, a strange lure to folow,
For here with your God may you meet your own soul!!

EDMUND S. MEANY.



The Poet and the Pine

To

EDMUND S. MEANY

President of The Mountaineers

Companion of Many Trails and Summits

O Climb to the Mountains

Words by E. S. Meany **Music by E. E. Coursen**



—Copied by Crissie Cameron

Preface

THE MT. RAINIER NATIONAL PARK has, in recent years, increased the number of its visitors from hundreds to many thousands. With this great growth in Park attendance has come the necessity for a new education in outdoor life.

A playground of glaciers and of mountains is fascinating in its strangeness and in its infinite variety. But its use requires special knowledge.

It is the purpose of this book to give an introduction to the science of mountain climbing and at the same time to tell tales of its accomplishment. It is not the intention of the author to become too positive or over technical. The advice contained is for those who are new to glacier playfields. As in all other fields of human experience, the expert can disregard set rules and can leave everything to his own resourcefulness. If the message of these pages will help others to know and to love the mountains, the author will have repaid, in part, his debt to those who led him into the "Land of the Open Spaces."

Grateful acknowledgement is offered to The Mountaineers, and to the many members of The Mountaineers, who have granted the permission to use illustrations from The Mountaineer Magazine. The pictures from which these illustrations are made are the result of weeks and months of exacting work in the mountains of the Pacific Northwest.

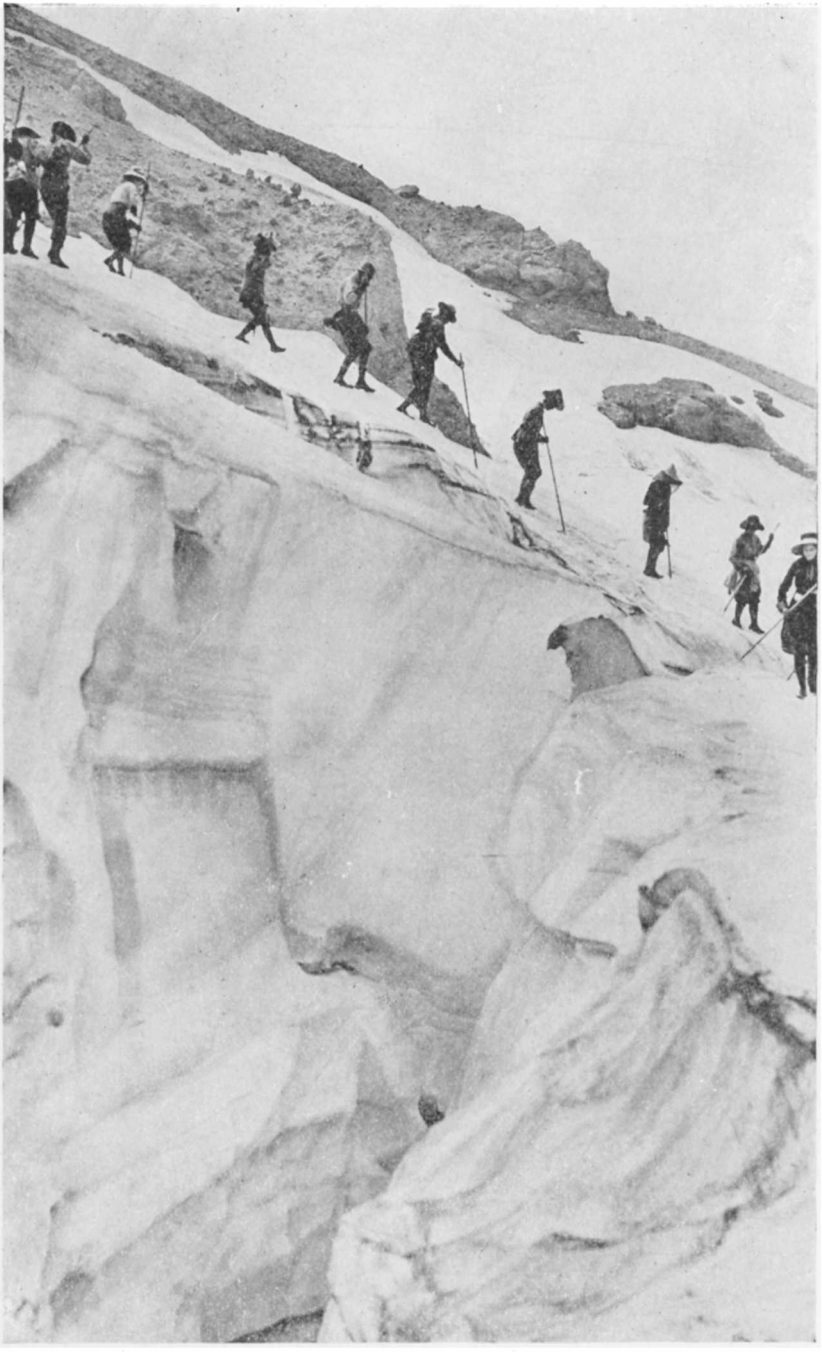
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— J. T. H.

Seattle, Washington,
August 1, 1920.

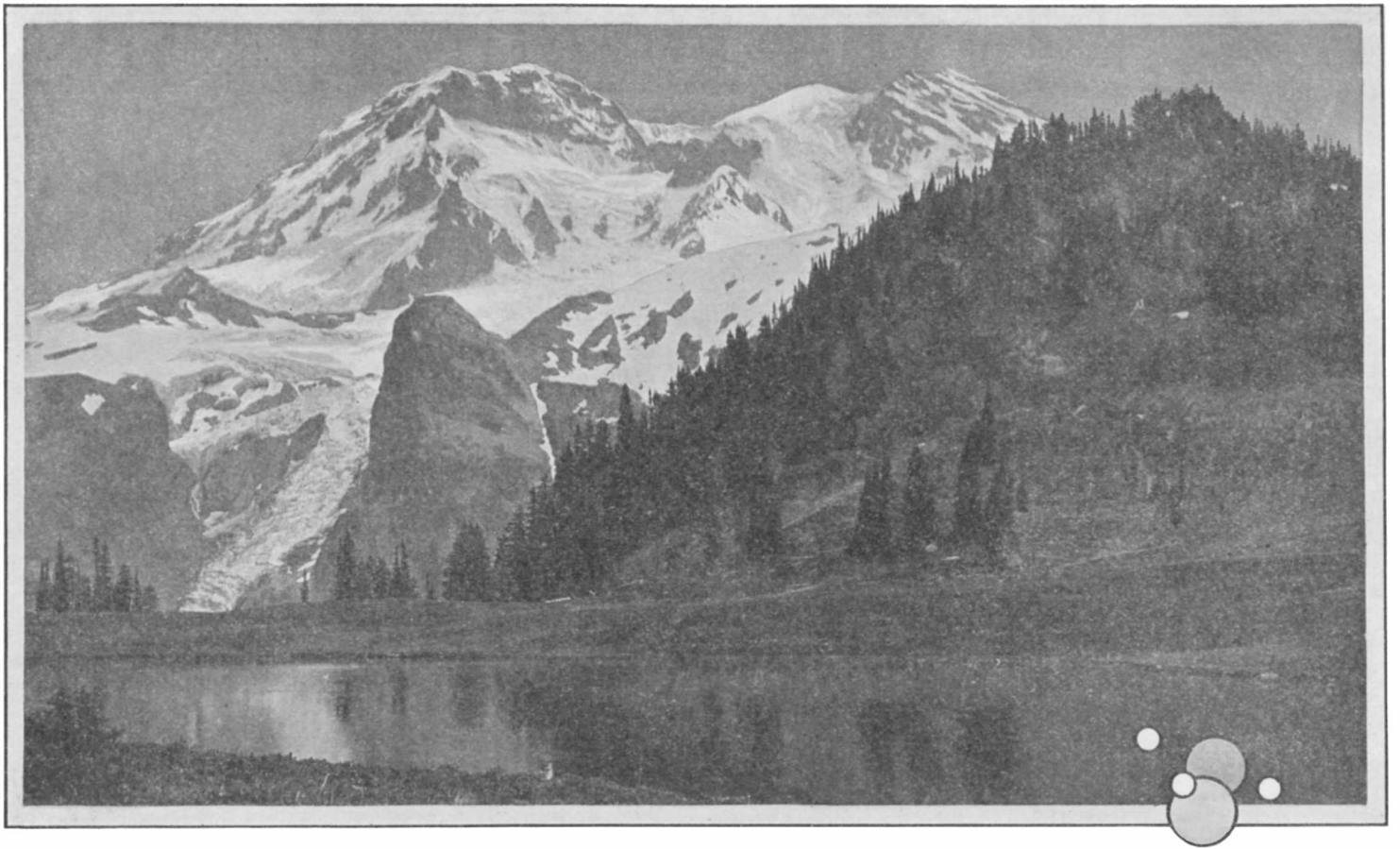
Contents

	Page
CHEECHAKO AND GUIDE	9
ON THE NISQUALLY GLACIER	17
ROCK AND SNOW CLIMBING	25
UP THE FRONT FACE OF PINNACLE	31
NIGHT CLIMBING FOR SUNRISE AT TEN THOUSAND ALTITUDE	37
SUMMIT CLIMBING	43
THE FUHRER ROUTE TO THE SUMMIT	51
MOUNTAIN FLOWERS AND TIMBERLINE TREES	57
ICE AND SNOW, ROCK AND WATERFALL	63
THE SUMMIT IN A STORM	73
PARADISE IN WINTER	79
THE MOUNTAINS OF WASHINGTON	83



—H. V. Abel

Crevasse on Interglacier



Mt. Rainier from St. Andrews Park —A. H. Denman

Cheechako and Guide

WHAT can I see?" "Where shall I go?" "When will I start?" "How may I learn to climb?"

These questions confront the Cheechako on his arrival in Paradise Valley, on Mt. Rainier. They are the four big levers that make things move—what, where, when and how!

Two words have suggested this chapter, one from Alaska,. "Cheechako," and another from Switzerland, "Fuhrer." A Cheechako is one new in the hills, a Fuhrer is a leader or guide. It is for the one to educate the other, not with derision, but with kindly cheer, and to lead him forth into the wild places.

In Switzerland the training of guides has reached its highest development. It is there a government function. To receive the official "Diplom Fuhrer" a guide must master all thing conducive to the safety, the comfort, and the entertainment of those "new in the hills". He must know topography, route finding, pace making, first aid, cooking and every branch of entertaining from the yodeling song to the gay melodies of the Swiss accordion.

While he is a happy fellow, a gay companion, he is withal, when necessary, as dynamic as polished spring steel and as military as an officer. His body, mind, and spirit respond naturally to a code—a code that has come from hundreds of years of freedom and of helpfulness.

There is a technique of climbing definite as that of any outdoor sport or competition. To go "on your own" in the high places of a mountain region requires more than health and strength and a bold heart. It demands both knowledge and skill of a decidedly special kind. Such are the demands of Paradise Valley.

Among mountain valleys Paradise is no amateur. Its spreading fingers are not manicured. They point to rough places, to untamed places that give a distinct shock to those who frequent conventional resorts.

To say the least, nature has been informal with the south side of The Mountain. Grinding glaciers, hugely

cracked and hummocked, have gouged canyons. Shaggy cliffs with steep, crumbling rock chimneys alone defy the rending power of these rivers of moving ice. It is in such places that experience must pilot unwariness.

The first step in the preparation of a Cheechako for mountain work is to equip him properly.

Boots are of first importance and they must be high and heavy. One is tempted to tell the tale of a certain young lady from Boston. Dismay was written on her countenance as she lifted the boots offered her.

"These boots are terribly heavy," she protested, "Why cannot I wear my own over to the glacier and then change?"

We were interested, a question was asked.

"How will you get the heavy ones over there?"

"I'll wear them on my back."

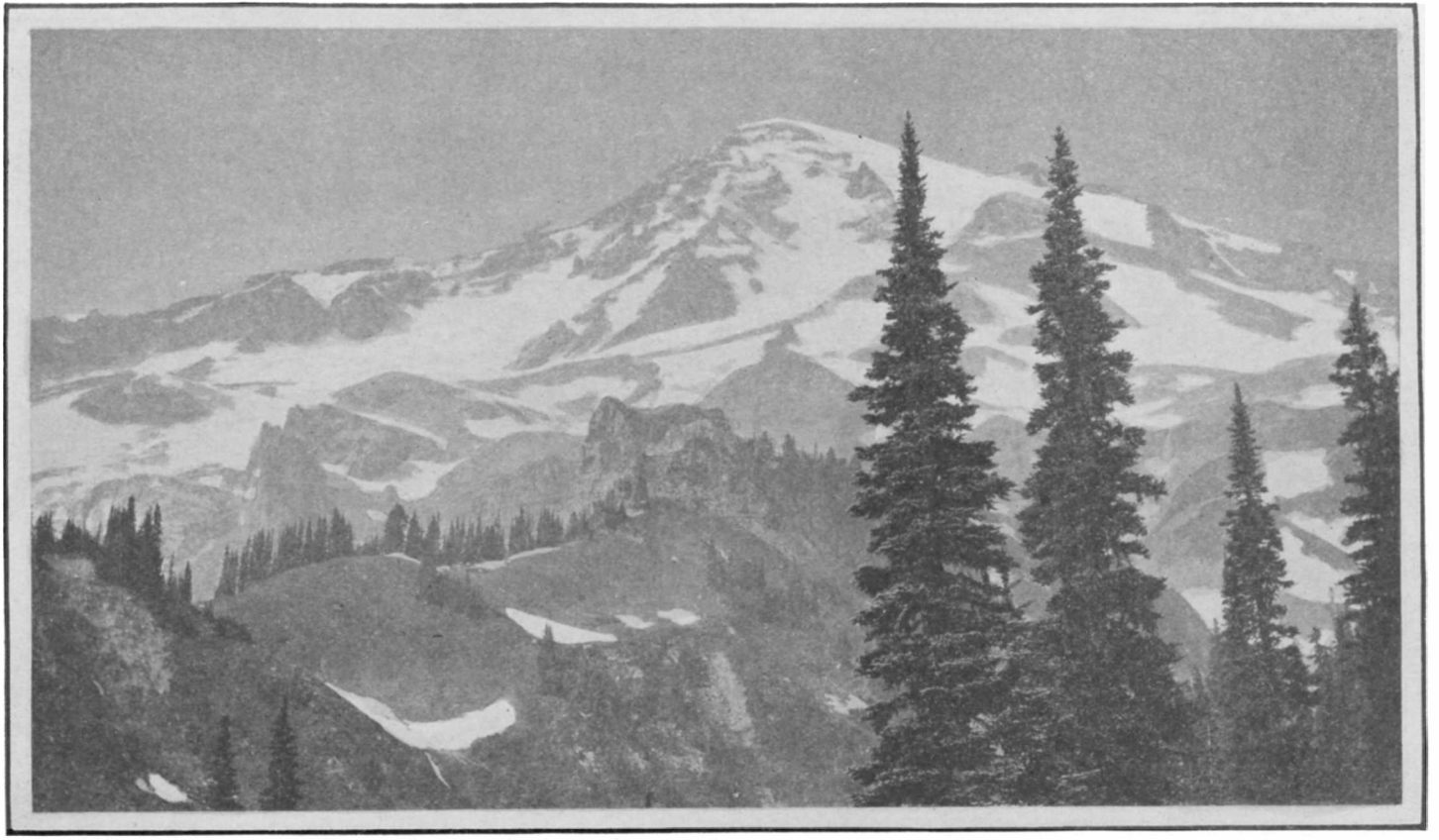
With patience, and a diagram, we explained that by her plan she would carry two pairs instead of one and that she would lift both of the heavy boots at once—while by wearing the heavy ones she would carry one pair only and lift one boot at a time.

Every year in Paradise the Cheechako attempts mountain trails in strange footgear—in everything from brogans to carpet slippers.

The mountain boot must be at least ten inches high and must have a sole hard and thick enough to carry number seven or number eight screw steel calks. Low shoes will not do even with leggings or wool puttees. The ankles must be held rigid on rocks and must be protected from water and snow. Many experienced climbers prefer above all the "logger" boot, an article professionally evolved to meet the hardest conditions that trail and water can offer.

To the climbers, the steel calk is nearly an object of worship. As a metal god, it puts it over on the "Golden Calf," One of my friends, a man who has climbed many mountains, never considers himself dressed until he has placed a steel calk held in a setting upon the lapel of his coat. I would have done the same with a certain calk if I could have identified it.

It was in a driving fog, one afternoon, in the Olympics. We were descending Mount Meany, a difficult granite pinnacle. Upon a steep heather slope, my feet slipped from



Van Trump Park facing the new Kautz Glacier Route to the Summit —Mabel Furry

under me and I rolled and twisted down the mountain. With a jerk I faced the slope, dug in with my alpen-stock and spread both feet wide and flat to use the pull of every calk. I came to a stop with one leg swinging in space and one calk only in the toe of my boot, caught in a depression in the last rock on the brink, holding me from cluttering up a well ordered granite ledge three hundred feet below. That calk, rusting somewhere in disuse, would look good to me in a setting of platinum.

One pair of light stockings, covered by one or two pairs of heavy woolen stockings will make the mountain boot springy and comfortable.

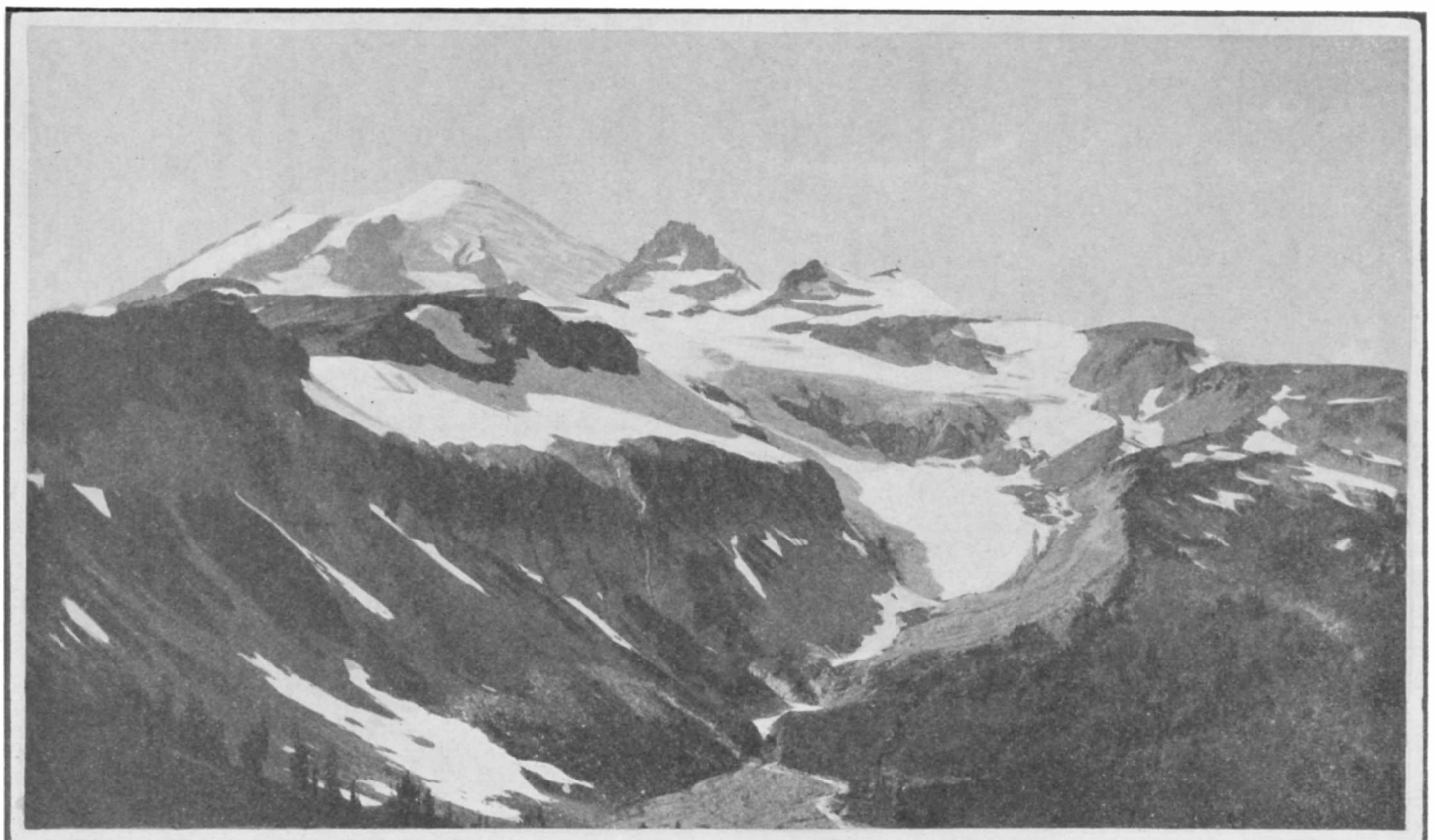
But we will move north from boots to trousers. Both men and women should wear them in the mountains. The skirt is a snare as well as a delusion. Some years ago an unguided party climbed Pinnacle Peak. A young woman in the party attempted to step from ledge to ledge. Her skirt tripped her—she pitched headlong to the rocks hundreds of feet below.

Heavy woolen trousers are the best. But in Paradise where we glory in nature coasting we use khaki and a concoction including parafine. We iron the one into the other in the places provided by nature for sliding on snow slopes. The result is a slippery surface as nearly waterproofed as mere cloth can be. The common name used in Paradise Valley is "Parafined Trousers," the descriptive, scientific one is "Tinned Pants."

Any shirt, from a silk one marked down to twenty-two fifty to a cotton one marked up to eighty-nine cents will do for short trips. Night trips and the summit, or those fascinating day trips in a mountain fog, demand wool. For extreme cold we use the mackinaw, the cruisers' shirt, or the parka.

The hands are extremely useful and should be worn with or without gloves. For rope work on rock cliffs or chimneys the best glove is of leather with heavy gauntlets. Leather covered fingers will hold rocks, and a double turn of a rope around a gauntleted wrist will ease one down a cliff as easily and as gracefully as a monkey down a stick.

A rope is necessary in the mountains in every party. Hemp is too heavy and is harsh on unprotected hands. Best of all is the hand-made Swiss rope. It is light, ties and



The Mountain—Indian Bar —Roger Toll

unties easily, and is tested to an immense strain. There is, to say the least, an uncanny feeling on a rock face when a rope breaks. A fair substitute rope is the American tested cotton cord. All ropes should be thick enough for comfortable handling and for unexpected strain.

But above all tools used in the mountains, the climber relies on the iceax or the alpen-stock. The iceax is a professional tool, dangerous for unskilled use. An unexpected twist on a coasting slope will jam the ax point uncomfortably against one's mid-section. Men have been terribly gouged and even killed by the cross-point of the iceax. The most necessary function performed by this instrument is that of cutting ice and rock steps. In such ways it is indispensable. One in a party is enough.

The alpen-stock is for everyone. It converts your two hands into a third leg and your human body into a tripod. It is hard for a tripod to slip on the steepest slope, unless it tips over—the human tripod must learn not to trip.

"Feet flat and alpen-stock like a third leg!" is the guide's frequent command in crisp English. "Point below on rock slopes, above on snow and ice slopes!" is equally correct. If used above trail on rocks the steel part is apt to roll rocks upon you. If used below on ice or snow, you may allow the point to slip or yourself to topple over out of control. On dangerous slopes the best time to stop is before the slip occurs. The law of momentum in slipping seems to be based on acceleration by the square of the distance and then some.

Alkali Ike is supposed to notch his gun for every kill. The climber cuts a notch in his alpen-stock for every new summit. It is impossible to over value the alpen-stock. It is used for balance, for bridging, for ladder work, as a brake, and in time of need for the side support of an improvised stretcher.

