

The
Canadian
Alpine
Journal

PUBLISHED BY
THE ALPINE CLUB OF CANADA

1907

HEADQUARTERS
BANFF, ALBERTA

VOLUME I, No. 1

**CANADIAN ALPINE JOURNAL
PUBLISHED BY THE
ALPINE CLUB OF CANADA
1907**

Printed by the Herald Company, Limited, Calgary, Alberta.

The Publishing Committee is not responsible for statements
made by contributors to the Canadian Alpine Journal.

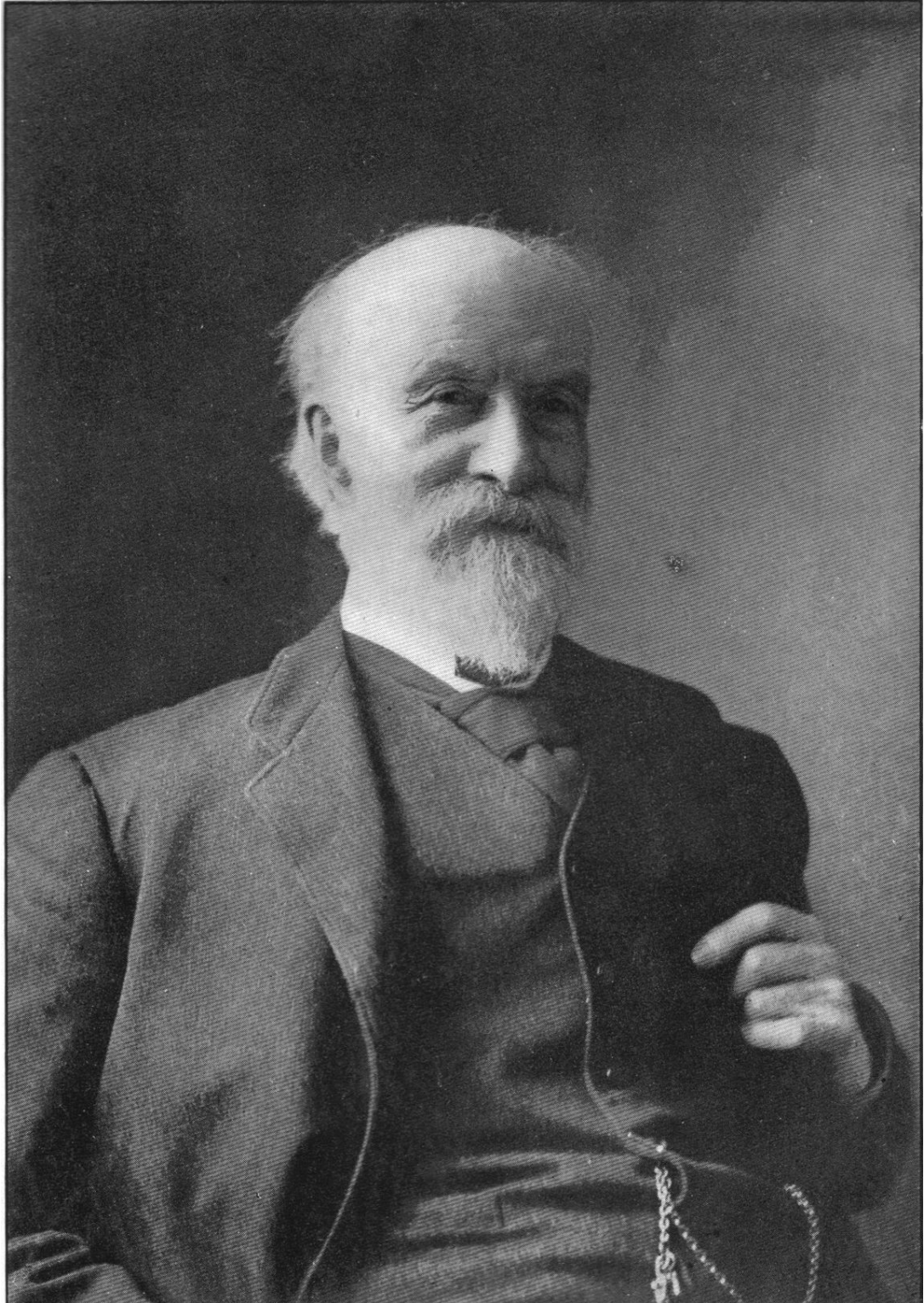
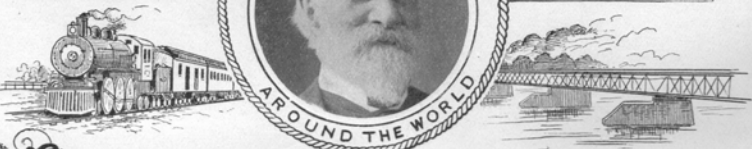
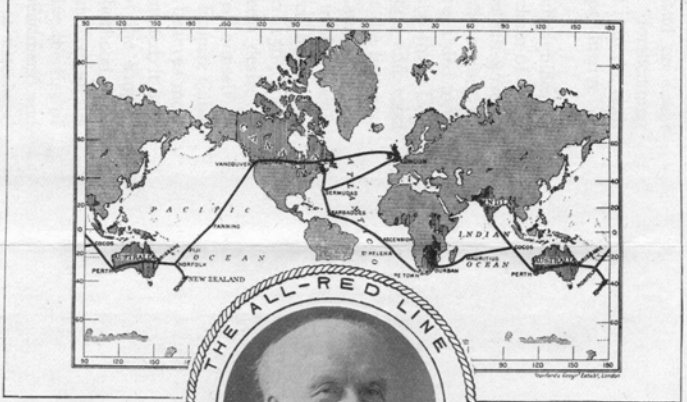


Figure 1
SIR SANDFORD FLEMING

Sir Sandford Fleming C.B. K.C.M.G. D.D.

ON HIS EIGHTIETH BIRTHDAY JANUARY 7TH 1907



- 1827 MIRACULOUS FISHING SCOTLAND
- 1836-41 SCHOOLBOYS FUNDING COMMITTEE THE RAIRIE, BUCKLEY PATS.
- 1841-45 KENNOWAY HAUGH MILLS STUDYING ENGINEERING
- 1845 CANADA BY TOWN AND GUNTON TORONTO
- 1846-48 SURVEYING PETERBORO COBOLG
- 1849 APRIL 25TH MONTREAL ASSISTANT IN DRAWING PARTS OF NEW YORK RAILROAD ENGINEERING
- 1849-53 TORONTO IMPROVEMENT WITH PETERBORO THROUGH SPANISH AND WATERLOO
- 1849 CANADIAN INSTITUTE FOUNDED, SECRETARY 27TH MARCH 1853
- 1851 FLEMING'S PLAN OF TORONTO PUBLISHED
- 1851-55 NORTHERN RAILWAY SURVEYS AND CONSTRUCTION
- 1855 MARRIED AT PETERBORO JAN. 23RD
- 1855 HOME CARLTON ST YORK ST DARTMOUTH AND HUDSON ST TORONTO
- 1855-63 CHIEF ENGINEER NORTHERN RAILWAY
- 1858 DESIGN CRYSTAL PALACE TORONTO 1ST PRIZE
- 1861 10TH HOSPITALS ORGANIZED, CAPTAIN OFFICIAL CAPTAIN HON. 1ST 1862
- 1863 RED RIVER DELEGATE TO PEOPLE TO IMPERIAL GOVERNMENT
- 1863-76 INTERCONTINENTAL BY CHIEF ENGINEER HONORARY 1ST 1864 AND IMPERIAL 1ST 17TH DEC. 1863
- 1863-79 HOME IN WALSLEY, N.S. BRUNSWICK ST
- 1865 A SHORT OCEAN PASSAGE PROPOSED
- 1866 FENIAN RAID INVENTED A PROBE AT WALSLEY, 1ST JUNE
- 1867 PICTOU R.V. COMPLETED
- 1868-78 THE RESTIGOUCHE LAKE FISHING THE LODGE AND SINGLE WALSLEY
- 1869 WINTERHOLME OTTAWA
- 1871 IRON BRIDGES ADDED AN INTERSECTION MAY 12TH
- 1871-80 CHIEF ENGINEER CANADIAN PACIFIC RAILWAY
- 1872 OCEAN OCEAN
- 1875 NEWFOUNDLAND GOVERNMENT SURVEY