In clear weather, all the trails within Paradise Valley, and on the skyline surrounding it are safe for the Cheechako. Alta Vista is close by and gives a panoramic reward for the effort of the climb. A clearly marked trail leads up either side of the Paradise River. One can take a trail to Sluiskin Falls, pass behind them, and return on the opposite side of the river. With brief directions, cheerfully given in the guidehouse, the more ambitious Cheechako can

venture even to Panorama Point or to Reflection Lake. Beyond these points it is not safe to go unguided. In fact the ranger at Paradise has placed signwarnings against unattended longer trips.

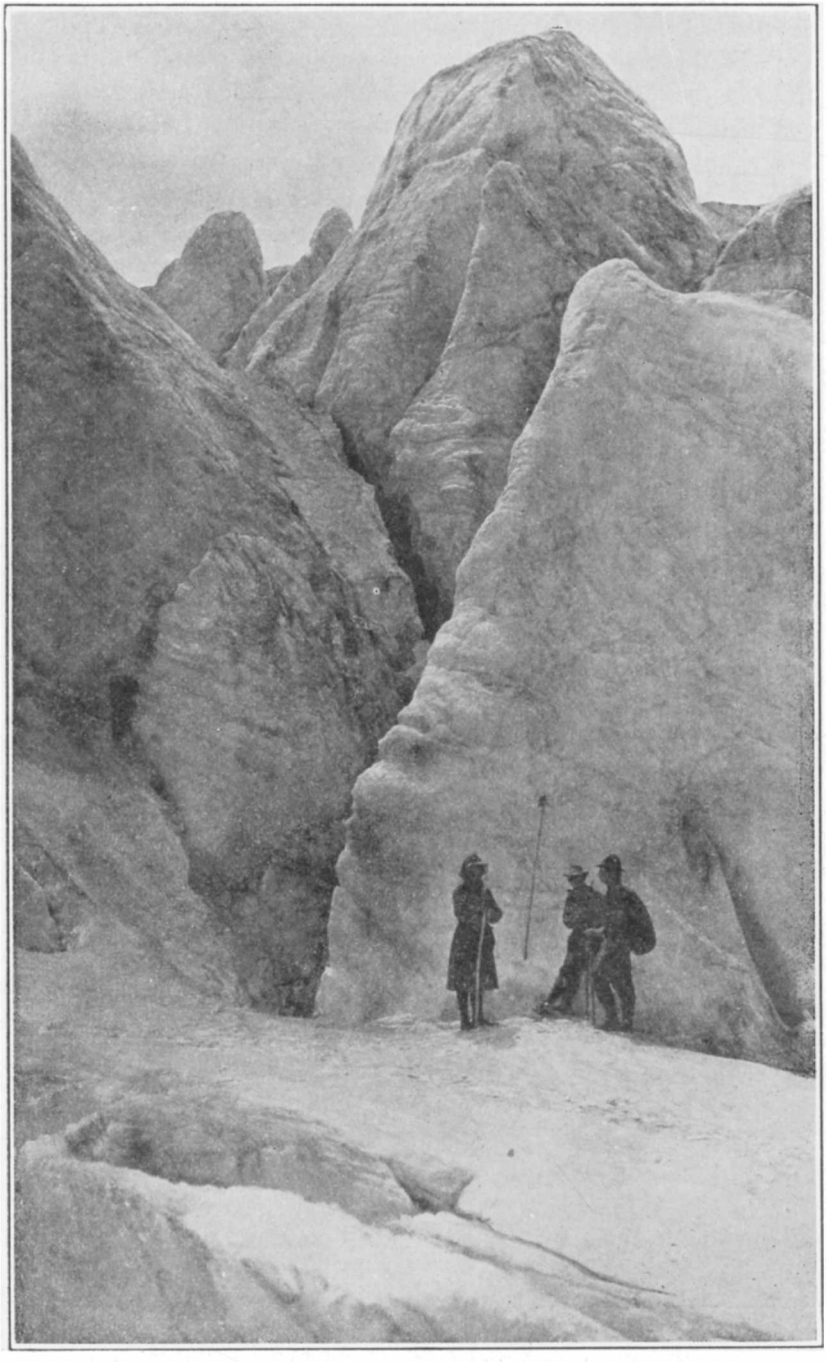
During the regime of the National Park Company, no life has been lost in a guide party, while several have been lost through reckless disregard of the ever-present dangers of so rugged a region. Even experienced mountain guides do not care to venture upon a glacier alone except at the call of duty.

The Cheechako is usually a good sportsman. He takes to the many joys of Paradise Valley like the proverbial duck to water. He garbs himself according to Blackridge, the up-to-the-minute Hoyle, and hies forth. In a few days he has learned most of the rules of the new game of climbing, has ambitions to qualify as an assistant guide, and is for life a victim of that "Mountain Fever."

A partial answer to the question, "How may I learn to climb, and what must I wear," has been given in this chapter. In succeeding chapters many other questions will be answered and varied trips taken. In the next one, there will be a three hour trip "On the Nisqually Glacier."



—A. H. Denman



—Edward W. Harnden

Ice Columns in the Selkirks

On the Nisqually Glacier

FOR an hour there had been a happy confusion in the guide rooms. Big boots had been laced over slender ankles, stretched over more ample ones. Metamorphosed beings, shedding convention, had appeared in "Tinned Pants." The air had been redolent with boot-grease and with grease-paint, used respectively to protect the extremes of feet and face from the elements. Smoked or amber glasses had interposed between the glare of the sun and the gleam of the eye. Properly clothed and in a right mind for fun, we were ready for the Glacier.

The guide yodeled his final call and we trailed his slow step up the first slope.

In climbing, the first quarter hour usually gives the tone to the whole day. There should be, in the start, a perfect relaxation. Untensed muscles and a deliberate, pendulum swing from the hip, will gradually quicken to a firm climbing stride without noticeable effort or strain.

There is a ranger's cabin, 157 feet in altitude above Paradise Inn, on the first bench. There were several short breathing stops before reaching it. Arriving there we viewed the Tatoosh Range while we rested. The first hundred and fifty-foot climb at a 5,000 foot altitude takes one's breath.

The Tatoosh Range is seemly as a setting for the great snow dome. Its ragged upthrusts of rock are in marked contrast. From Eagle Peak at one end of the range to Stevens Peak at the other, it is seamed by rock chimneys and emboldened by sharp peaks.

Beyond the cabin the snow begins. Borne upon a gale of "Second Wind" came a volley of snowballs. Cantankerous care fled before the onslaught. Even that lowest form of wit, punning, seemed permissable.

Soon we reached the first coasting slope. On the way to the Nisqually Glacier we climb 250 feet and slide down five hundred. The lure of nature coasting can be estimated by a mathematical measure. Take for example the joy of skating—multiply by two and square the product—and you have mountain coasting.

In our party were several who had coasted before. The first one cut away standing. Without touching his alpenstock for balance he swooped downward leaving behind him a trail of Comanche yells. The next one toppled over head first. The weight of his head and shoulders sped him like an arrow to the bottom of the slope. A third sat on one leg in a controlled "Alpine Glissade." The rest of the line decided to sit and slide, some tandem, some alone. There were spills galore but unbruised by the soft snow, we scurried ahead for the next slope.

There are mountain songs for every sport. So it is with

COASTING

Some folks say for to stand on your feet
But when I tried it I took a seat
Way up yonder in the snowfields.

Others say to sit and slide
But that's the worst I ever tried,
Way up yonder in the snowfields.

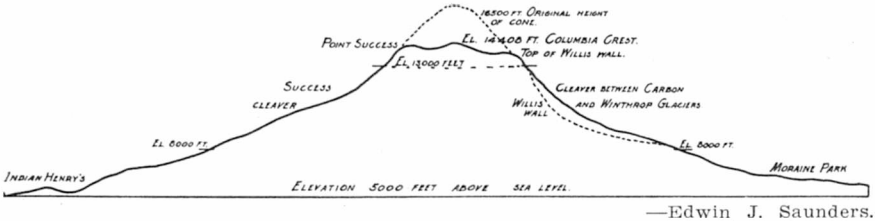
So I sat astride of my alpen-stock
And I pinwheeled around like the hands on a clock
Way up yonder in the snowfields.

It sure is fun, however it goes
You slide on your feet or you slide on your nose.
Way up yonder in the snowfields.

Soon we slid down to a lateral moraine above the Nisqually Glacier. We were under the very shoulder of The Mountain which seemed magnified by its nearness to fill all out-of-doors. From its summit the ice river composing the Nisqually Glacier—seven and one-fourth miles long—tore its way into the vitals of The Mountain.

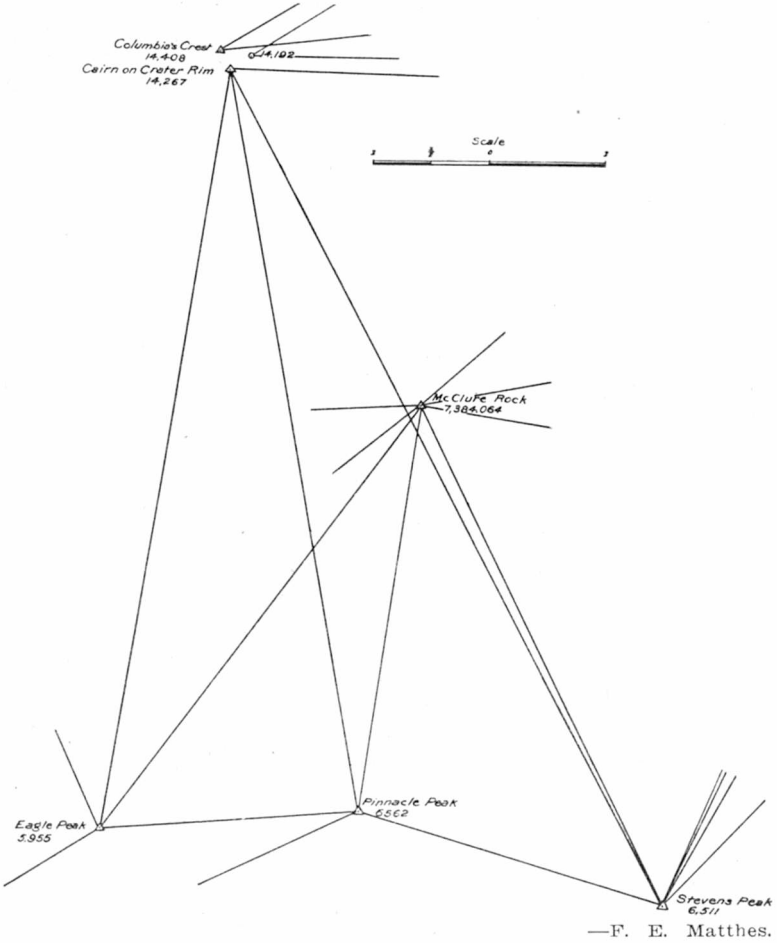
The history of The Mountain is one of gradual distruction by glaciers. Nature built it from lava flows 16,500 feet high. It had then the contours of a perfect cone. But the winter and summer storms left great fields of snow which hardened to ice. These ice fields sought softer strata and became grinding ice rivers, flowing twenty inches a day, tearing deep canons into the even slopes.

About this time The Mountain in a wild night out, blew off 2,000 feet of its own head, strewing it over the landscape as far as Yakima. Minor cones on the big top have since built up to 14,408 feet.



—Edwin J. Saunders.

Original Height and Present Contours of The Mountain



—F. E. Matthes.

Triangulation connecting McClure Rock with the Tatoosh Range and with the summit

A final slide of breath-taking steepness landed us on the surface of the glacier. Here we formed in line and put out a rope, for glaciers must be treated with due respect. There are hidden crevasses with a mere shell of soft snow covering them. A drop into a large one means certain death. There are ice mills, great wells to the bottom of the glacier with a small vent or no vent at all to indicate them.

It is interesting work to prospect a new route over a glacier. Three guides usually work together. If the field is heavily crevassed, the lead man ties the rope securely around his waist. The other two follow twenty feet behind with a firm grasp upon the rope. Then if a snow bridge breaks, a hidden crevasse opens, or an ice mill shows, the man ahead dangles safely on the end of his rope and can scramble out.

A story is told about an over-confident tourist who resented the guide's extreme carefulness with his party. He fairly exploded with scorn:

"Cut it out, guide! You treat us like a lot of children. Anyone who didn't commit suicide or drop dead could cross these glaciers without trouble."

"Perhaps you would like to lead the party," the guide answered quietly.

"Sure thing—lead me to it," was the reply.

The guide tied in his confident critic, against protest, and sent him ahead with a twenty foot lead. He headed straight for a blind crevasse and toppled through. As he disappeared his fervent voice uttered a prayer in two short words:

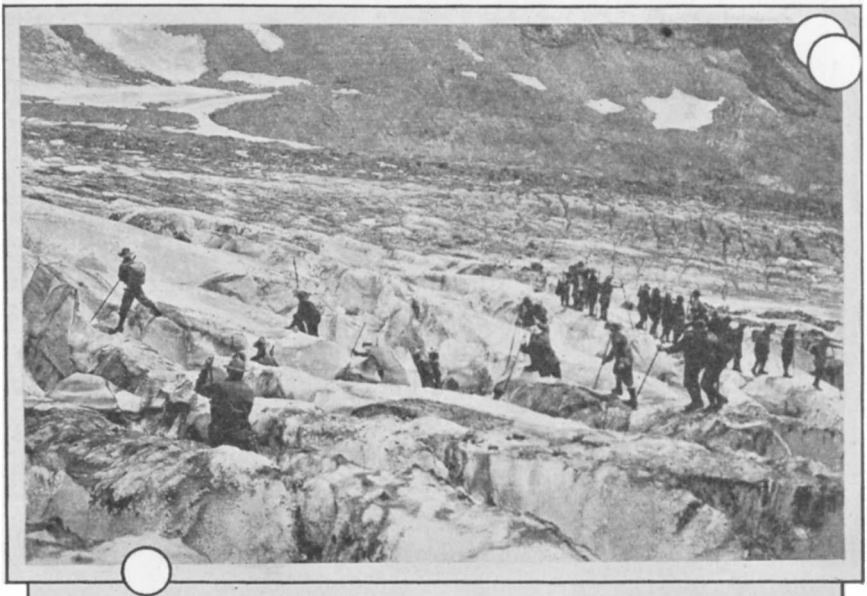
"My God!"

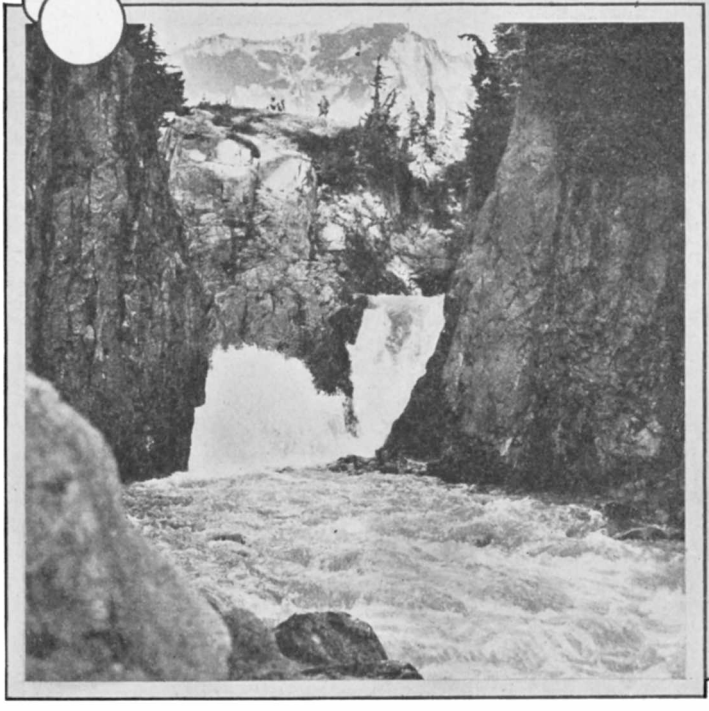
Those who held the rope checked him with a jerk. The guide tested his way to the crevasse edge. The man was dangling over a two hundred foot drop into the black depths of the crevasse.

It is further stated that the guide was forced to lead his chastened critic by the hand off the ice. True story or not, we cannot be too careful on glaciers.

Soon we were treading our way through a maze of crevasses. We crossed them on tested bridges, our grasp on the rope tightening as we worked past each darkened abyss.

Crossing the Nisqually Glacier, —C. R. Corey





Wauhaukaupauken Falls, in the Ohanapecosh Meadows —T. C. Smith

There is a wierd beauty, marvellous in its variety, in the Nisqually ice fields. In the middle of the glacier we passed over ice shelves beneath hundred-foot ice cliffs. The formation is an unusual one. Beneath the 500-foot ice river there must thrust upward, a more resistant stratus. The push of the ice river above raises mighty ice cliffs formed from crevasse walls until they crash over and roar down sheer slopes to the lower glacier, five hundred feet beneath.

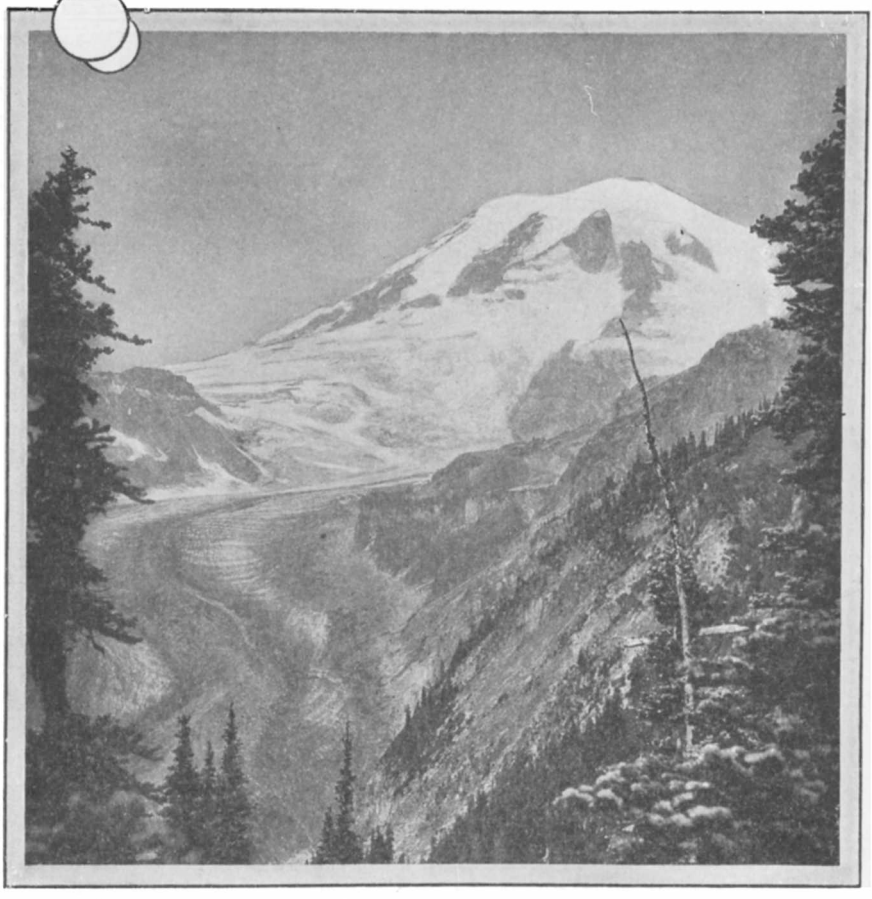
We pass under these ice cliffs in the morning before the softening sun has made them dangerous. On this particular trip, an early July one, our guide showed a saving foresight. We angled below an isolated ice pinnacle of some 500 tons whose base had thinned to a stem. On our return thirty minutes later, the guide became suspicious and led the party above on a higher ice shelf. Just as we were opposite, the pinnacle crashed over without warning, burying our former path tons deep, and slithering off with an ominous grinding and a staccato bombardment to the glacial valley. The canyon reverberated from cliff to cliff, crashing its paean of destruction.

In spite of somewhat tingled nerves, we treated our party to another sensation. Selecting a broken crevasse, we tied ourselves into the climbing rope and descended from hummock to hummock into its depths. Soon we had burrowed sixty feet into the heart of the tortuous openings. The weather conditions were right and danger absent, but there remained as always an uncanny feeling that the glacier might snap tight its hard ice jaws. The cold breath and the darkness of the crevasse's depth finally drove us forth on the home trail.

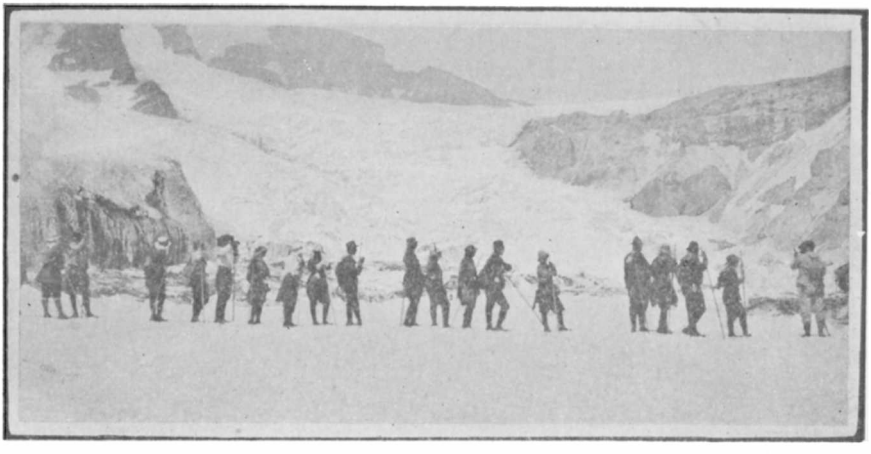
On the slopes we had so gaily coasted there was an insistent call for a machine of peculiar purpose, a slope reverser. Where we had smoked downward in nothing—flat—we toiled sharply upward to the pull of aching muscles. For three hours and three miles of infinite variety, we had tasted the salt of our own effort and had walked hand in hand with the bold invisibles who haunt the rugged places.

At the hotel we faced the derision of the stay-at-homes, who preferred solitaire to the solitary places and the call of two pairs to the call of the wild. Impossible to convince them of their utter loss, so we disposed of them in the good-tempered limerick of one of our party:

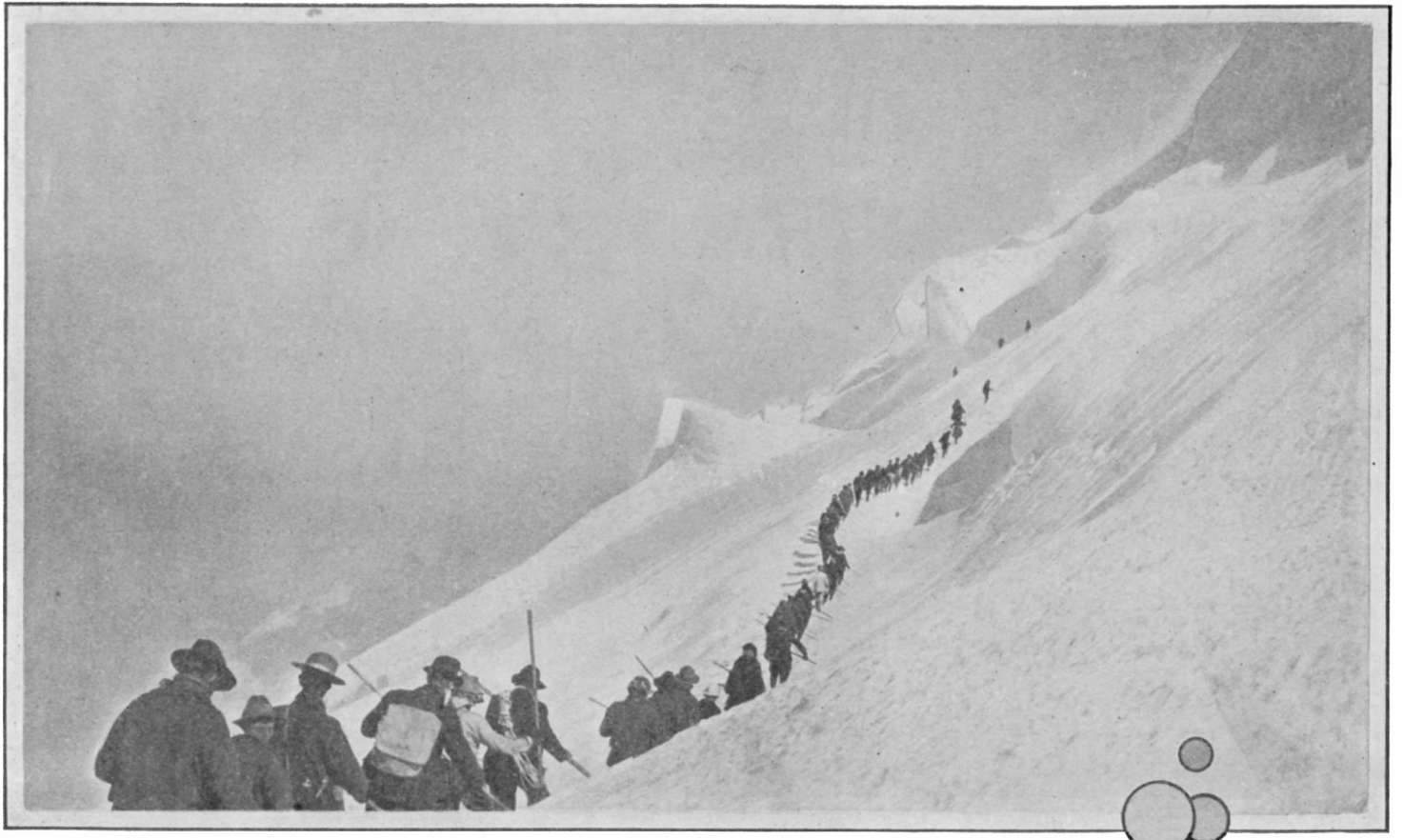
"There once was a man in a chair,
Who had legs and a trunk and some hair,
But under his hat,
His head, and all that,
For comfort alone had a flair."