- 1876-88 TIME BEGINNING AND ITS NOTATION.
- 1877 COMPANION ST MICHAEL AND ST GEORGE
- 1878-98 THE PACIFIC CABLE
- 1880-07 CANCELER QUEENS UNIVERSITY
- 1881 INTERNATIONAL CONGRESS, VENICE
- 1882 FREEDOM KIRKCALDY BURGH
- 1883 STANDARD TIME ADOPTED IN AMERICA.
- 1884 L.L.D. ST ANDREWS UNIVERSITY, GLENBURG UNIVERSITY
- 1884 TERCENTENARY EDINBURGH UNIVERSITY
- 1884 OLD TO NEW WESTMINSTER
- 1884 CONFERENCE AT WASHINGTON
- 1886 24 HOUR NOTATION ADOPTED ON CANADIAN PACIFIC RAILWAY
- 1886 CONFEDERATION MEDAL
- 1887 COLONIAL CONFERENCE LONDON.
- 1888 PRESIDENT ROYAL SOCIETY OF CANADA.
- 1893 SPECIAL MISSION TO AUSTRALIA
- 1894 SPECIAL MISSION TO HAWAII.
- 1894 COLONIAL CONFERENCE OTTAWA
- 1896 IMPERIAL CABLE COMMITTEE LONDON.
- 1897 KNIGHT COMMANDER ST MICHAEL AND ST GEORGE
- 1898-1907 EMPIRE CABLES
- 1900 SECRETARY COMMITTEE AIDS FOR SOCIAL WORKERS
- 1902 PACIFIC CABLE LONDON
- 1905 COMMISSIONER FOR NEW ZEALAND PACIFIC CABLE COMMISSION LONDON
- 1906 ALPINE CLUB OF CANADA HON. PRESIDENT
- 1906 ADDRESS EIGHTY CLUB LONDON
- 1907 DIRECTOR HUDSON BAY CO. SINCE 1852 AND 1855

It is with joy and thankfulness that we congratulate you on reaching the age of four score years. While your name has been associated during your long life with many important enterprises (of some of which this card will remind you) and an incentive to lofty and untiring effort, to your children it has been expressive as well of truth and purity, justice and helpfulness, and fatherly love and care. Your public services have been acknowledged by the Sovereign and by Parliament, we offer you the love which your noble example and unblemished character have inspired and we pray that in God's Providence you may long be spared to us in health.

- | | | |
|--------------------|--------------------|--------------------|
| Frank A. Fleming | Ernest W. Fleming | Charles A. Fleming |
| E. A. Fleming | Grace Fleming | Sambury Critchley |
| A. Fleming | Hubert Fleming | Leon Fleming |
| Estimable Fleming | Walter Fleming | Archib. Fleming |
| Minnie & Critchley | Ethel Jean Chapman | Ossie Critchley |
| T. O. Critchley | Georgel E. Chopman | Edward Fleming |
| Lily Exshaw | F. N. S. Fleming | Reul G. Fleming |
| Wm Exshaw | Noel Exshaw | Joan Fleming |

Table of Contents - 1907

CANADIAN ALPINE JOURNAL PUBLISHED BY THE ALPINE CLUB OF CANADA 1907	i
Table of Contents - 1907.....	i
Table of Figures - 1907.....	iii
GREETINGS	2
THE ALPINE CLUB OF CANADA.....	4
Miscellaneous Section	7
MEMORIES OF THE MOUNTAINS.....	9
THE CANADIAN ROCKIES, A FIELD FOR AN ALPINE CLUB.....	25
CANADA'S FIRST ALPINE CLUB CAMP	34
HOW WE CLIMBED CASCADE	44
CAMPING IN THE CANADIAN ROCKIES.....	49
Mountaineering Section.....	54
THE ASCENT OF MT. GOODSIR	55
THE ASCENT OF MT. HUNGABEE	63
THE ASCENT OF MT. BALL.....	67
THE ASCENT OF MT. ASSINIBOINE.....	71
THE ASCENT OF MT. HERMIT.....	75
THE FIRST ASCENT OF THE CENTRAL PEAK OF MT. BAGHEERA.....	78
THE ASCENT OF MT. MACOUN	82
THE CLIMB OF CROW'S NEST MOUNTAIN	85
THE ASCENTS OF MTS. MARPOLE AND AMGADAMO	90
MT. STEPHEN.....	91
GLOSSARY OF MOUNTAINEERING TERMS.....	94
THE MOUNTAIN WILDFLOWERS OF WESTERN CANADA.....	97
GLACIER OBSERVATIONS.....	103
Illecillewaet Glacier (Glacier House).....	105
Asulkan Glacier (Glacier House).....	109
Wapta Glacier (Yoho Valley).....	110
Victoria Glacier (Lake Louise).....	111
OBSERVATIONS OF THE YOHO GLACIER	112
FIELD NOTES OF OBSERVATIONS. TAKEN ON THE YOHO GLACIER....	119
Official Section.....	122
ALPINE CLUB NOTES.....	122
STATEMENT OF TREASURER	127
Receipts.....	127
Disbursements.....	127
REPORT OF LIBRARIAN	128
YOHO CAMP.....	129
CIRCULAR ISSUED	129
The Alpine Club of Canada	129
FIRST SUMMER CAMP IN THE YOHO PARK.....	129
Charges.....	129
REPORT OF CHIEF MOUNTAINEER	131

MT. VICE-PRESIDENT (10,049 feet above sea level)	131
MT. PRESIDENT	136
MT. BURGESS	136
MT. WAPTA	138
MT. COLLIE	139
MT. FIELD	139
MTS. AMGADAMO AND MARPOLE	139
TRIPS.....	144
RECEIPTS AND EXPENDITURES for Yoho Camp.....	145
Receipts.....	145
Expenditures.....	145
CONSTITUTION	146
List of Members.....	150
HONORARY MEMBERS	150
ASSOCIATE MEMBERS	150
ACTIVE MEMBERS	151
GRADUATING MEMBERS	158
SUBSCRIBING MEMBERS	161
NOTICE.....	161

Table of Figures - 1907

Figure 1 SIR SANDFORD FLEMING	ii
Figure 2 ROLL CALL FOR THE OFFICAL CLIMB OF MT VICE-PRESIDENT	1
Figure 3 A SNOW CORNICE ON MT. VICE-PRESIDENT	3
Figure 4 SIR ALEXANDER MACKENZIE	10
Figure 5 THE YELLOWHEAD PASS	11
Figure 6 DRIVING THE LAST SPIKE AT CRAIGELLACHIE	24
Figure 7 A PARTY OF GRADUATES AND GUIDES RETURNED FROM THE OFFICIAL CLIMB OF MT. VICE-PRESIDENT	32
Figure 8 MOUNT WAPTA FROM YOHO CAMP	33
Figure 9 MOUNT BURGESS AND EMERALD LAKE	36
Figure 10 Meal Time	37
Figure 11 MOUNT VICE-PRESIDENT THE OFFICIAL CLIMB	38
Figure 12 RESIDENCE PARK - YOHO CAMP	39
Figure 13 OUR BIVOUACS ON THE YOHO TRAIL(1).....	41
Figure 14 OUR BIVOUACS ON THE YOHO TRAIL (2).....	42
Figure 15 THE MEN IN BUCKSKIN.....	43
Figure 16 TWO VETERANS	43
Figure 17 CASCADE	45
Figure 18 AROUND THE CAMP FIRE	51
Figure 19 CROSSING TWIN FALLS CREEK - YOHO VALLEY TRAIL	52
Figure 20 MOUNT BIDDLE AND LAKE McARTHUR.....	53
Figure 21 THE SUMMIT OF MOUNT GOODSIR South Tower	60
Figure 22 THE NORTH GABLE OF THE SOUTH TOWER Mount Goodsir	60
Figure 23 THE NORTH TOWER OF MOUNT GOODSIR.....	61
Figure 24 THE CLIFF AND SUMMIT OF MOUNT GOODSIR (11,676 FT.) AS SEEN IN 1901	62
Figure 25 THE SWISS GUIDES CHRISTIAN AND HANS KAUFMANN, WHO ACCOMPANIED PROFESSOR H.C.PARKER ON THE SUMMIT OF MOUNT HUNGABEE.....	65
Figure 26 THE SUMMIT OF MOUNT HUNGABEE (11,447 FT.) SHOWING FOOPRINTS OF THE TRAVERSE	66
Figure 27 MOUNT BALL FROM STORM MOUNT	70
Figure 28 THE WAPTA ICEFIELD – MOUNT COLLIE IN DISTANCE	70
Figure 29 MOUNT ASSINIBOINE,SHOWING NORTH AND EAST FACES.....	74
Figure 30 E. FEUZ, JR., AT OUR CAIRN ON MOUNT BAGHEERA.....	80
Figure 31 ONE OF THE DENIZENS OF COUGAR VALLEY	81
Figure 32 EDOUARD FEUZ OF INTERLAKEN The Crack Swiss Guide of the Selkirks	84
Figure 33 CLIMBING PRECIPICES ON CROWS NEST MOUNTAIN	89
Figure 34 YELLOW ADDER'S TONGUE (ERYTHRONIUM GIGATEUM)	101
Figure 35 GREAT-FLOWERED GAILLARDIA (GAILLARDIA ARISTATA).....	102
Figure 36 TONGUE AND MORAINES of the ILLECILLEWAET GLACIER	106
Figure 37 TEST PICTURE OF THE ILLECILLEWAET GLACIER FOR THE YEAR 1905 Showing The Left Lateral Moraine, Mount Lookout in Centre.....	107

Figure 38	SHOWING ICE SNOUT OF YOHO GLACIER ON JULY 15, 19 06, FROM VEIW 6 1/2 FEET NEARER ICE THAN THE VAUX MARKS OF 1902	116
Figure 39	VIEW OF THE ICE FOREFOOT OF THE YOHO GLACIER FROM ROCK No. 2.....	118
Figure 40	SKETCH SHOWING THE POSITION OF PLATES.....	121
Figure 41	ON THE SUMMIT OF MOUNT VICE-PRESIDENT.....	135
Figure 42	ON THE SUMMIT OF MOUNT BURGESS.....	135
Figure 43	GUIDES IN CHARGE OF CLIMBING - YOHO CAMP.....	137
Figure 44	A WELL EARNED REST - MOUNT VICE-PRESIDEN	138
Figure 45	AN AWKWARD CORNER Mount Vice-President.....	140
Figure 46	A PIECE OF ROCK WORK Mount Vice-President	140
Figure 47	THE UPPER SNOW FIELD MOUNT VICE-PRESIDENT.....	141
Figure 48	A CLIMBING PARTY MT. BURGESS	142
Figure 49	DESCENDING TH EGLACIER Mt. Vice-President.....	142
Figure 50	LAUGHING FALL CAMP, Yoho Valley Trip	143



Harmon, Byron

Figure 2
ROLL CALL FOR THE OFFICAL CLIMB OF MT VICE-PRESIDENT

Vol. I. PUBLISHED BY THE ALPINE CLUB OF CANADA. No. 1

GREETINGS

Whyte, William

The opening of the Alpine Club's Season of 1907 is awaited with the most pleasurable anticipation by great numbers of whole-hearted and patriotic Canadians. That the coming Season will be an epoch in the history of the Club is my firm conviction. With its large membership and loyal adherents all, awaiting eagerly the time when they may be permitted to try conclusions with the glorious peaks and mountain passes in our great West, the Club has, within itself, the quality of unlimited success.

With my early experiences in the Canadian Rockies, I could, perhaps, speak with authority on the subject of our wonderful mountain ranges, but the time and space at my disposal would not permit of my doing full justice to them. I might say, however, that although countless books and articles have been published in laudation of the Canadian Rockies, a great deal has been left unsaid.

When one considers the personnel of the Club and the field they have chosen for their outing this season, one cannot help but prophesy that the Camp this year will be a great success, and I cannot too strongly urge all of our young Canadians to attend, when the opportunity will be afforded them of climbing their own mountains and thus securing an appreciation of some of the beauties of their own country.

Much has been said and written about the Alps of Switzerland and about other great mountain ranges of the earth, but when the Canadian Rockies become widely known as these other ranges, I am confident that they will not be found second in the regard of all lovers of mountains and mountain-climbing, and I may say that the best method of advertising our mountains is first to have, our young Canadians gain a thorough knowledge and appreciation of their heritage. The resultant pride in their heritage will quickly make itself known across the seas, and many will come, see, and be conquered. There may be those who will come to scoff, but they will remain-to praise.

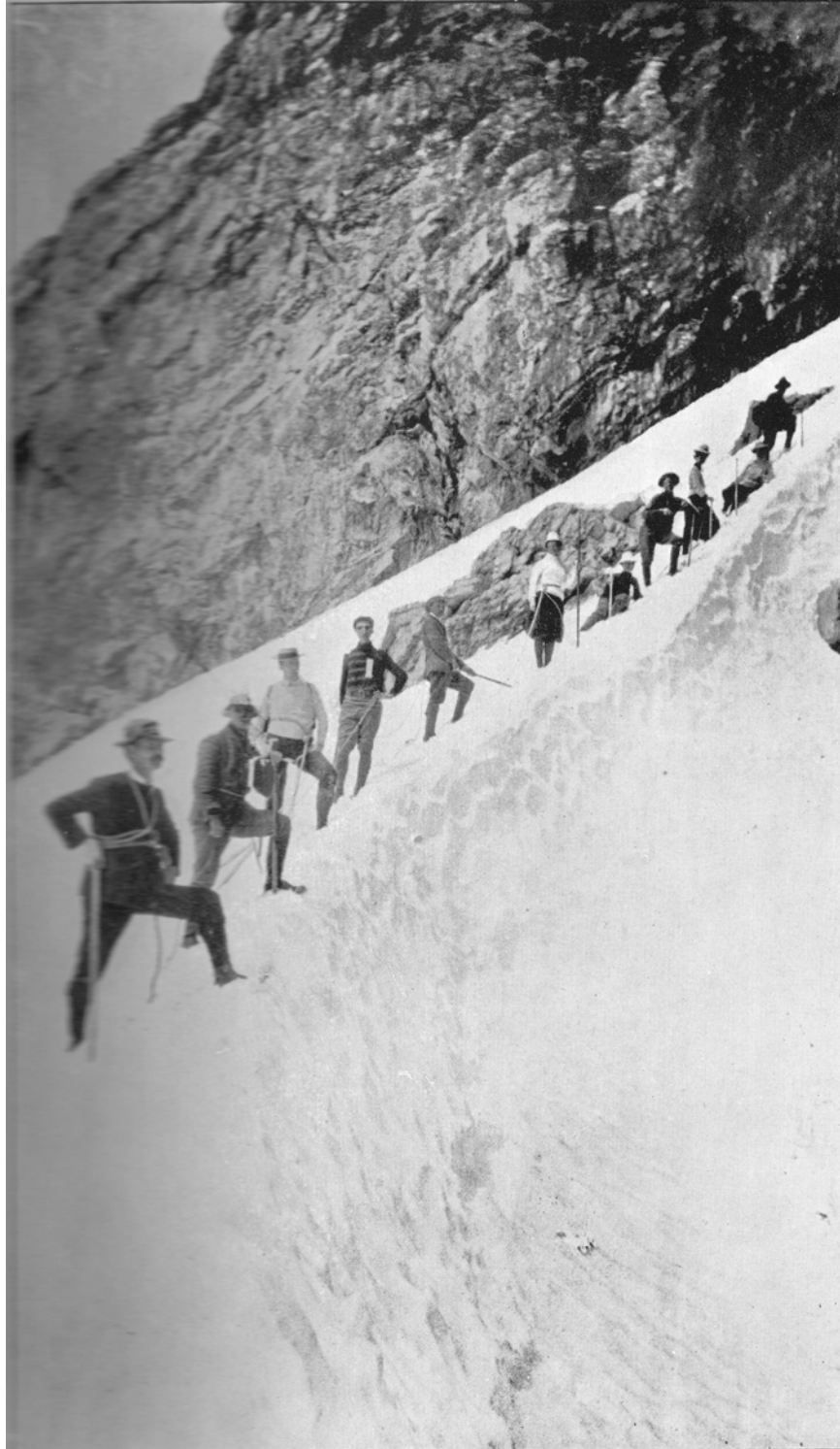


Figure 3
A SNOW CORNICE ON MT. VICE-PRESIDENT

THE ALPINE CLUB OF CANADA

Parker, Elizabeth

Its apologetic is summed in the second paragraph of the circular announcing the organization of the Club.