Cowlitz Glacier —T. C. Smith



Party on the Nisqually Glacier —Henry Hitt



Climbing The Mountain from the North side —J. M. Gould

Rock and Snow Climbing

IT is perhaps permissible to give a somewhat technical exposition of climbing on rocks and snow. So few tourists in the United States have had opportunity to learn how to climb that helpful suggestions may be given. There are Alpine regions all about us, and as our population increases more and more outlaw or unguided climbing will result.

Rock climbing and snow climbing are vastly different. Rocks always demand skill and cautious work. Snow is seldom dangerous unless hung over rocks or under avalanches. Snow climbing usually demands endurance rather than skill.

We are often asked, "Can women climb?" Our answer is always, "Yes." Wherever the test is endurance and nerve and gameness the average woman in a mountain club makes the average man look to his laurels. But the woman climber usually shows best on snow. The man's muscular development of arms and upper body gives him a natural advantage in rockwork.

The first two rules in rock climbing are absolute: Never throw a rock purposely over a brink, except in legitimate trail making; never roll rocks carelessly with your feet in climbing. These two things are part of the code of the trail. Many have been killed by rocks carelessly set in motion.

Slopes, faces and chimneys are with us everywhere. Slopes covered by loose rock are dangerous only to ankles. A slope that will retain loose rocks is always within the margin of safety, unless the slope is icy. Rocks melt quickly into an icy slope and may be insecurely poised. One caution alone obtains. Loose rocks are always avalanched into position. Others may follow and moving rocks are always dangerous.

In climbing rock faces every foot and hand hold should be severely tested. Granite is usually safe and will allow you to climb anything you can reach. All forms of volcanic rock should be taken on suspicion.

A trained climber never attempts a rock face until he has seen his way clear to the top or at least to a safe shelf. I have seen a Swiss guide examine a rock face for intent minutes and then go up it with as little hesitation as on a ladder.

If you carry a climbing rope—and you must in rock climbing—you need not fear to come down anything you can climb. The trick is to loop the middle of your rope over a safe projection and to let yourself down double strand.

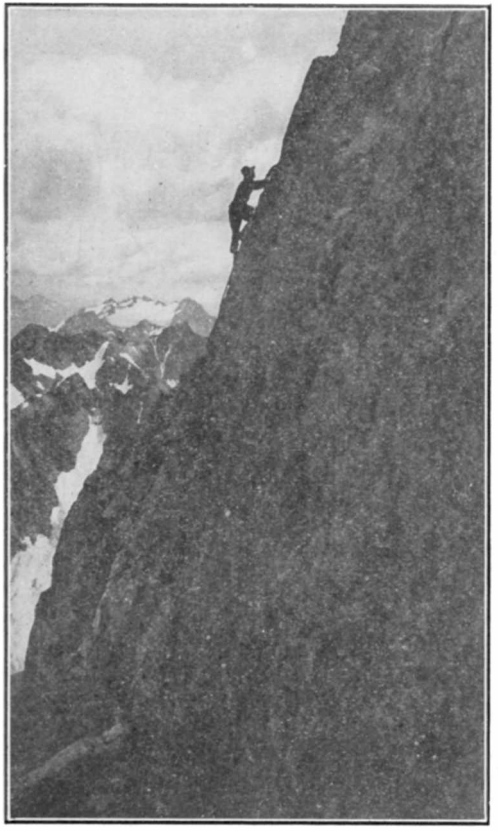
A rock chimney is formed by angled rocks and weathered fissures. In them straight up and down work can be done. The pressure of knees and elbows can be used to strengthen your holds. Or you can angle your back against one face and your feet against the other and so twist and squirm upward.

The last rock chimney of Mt. Thompson has been climbed three ways without a rope. It is hung over a huge precipice and hits the nerves hard. At the first ascent the climber used foot and hand holds, took a big chance, jumped the last foot, catching his arm over the top rock. The second climber was taller—he reached a bit of heather and pulled up, taking a still bigger chance—for heather roots are the only roots growing in rocks not to be trusted. The third took the safe way. He arched the chimney with his back and his feet, and inched up to safety. The safe way is always the more sportsmanlike way for human life is sacred even on rock pinnacles.

There is an easy test of the safety of a snow slope. If it has no trace of rock or snow avalanches, if its surface is unmarred, it can be taken without fear. Such slopes can be climbed to a cornice and one can tunnel through the cornice to the top.

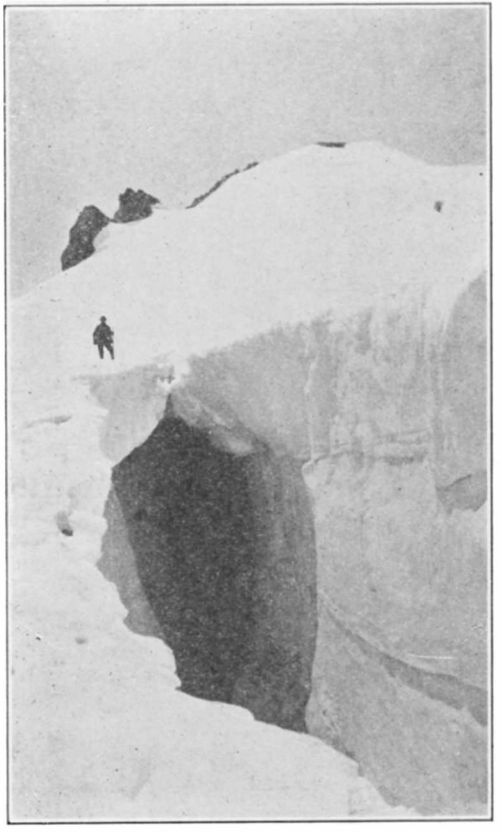
A few things should always be avoided: Slopes that have avalanched; icy slopes over a drop; snow fingers over streams; heavy slopes over crevasses. No detour is too long to avoid these dangers.

Last summer a man in one of my Pinnacle Peak parties slid ten feet out of line. He dropped from sight in an opening between the rocks and the edge of the snow finger. We found him twelve feet below under the snow, standing in a rush of water that buried him to his neck.



—H. Landes

Rock Climbing



—Chas. Albertson

Snow Climbing

We bridged the break with alpen-stocks and pulled him out on the thong of an iceax. We got him out in five minutes—he was already blue from exposure.

Another necessary caution: Never coast a snowslope that you have not prospected to a safe bottom.

My last lesson was learned two years ago. I coasted a 70 degrees slope in a chimney leading off Chair Peak in the Cascade Mountains. Three holes opened before me. I hurdled the first one—my left leg caught in the second —my head snapped in and out of the third—I hurtled through the air turning completely over three times before I hit the safe snow beyond. For two weeks I was lame from hair to toe.

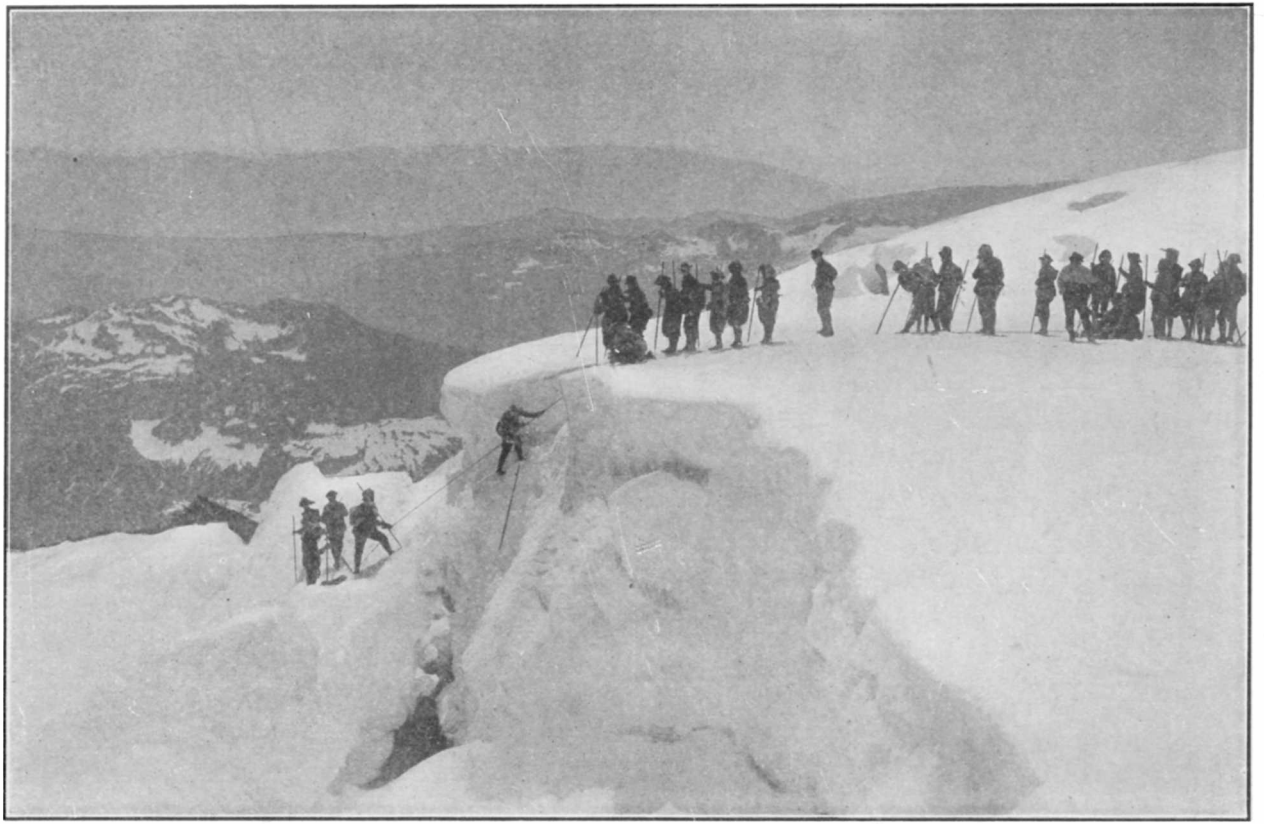
Rock cleavers, rocks thrusting through snow, appear where you least expect them. It is always safe to look twice or more before you slide.

Snow climbing is the easiest of all except to the man ahead breaking trail. In heavy going the strongest members of the party alternate in front, each one leading in turn for fifty or even less steps. The feet of the followers drop into the steps made for them. It is an as easy and as untiring as climbing a stair.

Where slopes are icy the man ahead cuts steps with an iceax. This is the most severe work of all climbing. One skilled in the art can cut steps as fast as the average climber can use them. The iceax is swung in one hand—three hacks, right, left and middle will leave a secure foothold. Few men can stand the severe strain of step-cutting in summit climbing. Those who follow in the easy way should never fail in appreciation of the super-work done for them.

Every slope steeper than 30 degress should be climbed with switch-back turns. This is easily explained. First we angle for a time to the left, then turn about and angle up to the right. A 45 degrees angle will reduce the steepness by one-half. In this way slopes can be taken on the bias with less exertion than by going straight up.

As explained before an iceax or an alpen-stock acts as a third leg and prevents slipping. The iceax is the more powerful and the more dangerous because of its three sharp points. Both should be held above you in climbing snow.



A Snow Cornice Near The Summit of Mount Baker

There is a stimulation in the crunch of a good boot on firm snow. Years of snow climbing do not dull its joys. Given a party of friends, fantastic decorations with actors' grease paint to prevent the scorching of the face by reflection and concentration of the sun's rays, colored glasses to protect the eyes, a clear day and a big mountain snow slope—all is joy.

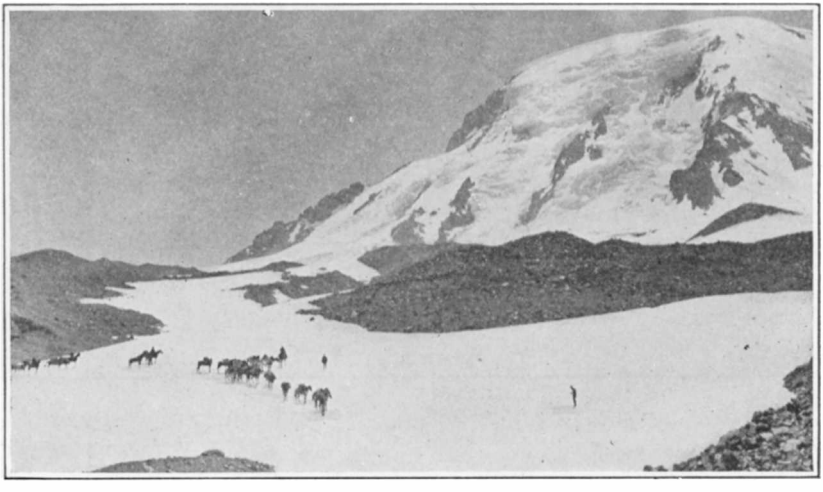
The spirit of it has been caught in a climbing chantey of The Mountaineers:

THE SWITCH-BACK SONG

"Forest trails are leading high
From the valley far below.
Mountain slopes are looming nigh
With their fields of ice and snow.
Swing and lift are free and strong
While we sing our switch-back song.

"Leader treads the dazzling white,
In his steps we hold the time.
Now he turns in zigzag right,
Then to left, bends the line.
Swing and lift are free and strong,
While we sing our switch-back song.

"Soon we'll stand on mountain peak
View the world flung wide, afar.
Realms so fair, we e'er will seek,
Of summit snow and neighbor star,
Swing and lift are free and strong,
While we sing our switch-back song."



Horses Climbing Snow

Up the Front Face of Pinnacle

THIS is the story of a hard ascent. Its accomplishment is a tribute to five boys, members of the 1919 Yale crew, who had never before climbed a mountain.

The Pinnacle face had been climbed once, years before, by two members of the Sierra Club. Since then it had been left severely alone.

All summer long we had awaited the right party to attempt its sheer cliffs. The last eleven hundred feet was impossible to any but the best of climbers. They came to the guide room one day, five of them, tall, bronzed, athletic. True, they had never climbed but crew men have strong muscles, stout hearts, and determined wills. So we proposed the trip and they promptly agreed to try it.

Our party was organized with the five boys from Yale, three guides, and a photographer. In direct charge was Hans Fuhrer, Swiss guide, strong and resourceful, one of the world's best climbers. With him and under his orders were Erroll Rawson, guide and former football end of the University of Washington, and the guide manager. The cameraman, Harry Buckley, a boy of seventeen, completed the number.

In the early morning we left Paradise Inn and took the Narada trail. Half-way down we crossed the Paradise River and then climbed Mazama Ridge, across the valley. Soon we were at Reflection Lake. We turned off on the Pinnacle Peak trail and climbed for six hundred feet out of the valley.

As we climbed The Mountain lifted into full view.

There are many misconceptions about the world's mountains. One of them is in regard to size. The highest mountain is not always the biggest. The size of a dome, with its setting, determines a mountain's majesty. Our own Mt. McKinley, in Alaska, is the world's most impressive mountain. Its dome is the largest for it rises from a base 14,000 to 16,000 feet below its crest. Mt. Everest, the world's highest mountain, is merely a little peak set up on a high plateau. Mt. Rainier is one of the ten biggest—its immense summit rises from an 11,000 foot base.

At Paradise Inn we are 2000 feet up on the mountain. But as we cross the valley and conquer the slopes of Pinnacle, we climb step by step into a view of The Mountain's great flaring base. Its size grows more immense. At the left, the Success Cleaver leads in a jagged rock line from base to summit. At the right is a great snow line broken in its majestic sweep by the Rock of Gibralter. In front are the mazes of rock cleavers and crevassed glaciers, breaking the immense face into infinite ruggedness and detail.

At 5,400 feet, equal to the altitude of the Inn, we left the beaten path to Pinnacle and angled across to the base of the front face. Above us hung eleven hundred feet of edged up rocks. In steep chimneys and bold faced cliffs they lifted to the peak. Toward the top these rock trails narrowed to a knife edge. From below, the route seemed impossible.

"What do you think of it?" I asked Hans.

"We can always turn back," he answered with ready cheer. "Let's go?"

The first rock work was over a steep talus of huge boulders. We climbed it easily, holding in line, Hans leading. Above at a 50 degree angle was an open rock face roughened by broken strata. Unfortunately the edges angled downward, reducing the pull of hobs or calks.

Here Hans put out the rope. He led powerfully, his Swiss edging nails striking sparks from the flinty rock. Three hundred feet above we faced a choice of alternate routes, one over rock faces, the other, less severe, through stubby trees fringing the rock face.

Hans chose the harder rock route.

"In Switzerland we never like to climb mountains on trees," he explained, his eyes twinkling. "We want all the sport a mountain can give us."

The next three hundred feet gave us sport sure enough. Cliff after chimney and chimney after cliff, tricky through rotten rock holds led us to where our real task began.

We stood at last on a narrow rock shelf. Behind us was our rugged path. On either side was a sheer drop of six hundred feet. Above us, seemingly straight up, was the final five hundred feet of jagged rock face alternating shallow chimneys and crumbling cliffs.



Grand Park with The Mountain in Full Contour —Lydia Lovering

Hans let me lead up the next chimney. At first I climbed carefully, testing every rock hold, trailing the rope. Surfaces at the left seemed to offer more lifting space. The rock was woven together with heather and mosses. I angled out over the brink, neglecting to test my holds. First the rocks under my hands began to move, then the footholds sagged. There is an uncanny feeling when a sheer rock face begins to move out from under you.

Hans spoke with cool direction: "Solid rock near your right foot. Take it easy and you're all right."

I slipped my right foot across, catching a solid depression. Dragging against the rock with body, arms, and legs, I moved slowly over, finding solid ground. The rocks I had torn loose crashed over the brink, bounding and breaking into the depths below. Never since have I trusted an untested rock hold. It is not right to demand too much of Providence, above 5,000 feet altitude.

The boys from Yale had been climbing in great form. Fortunately they understood discipline—what crew man does not—and worked exactly as directed. For the last 500 feet of the climb we used the rope continuously, taking no chances. At that, accident alone saved us from a fatality.

It happened on the last rock face and the worst one, at the summit.

At 25-foot chimney led to a shelf three feet wide. Below was a drop of 1,100 feet, above, a 40-foot rock face hung over the drop.

Hans and I climbed to the shelf and consulted. I did not believe it possible to finish the ascent and told him so. He examined the rock face with minute care. He tested mentally every foot and hand hold. Then he announced finally: "It can be done—I'm willing to try."

It is necessary briefly to describe Hans that one may believe possible the feat that followed.

He is six feet, one inch, in height. He weighs 176 pounds and is the strongest man of his weight I have ever known. If he can get three fingers of one hand in a rock hold he will go up. His arms and legs have an immense spread over a rock face and he seems to cling like a caterpillar on a log. He works best when things are hardest. Even his cheerful grin and his joyous yodel cannot hide the chilled steel of his will.

He started up that inhuman rock face with detached sentences of an easy monologue.

"Here's my first foot hold—my next hand hold. Took long fingers to reach that—look out Mr. Hazard, while I drop a loose rock."

By that time Hans had climbed twenty-feet of the rock face. He awakened the mountain echoes with a wild yodel and then:

"Easy going from here on Mr. Hazard. I'll drop you the rope in a minute. We'll make the summit."

Then came an accidental detail that saved a human life. Hans had left his iceax below. I tied it into the rope to send it above. It fitted nicely against the rock above the shelf, giving an extra foothold. I decided to leave it and climbed the rock face.

The third one of the Yale climbers fainted when half up the rope. His hold relaxed and he slid toward the shelf and the abyss below. The head of the iceax caught under his arm and held him for an instant, while he sagged out over the abyss. Rawson, guarding below, used his foot-ball brains, tackled the unconscious climber and held him on the shelf.

After the rest of the party had climbed the roped cliff, Rawson tied the end of the rope around the body of the boy who had fainted and we pulled him safely up. Then came the camera and lastly the rope and the iceax.

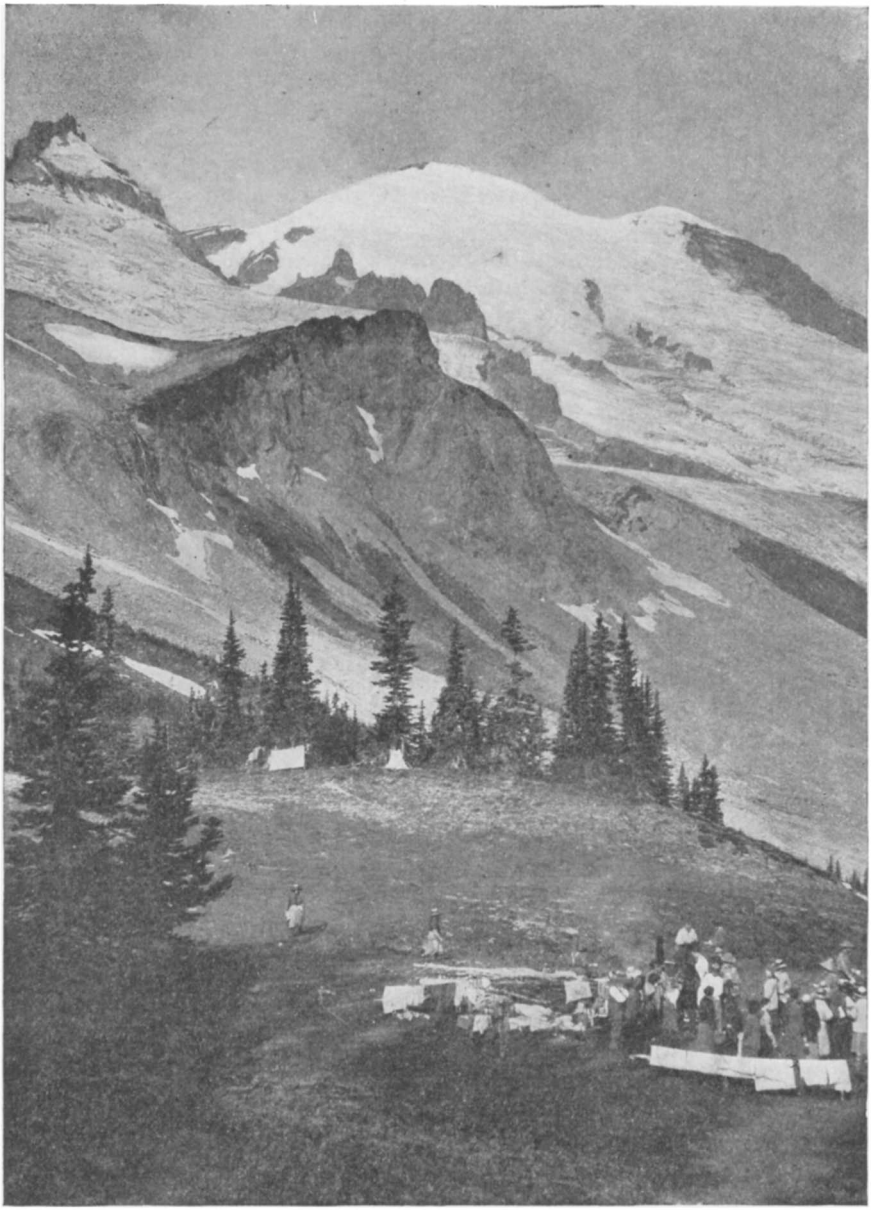
We were now perched safely upon a knife edge within fifty feet of the summit of Pinnacle. On either side was a dizzy drop of eleven hundred feet. We took stock finding all nine of our party safe and fairly sound. True one of the boys was still weak and faint while I had a two-inch cut in my head from a falling rock that had hit me while on that shelf. But nine human beings, the rope, the iceax and even the camera were safe. We had conquered the front face of Pinnacle Peak.