"The objects of the Club are : (1) the promotion of scientific study and the exploration of Canadian alpine and glacial regions; (2) the cultivation of Art in relation to mountain scenery ; (3) the education of Canadians to an appreciation of their mountain heritage; (4) the encouragement, of the mountain craft and the opening of new regions as a national playground ; (5) the preservation of the natural beauties of the mountain places and of the fauna and flora in their habitat; (6) and the interchange of ideas with other Alpine organizations."

When the Club was organized in March, 1906, it was a red-letter day to some who had long felt the reproach of Canadian apathy to Canadian mountains. For, while English and American mountaineers had, year by year, seized the summers following the advent of the railway, and had explored and climbed-here and there a man with the "magic of the words" telling the story,-an increasing few of our own people had also been climbing for love of it. Thus learning of the immensities of the alpine regions of their own land, they became jealous for their compatriots' sake. Why should not mountaineering become one of our national sports ?

Not until November, 1905, did any positive movement towards organization begin. The response from all parts of the Dominion was a surprise, and ought to have been a rebuke to us who had loudly lamented Canadian indifference to a sport for which Nature had provided so vast a playground on our own immediate territory. We had awakened out of sleep, and would redeem the past by a' vigorous mountaineering organization. But whatever the Alpine Club of Canada achieves of climbing, of discovery, of purely scientific work ; whatever the Club may eventually become, it must never forget how great and splendid service, and affectionate withal, has been rendered to our mountains and Canadian mountaineering by the members of the Appalachian Mountain Club, the American Alpine Club, and the Alpine Club of London. They have done the work, and published the tidings in a series of publications that already make a considerable library of Rocky Mountain literature. When the Canadian Alpine Club was organized, it counted itself honored to confer honorary membership upon some representatives of these Clubs, and happy to receive others as active members. The first life-member on our list is Professor Herschel C. Parker of Columbia University, one of the boldest pioneers of them all. What does the Alpine Club of Canada propose to do? Does it take itself too seriously? There may be learned cosmopolitan alpinists whose many years' experience of hardy holidays among the glaciers and upper snows of the mountain ranges of the world, would incline them to look with patronage, if not incipient scorn, upon an organized effort to popularize the exclusive sport. They might say that to popularize was to vulgarize. Not so. Mountaineering is too toilsome, too hard a sport, and demands qualities of mind and character quite other than vulgar. Many pastimes and sports, many vocations and avocations may become vulgarized. But it must be obvious to any who know ever so little about the glaciers and névés and precipices-the unimaginable

visions from the upper heights; it must be obvious that, from the very nature of the sport, to popularize mountaineering is not to vulgarize nor degrade it. The mountains themselves hold the high effort and achievement in fee. The vulgar reach the mountain summits by a way against which the Alpine Club of Canada will set a face of flint. We know what way that is: the way of the monster, Mammon. By virtue of its constitution, the Alpine Club is a national trust for the defence of our mountain solitudes against the intrusion of steam and electricity and all the vandalisms of this luxurious, utilitarian age; for the keeping free from the grind of commerce, the wooded passes and valleys and alplands of the wilderness. It is the people's right to have primitive access to the remote places of safest retreat from the fever and the fret of the market place and the beaten tracts of life. We are devoutly grateful, as we ought to be, that the Canadian Pacific Railway Company has shown itself wise in a national sense, by refusing to follow in the wake of the cog-railways of the Rigi and Pike's peak. Our associate member, Mr. Whyte, the Second Vice-President of the Company, than whom a shrewder man of commerce does not live in Canada, nor one with a clearer vision of the people's good, would deplore any wanton defacement of the wild natural beauty and grandeur of these now secluded fastnesses. If I had space I could give tangible proof of this.

It is the Club's business to support the picturesque and wholly enjoyable transit to the mountain-places by pack-horse and saddle, and to promote the too much neglected exercise of walking. Your true lover of Nature is also a man of the unfamiliar roads and forest trails. It would be a great thing for young Canadians if all the automobiles vanished into space and walking for pleasure became the fashion. As soon as prudence will warrant, huts will be built in remote strategic situations for the convenience of the members, and persons put in charge for the season; bivouacs will be established on the long trails at distances of a day's journey, and the Club will cooperate, where possible, with the Railway and the Government, in making new trails, giving comfortable access to all the places already known or yet to be discovered. And it is the Club's business to support all measures towards preservation for all time of the fauna and flora in their wild habitat. All members are expected to be alert to this end.

First named among the reasons for the Club's existence is the claim of science : "the promotion of scientific study and the exploration of Canadian alpine and glacial regions. This clause makes its appeal' to the exclusive class already referred to, whose work is of the schools, a thing apart from, though it may and ought to include mountaineering as an ennobling, ethical and aesthetic pastime. This section has a distinct work to do; and will, we hope, include a considerable number of men of science. And though much snow may fall upon the mountains and much water run in torrents from the glaciers ere it achieves its predestined high place in alpine and glacial science, its progress towards that consummation is in safe guidance. The President will look to that. He is keen for progress, and has withal, an appalling capacity for dogged hard work-and for making other people work. The Scientific Section is not likely to languish while Mr. Wheeler is alive.

Concerning the cultivation of Art, prizes are to be given for the best photographs; and as soon as circumstances will permit, a competition in oils and water colors will be opened for active members. A reliable guide-book, too which will include instruction on the details of mountaineering, will be published for the benefit of any who come to climb in the Canadian Alps.

There is nothing quixotic about the Alpine Club of Canada : it is a sane, sober institution, organized by sane, sober men. As indicated, its mission is manifold. The education of Canadians to an appreciation of their alpine heritage, is of itself a *raison d'être*. The Canadian Rocky Mountain system, with its unnumbered and unknown natural sanctuaries for generations yet unborn, is a national asset. In time we ought to become a nation of mountaineers, loving our mountains with the patriot's passion. A great Canadian, who wore himself out for the love he bore to God and Canada, was wont to say that a country which could grow wheat could grow men, by which he meant a race made of the flesh-stuff and the soul-stuff that builds up nations. This is the composite human material out of which mountaineers are made. But the peril is, that men become satiated with wheat, and there, follows that effeteness which is worse than the effeteness of an unbalanced culture. Among other correctives none is more effective than this of the exercise of the mountain-craft. No sport is so likely to cure a fool of his foolishness as the steady pull, with a peril or two of another sort attending, of a season's mountain climbing in one of those "thrilling regions of thick-ribbed ice" in the wild alpine playground of Canada. The ethical value of mountaineering is a subject upon which our statesmen would do well to ponder; and there is a considerable Canadian Alpine literature from which they may gather data.

Any young man of latent intellectual and moral force, who comes to close grips with the waiting, challenging mountains, and puts one summit after another beneath the soles of his feet, has gained immensely in the Spartan virtues. Moreover, he has,

by climbing to these skiey stations and standing face to face with Infinitude, learned some things he may not tell, because they are unspeakable. It is given to very few, to utter such experiences. But there comes to the mountaineer of pure mind and willing spirit the sense of which Wordsworth tells, of the presence interfused in Nature; the presence that dwells among the sheer peaks and in the living air and the blue sky and in the mind of man; the motion and the spirit that rolls through all things. Browning sums it in his swift way : "which fools call Nature and I call God." To this climber is given a key to many an utterance of the Masters, which else remained for him unlocked. It is quite true that every climber has not, nor may not acquire the philosophic mind that is curious regarding the divine interpretation of Nature; but traversing the sources of the great ice-rivers and breathing the virgin air above their mute snows is conducive to that philosophic mind. And whether or no, if that high exercise and that environment fail to arouse a sense of Nature malignant and Nature benignant, his case is hopeless as one who stands among men at the making of the nation.

One word more : the standard for membership may not be lowered. That it will be raised is almost certain; just as, with the progress of education. the standards for matriculation in a new university are raised.

Miscellaneous Section

Sir Sandford Fleming C.B. C.M.G. D.D.

ON HIS EIGHTIETH BIRTHDAY
JANUARY 7TH 1907

1827 MIRACULOUS FLIGHT SCOTLAND
Sum. January 7th

1836-41 SCHOOLBOYS RINGING COMPANY
THE RAUK. BUCKET PATS.

1841-45 KENNOWAY HAUGH MILLS
STUDYING ENGINEERING

1845 CANADA BY TOWN HINGSTON
TORONTO

1846-48 SURVEYING PETERBORO
CIRCULAR

1849 APRIL 25th MONTREAL
ASSIST IN DRAWING PARTS OF
NEW YORK RAILROAD ENGINEERING

1849-53 TORONTO IMPROVEMENT
WITH PETERBORO THROUGH
EXPANSE AND WATERWORK

1849 CANADIAN INSTITUTE
FOUNDED. SECRETARY
27th MARCH 1853

1851 FLEMING'S
PLAN OF TORONTO
PUBLISHED

1851-55 NORTHERN RAILWAY
SURVEYS AND
CONSTRUCTION

1855 MARRIED AT
PETERBORO
JAN. 23rd

1855 HOME CARLTON ST
YORK ST. DARTFORD
AND HUNTER ST. TORONTO

1855-63 CHIEF ENGINEER
NORTHERN RAILWAY

1858 DESIGN
CRYSTAL PALACE TORONTO
BY PRIZE

1861 10th HOSPITALS
ORGANIZED. CAPTAIN
OFFICER Cayton. March 1st 1862

1863 RED RIVER
DELEGATE OF PEOPLE
TO IMPERIAL GOVERNMENT

1863-76 INTERCONTINENTAL BY
CHIEF ENGINEER
FROM N.Y. TO W. COAST
AND IMPERIAL GIVE 17th DEY. 1863

1863-79 HOME IN
WALFIRA. N.S.
BRUNSWICK ST

1865 A SHORT OCEAN
PASSAGE PROPOSED

1866 FENIAN RAID
INVENTED AN AIRRAIL
AT WALFIRA. 1st JUNE

1867 PICTOU R.V.
COMPLETED

1868-78 THE RESTIGOUCHE
SALMON FISHING
THE LODGE AND SINGLE WALFIRA.

1869 WINTERHOLME
OTTAWA

1871 IRON BRIDGES
ADAPTED IN INTERCONTINENTAL
MAY 12th

1871-80 CHIEF ENGINEER
CANADIAN
PACIFIC RAILWAY

1872 OCEAN
OCEAN

1875 NEWFOUNDLAND
GOVERNMENT
SURVEY

1876-88 TIME
RECORDING
AND ITS NOTATION.

1877 COMPANION
ST. MICHAEL AND
ST. GEORGE

1878-98 THE
PACIFIC
CABLE

1880-07 CHANCELLOR
QUEEN'S
UNIVERSITY

1881 INTERNATIONAL
CONGRESS,
VENICE

1882 FREEDOM
KIRKCALDY
BURGH

1883 STANDARD TIME
ADOPTED
IN AMERICA.

1884 L.L.D.
ST. ANDREWS UNIVERSITY,
DUNDEE

1884 TERCENTENARY
EDINBURGH
UNIVERSITY

1884 OLD TO NEW
WESTMINSTER

1884 CONFERENCE AT
WASHINGTON

1886 24 HOUR
NOTATION ADOPTED
ON CANADIAN PACIFIC RAILWAY

1886 CONFEDERATION
MEDAL

1887 COLONIAL
CONFERENCE
LONDON.

1888 PRESIDENT
ROYAL SOCIETY
OF CANADA.

1893 SPECIAL MISSION
TO AUSTRALIA

1894 SPECIAL MISSION
TO HAWAII

1894 COLONIAL
CONFERENCE
OTTAWA

1896 IMPERIAL
CABLE COMMITTEE
LONDON.

1897 ANKNET COMMANDER
ST. MICHAEL
AND ST. GEORGE

1898-1907 EMPIRE
CABLES

1900 SECRETARY
COMMITTEE
AIDS FOR SOCIAL WORKSHIP

1902 PACIFIC CABLE
LONDON

1905 COMMISSIONER FOR NEW
ZEALAND PACIFIC CABLE
COMMISSION LONDON

1906 ALPINE CLUB
OF CANADA
HON. PRESIDENT

1906 ADDRESS EIGHTY CLUB
LONDON

1907 DIRECTOR HUDSON BAY
AND CANADIAN TRADING CO. SINCE 1852 AND 1855

Is with joy and thankfulness that we congratulate you on reaching the age of four score years

While your name has been associated during your long life with many important enterprises (of some of which this card will remind you) and an incentive to lofty and untiring effort, to your children it has been expressive as well of truth and purity, justice and helpfulness, and fatherly love and care

Your public services have been acknowledged by the Sovereign and by Parliament, we offer you the love which your noble example and unblemished character have inspired and we pray that in God's Providence you may long be spared to us in health.

Frank A. Fleming
E. A. Fleming
A. Fleming
Estimable Fleming.
Minnie & Critchley
T. O. Critchley.
Lily Exshaw
Wm Exshaw

Ernest W. Fleming
Grace Fleming
Hugh W. Fleming.
Walter W. Fleming
Ethel Jean Chapman
Georgina E. Chapman
F. N. S. Fleming
Noel Exshaw

Charles A. Fleming
Sarahy. Critchley
Leann Fleming
Archie Fleming
Ossie Critchley
Edward Fleming
Reul G. Fleming
Joan Fleming

MEMORIES OF THE MOUNTAINS

Fleming, Sir Sandford

There is no record of any European having crossed the continent of America north of the Gulf of Mexico at an earlier date than one hundred and fourteen years ago. The idea of reaching the Western sea overland had fired the ambition of the men of New France for a hundred years and more. After long effort they succeeded in reaching a point within sight of the Rocky mountains, but a distant view of the gleaming peaks of that mighty range marked the utmost limit of their achievement. It remained for a Scotchman, a partner of the enterprising North-West Company of Canada, to gain the coveted honor. Alexander Mackenzie was born in Scotland in 1760, came to Canada as a young man, and at once threw himself into the hazardous service of the western fur trade. His restless ambition found little congenial in the commercial side of his occupation, but he eagerly seized upon the opportunities it offered for exploration. Always ready to engage in perilous enterprises, he discovered the great river of the north which springs in the passes of the mountains and bears the name of its discoverer. He was the first from Canada to reach the Arctic ocean. Not content with that notable exploit, he turned to the westward, penetrated the mountains, and reached the Pacific at Bella Coola, a point not far distant from the site of Prince Rupert, the recently selected terminus of the Grand Trunk Pacific railway. On a rock facing the tide water of the western ocean he painted this simple memorial: "Alexander Mackenzie, from Canada, by land, the twenty-second of July, one thousand seven hundred and ninety-three." The record has long since disappeared, but the name of Alexander Mackenzie, the indomitable explorer, lives and will always live in the history of Canada.

Following in the footsteps of Mackenzie, another explorer, Simon Fraser, crossed the mountains and descended the river that now bears his name. The appalling difficulties of the journey would have frightened any less heroic heart. His men threatened to desert him. They urged him to avoid the almost impassable canyon by crossing overland to the Thompson river, but he replied simply that his orders were to explore the Fraser to the sea, and he would do that or die in the attempt. He succeeded, where many another would have failed.

From the days of Mackenzie and Fraser, the Rocky mountains have been penetrated time and again by explorers, fur-traders and travellers, from David Thompson, Alexander Henry, Gabriel Franchere, Ross Cox, Daniel Harmon, and Alexander Ross, to Sir George Simpson, Sir James Douglas, Paul Kane, the Earl of Southesk, Dr. James Hector, Lord Milton and Dr. Cheadle. All the earlier explorers were associated either with the North-West Company or with the greater company into which it was merged, the Hudson's Bay Company, whose vast commercial enterprises are recognized to have played an exceedingly important part in retaining our western territory within the limits of British North America.