We made the last 50 feet easily and lifted over the summit rock to find the top already occupied by a party that had climbed the easy way. One of them was a reporter of the Tacoma Ledger, so if ever a paper was entitled to a beat on a sporting event the Ledger is the one.

We went off Pinnacle by the easy, conventional route and arrived at the Inn in mid-afternoon, elated that we had helped to make mountain history.

The front face of Pinnacle will never become a popular route. It requires a super-leader like Hans Fuhrer, our Swiss guide, game boys from Yale, assistant guides driven by the lure of difficulty, and the protection of good Dame Fortune.

We have named the route, "The Yale Trail."



—Chas. S. Gleason

Summerland on the North side of The Mountain

Night Climbing for Sunrise at Ten Thousand Altitude

A BUSY day at Paradise was over. The glacier parties, the Pinnacle climbers, the flower lovers, had checked in and had sought the minister of Nox and Somnus. The illustrated lecture had ended and the guide rooms had gradually cleared of signers for the next day's trips. One group alone lingered.

As eleven o'clock approached there was a final inspection. In addition to the usual equipment were added stocking caps, woolen gloves, and mackinaws, for at high altitude there is a bitter cold in the hour of darkness before dawn.

We stepped from the guide rooms, five of us, into a perfect night, warm, breeze scented, silvered by a full moon. We turned our backs upon the unearthly beauty of the Tatoosh Range and led off for the 4,600-foot night climb to Camp Muir at 10,000 feet altitude.

The night was too light for "Carbide" or "Bug" although we carried them, unused, as a provision for descending fog. We stumbled through the shadows under Alta Vista and emerged upon a snowfield leading gradually to the cliffs at Panorama Point. Picking always the night-time snow-route, we made, in an easy hour, the first thousand feet upward and filed out on a great snowfield lifting away three and a half miles to our destination.

At the right of this field was a series of rock cleavers, leading from McClure's Rock to Lower Anvil, a jagged route to be avoided in night climbing. At the left were sheer drops into the canyon of the Nisqually Glacier. Before us rose the great dome, softened by night, luring the imagination, and awakening every impulse toward right thinking.

Another glance at McClure's Rock, standing out bodily near in the moonlight, brought forth the story of the man for whom it was named. The mountains have their own code, a stern one of unselfishness and of courageous service.

Years ago, McClure, a member of the mountain club of Portland, Oregon, The Mazamas, was leading a belated

party off The Mountain in the dark through a dense fog. He worked slowly ahead, calling orders back through the darkness. He encountered a rock cleaver, called a halt, and scouted ahead. His last words, hurled back from the void, warned his companions of danger:

"Turn back! Don't come down here, it's too steep."

His body was recovered the next morning hundreds of feet below. But the memory of his unselfish service will live through the ages, as deathless, as unchanging, as the rock which bears his name.

Night climbing differs from all other mountain work. There are long silences. Companionship is complete without the spoken word. The impressiveness of all scenes is intensified by the contrasting sheen and shadow. Colors are intangible yet the imagination supplies them.

At 7,000 feet, the snowfields had lifted us into a view of great vistas to the south. The unusual clearness of the atmosphere brought out the contours of distant peaks. The three "Guardians of the Columbia," St. Helens, Adams, and Hood, immense volcanic cones, seemed buoyed to greater heights upon a sea of mist. A dark horizon line gave a setting to these three great peaks and at the same time had the strange effect of intensifying the steepness of the slopes of our own snowfield. The whole scene gave imprint of indomitable strength without any element of morbidity or of dread. There was suggested the emotional tone of a thunderstorm, or of a typhoon at sea, or of a dawn in the Orient, without their oppressiveness or their foreboding.

The night wore on. With the increasing altitude and the small night hours, we began to be drowsy. The trick of sleeping on the trail was soon learned. One dozes off for five to ten steps only to be aroused as the stride grows uncertain. Then for a few waking paces we gain the momentum for another sleep. From seven to nine thousand feet we climbed through the night while the waning moon cast lengthening shadows.

At an elevation of 9,000 feet the mildness of the night air gave way to a chill wind which held until dawn. We donned mackinaw, woolen gloves, and stocking caps. Thus fortified we made on.

Climbing had become mere routine. For a time we failed to respond to the scenic immensity of the night. Half sleeping, half waking, we drove our lagging muscles to the task. The snow had hardened to ice and there appeared endless wind pockets, just a little deeper than a comfortable reach in climbing.



—Asahel Curtis

Climbing party of the Sierra Club on the way to Camp Muir—(Gibralter Route to the summit along the right sky-line.)



—Chas. S. Gleason

From Sourdough Mountain on the North

We climbed the last four hundred feet to Camp Muir while the dawn's gray turned to silver. We stood on the upper Cowlitz Glacier, at 10,000 feet while there were unfolded beneath us the slow changes of the sun's rising.

The silver sky brightened to pale yellow, to orange, to brilliant cloud streamers of crimson and gold. Through the billowing clouds beneath us were thrust a thousand lesser peaks. At the left Little Tacoma lifted the sheer dangers of its rocky pinnacle.

Behind us the Cowlitz Cleaver caught the first rays of the lifting sun. As we turned, its rock masses were gilded with rainbow colors while the Beehive, higher up, flamed with an ardent light. Above, Gibralter's immense rock surface glistened and came to life as the sun's rays gleamed from a beard of countless icicles. Over all was the great dome of The Mountain, eternal guardian of changing night and day.

For an hour we watched the developing bath of dawn then sought the stone shelter cabin for well earned sleep. For six hours we had climbed through the night and for another we had marvelled at a sunrise at Ten Thousand.

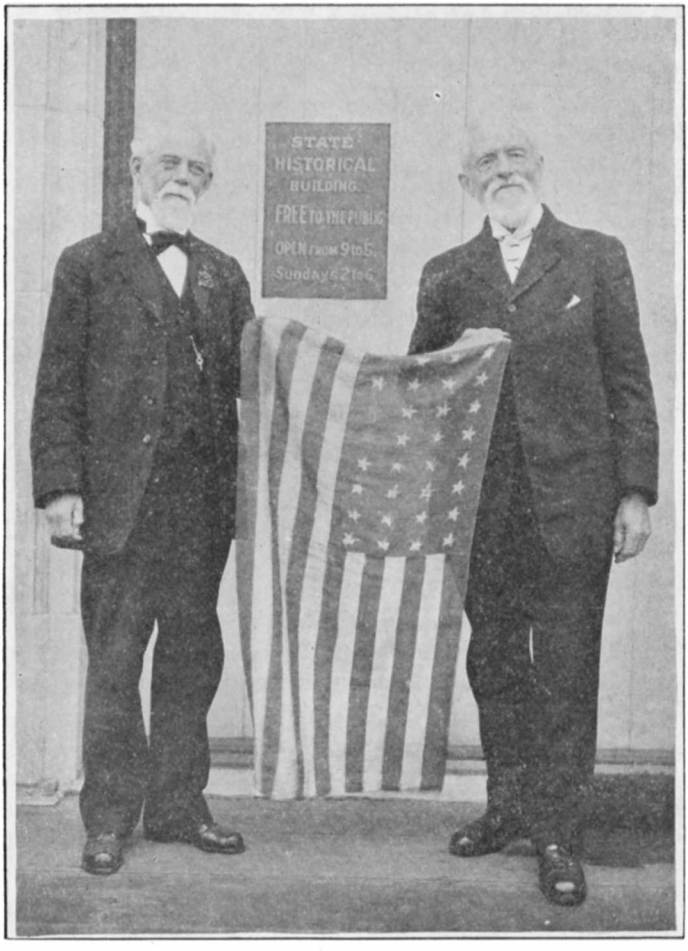
We rolled up in many blankets on real mattresses and were almost instantly asleep. Two hours later we turned out for a hot breakfast and prepared for the return trip to Paradise Inn.

We took the upper slopes, where the night before, we had toiled and slipped and stumbled, with a skating glide. At 8,000 feet we angled over to the canyon of the Nisqually Glacier, climbed a hundred feet down a rock cliff and prepared to slide for the next three-fourths of a mile.

The snow canyon, set up on an edge of steepness, stretched far below us to a moraine of the glacier. Following the lead of the guide, we sat down and cast off with our alpen-stocks trailing.

Snow avalanched from the sides and above us, caught us, and carried us onward with an irresistable sweep. The speed was safely terrific, for we sat cross legged and at ease upon our 500 ton snow sled. Our slide carried us swiftly two thousand feet downward to the moraine. An easy rock trail and a five hundred foot climb out of the glacier bed brought us to the hotel, our trip completed.

The night trip to Camp Muir gives the climber an infinite variety. The silvered scenes of the quiet night, the stupendous dawn, the grind of work, the short sleep, the hilarious slide and the swift return, form an unrivalled whole of fascinating mountain work.



FIFTIETH ANNIVERSARY

Fifty years ago, August 17, 1870, General Hazard Stevens, left, and P. B. Van Trump, right, accomplished the first ascent of The Mountain. The flag shown above was brought to California in 1849 by Joseph Cushman. They carried it to the summit with them.

Stevens and Van Trump made their last camp before climbing just above the falls at the head of Paradise Valley, named after their Indian guide, Sluiskin. They will be honored for their heroic pioneering as long as The Mountain stands.

Summit Climbing

THE summit of a mountain is not merely the top of a dome—it is the consummation of many things. In trail work the real mountain man does not climb to get somewhere—he climbs to be on the way.

There are rumors of an ambitious aviator who is planning an airplane route to the top of Mount Rainier. Even though he can conquer those terrific air pockets caused by the shoot of a wind up a canyon and its drop on the other side, twenty mile gales pinched by narrowing cliffs to fifty and even more miles of tearing air, he will fail. It is not merely the top; it is the getting there as well—all of patience, of will, of unfolding panoramas, the summation of the many good things of mountain work.

This chapter must be negative as well as positive. It will endeavor to tell what not to believe and what to take on faith. No one can arrogate to himself absolute knowledge. It is expected that a few good climbers will question some or all of our climbing rules. Be that as it may, indifference alone is dreaded by those of us whose purpose it is to lure you over the high places.

Do not be afraid of altitude. In itself it is nothing to fear. Avoid all bosh, thrice related, about ringing ears and bleeding noses and quaking stomachs. You can get the same things by over-exertion at sea level. Overwork is the cause of all mountain trouble. Its main cure is to stop the work and rest.

True the rarer air puts more work on heart and lungs. There are cases of mountain sickness that persist until a lower altitude is reached. But it is caused by no mysterious hocus-pocus, no evil spirit of altitude. The cause of all trouble is the hard work and the faster breathing in thin air.

It is not necessary to put yourself through a severe course of preliminary training. All that is required for summit work is a healthy body without organic defects, a strong will and the zeal of a devotee. Given the first two, the zeal will come.

The summit route is not a starvation route. So persistent is the pernicious advise not to eat in mountain climbing that we will endeavor to meet it by reduction to the absurd.

You are a rancher. The hay has been cut and cured. Storms threaten. It is necessary for your hired help to put in a fifteen-hour day to save the crop. That the men may have the endurance for the super-work, deny them breakfast, omit their mid-day dinner and soft pedal their supper. Sensible plan, isn't it?

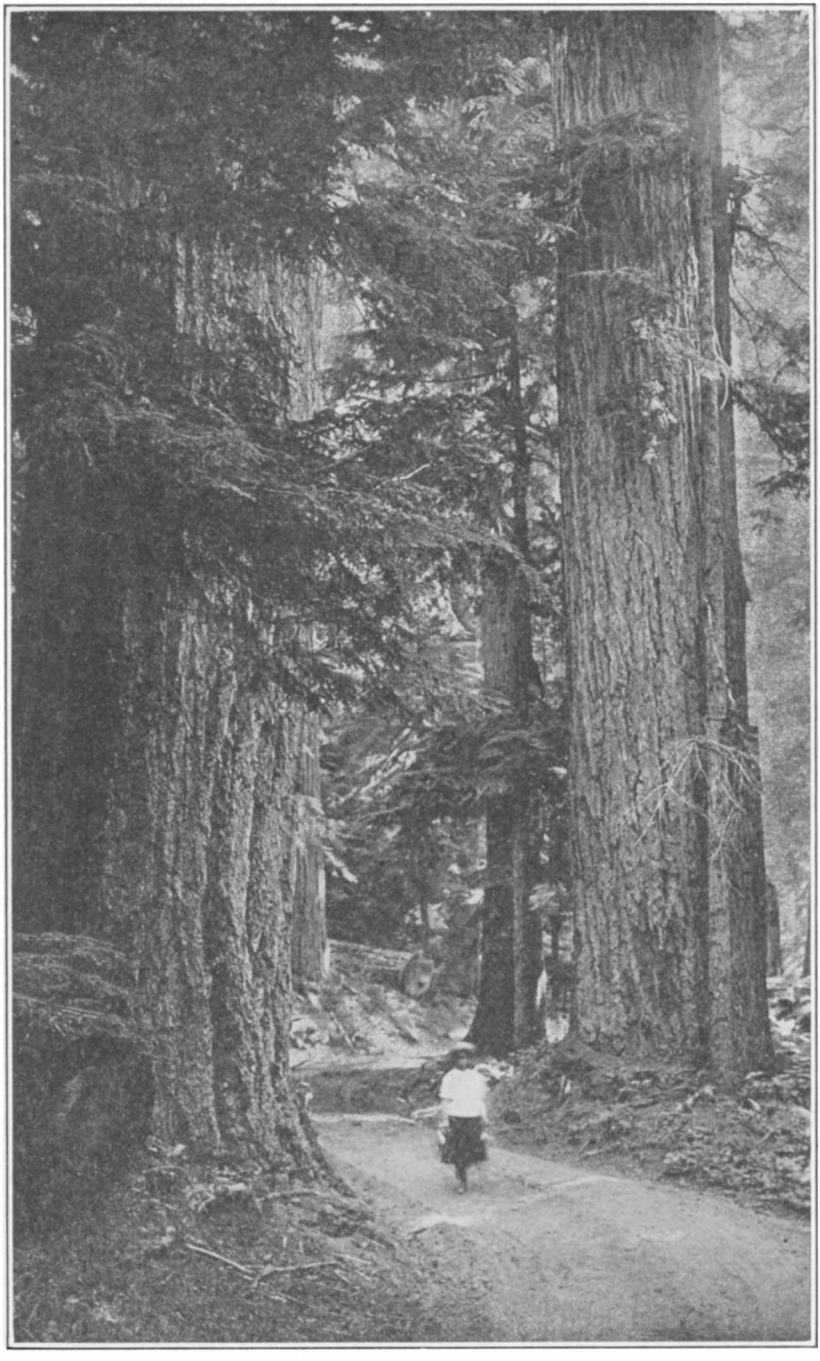
Or may we draw an alternate argument from the animal world. Your pack train is overloaded. It must make fifteen miles of up and down over a high mountain pass. Deny a feed of oats, omit the hay, do not allow browsing on grass or leaves. For in some strange way under-nourishment means super-energy. From the nothing of an empty stomach will come the something of extra work. Of the old time starvation stuff it may be said that "All is vanity."

In preparing for a mountain climb eat plenty of meat and potatoes and bread and butter. If you like sweets, eat them. The most dangerous thing to do is to change, radically, your diet. Personally I prefer meat sandwiches and cake to anything else, on a mountain top.

When you are climbing, eat as often as you can, a little at a time. The severe work will empty your stomach in an hour or two—nature abhors a void and punishes it. Cubes of pure sugar, or best of all, dried prunes, eaten from half-hour to half-hour will speed you on your way.

Last summer I conducted a party of eight to the summit of Mt. Rainier. Two men were over fifty years of age. One woman had never climbed before. We climbed the 9,000 feet in twelve hours and not one in the party suffered from mountain sickness. My frequent command, "Halt—eat a prune" became a by-word. The prune pit, held in the mouth, will prevent thirst and that extreme irritation of a parched palate.

The rules for drinking vary more with the individual than do those for eating. If you are of the shape and the consistency of a lead pencil, you will not need much water on a climb. If you are, like I am, more of the contours and the nature of a sponge, you will need to soak up liquid refreshment.



—A. H. Denman

In the warm forest aisles below, where distant summits seem cold and bleak

Drinks of a high alcoholic content must be left alone. Their effect seems to increase with the square of the altitude. Coffee is bad. It is a heart stimulant. Your heart beats are always too rapid while climbing. Coffee will hasten them to palpitation. Then, too, there is a bad reaction after one or two hours.

Glacier water, with its suspended silt is dangerous. Ice water from snowfields varies in its effect with the individual. Personally, my engine is always overheated when climbing on high. Ice water, to me, is always welcome. The danger comes when one has been too long without drink. Then the shock of ice water seems to cause a sudden congestion and a nausea.

One of the strongest climbers I know climbed Mt. Hood and pulled several weaker climbers up behind him. He was going strong until I offered him a drink of ice water at the bottom of the mountain. It doubled him up in an agony that persisted for hours.

Opinions differ about eating snow. Amundsen chewed snow for drinking water for weeks at a time in the Arctics. If melted in the mouth and warmed before swallowing, snow is better than ice water. But snow eating has its drawbacks, and a prune pit will remove its necessity.

Just last week I made a 10,000 foot climb to the summit of The Mountain. We had water at necessary intervals. But I had forgotten my prunes and I ate snow all the way. In spite of it my mouth was parched most of the time. At the summit my soft palate and tonsils were in a sad state of congestion. There were no permanent bad effects for there are no germs and no infections on summit snow fields, but it did not pay to eat snow under the conditions of that particular trip.

Had there been no other water, with a hard climb of fifteen hours, the eating of snow by melting and warming before swallowing would have been a necessity.

Warm water and cold tea are the ideal climbing drinks. A canteen carried against the back will take the chill from either water or tea and will give the ideal refreshment.

Last summer many men made the summit of Rainier and most of them were smokers. It was an indoor sport of the guide-room to answer the woe-be-gone question, "Will I have to cut out smoking for a few days before making

the climb?" Our answer was always the same, "Sure you will—but give us your extra cigars, for all the summit guides smoke."

Archdeacon Stuck has written a great book on the "First Ascent of Denali." In it he takes up the matter of smoking and mountain climbing. Two men of his party were super-men on the trail. One of them never smoked while the other smoked nearly all the time. Carstens, the smoker, carried a pack of 125 pounds nearly to the top of Denali (Mount McKinley.)

Many a man leading a lobby life blames his short wind on smoking when the real cause of it is his own laziness. Cigarettes are always bad for they mean lung smoking, but cigars or a pipe used in moderation have little effect on the adult user. In fact, a cigar after a climb may help reduce the accelerated circulation to normal and so enable one to sleep. The hours of climbing have inured the heart to heavy work which is prone to continue after the climb is ended.

An all-important thing in summit climbing is the matter of a proper pace. The Cheechako is always impatient at the beginning of a climb. The slow, easy, relaxed swing of a climbing step seems too deliberate for comfort. A climber in one of my parties told it in these words:

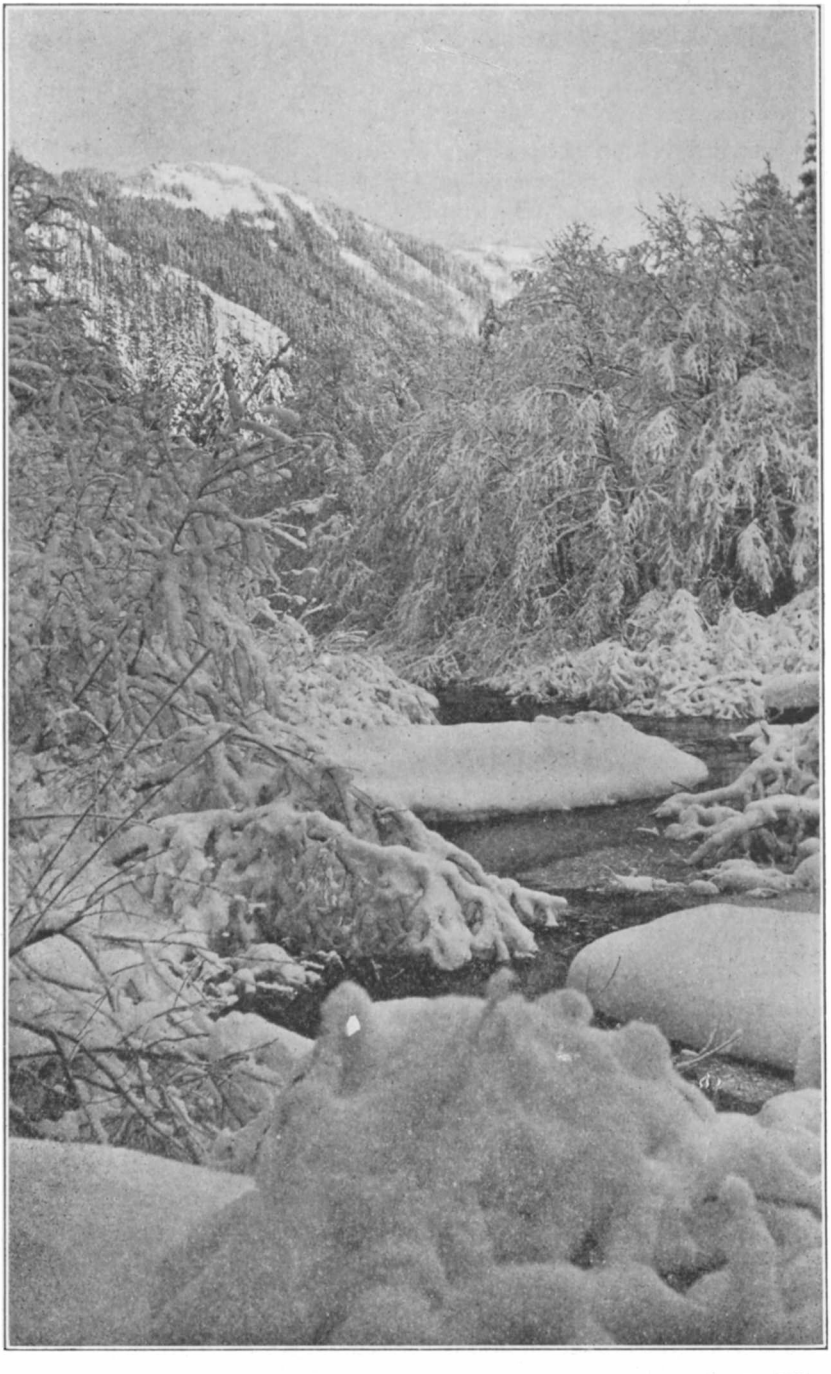
"When we started I thought you were the slowest mortal I had even seen. After a while I sort of went to sleep on my feet and didn't notice the effort. On the last thousand feet at the summit, I watched your legs—they seemed like pile drivers pounding ahead until every bone in my head and body ached."