The days when the fur-trader ruled an empire larger than all Europe have gone by. His realm is now in a different sphere. The railway has to a large extent taken the place of his brigade of prairie carts, his bark canoe. or dog-sled. Many changes have occurred under my own eyes during the more than third of a century since my feet lightly trod for

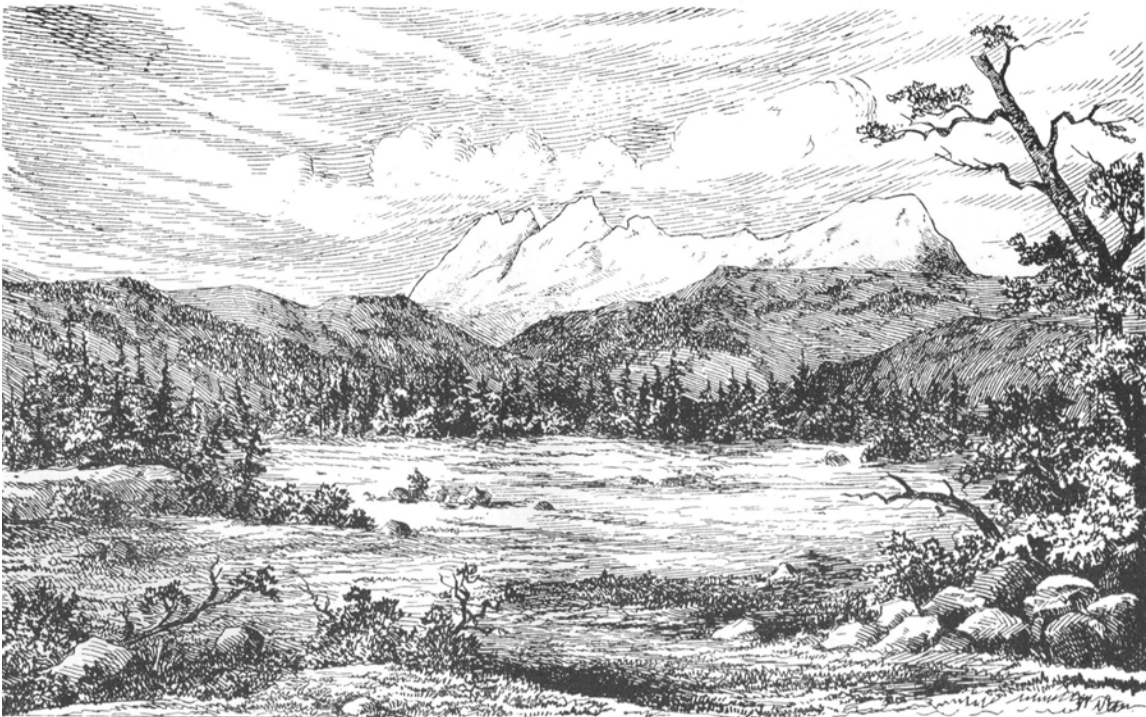


Figure 4
SIR ALEXANDER MACKENZIE

the first time the region of the mighty mountains, when I willingly accepted my first lessons in mountaineering.

It was in 1871 that the mountain region north of the 49th parallel became part of Canada. The importance of connecting British Columbia with the eastern provinces was at once recognized, and the stupendous task of building a railway from ocean to ocean was undertaken. Having been appointed engineer-in-chief, my duties soon led me to the mountains, and I have returned to them again and again, always with the same keen appreciation of their grandeur. My purpose here is to recall the past and revivify some of the impressions formed from personal observation, before the mountain region was made accessible to the people of the world by the completion of the Canadian Pacific railway. With this end in view, I do not think I can do better than select illustrations from the records of my early journeys. I purpose, then, to submit a brief reference to some scenes and incidents still fresh in my memory, under the following headings:

1. The Yellow Head Pass-1872.
2. The Kicking Horse Pass-1883.
3. The Rogers Pass-1883.
4. The First Through Train-1885.



Fleming, Sir Sandford

Figure 5
THE YELLOWHEAD PASS

The Yellow Head Pass-1872

My overland expedition of 1872 left Halifax on July 1st. We reached Prince Arthur's Landing (now Port Arthur) twenty-one days later. Following the route of the fur-traders, and travelling for the most part by canoe, we arrived at Fort Garry (now Winnipeg) on August 1st. Procuring horses, we crossed the plains to Edmonton; thence, after an

exceedingly toilsome journey, we came under the protection of the Rocky mountains. It had taken from August 28th to the night of September 9th to reach the mountains from Edmonton. I cannot now do better than turn to the diary kept, day by day, by my dear friend, the late Principal Grant, who acted as secretary to the expedition.

September 10th. We had come to the bases of the Rocky mountains and the sight of them was sufficient reward for all the toil of the preceding fortnight. Curiously enough, as if to mark the occasion, we came into possession of "treasure trove" soon after we decided to camp for the night. A tent pole refusing to penetrate the ground more than about four inches, some blows from the axe were called for, to cut the supposed root of a sapling, but without effect other than blunting badly the edge of the axe. The hand of the axeman then felt for the obstruction, and with some effort drew out of the soil an ancient sword bayonet, the brazen hilt and steel blade in excellent preservation, but the leather scabbard partly eaten as if by some animal. It seemed strange in this vast and silent wilderness thus to come upon a European relic. How long had it lain where we found it? Are there many or any more bayonets embedded in this region? Its past history remains a mystery. It became part of our travelling impedimenta for the rest of the journey, and for nearly thirty-five years, which have since passed away, this "treasure trove" has found another resting place in my Ottawa home.

The Athabaska fell six inches during the night. Got away from camp at 7.30 a.m., and for two hours had a delightful ride to Prairie river. The trail ran along a terrace of shingle or alluvial flats, and was free from fallen timber and muskegs. Most of the flowers were out of blossom. Few, however, thought of plants to-day or of anything but the mountains that stood in massive grandeur, thirty miles ahead, but on account of the morning light, in which every point came out clear, seemingly just on the other side of each new patch of wood or bit of prairie before us. They rose bold and abrupt five or six thousand feet from the wooded country beneath them—the western verge of the plains, the elevation of which was over three thousand feet additional above the sea,—and formed in long, unbroken line across our path. . . . The summits on one side of the Athabaska were serrated, looking sharp as the teeth of a saw ; on the other, the Roche a Myette, immediately behind the first line, reared a great, solid, unbroken cube, two thousand feet high, a "forehead bare," twenty times higher than Ben An's; and, before and beyond it, away to the south and west, extended ranges with bold summits and sides scooped deep, and carries far down, where formerly the wood buffalo and the elk, and now the moose, bighorn and bear, find shelter. There was nothing fantastic about their forms. Everything was imposing. And these, too, were ours, an inheritance as precious, if not as plentiful in corn and milk, as the vast rich plains they guarded. For mountains elevate the mind, and give an inspiration of courage and dignity to the hardy races who own them and who breathe their atmosphere.

For the strength of the hills we bless Thee,
Our God, our fathers' God.
Thou hast made our spirits mighty
With the touch of the mountain sod.

The scene had its effect on the whole party. As we wound in long, Indian file along the sinuous trail that led across grassy bas-fonds under the shadow of the mountains that were still a day's journey distant, not a word was heard nor a cry to the horses for the first half-hour.

After dinner we resumed the march. . . . The view of the mountains all this afternoon more than made up for the difficulties of the road. Instead of being clearly outlined, cold, and grey, as in the morning, they appeared indistinct through a warm deep blue haze. September 11th. Away this morning at 6.15 a.m., and halted at 1 p.m., after crossing the Riviere de Violon, or Fiddle river. It was a grand morning for mountain scenery. For the first three hours the trail continued at some distance east from the valley of the Athabaska, among wooded hills, now ascending, now descending, but on the whole with an upward slope, across creeks where the ground was invariably boggy, and over fallen timber where infinite patience was required on the part of horse and man. Suddenly it opened out on a lakelet, and right in front, a semicircle of five glorious mountains appeared; a high wooded hill and Roche a Perdrix on our left, Roche a Myette beyond, Roche Ronde in front, and a mountain above Lac Brule on our right. For half a mile down from their summits, no tree, shrub or plant covered the nakedness of the three that the old trappers had thought worthy of names; a clothing of vegetation would have marred their massive grandeur....

The road now descended rapidly to the valley of the Athabaska. As it wound from point to point among the tall dark green spruces, the soft blue of the mountains gleamed through everywhere, and when the woods parted the mighty column of Roche a Perdrix towered a mile above our heads, scuds of cloud kissing its snowy summit, and each plication and angle of the different strata up its giant sides boldly and clearly revealed. We were entering the magnificent jasper portals of the Rocky mountains by a quiet path winding between groves of trees and rich lawns like an „English gentleman's park.

Crossing a brook divided into half a dozen brooklets; by willows, the country opened a little, and the base and inner side of Roche a Perdrix were revealed, but it was still an amphitheatre of mountains that opened out before us, and Roche a Myette seemed as far off as ever. Soon the Riviere de Violon was heard brawling round the base of Roche a Perdrix and rushing on like a true mountain torrent to the Athabaska. We stopped to drink to the Queen out of its clear ice-cold waters, and halted for dinner in a grove on the other side of it, thoroughly excited and awed by the grand forms that begirt our path for the last three hours. We could now sympathize with the daft enthusiast, who returned home after years of absence, and when asked what he had as an equivalent for so much lost time, -answered only, "I have seen the Rocky mountains."

Myette is the characteristic mountain of the jasper valley. There are others as high, but its grand bare forehead is recognized everywhere. It is five thousand eight hundred feet above the valley, or over nine thousand feet above the sea. Doctor Hector, with the agent in charge of jasper House, climbed to a sharp peak far above any vegetation, three thousand five hundred feet above the valley, but the great cubical block which formed the top towered more than two thousand feet higher.

The views this afternoon from every new point were wonderfully striking. Looking back on Roche a Perdrix, it assumed more massive proportions than when we were immediately beneath. A huge shoulder stretched up the valley, one side covered with bare poles, grey as itself, and the other with `sombre firs. From it, the great summit upreared itself so conspicuously, that it filled the background and closed the mouth of the valley.

But the most wonderful object was Roche a Myette, right above us on our left. That imposing sphinx-like head with the swelling Elizabethan ruff of sandstone and

shales all around the neck, save on one side where a corrugated mass of party colored strata twisted like a coil of serpents' from far down nearly half way up the head, haunted us for days. Mighty must have been the forces that upheared and shaped such a monument. Vertical strata were piled on horizontal, and horizontal again on the vertical, as if Nature had determined to build a tower that would reach to the skies. As we passed this old warder of the valley, the sun was setting behind Roche Suette. A warm southwest wind as it came in contact with the snowy summit formed heavy clouds, that threw long black shadows, and threatened rain; but the wind carried them past to empty their buckets on the woods and prairies.

It was time to camp, but where? The Chief, Beaupre, and Brown rode ahead to see if the river was fordable. The rest followed, going down to the bank and crossing to an island formed by a slew of the river. . . . The resources of the island would not admit of our light cotton sheet being stretched as an overhead shelter, so we selected the lee side of a dwarf aspen thicket, and spread our blankets on the gravel ; a good fire being made in front to cook our supper and keep our feet warm through the night. Some of us sat up late, watching the play of the moonlight on the black clouds that drifted about her troubled face as she hung over Roche Jacques; and, then we stretched ourselves out to sleep on our rough but truly enviable couch, rejoicing in the open sky for a canopy, and in the circle of great mountains that formed the walls of our indescribably magnificent bed-chamber. It had been a day, long to be remembered.

September 12th. We slept soundly our first night in the mountains, and after a dip in the Athabaska and breakfast, Valad went off on horseback to try the fords. Though the river had fallen six inches since last night, he found it still too deep for pack horses, and there was nothing but to construct a raft....

All got over safely, though there was some danger on account of the strength of the current. . . A ride of two miles took us to Jasper's, where we arrived exactly fifteen days after leaving Edmonton, two of them days of rest and a third lost by the obstruction of the Athabaska. It is hardly fair to speak of it as lost, however, for there was no point at which the delay of a day was so acceptable. The mountains of the Jasper valley would have repaid us for a week's detention.

Jasper House itself is one of the best possible places for seeing to advantage the mountains up and down the valley. It is situated in a pretty glade that slopes gently to the Athabaska, sufficiently large and open to command a view in every direction. There is a wonderful combination of beauty about these mountains. Great masses of boldly defined bare rock are united to all the beauty that variety of form, color, and vegetation give. A noble river with many tributaries, each defining a distinct range, and a beautiful lake ten miles long, embosomed three thousand three hundred feet above the sea, among mountains twice as high, offer innumerable scenes, seldom to be found within the same compass, for the artist to depict and for every traveller to delight in.

Valad informed us that the winter in this quarter is wonderfully mild, considering the height and latitude; that the Athabaska seldom if ever freezes here, and that wild ducks remain all the year instead of migrating south, as birds further east invariably do. The lake freezes, but there is so little snow that travellers prefer fording the river to trusting to the glare ice.

September 13th. The rain that had been brewing all yesterday came down last night in torrents. One awakened to find the boots at his head full of water; the feet of

another, the head of a third, the shoulders of a fourth, were in pools according to the form of the ground, or the precautions that each had taken before turning in. The clouds were lifting, however, and promised a fine day, and nobody cared for a little wetting; but everybody cared very much, when the Chief announced that the flour bag was getting so light that it might be necessary to allowance the bread rations. That struck home, though there was abundance of pemmican and tea. By 6.45 a.m. we were on the march again, to go deeper into the mountains. The trail led along Lake Jasper, and was so good that we made the west end of the lake, which is ten miles long, in two hours.

After dinner the march was resumed for seven miles up the valley. On the east side a succession of peaks resembling each other with the exception of one-"Roche a Bonhomme"-hemmed us in; while on the west, with lines of stratification parallel to lines on the east side, the solid rampart at the base of the Pyramid rose so steep and high, that the snowy summit behind could not be seen. The valley still averaged from two to five miles wide, though horizontal distances are so dwarfed by the towering altitude of the naked massive rocks on both sides, that it seemed to be scarcely one-fourth of that width. What a singularly easy opening into the mountains, formed by some great convulsion that had cleft them asunder, crushed and piled them up on each side like cakes of ice, much in the same way as may be seen in winter on the St. Lawrence or any of our rivers, on a comparatively microscopic scale, in ice-shoves! The Athabaska, finding so plain a course, had taken it, gradually shaped and finished the valley, strewn the bas-fonds, which cross-torrents from the hills have seamed and broken up. It looks as if Nature had united all her forces to make this the great natural highway into the heart of the Rocky mountains.

Sept. 14th. The trail this morning led along the Athabaska for seven miles, to where the Myette runs into it, opposite the old "Henry House." The highest mountains that we had yet seen, showed away to the south in the direction of the Athabaska pass, and "the Committee's Punch Bowl." This pass is seven thousand feet high, and snow lies on its summit all the year round, but our road led westward up the Myette; and, as the Athabaska here sweeps away to the south, under the name of Whirlpool river, the turn shut out from view for the rest of our journey, both the valley and the mountains of the Whirlpool.

The first five miles up the Caledonian valley, as the valley of the Myette is called in the old maps and in Dr. Hector's journals, we made in about three hours, and a little after midday halted for dinner. . . . The Myette has a wonderful volume of water for its short course. It rushes down a narrow valley fed at every corner by foaming fells from the hillsides, and by several large tributaries. A short way from its mouth it becomes simply a series of rapids or mad currents, hurling along boulders, trees, and debris of all kinds. The valley at first is uninteresting, but, five miles up and for much of the rest of the way, is quite picturesque, two prominent mountains, that rise right above the pass and the lake at the summit, closing it in at its head.

September 15th. Left the "Caledonian Camp" at 8 a.m. for our Sabbath day's journey, and found it not much better than yesterday afternoon's, as far as quality was concerned. As every one needed rest and was tired of the Myette and its swamps, willows, and rocks, the call for a halt was hailed with general joy. . . . McCord had selected his camping ground judiciously. Good wood, water, and pasture in his immediate neighborhood; a beautiful slope covered with tall spruce, among which the

tents were scattered ; an open meadow and low wooded hills to the northwest, round which the low line of the pass, winding in the same direction, could easily be made out; and the horizon, bounded by a bold ridge which threw out its two great peaks to overhang the pass. This was one of the most picturesque spots in the Caledonian valley, combining a soft lowland and woodland beauty. with stern rocky masses capped with eternal snow. We were 3,700 feet above the sea, but the air was soft and warm. Even at night it was only pleasantly cool. We were all delighted with this our first view of the Yellow Head pass.