Seven hundred and fifty feet an hour in elevation is sensible climbing in summit work. Near the top, 14,408 feet, the pace should be still slower. Step-breathe—step—breathe—will carry you up the last slopes without strain or suffering. Anything faster is a mistake.

The man who races on a summit does not understand why we climb mountains. May we repeat in this chapter: "In trail work the real mountain man does not climb to get somewhere—he climbs to be on the way."

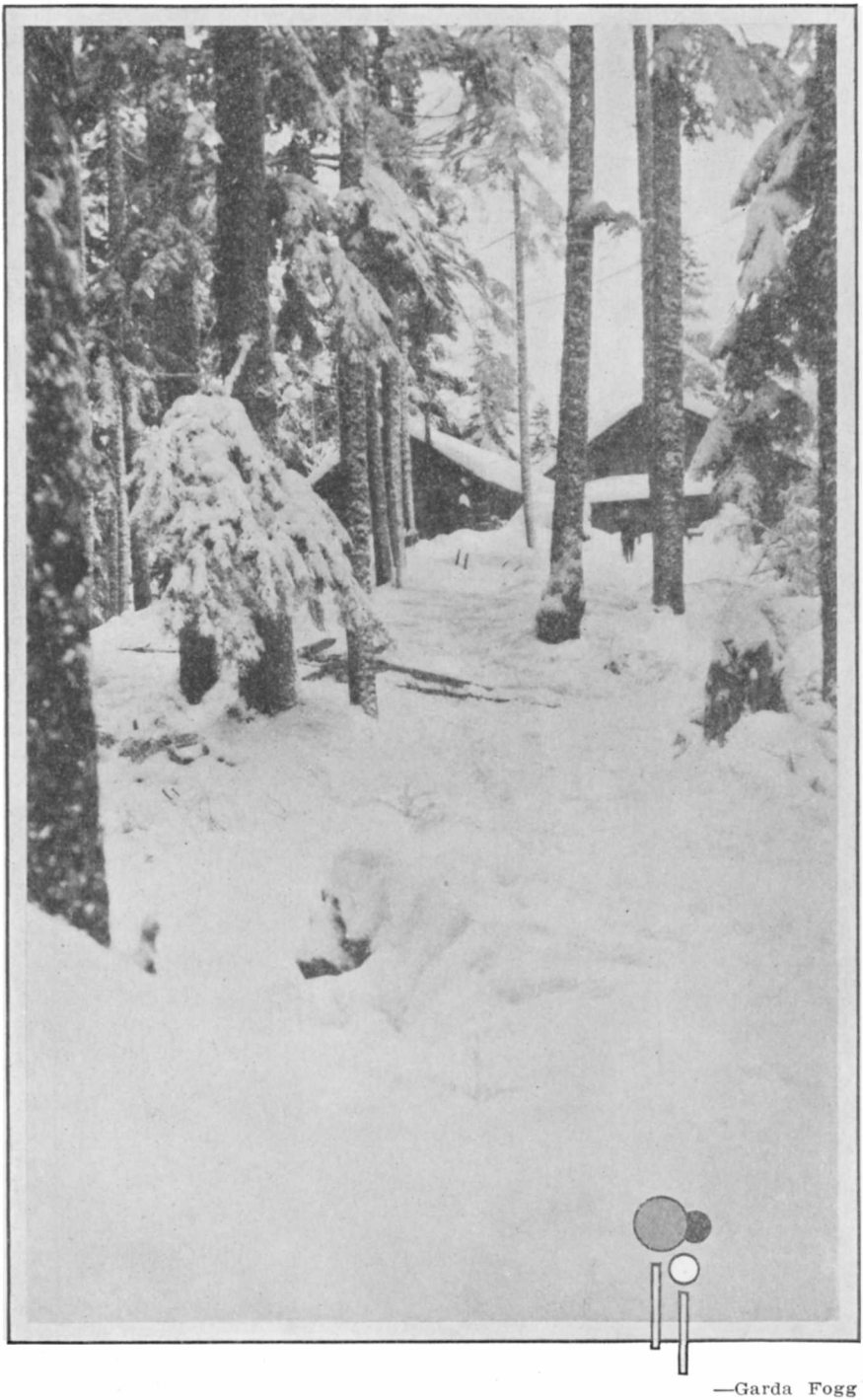
In climbing to the summit of Mt. Rainier we lift two days right out of prosaic existence. We enter a world of the unreal, a realm of the ideal, where all dross is refined away. We climb upward hour by hour while our spirit soars to meet ever-changing vistas and ever-widening panoramic reaches.

As the years pass, summit climbing will no longer be the feat of the few—it will be mastered by the many.



—J. W. Wilson

Hot Springs and Winter Snows



—Garda Fogg

Snow Time At a Mountain Lodge



—Chas. S. Gleason

This face of The Mountain was climbed this year by two new routes. Left of the middle face, over the Kautz Glacier, it was climbed, June 27, by Roger Toll, Harry McL. Myers, and Hans and Henry Fuhrer, Swiss guides. The other new ascent is described in this chapter.

The Fuhrer Route to the Summit

MT. RAINIER is called "The Mountain That Was God." It has been worshipped for ages—it will be worshipped by countless generations now unborn.

We caught our first glimpse of it, coming in, from the broad curve above Ohop Valley. In a promise of July sunshine it rose majestically over the dwarfed foothills, through fringing clouds, into the dignified contours of a great white dome.

At Ohop Valley it had been softened by distance. At Longmire it burst into view again—it thrust mightily upward, infinite in charm of detail, and rugged with converging lines of rock cleaver and glacier. Always with us was the strong urge to stand upon the very top where we might view the world beneath.

Above Longmire the darkened depths of timber and tangle hid The Mountain from view, until the road veered into an aisle flanked by dark forest green. Through this aisle gleamed the white purity of The Mountain as always, intriguing the imagination.

Then came the toe of the Nisqually Glacier where the ever-changing, forever constant dome lured us nearer.

Before us always was the goal of the summit. There came the thought of the punishing toil of summit climbing tempered by the saving alchemy of the outdoors, which transmutes toil to play.

We had planned for a year to attempt a new route to the summit over the Nisqually Glacier. It had been discovered through the telescope by Hans Fuhrer, Swiss summit guide. He awaited us, with his brother, Henry, in Paradise Valley.

Arriving there we organized our party; Hans and Henry Fuhrer, Peyton Farrer, guide manager, Thomas Hermans, United States ranger, and I.

We were all experienced in outdoor life. Hans and Henry had guided in Switzerland, on Mt. Hood, and on Mt. Rainier. Farrer and Hermans knew Alaska trails as well

as the Pacific Northwest. We would need experience for we were to pioneer over the crevasses, the ice cliffs, the broken rock ledges of an all-glacier route.

We left Paradise Inn at eleven-twenty at night, planning to climb straight through, 10,000 feet to the summit. We wore calked boots, heavy woolen clothing, and carried iceaxes and substantial food for a day—for we all believe in eating heartily on a climb. Hans and Henry carried climbing ropes and packs.

The sky was clear and the moon was in its full. The air was cool and comfortable without a breeze. We could ask for nothing that foresight and fortune had not provided in good measure.

We climbed past the Ranger Cabin, 5,557 feet elevation, to the rim of the Nisqually Canyon. We dropped 500 feet in elevation to a moraine of the Nisqually Glacier.

Below at the left was the darkly broken surface of the glacier, above, at the right, the sky-line timber, ahead the moraine trail leading to the very shoulder of the great dome we were to climb.

Beside the moraine was a firm snow cornice. The night chill had hardened it until our calks gripped without our feet sinking into the snow.

For two hours our trail held along the moraine to 6,500 feet altitude. Then we joined two climbing ropes together and tied ourselves in, about fifteen feet apart.

From 6,500 feet to 7,000 feet we worked upward over the middle of the glacier The snow was still firm and we encountered few crevasses.

At 7,000 feet the slopes steepened and the glacier surface became deeply crevassed. We worked our way toward the left rim and attempted to climb off the glacier. Here trouble began.

The crevasses became immense. Sometimes they were fifty feet wide and yawned to blackened depths. The moonlight upon the snow surface was as light as day or we could have gone no farther. Hans, ahead, cut ice steps up 60 deg. snow and ice faces only to find the route blocked by cross breaks. At times we hunched across narrow bridges by straddling or "cooning it."

For an hour we worked up and down gaining elevation then losing it. At last we crossed the glacier to the left rim and followed it to a rock cleaver, ice capped, thrusting through brokenly. It was just daylight and we ate breakfast.

As the night hours had fallen behind us we had lifted into view the immense panoramas of the "Guardians of the Columbia," Hood, St. Helens, Adams. The night had been silver clear. Now at dawn, at 8,500 feet we lifted another peak, Jefferson, in central Oregon.

We finished breakfast in a half-hour, our first rest since starting the ascent.

Along the unbroken rim of the Nisqually Glacier we alternated rock cleavers with snow fingers, climbing ever in the long shadows of the rising sun.

For a half-mile at about 9,500, we left the glacier route for the first time. A break in the rocks led us to a steep, isolated snow finger, part of the route we had examined for a year through the telescope. While extreme in steepness, this slope did not avalanche and it flattened below to a safe snow field. It connected us nicely with the more flattened shoulder of The Mountain at 11,000 feet altitude.

The snow had softened in the sun's rays and the climbing became harder. At about the third step we would break through to our knees. Fortunately the rock cleavers gave us a frequent supply of water and our climbing energy stayed with us.

At our left a series of rock cleavers defined our route, while slowly, at the right, the great Rock of Gibralter dropped away beneath us.

The last thousand feet to the crater rim, the summit, was alternate snowfield and well bridged crevasse. On the entire climb we found no danger that could not be avoided by skill, no extreme climbing problems. With a shelter cabin at 9,000 feet, the new Fuhrer route will be the safest and the most interesting route to the summit of Mt. Rainier. In late season climbing the glacier can be abandoned for a ridge-route nearby.

Climbing as we did, straight through from Paradise Valley, we found the work a test of endurance. Paradise Inn is 9,000 feet below the top. We lose 500 feet at the start, dropping to the moraine of the Nisqually. Another

500 feet is lost in working up and down over the glacier. A ten thousand climb is severe at the best. But with a shelter cabin at 9,000 and a sleep between climbs, the new route will be accepted as ideal.

Mt. Rainier has now been climbed by seven routes, no two of them even similar. The Mountain has an infinite variety in its fourteen canyons, its six summit glaciers, its great rock cleavers and its sheer rock faces.

Some day, not far distant, we will climb over the mountain from hotel to hotel. Then we can shortcut in a tremendous day, the present base-line trip of a week and a half.

The summit of The Mountain is a circle of crater-rocks over a mile in circumference. Inside, the crater itself is filled nearly to the brim with snow. On the inner crater slopes are steam jets which have melted the snow masses into caves. There are vapors frozen into fantastic shapes and delicate ice designs. Every interesting prank has been played by the mingled frost and steam. Several parties have been caught on top in severe storms, and the lives have been saved by holing in until the storm abated.

Last summer the summit parties found the crater inhabited by a certain chipmonk. In some strange way he had climbed to the summit and had made his home at Register Rock. He always received nuts and raisins and hardtack with evident gratitude. He became very tame. Let us hope he made his way safely down before winter.

One can never linger long enough on the summit. On favorable days the air is as balmy as a day in Spring. There is always the exploration of steam caves, of ice forms, of moss and lichen growths. But above all there is eternally with us the consciousness of the high places and of the immense panoramas beneath.

Away to the South, Hood, St. Helens, Adams, and Jefferson stand sentinelled in hundreds of miles of ruggedness. In the East are the upthrusts of the jagged Cascade Mountains and beyond half of the State of Washington. In the north are Mt. Baker, Glacier Peak, and the Selkirks of Canada. Far to the westward are the Puget Sound and the dim Pacific.

"The Mountain That Was God" uplifts one to a new thought world where pettiness drops away like a discarded

cloak; where unselfishness and service are as natural as nature itself; and where life seems as limitless as infinite space.

We reached the summit at 2.40 in the afternoon, a little over fifteen hours after leaving Paradise Inn. At 4.00 o'clock we began the descent by the old Gibralter route.

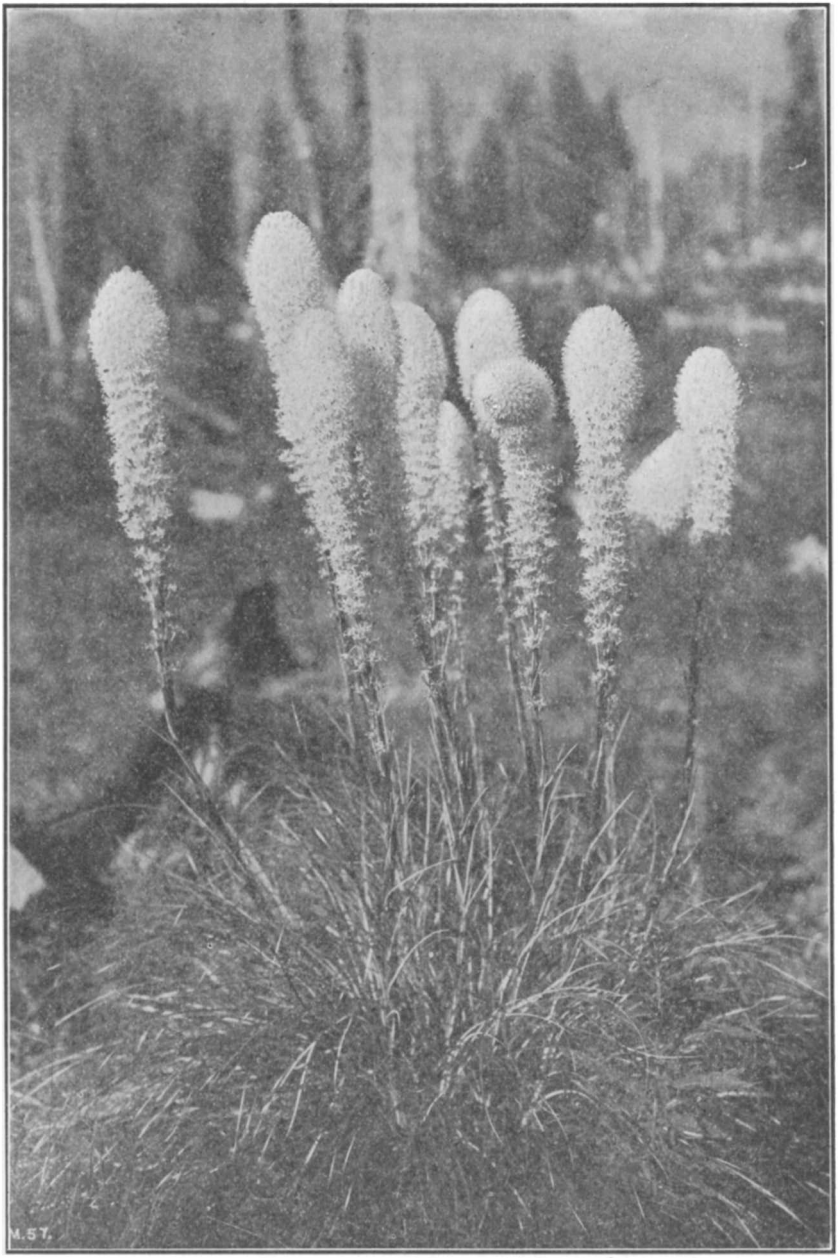
In less than an hour we had dropped to Gibralter 12,600 feet. We worked carefully down the steep "chutes" to the rock trail along Gibralter's face. We kept to the snow from "Camp Misery," 11,500 feet, past the Beehive, 11,000 feet, to Camp Muir at ten thousand.

We stopped long enough at Camp Muir to drink hot tea and to eat nearly everything in sight.

We took the long snow slopes from Muir to Paradise in a swift, sliding stride and arrived there in five hours from the summit. For twenty-two hours we had worked without sleep and were still going strong. Summit climbing brings out unexpected reserves and there seems to be no limit to the joys of hard effort. Then, too, we men, five of us had climbed, for the first time, an all-glacier route to the summit of the big mountain.

To Hans Fuhrer, summit guide, should be given the credit for a new, safe route. He discovered it. With his brother Henry, he led the entire climb—making rough places smooth, hard tasks easy—a 100% climb with a morale uplifted by skill, by courage, and by good cheer.





—Asahel Curtis

Indian Basket Grass

Mountain Flowers and Timberline Trees

FROM the forest below to the snow line above are found the mountain meadows of the Rainier National Park. They stretch around The Mountain for a glorious fifty miles. In a width of from one to two miles they alternate flower field and lake, intruding glacier and beetling crag.

The world's authority on mountain regions, John Muir, writes that the flower wealth of Rainier's parks is incomparably greater than that of any other region he has known.

To love these flowers, these stunted and wind-blown trees one need not be technical. What are names in a riot of blooms?

Nature knows nothing but harmony. In open fields sixty or seventy varieties are often mingled together. The reds, the yellows, the purples, every shade between the seven majors of a complete color riot, are arranged by nature's consummate artist touch into a whole of harmony.

In California some years ago, a girl experimented with forty acres of seed flowers. She selected solid colors supposed to clash and planted them in alternate strips. The field was a unit of beauty, brought to oneness of emotional tone by the great setting of the outdoors. So it is in our mountain meadows.

There are 365 varieties of these mountain flowers, one for every day in the year. They peep through in ones and twos as the snow banks melt away. In mid-July they appear in magic dozens. In August they swarm forth answering the riot call of summer, driving to distraction those benighted souls who try to tag and tabulate them day by day.

The government has wisely prohibited the picking of flowers in the Rainier National Park. This year there will be over 60,000 Park visitors. Allow each visitor to pick one flower in Paradise Valley and nature will be given too severe a handicap even where she is so lavish.

In the mountains, flower picking is flower murder—for in nearly every case the loss of a bloom means the loss of a plant life. Mountain flowers grow quickly. They place their whole life energy in a blossom and a seed. If

you pick the one you prevent the other and the plant dies. How much more sportsmanlike to look, to worship, and to let live, that those who follow you may pay devotion at the same flower shrine.

The avalanche lily is the first to appear with the melting snow. Its delicate, nodding blossom redeems the earliest bare spot. It does not wait always for the snow to disappear. Eager to give its flower wealth to the awakening spring it shoots up through three or four inches of melting snow.

The heather is dear to the heart of every mountaineer. There are on the mountain three varieties, the white, the yellow and the bonnie purple. Our heather differs from Scotch heather, which is spiked, in its bell-like blooms and its close clusters.

A bed of heather at the end of a long hike offers a springy couch and excells the sleep inventions of mere men.

The Indian basket grass, with its unique spike, is a characteristic mountain flower. It blooms in August and whitens the meadows with its distinctive clusters.

The mountain phlox is a flower of delicate tints. It nestles in gentle security against the most barren rocks.

The heliotrope grows in great profusion and touches the mountain breeze with elusive odors.

The shooting star, ardent as a flame, gives here and there its decorative tone.

On sheer rock faces, the hare-bell ventures its rare beauty in the tiniest crevices.

In the forest below, the rhododendron, the Washington flower, fills the more open spaces with a wealth of bloom.

Far above the lupine, bluer than an Italian sky, redeems the brutality of rock cleavers. At 8,000 or even 9,000 feet altitude, one approaches a bare rock mass. At a hundred yards, then fifty yards, there comes the surprise of a magic carpet. The rocks disappear in a field of lupine blue.

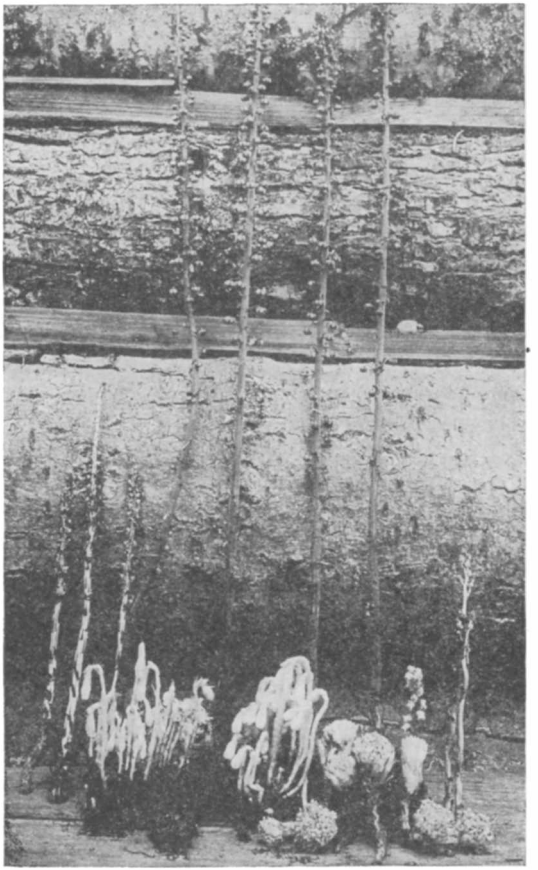
Every lover of flowers has his favorites, but as his experience broadens, he begins to include other forms of mountain life. There is a fascination about the timber line trees.

Van Dyke has written a book, "The Desert." It is the text for those who appreciate the desert. Life, there, to plants and animals is a hard, almost a grewsome thing. In the fight for mere existence both plants and animals develop scales and thorns and poisons. They never call quits but game it out to the last arid day.



—Mabel Furry

Shooting Star



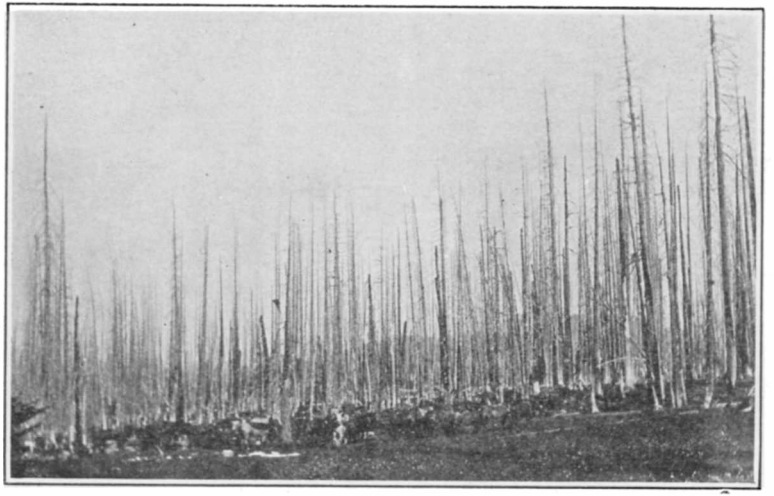
—J. B. Flett

Indian Pipe—five varieties



—Chas. S. Gleason

Above—Silvered Trees at Summerland



—Fred Q. Gorton

Below—Camp in the Ghost Forest

So it is with the trees at timber line. They wage everlasting warfare in the narrow areas between short summer and eternal winter. They are buffeted and twisted, hunched and gnarled, at once the victims of poor nutrition and of direct injury. But they wage a stout fight and grow stubbornly strong through adversity.

Some of the best mountain pictures are of wind-racked trees. Were I a painter I would strive to catch the soul of them that it might shame some luxury loving human who is prone to quit when the going is hard.

Interesting observations have been made of exposed trees at the snow line. One dwarfed trunk, twelve inches high showed rings of a hundred years of battle. Another fourteen inches high was one hundred and fifty years old. In the life and death struggle they had been held almost even but had managed to live and to acquire a miscroscopic growth.

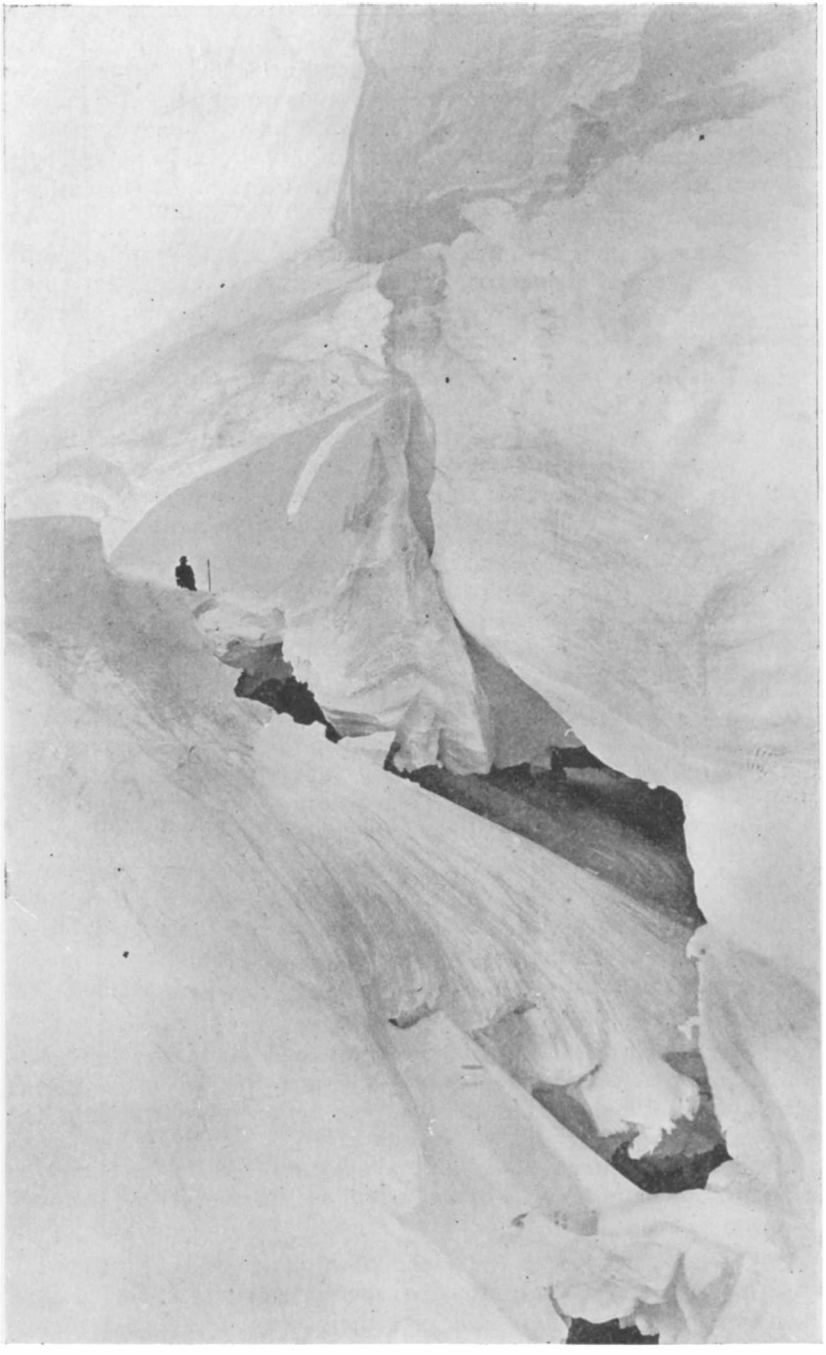
In fighting these adverse conditions, roots and branches acquire immense strength. In climbing rocks one can safely trust his weight to a shrub as thick as his finger. As mentioned before, heather alone cannot be trusted.

The skyline trail, taken with the ponies, winds along Timberline Ridge above Paradise Valley. It skirts thousands of these dwarfed trees. Many a careless observer passes them without a look or a passing thought while they wage silent warfare against the elements.

One of our parties had a strange experience in temporary camp on the north slopes of Mt. Baker. We threw our sleeping bags on a perfect mattress of dwarfed tree tops. It was a modern version of "Rock-a-bye baby in a tree top." The difference is that the cradle never rocked. It was firm and springy and comfortable.

Mountain forests vary with sudden changes as the altitude increases or decreases. From the immense trees below, where darkened depths give forth inviting odors to the dwarfed fringe above, is but a few miles in space. But the flowers, even the animals, show a corresponding adaptation and new world's open to us with the rise of every slope.

The flowers and the trees of high mountain meadows give color and warmth to the severities surrounding them. When winter's whiteness covers them, they are hidden away for a sure awakening. Each year as they spring forth to greet us, they radiate the freshness and the abandon of elves at play.



—H. V. Abel

Crevasse on The Mountain, below Colombia Crest and Liberty Cap, at 14,000 altitude

Ice and Snow

THE MOUNTAIN has twenty-eight glaciers. Fourteen of them are primary glaciers occupying their own valleys—fourteen secondary ones are either tributary or stationary. Six grind from the very summit to the deep canyons below. The summit born glaciers are the Nisqually, the Ingraham, the Emmons, the Winthrop, the Tahoma, and the Kautz. Of the twenty-eight, the Emmons is the biggest.

There is a fascination in the study of a glacier. At first it seems silent and rigidly still. Gradually one acquires a sense of glacier life and motion. The opening and closing of crevasses, the bowing of a cross crevasse through its less retarded flow in the middle, the crashing of ice cliffs, the avalanching of undermined canyon rock walls ,the mad rush of under-ice streams, all tell a tale of action and of the release of stupendous force.

An individual crevasse is equally interesting. On an upper glacier, its white walls blend to blue, to indigo, and disappear far below in intense blackness. High on a mountain these crevasses are mere cracks expanding under the surface into great caverns. Half way down the cracks widen and become more immense. At 9,000 feet on the Nisqually they are from ten to seventy feet wide and of unknown depth. They cross and criss-cross until there are left veritable block islands of ice and snow. At one place there is an immense pit, 200 feet across, of 200 feet depth. Great cubes and balls of ice and snow, as big as a house, have tumbled into its capacious maw.

Toward the toe of the glacier, the crevasse walls crumble and fall, forming a confusion of hummocked ice. The beauty disappears, for the ice is darkened by the debris of broken cliffs. From a middle distance depth of a half-mile the glacier thins to a few hundred feet, while underneath there is the grinding rush of mighty waters. The beauty disappears—but there remains the majesty of mighty power.

There are varied forms of ice and snow upon a mountain. At the summit are found snow cornices. The strong

winds of the upper air, inch them out to a sharp edged drop-off. Sometimes it is necessary to tunnel these cornices to make a summit. Coleman did it in the first ascent of Mt. Baker. The Mazama Club later, tunneled also to the top of Baker.

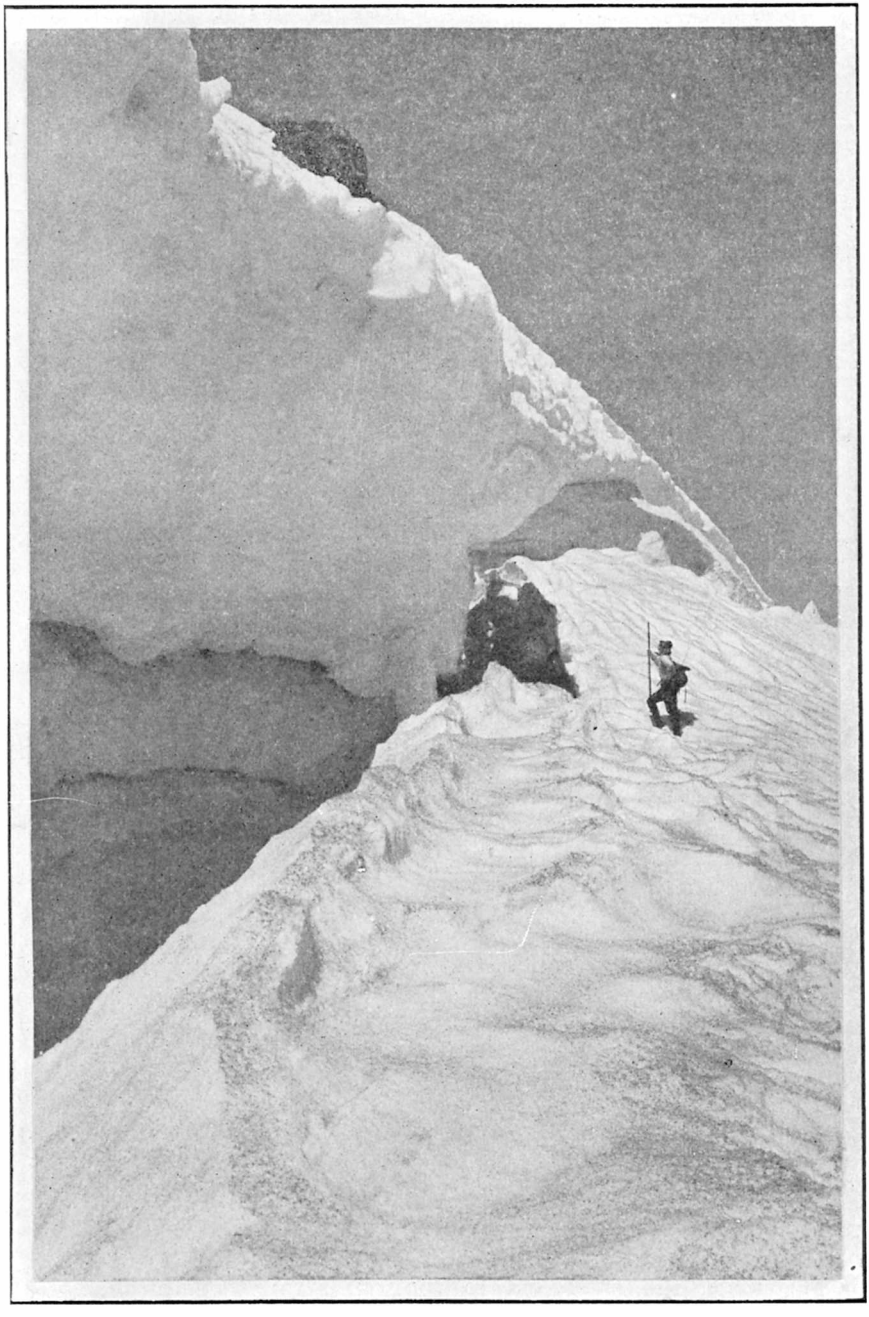
Below the summit there is usually a splitting away of the snow and ice from the rocks. It is called a berg-schrund. In this way some of the most thrilling abysses are formed. The depth of a bergschrund is, fortunately, unplumbed. For there are hidden dangers in snow roofed traps over plunges to sudden death.

On exposed ridges, honeycombs appear. They are snow and ice bad lands carved by wind and sun. In the night and morning these sharp pinnacles are frozen hard and make the going almost impossible. When softened by the sun they allow a wallowing progress.

The great snowfields are made uneven in late summer by wind cups. They too make climbing difficult. In August the last thousand foot climb to Camp Muir, at 10,000 feet altitude, is unpleasant. The wind pockets are too deep in the daytime for a comfortable lift, while in the night, one slips and stumbles all over their unexpected edges. In the steep snow between Gibralter Rock and the summit snow field, the "Chutes," the snow pockets, are exaggerated to honeycombs. Their edges melt to knife thinness and needle points which freeze into cutting sharpness. In a way they improve the conditions in the "Chutes," for they are so deep that one cannot possibly slip out of them and avalanche over the ice cliffs below.

Snow bridges occur on all crevassed glaciers. They might be used for models of bridge construction. Most of them are strong to the last few days before they melt away. But they should be thoroughly tested before they are trusted with human life.

In testing a snow bridge many things are considered: The relative length and thickness; the under supports of ice or of hard snow; the age and the granulation of the snow forming them; the danger below in case of caving. If a snow bridge must be used and there is any question of its strength one should lie flat with arms and legs extended, and then inch slowly across. Such bridges demand a rope and a party of at least three people.



—R. L. Glisan

Bergschrund

Ice cliffs, too, are found in many places. On the lower Nisqually they are formed by an upthrust of hard rock in the glacier bed. Crevasses are forced upward. The lower lip crashes over leaving the upper one to form a cliff.

Whenever a glacier drops over a high rock wall, ice cliffs are found where the break is made. The icy face of the broken glacier is weathered into crags of ice. Across the "Chutes" from Gibralter Rock, there are great ice cliffs, towering over the lower glacier. Climbing parties have watched them crumple over and fill the canyon with roaring reverberations. Near these cliffs are usually to be found crumbling rock faces. Between the crumbling ice and the crashing rocks, nature seems bent upon her most terrific mood of destruction.

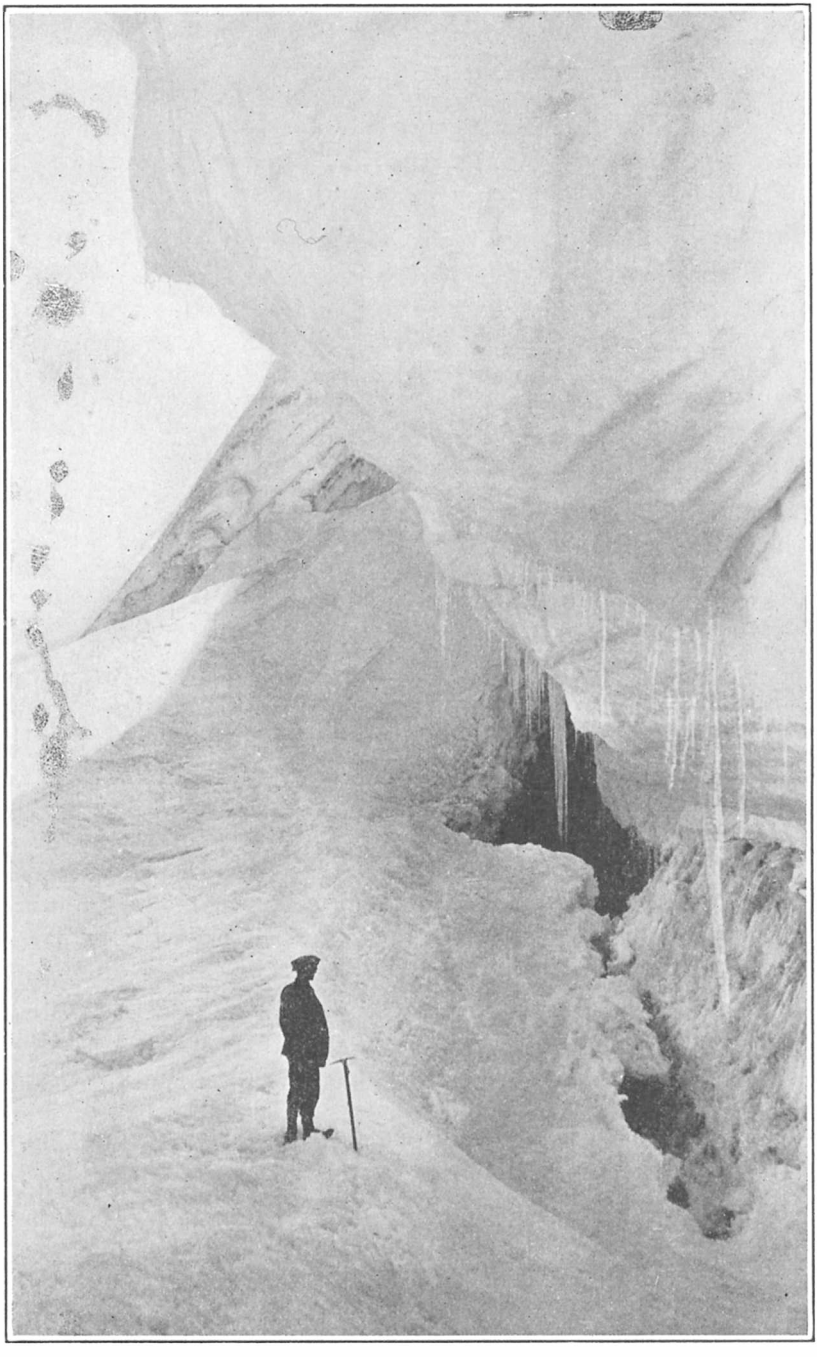
Upon steep grades, glaciers break into blocks which weather into pinnacles. They are called seracs. They come and go with seasonal change and they are found only on the more turbulent glaciers. The north side of Mt. Shuksan has a cirque of converging glaciers where the seracs are myriad. They are found on the broken glaciers on the north side of Mt. Rainier. The photographer revels in them, for they are strikingly theatrical, and in the glacier story, affect the dramatic.

At rare intervals snow and ice pyramids occur. Many factors determine and shape them. Sun exposure, wind erosion, the pull of gravity, these and many other things sculpture the snow and ice into pyramid shapes. .. .. ..

Rocks melt into snow, their dark surfaces radiating the heat which buries them. On ice, the opposite obtains. By protecting the ice from the sun's rays they retard melting.

On the Emmons glacier are many rocks suspended on ice supports. The large ones look like gigantic toadstools, and give a touch of wierdness to the glacier.

Ice and snow are always doing the unexpected. It is possible merely to indicate their infinite variety. A mountain man never tires of the hours spent upon glaciers or upon snowfields. He follows the glacier to the foot of the avalanche, the snowfield to the snow finger pointing up the high hung rock chimneys. He photographs the unusual forms of ice and snow, and invites the world to join him in his explorations.



—H. V. Abel

Combined Crevasse and Snow Cornice

Rock forms are as varied as those of ice and snow. They may be studied from the viewpoint of climbing.

Volcanic rocks are of least value to the climber. They crumble easily and afford uncertain support. An example may be found in Gibralter Rock, half-way to the summit from Camp Muir.

It is from six to eight hundred feet high. It is composed of more or less than fifty distinct lava flows. They are uneven and scrapped up. The face with a southern exposure is almost straight up and down. During the day it is avalanching badly, rocks big and small hurtling through the air to the long suffering talus slope below.

On my ascent of July 18, 1920, we were sitting in safety at Camp Misery, just away from the foot of Gibralter. Avalanches startled us. Bounding and breaking rock dashed continuously upon the trail we had just passed. One girl of the party gazed critically at the spewing face of the cliff and then in a short sentence fully described it:

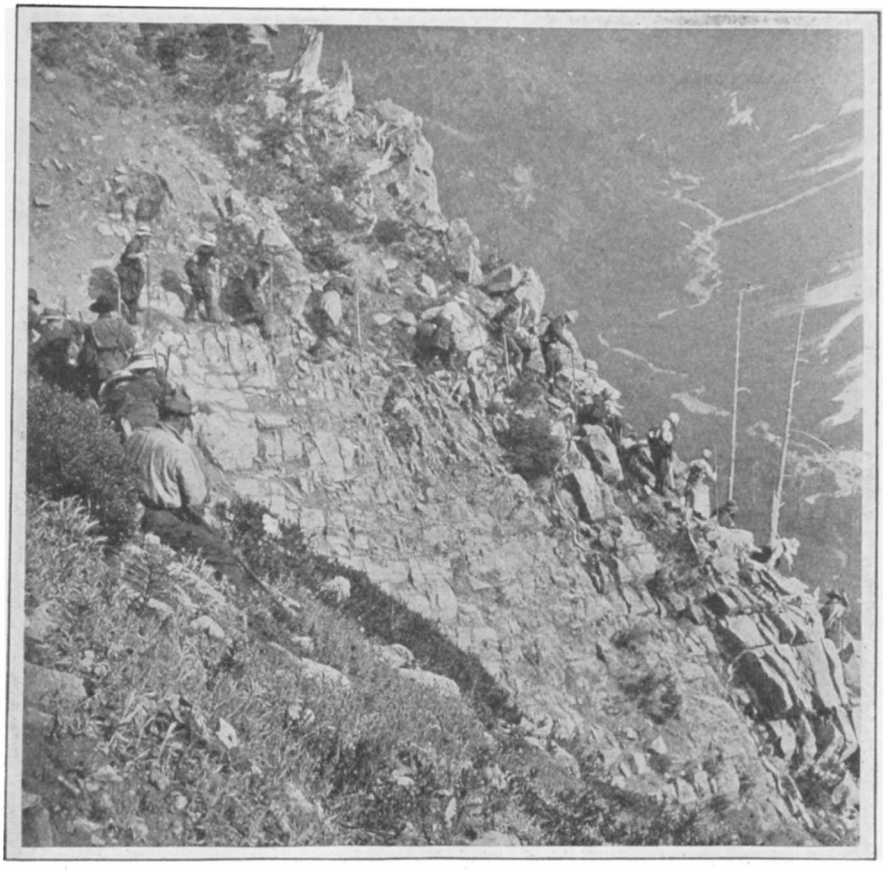
"Gibralter is a mess!"

Volcanic rocks are often cemented by a weak mortar of pumice and sulphur. If so they are not to be trusted. In fact the best way to be safe on them is to demand broad, supported surfaces or to take to the snow nearby.

Older fire rocks or lime rocks are usually safe. Granite ledges and pinnacles seem best of all. No other mountain climbing is as fascinating as rock work where the foot and hand holds are solid.

It is a common belief that one can climb rocks where one cannot go down. The contrary is true. Of course you should never go down an unscouted rock face but you can usually conquer what you can see. It is all a question of the climbing rope. Loop its middle over an outstanding rock and slide down double strand.

Rocks made many fantastic figures. Great stone faces are numerous—so are animal shapes. I recall an immense steamboat rock on Mt. Baker. It was formed perfectly with bow and stern. It stood in a snowfield like a ship at sea. Behind it lay an even track like a wake that it had ploughed from a crag far above. Near its starting place it had leaped a snow cornice and a crevasse. Its path even there proved an even keel.



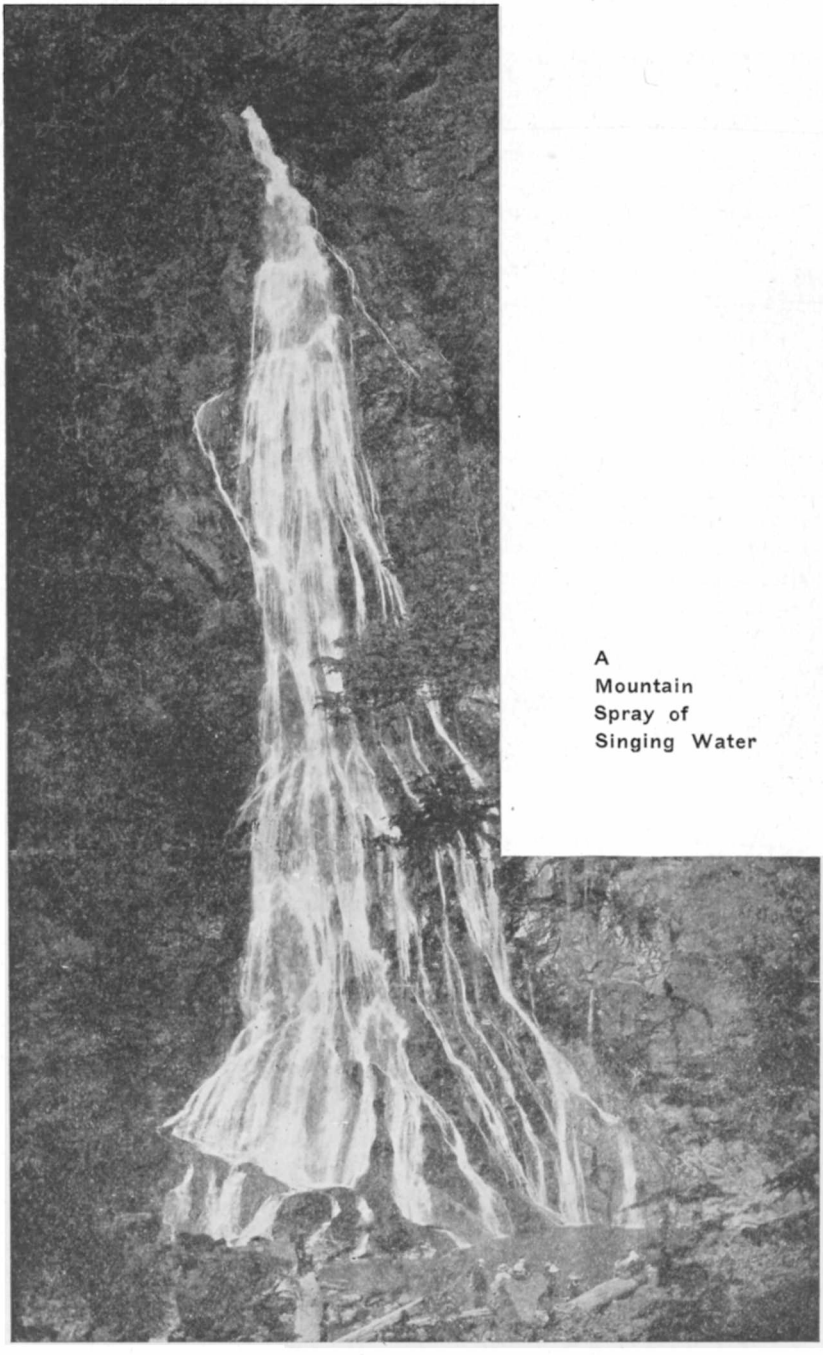
—T. C. Smith

Climbing Down a Rock Slope



—Fairman B. Lee

Sliding Down a Snow Slope



A
Mountain
Spray of
Singing Water

—Chas. Albertson

The mountain waterfall is to the rock as the avalanche to the glacier. It is the striking thing, the never failing surprise.

Many a canyon wall is silver threaded by a dozen waterfalls. In mid-summer nearly every snowfield ends in one or more plunging streams. They come and go with the melting of day and the freezing of night. Their roar and dash deepen the mountain melodies with all the power of creative accompaniment.

Falls are often forked and twisted—divided above and united below, or united above and sprayed below. Or they hurdle half miles in successive leaps. In the sunshine bathing them hover rainbows.

In Hannegan Pass, near the Canadian line, we found a twenty foot waterfall near camp. It was converted into a swimming hole de luxe. There was a firm rock and sand bottom below it. We would walk into it, extend our arms to its buffeting, and imagine ourselves modern versions of the Colossus of Rhodes. We did not rival that gentleman of mythology, however, in silence, for our swimming parties could be heard for startled miles.

This chapter is not complete. Its purpose is not one of inclusion but of stimulation. Snow and ice and rock and waterfall encompass The Mountain, as do the lakes and flower meadows, in a huge circle of fifty miles. The Mt. Rainier National Park is not a wilderness, but a maze of wonders leading one ever deeper into nature's moods and mysteries.



Rock on Ice Pedestal —Lloyd Smail



A Storm —Norman Huber—Copyrighted

The Summit in a Storm

TWENTY-ONE of us reached the summit of The Mountain, July 18, 1920, in a storm. The climb was an unusual one and the tale should be told.

With wise foresight for the safety of climbing parties the government has adopted certain regulations. One guide is allowed a maximum of eight people; nine to fifteen require an extra guide; sixteen to twenty, two extra. In this way each climber can be watched closely and help can be given when necessary.

There were nine women and twelve men. Two experienced mountaineers were chosen as assistants. Two companies were formed with one guide leading the second company. The other was given the manifold duties of rear-guard.

The climb to Camp Muir from Paradise Valley, 5,400 feet altitude to 10,000, was made the day before. The women were to use the mattresses and the blankets at Muir, in the stone cabin, so they travelled light, carrying only their extra clothing and food. Each man packed a sleeping bag and "commissary." It is necessary to reach Camp Muir in perfect condition, so we made the climb slowly in seven hours.

In spite of a rising wind the men slept comfortably, outside in the rocks, and were ready before full daylight for the start.

At four-twenty in the morning we formed in companies and received final instructions. Rigid discipline was maintained throughout the ascent, for no chances may be taken above 10,000. It was an easy task to maintain it, for the climbers were Mountaineers, trained to the code.

We climbed slowly up the Cowlitz Cleaver, a long rock backbone, and the dawn climbed with us. Below Paradise Valley lay a level sea of clouds. Beyond, the Guardians of the Columbia rode high above a misty ocean. Eastward, a hundred peaks thrust mightily through wind tossed clouds. Little Tohoma, a menacing rock spire, towered darkly over the Cathedral Rocks, malignant as though intending evil.

The afternoon before an unusual phenomenon had occurred. Half-way to Muir, one of the party gave a startled exclamation. We looked and saw a drifting cloud formed into a perfect question mark. It had drifted behind the forbidding faces of Little Tahoma. Now we were determined to answer that implied question despite gathering clouds and a threatened storm. Not one member of the party thought of turning back. We were defiantly obsessed by our purpose of getting everyone on top—of accomplishing what we call a one hundred percent climb.

The sun, worrying through the fast moving clouds, painted rare patches of sunshine upon the Cowlitz Glacier below and upon the Beehive, a dome of rock, above us. The wind was behind and climbing kept us warm.

We made the thousand feet to the Beehive in less than an hour and stopped there a few minutes to decorate our faces with grease-paint for the snowfields above. We climbed easily down a twenty foot rope and connected with the upper rock cleaver. We followed a knife edge trail for a time where a snowball tossed West would find the Nisqually Glacier and the Puget Sound, and one tossed East would drop to the Cowlitz Glacier and reach finally the Columbia River. We were climbing truly over the parting ways.

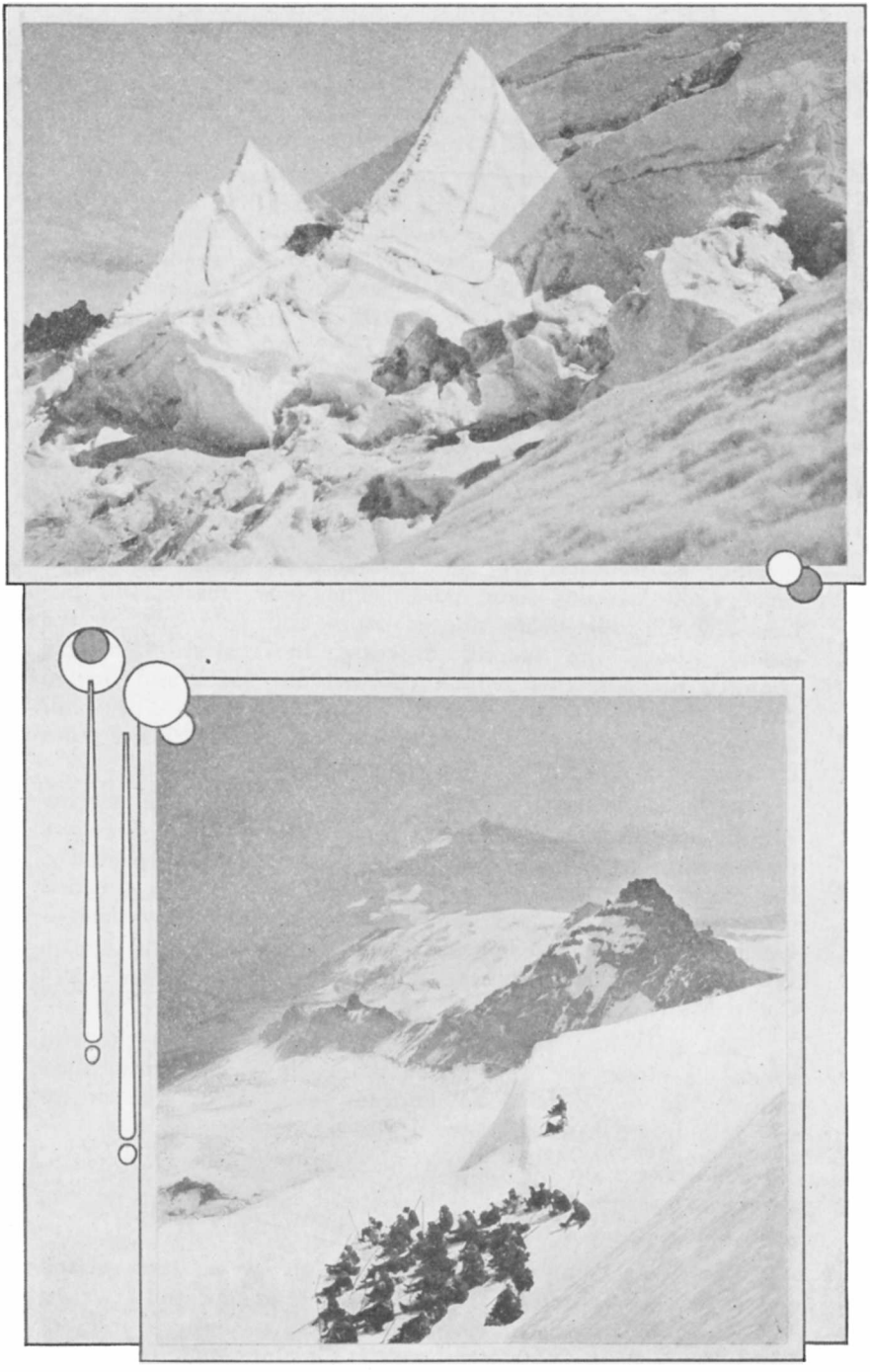
At 11,500 feet we reached the top of the Cowlitz Cleaver and Camp Misery. It is customary here, to check weak climbers away in the protected rocks, to be left until called for by the returning party. We had no weaklings with us so after a short stop we prepared to pass the Rock of Gibralter.

It was still early morning, 6.30. Gibralter is frozen tight until the sun strikes it at 9 o'clock, so we did not fear avalanching rocks. We passed the left face of the rock in rope formation. The alpen-stock was carried in the left hand, the rope in the right, against the rock.

We made slow, careful progress. Just one step to the left there was a deep plunge to the Nisqually Glacier. We did not touch the Gibralter face with the right rope hand for Gibralter is volcanic and will slough off dangerously at the slightest touch. Poised high up on a narrow shelf between glacier below and cliff above we made safely past Gibralter to the "Chutes."

The "Chutes", filled with snow and ice at a steepness of from sixty to seventy degrees, connect the upper end of Gibralter with the summit snowfields. Securely held by rope and alpen-stock, in well cut steps, we climbed six

Snow Pyramids —L. A. Nelson



Lunch on the Climb —T. C. Smith

hundred feet up the "Chutes" to Camp Comfort, above Gibralter, at an altitude of 12,600 feet. This is the final cache for weak climbers, but as at Camp Misery we had none.

We saw here our last panoramic view for over four hours. Below us to the south west were the "Chutes," the Nisqually Glacier, Paradise Valley and the persistent "Guardians." Steeply beneath to the south east were the Ingraham Glacier and the black cliffs of Little Tahoma. Ahead of us was the final 1,800 feet of the summit blotted out by storm clouds driven by a forty mile wind.

We pulled ourselves together and climbed into the clouds. Instantly the world, almost blotted out, shrunk to a chill fifty feet of steepness. A hundred feet ahead we found the "Big Crevasse" and crossed it on a safe snow bridge. We toiled upward through the storm with endless switchback turns.

For a thousand feet the clouds were moist, the wind force alone making them cold. The snow melted on our boots, while our faces tingled from the cold cut of the gale. Above the second crevasse the cloud dampness changed to snow dust which bearded our faces and turned our clothing into a veritable ghost raiment. The chill deepened and we forced our climbing pace to keep from freezing.

After work that seemed endless we crossed the narrow summit crevasse and realized with intense relief that we were nearing the end of our toil. As usual, unexpectedly, the crater rocks at the top burst into view and we speeded up to Register Rock, our goal. We looked at our watches—we had climbed 1,800 feet in two hours of wind and storm. It was 11.05, six hours and forty-five minutes from Camp Muir.

The gale had quickened to fifty miles. From the rim rocks we could see a short fifty feet into the snow filled crater. So we hurried a hundred yards along the crater rim to our haven, the steam caves.

They were on the inner slope and slanted steeply. We entered, leaving behind us the hard push of the storm. Almost instantly we were comfortably warm.

Under the snow, where the volcanic steam had melted the caves, we found drips and tiny streams of pure water. We had climbed 4,400 feet without a drink, saving ourselves from the suffering of thirst by eating prunes and by mouthing the prune pits. So we welcomed real water, collecting it slowly in a dozen relayed cups. A canteen of tea was weakened by adding water and was quickly emptied. One

stimulant alone was used by those who were the worst chilled. A boy scout leader, one of our party, gave it a name formerly wished upon it by one of his boys, in an examination:

"Automatic spirits of pneumonia."

We leave it to the more matter-of-fact to supply its real name.

We stayed in the caves until one o'clock, drinking water, resting and registering in the summit book. The storm still raged, blotting out all views except those of steam cave and swirling snow. Many, not knowing, were dreading the descent, fearing cold and fatigue.

At one o'clock we topped the rim into the howl of the storm. Its first chill shook us, but we skated down the steep snow with easy speed. Within ten minutes we were warm and were enjoying the going. We slowed up three times to cross the three crevasses. In an unbelieveably short twenty-five minutes we were again at Camp Comfort.

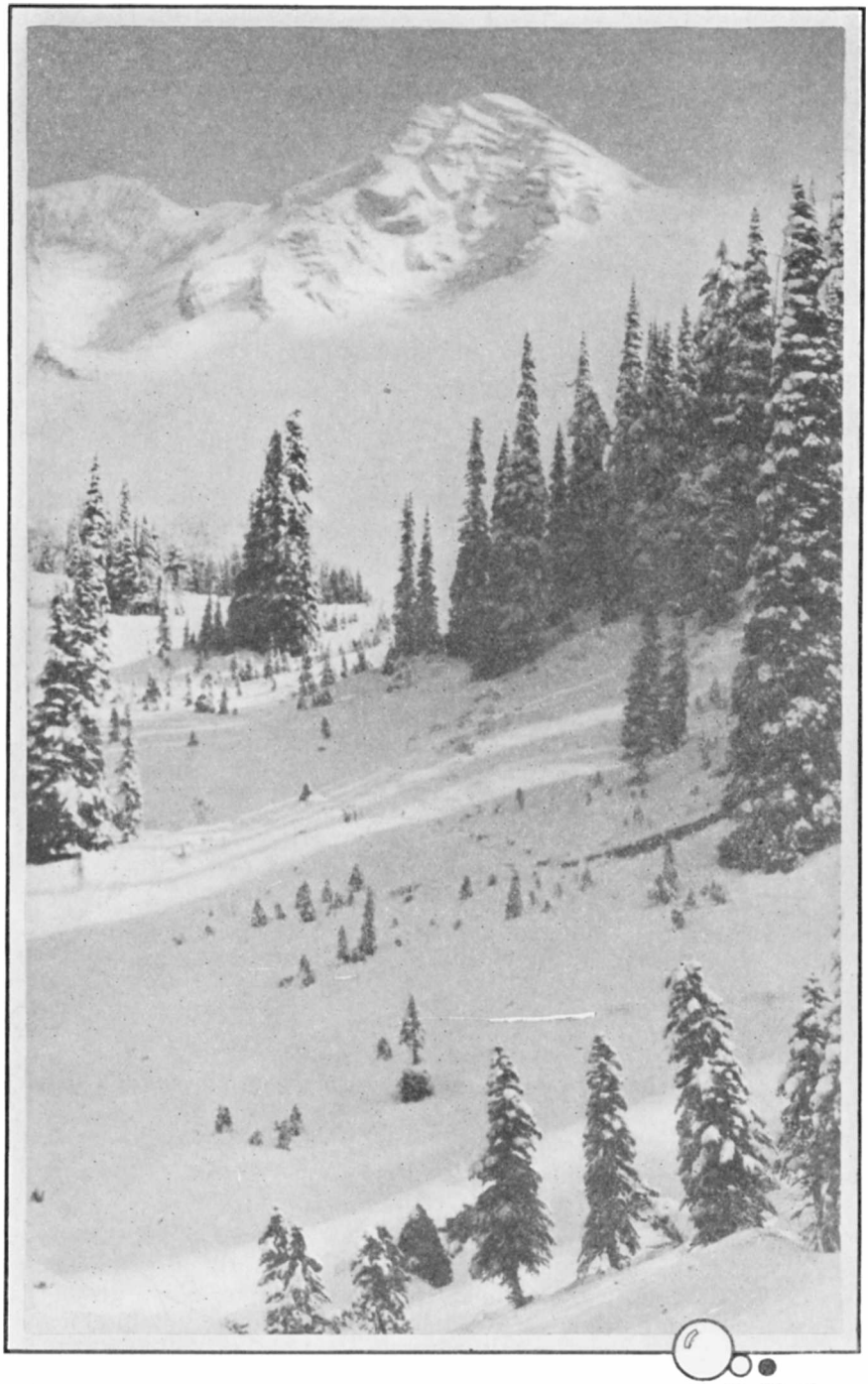
The storm had lowered while we were on top, half concealing the "Chutes." The leader tied the rope around his waist, and tied an assistant guide to the other end, behind, for "anchor." The rest of the party grabbed on between with rope below and alpen-stock above.

The snow had softened and we sank to half knee depth. In perfect safety we wallowed down the steep descent, past ice cliffs and crevasse caverns to the trail along Gibralter.

Past Gibralter we were forced to speed and to extreme caution. The rocks above were loosened by melting and were avalanching badly. With two breathing stops under safe overhangs of rocks, we rushed through, courting safety by a reduction of the time of exposure to falling rocks. Soon we reached Camp Comfort well below the storm. Technically taken, the climb was over, for below us was the mere routine of a safe return to Paradise Valley.

We reached Camp Muir at 4.00 p.m., three hours from the summit. The assistant guides had hurried ahead and hot tea, the real mountain drink, awaited us. We drank and rested, and then returned to Paradise Valley at a gait of "Go as you please."

The sunset was below us as we followed a lazy trail. Hood, St. Helens, and Adams gleamed distantly in the sun's rays. Symmetrical clouds spread from East to West, gradually changing from deep indigo to ardent pink. Behind us The Big Mountain, as though possessed by an evil spirit of mockery, brushed away its storm crest and towered in the gilded grandeur of approaching night.



—F. E. Matthes

Indian Henry's in Fresh Snow

Paradise in Winter

IN summer Paradise Valley is gorgeous with flowers. It is gay with merry crowds of tourist folk. In winter it is silent in the white peace of the deep snows.

Between Christmas and the New Year every year, we pay it the tribute of a five day visit.

We take the train to Ashford and back-pack into Longmire. We carry skees and snowshoes for the snowline hovers above or below Longmire. We spend the night at the National Park Inn.

The next morning we unstrap our snowshoes, adjust them, and take the snow trail for Paradise. This trail is about six miles long and rises nearly 3,000 feet in altitude. It gives an ideal tryout to the beginner.

Through the silent, snow-laden trees, we find our way to Narada Falls.

Narada is even more beautiful in winter than in summer. Its adornment varies with the severity of the season. Beside the rushing waters are fairy designs of frozen spray. In delicate lines they drape the sides of the waterfall. With infinite variety Artist Winter touches the falling vapors and they are frozen into permanent forms of beauty.

The bridges above Narada are mantled by great masses of glistening white. We snowshoe over them and enter Paradise Valley.

There is little wind during the Paradise winter. The trees are laden with snow, their branches bowed by its weight.

The Inn is always half buried. Usually one door is accessible. Four winters ago it was entirely buried and the summit guide drove his dog team over the roof. The drifts were seventy-eight feet deep, level with the highest gable. The government records gave a level pack of twenty-seven feet. Unpacked, the snowfall would have exceeded a hundred feet during the days of that winter. We entered the hotel through a snow tunnel leading to a roof window, and climbed down over the rafters.

Inside, the hotel is always cozy and comfortable. The fireplaces are merry with blazing logs and the comfort is the greater for the outside blanket of snow.

Two years ago we climbed to Camp Muir on snowshoes. It was a hard trip. The wind hunted out the marrow of our bones through layers of woolen clothes. Twenty-seven of us made the trip. It proved more of a feat of endurance than of pleasure. Last year a trip to the saddle of Pinnacle proved a delightful substitute.

Near the hotel we skeed and tobogganed and snowshoed to our hearts' content. Skees are great for winter sport. There is no danger at all in using them. If you spill, you sink into the fluffy snow, ankle deep—head down. By patient wriggling one can always manage to crawl out and to make ready for the next tumble.

Four kinds of snowshoe are used in winter in Paradise Valley.

The "Cook's Inlet" is a long Alaska shoe, from five to seven feet long. It's narrow runner is made for the cold fluffy snows of Alaska. It is bad for climbing and is not suited to Washington.

The "Canadien Trapper" is better. It is broad with a turned-up toe in front and a tail behind. It is ideal for snowshoe coasting. It, however, does not climb well.

The "Bearpaw" is the best climbing shoe. It is oval like the paw of a bear. It is too short in front to travel well in soft snow on level trails and it has no tail on which to sit in coasting.

The "Beavertail" is the ideal shoe for the Pacific Northwest. It climbs like a "Bearpaw" and is tailed like a "Trapper." In the mountains of Washington climbing and coasting are the two important things. Long trails are infrequent—so each year the "Beavertails" grow in favor.

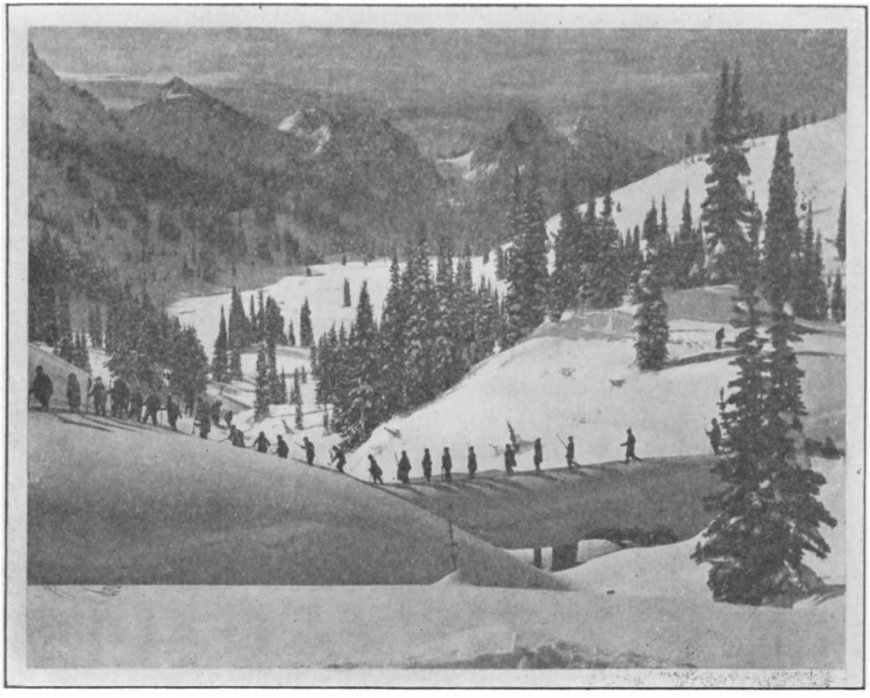
One of our most joyous parodies tells the story of the snowshoe:

SNOWSHOES

There are snowshoes that make you happy,
There are snowshoes that make you wail,
There are "Bearpaws," "Trappers" and "Cook's Inlets"
But the best of all are "Beavertails."

And when you find yourself face downward,
With your snowshoes waving in the air,
That's the time, my son, to keep your temper,
For a good Mountaineer won't swear.

—Mabel Furry



—Frank A. Jacobs

Paradise Valley in Winter



—T. C. Smith



—H. W. Playter

Winter Sports

A snowstorm in Paradise Valley doesn't kill sport. The flakes are moist and their touch is gentle. They fall, usually, straight downward for winter wind in Washington is "unusual." An occasional snappy blizzard is merely possible, not probable.

The wildest snowshoe sport of all is that of coasting cliffs and cornices. Few places there are near Paradise Inn that are not taken this way. The cliffs are safely covered by snow except where a straight drop occurs. These are seldom longer than twenty feet. One coasts the short slope above, sitting on the tail of the snowshoes, shoots over the brink, to land—but sometimes that is a different tale. The worst that can happen is a snow burial—alive and uninjured.

Above all the snowshoe harness should be right. Web straps and thongs are good enough for level trails. But the steep snow trails of Washington require hard, oak tanned leather fastenings or metal ones. With a "Beavertail" and a good foot harness one can venture the impossible things in the safety of the snows of Paradise Valley.

There are indoor sports in a winter visit to Paradise Inn. The best vaudeville is after all extemporaneous. The evenings are spiced by variety. No two of them are alike The serious is always welcomed in proper proportion.

Fireplace and campfire programs are a natural expression of the unconventionality of outings. They not only add to the entertainment. They stimulate keenness, foster discernment, and teach sportsmanship.

The return from a winter outing in Paradise is exceptionally easy. Snowshoes are a joy in downgrade travel. They sink just deeply enough to take the jar from the drop. There are short slides and longer ones. One never tires. and always, on the afternoon train at Ashford, there is definite decision to repeat the outing "next year."



The Mountains of Washington

A MOUNTAIN region, a mountain range and immense volcanic peaks, snow capped, are found in Western Washington. The region and the range are old; the volcanoes, even though extinct, are relatively new.

The mountain region is on the Olympic Heights between the Puget Sound and the Pacific Ocean. It is not a range, but massed upthrust of jagged peaks. For its altitude, 3000 to 8000 feet, it is the wildest region in America. Elk and bear rove unmolested in its valleys, while its crags echo the call of the whistling marmot.

Mt. Olympus, the highest peak in the Olympics, one of six major peaks of Washington, is shown on Page 84.

Mt. Meany, named for Professor Edmund S. Meany, of the University of Washington, is shown on Page 90. It gives us one of the stiffest rock climbs in the Olympics. On page 27 is shown a climber near the top of Mt. Meany. He has not much below him, but has plenty of work ahead.

The mountain range is the Cascade Range slanting across the state from north to southeast, east of the Puget Sound. The timber line rises gradually from 5000 feet at the Canadian border to 7000 feet at the Columbia River. The range grows more rugged from south to north where it lifts to meet the great Selkirks of Canada. Two peaks, typical of the Cascades are shown in this book.

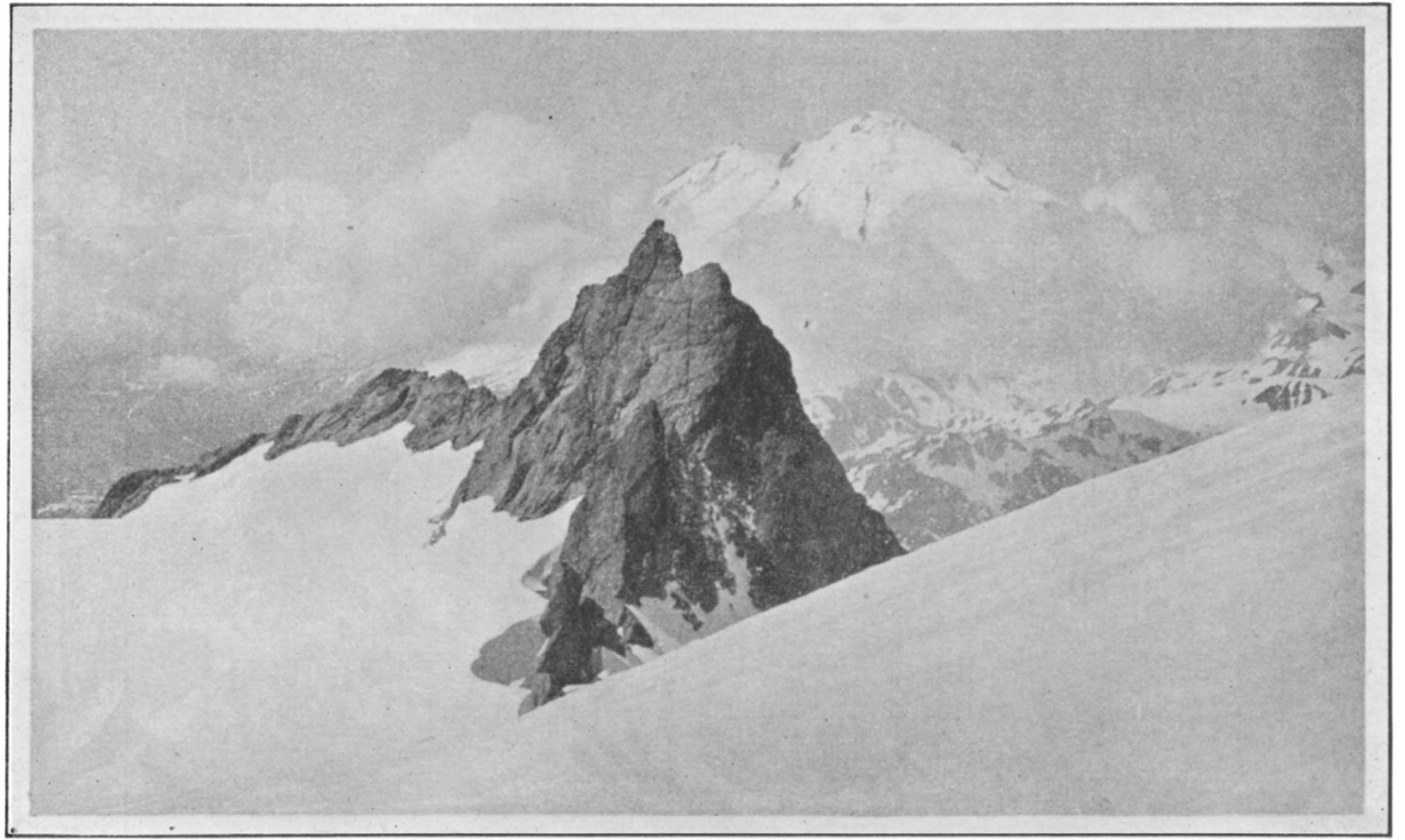
Chair Peak will be found on Page 91. It is climbed through a 600 foot rock chimney. Those who make the ascent graduate by sheer merit from Cheechako to mountaineer.

Mt. Shuksan, on Page 93, is in the Cascades, east of Mt. Baker, near Canada. It is so sheer and so ragged that its glaciers cling in a broken jumble to its ominous rock faces. In the warmer hours of the day there is an almost continuous roar of grinding avalanches. It has been climbed twice, both times in the face of great difficulty.

The six snow peaks of Washington are, in order of their altitude, Mt. Rainier, Mt. Adams, Mt. Baker, Glacier Peak, Mt. St. Helens, and Mt. Olympus. A fitting emblem is given to those who have climbed all six.



Mt. Olympus over Queets Basin and Humes Glacier —A. H. Denman



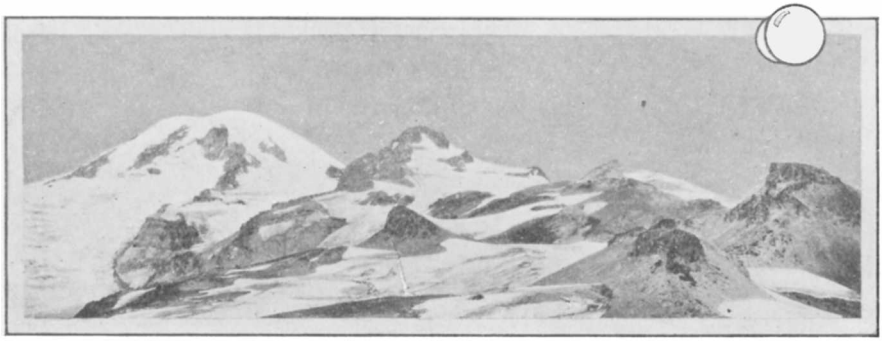
Mt. Baker over a Pinnacle of Mt. Shuksan —T. C. Smith

Views of the six peaks are found on the following pages:

Mt. Rainier, 14,408 feet.....Page 72
Mt. Adams, 12,307 feet..... " 87
Mt. Baker, 10,827 feet..... " 85
Glacier Peak, 10,436 feet..... " 89
Mt. St. Helens, 9,500 feet..... " 88
Mt. Olympus, 8,200 feet..... " 84

These six mountains have been climbed many times upon well known routes. Climbing them, in a way, seems like an impertinence to old Dame Nature in her most austere mood. But no mount of climbing can ever reduce them to the commonplace. They differ from season to season and from day to day—for big mountains are the most dynamic thing in all inanimate nature, and the most alive.

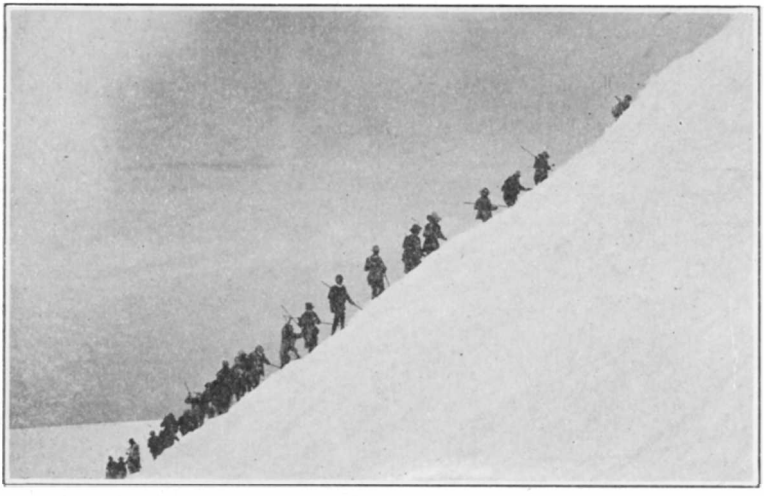
But those who have conquered the big peaks only, have still before them the "Glacier Playfields." With the right commissary, a proper outfit, and a sufficient knowledge of mountain work, one should cut away from all known trails and take to the uncharted open. There are literally thousands of scenes in The Mt. Rainier National Park that have, as yet, never attracted a human eye. They are waiting for us, as virgin as the scent of an opening flower, as eternal as the rock and the snow upon the outlaw trails that we must tread to find them.





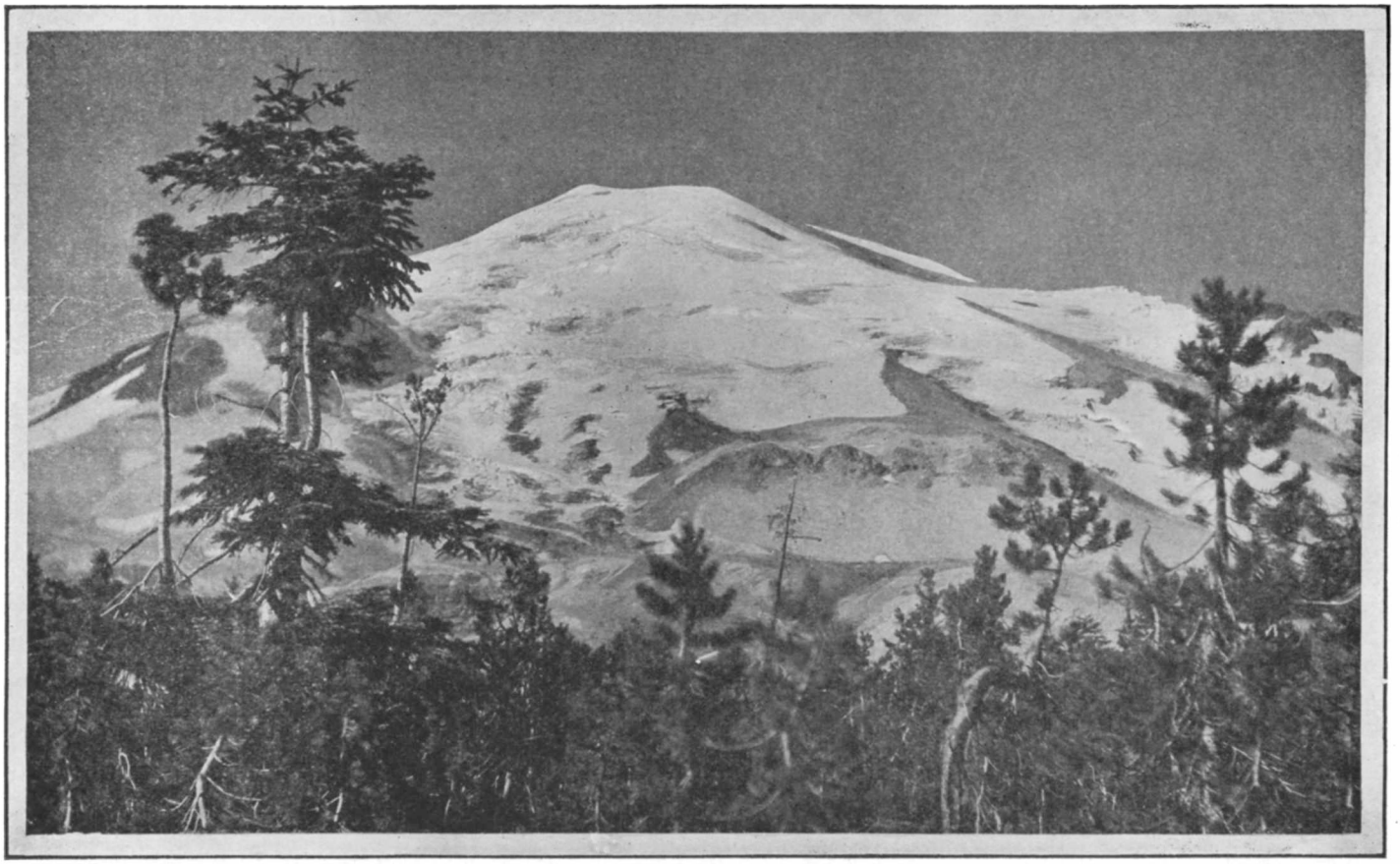
—Chas. Albertson

Indian Tepee Camp below Mt. Adams



—Chas. Albertson

Fifty Feet Below the Summit of Mt. Adams



Mt. St. Helens —Mabel Furry

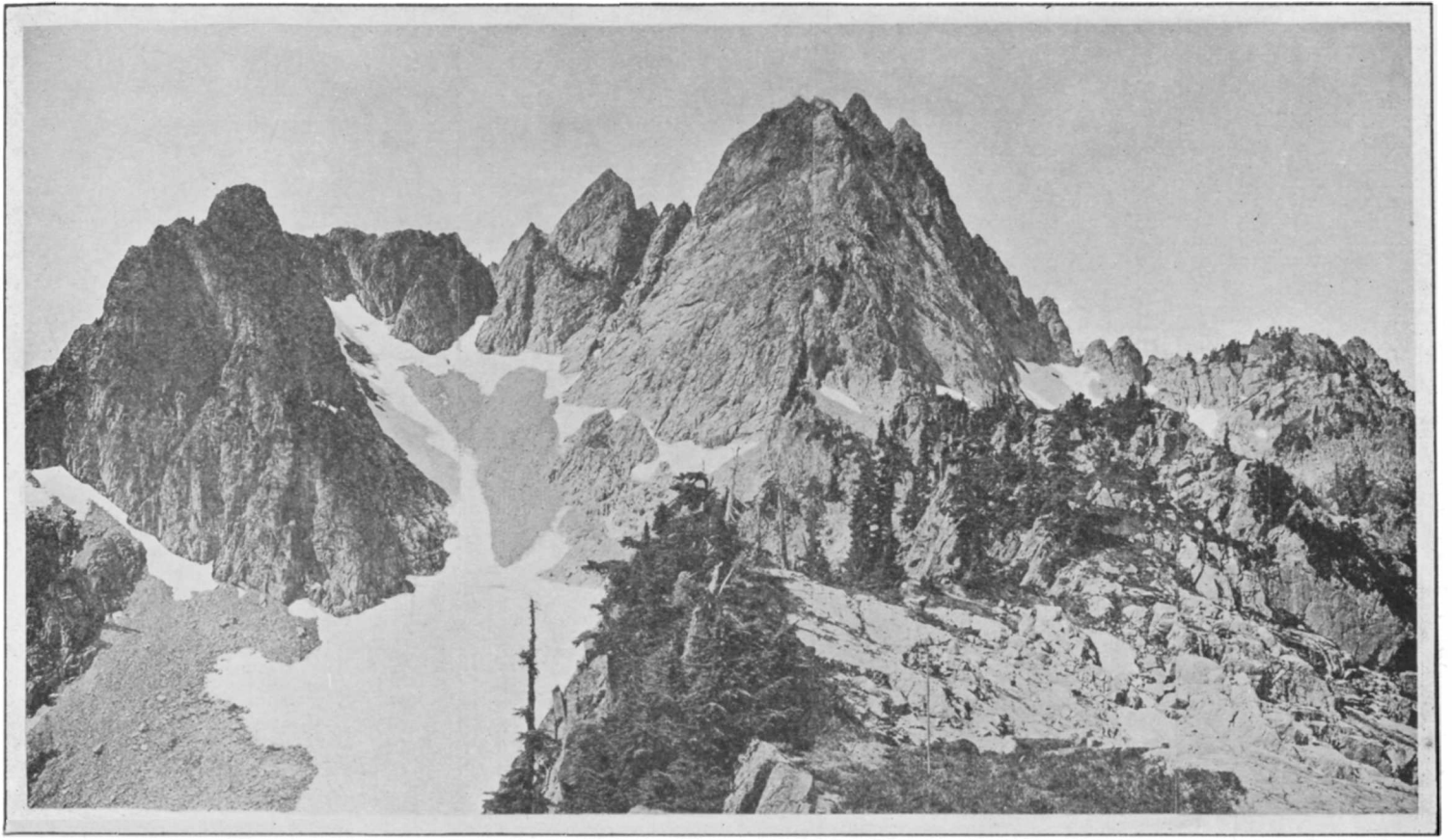


Glacier Peak —Copyrighted, Romans Photographic Co.



—A. H. Denman

Mt. Meany in the Olympic Region



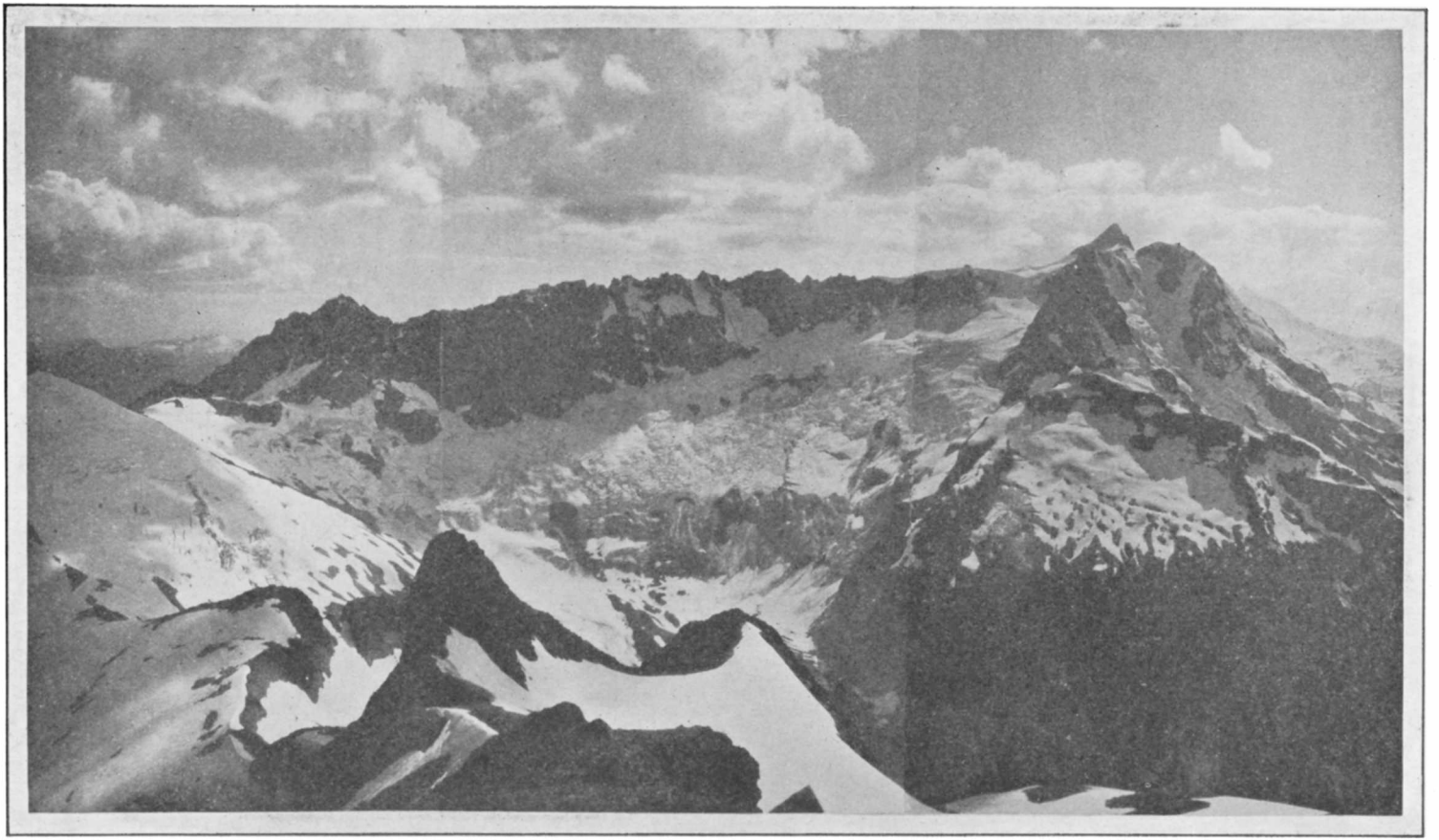
Chair Peak in the Cascade Range —H. W. Playter

The Chant of Shuksan

I'm the crag crowned King of the North Cascades
In my power is the avalanche,
I shake my head and the glaciers fall
While the cheeks of mortals blanch.
The rocks and snow, I hurl below
'Till they fall in a grinding dust
While my crags hold high,—under cloud and sky
They tower with a mighty thrust.

Twice mortals have dared to climb my steep
And stand on my mighty head.
I laughed as they toiled, for their puny hearts
Did thump with fatigue and dread.
I vouchsafed them rest on my kindly crest
Then I filled their souls with fear;
They fled below over ice and snow,
As my hour of wrath drew near.

For myriad years my towering peak
Has scorned the lightning flash
While storm and wind have howled in vain
As they charged with futile dash.
What mortal bold or Storm King old
Can cope with my ominous might!
I stand crag-crowned, c'er the hills around
I'm the King of the day and the night!



Mt. Shuksan —L. F. Curtis



Comrades of the Campfire —L. D. Lindsay

The Moon at Hannegan Pass

When we have turned our ear from forest call,
When on the mountains the distant curtains fall,
When we are weary with thought of coming strife,
When we are facing dull routine called life,
We will not falter 'tho the way seem drear,
We will gain courage in a memory dear.
We will think at twilight of the campfire low
Where the smouldering flashes gently dart and glow,
We will sing of comrades, of valley, peak, and glen.
And the moon at Hannegan will shine again,
Will shine clear again!

When the sands of life have almost ceased to flow,
When in our hearts we know that soon we'll go,
To that strange realm beyond the farthest star,
Where deeds are counted at a Judgment Bar
We will not falter 'tho the way seem drear,
We will take courage from a memory dear.
We will think of campfires of the long ago
Of the song of comrades in the flash and glow,
Then our hearts will awaken to the hope that afar
Another moon like Hannegan will light the Bar,
Will shine above the Bar.

Additional copies of this book may be obtained from J. T. Hazard, Box 234, Seattle, or from Lowman & Hanford, Seattle, Wash.; J. K. Gill & Co., Portland, Ore.; John W. Graham, Spokane, Wash.; Rainier National Park Co., Longmire, Wash.

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