September 16th. Our aim today was to reach Moose lake, twenty-four miles distant. The first half of the day was more like a pleasure trip than work. A gentle ascent brought us to the summit, which was found to be almost a continuous level, the trail following the now smooth-flowing Myette till the main branch entered the valley from the north, and then a small branch till it too disappeared among the hills. A few minutes afterwards the sound of a rivulet running in the opposite direction over a red pebbly bottom was heard. Thus we left the Myette flowing to the Arctic ocean, and now came upon this, the source of the Fraser, hurrying to the Pacific. At the summit Moberly welcomed us into British Columbia, for we were at length out of "No man's land," and had entered the western province of our Dominion. Round the rivulet running west the party gathered and drank from its waters to the Queen and the Dominion. Where had been little or no frost near the summit, and flowers were in bloom that we had seen a month ago farther east. Before encamping for the night we continued our journey some twenty-six miles farther into British Columbia, well satisfied that no incline could be more gentle than the trail we had followed to the Pacific slope through the Yellow Head pass.

Among my memories of the mountains, I may here allude to a curious episode. We had a toilsome journey of about two weeks from Yellow Head pass to Kamloops. About midway we came into possession of the head of the "headless Indian," well known to every reader of the "North-West Passage by Land." In 1863 Dr. Cheadle and his companion, Lord Milton, in the silent forest saw in a sitting posture at the foot of a tree a headless skeleton clothed in the leathern garments of an Indian. In vain they looked for the head, but all trace of it eluded their diligent search. When we reached the spot, nine years afterwards, the skeleton had been found by some of my staff precisely as described by Milton and Cheadle. After a careful search in all directions, the head was likewise discovered, about a hundred and fifty yards away from the body. While, the mystery of its separation from the trunk will probably always remain a mystery, the history of the skull since its discovery in 1872 is easily told. It found its way to Ottawa along with the old sword bayonet unearthed in the Jasper valley on the other side of the Yellow Head pass, but unlike, the sword bayonet it soon came to an untimely end. The long-missing cranium of the headless Indian was accidentally cremated on January 16th, 1874, when the offices of the, Canadian Pacific Railway Survey, at the Capital, were unfortunately consumed by fire.

The Kicking Horse Pass-1883.

My first visit to the Kicking Horse pass was in 1883, when on a special examination at the instance of Lord Mountstephen, then president of the Canadian Pacific railway. I was in London when I received his telegram from Canada. It hastened my return, and it likewise led subsequently to the publication in book form of the journal of a

summer tour between Old and New Westminster. It may not be without interest to look back at the record of a generation ago, along the identical route by which the railway has since conveyed, in ease and comfort, hundreds of thousands, and will continue to convey millions of passengers, through one of the great mountain regions of the globe.

Taking up the narrative at Calgary, the travelling party had hoped to learn at this place all that was then known of the territory to be traversed. We had reached the point on our journey where the accessories of modern travel ceased to be at our disposal. Before us lay the mountain zone to Kamloops, the distance across which, as the crow flies, is about three hundred miles. We failed to obtain any reliable information of the country through which we had to pass. Indeed, it was by no means a certainty that there was a practicable route through it. But it should not be forgotten that this uncertainty was understood to be the prime reason why Lord Mountstephen was so desirous that I should undertake the examination.

Before leaving the then canvas town of Calgary, I entered a tent where a printing press was in the act of striking off the first, or a very early issue, of the Calgary Herald, a journal which is still published. The day's journey brought us to "Morley," the home of the Stonies or Rocky Mountain Indians, where we obtained shelter. Next day, we proceeded nearly twenty miles, through a fine valley from three to eight miles wide, once the haunt of the buffalo, which a few years earlier, so we were informed at Morley, were numbered by hundreds of thousands.

The prairie diminishes as we advance, the valley contracts to half a mile. Evidently we are about to enter the portals of the mountains.¹ To the north, the bare precipitous rock is stratified and strongly contorted. The geological features are most striking and the exposure is on a grand scale. A great bluff rises almost vertical to a height of possibly fifteen hundred feet, and is about two miles in length. Four miles west, we are completely in the mountains, and every turn of the trail reveals new views of the

¹ In this locality the industrial town of Exshaw is being established, where Portland cement is to be manufactured on a large scale.--April, 1907.

grandest mountain scenery. Peaks towering behind and above each other come in sight, and the sun poured down its warmest rays, deepening the shadows and bringing out fresh beauties. The smoky air occasionally added to the landscape by developing the aerial perspective.

We pass Mount Cascade, so named from the small stream issuing from its side at the height possibly of two thousand feet, and descending direct to the valley. This mountain, the summit of which is said to be 5060 feet above the plain, is the most striking of the masses we have yet seen on the journey. Discoveries of anthracite coal have been made in its flanks, and from this fact the visitor of today will realize that the travellers had reached the neighborhood of what is now called Banff.

We learned from a party of engineers, encamped near by, that the prospect of getting through the mountains in front of us was not encouraging. They had never heard of any one crossing the Selkirk range. As they stated, "no one was known to have passed over from where we stood, by the route before us, to Kamloops ; not even an Indian ; and it was questionable if it were possible to find a route which could be followed." The information was unwelcome, but there was only one course open for us, and that was to proceed and ascertain the precise character of the difficulties, if there were any in the way.

We encamped for the night. Next morning, Sunday, the weather was really beautiful. The sun lit up in warm colors the great mountain peaks encircling the valley. The more distant peaks were invisible, but we had a remarkable view of the towering battlements to the north, in themselves so lofty and seemingly so near to us. We had a short service as usual, and as we anticipated a toilsome journey in front of us, we resolved on a Sabbath day's travel in order to get hardened to our work. We rode about twelve miles up the valley between mountains of the most imposing grandeur. One peak crowned with perpetual snow is of striking beauty. Another has a cubical summit. A third, at no great distance, is pyramidal; and so on, in every conceivable variety. On the other side of the valley, we see Castle mountain, the resemblance of its features to cyclopean masonry doubtless suggesting the name. Night comes and we are soon wrapped in our blankets.

Next morning we' are in the saddle again, when the sun is peering over Castle mountain. The ride is partly through burnt woods along the side of the river, and the smoke conceals to a large extent the outline of the mountains. Our party gets divided, one of the number taking a wrong trail narrowly escaped losing himself, at least for the night. At the end of the day, we ascend a glacier-fed stream and thus reach the summit, 5300 feet above the sea. Tonight we fall asleep on the continental "Divide." Hitherto we have passed over ground draining to the east. Tomorrow we follow a stream flowing into the waters of the Pacific ocean.

The descent from the summit, which has since received the name of Laggan, was by the KickingHorse valley, flanked by great mountains. It occupied four days to the upper part of the Columbia river, and proved to be a most toilsome journey. As is frequently the case in mountaineering, a dash of peril was occasionally encountered. The Kicking-Horse river, which has its source in a small summit lake near Laggan, soon gathers strength from many glacier sources, and flows with tremendous impetuosity, especially for the first six miles. The last ten miles passes through canyons, - where the descent is most rapid, and the water, now of great volume, rushes downwards with

wonderful force before it falls into the placid Columbia. In the lower canyon, the water is forced through a rocky chasm, which from our point of view was of unknown depth. Where we stood the banks were overhanging. We encamped on the evening of the fourth day near the intersection of the Kicking-Horse with the Columbia, a river of considerable size in a magnificent valley several miles in width.

It is again Sunday, the first of September, which we devote to much-needed rest for horses and men. It is a beautiful morning, the sun lighting up the whole valley of the Columbia. The Rocky Mountain range which we have crossed lies behind us. The great Selkirk range lies in front. To the west and northwest, high peaks form a golden line of stern magnificence. Away to the south, huge areas of snow, possibly the accumulation of centuries, rest between the peaks. Amid all this grandeur we seek a few hours' rest to regain the vigor and elasticity which we shall need as we proceed on our journey.

In the cool of the evening we walk up the first gravelly terrace in rear of the camp to enjoy the view, ascending some five hundred feet. We were repaid for our effort. The huge mountains in our front and the valley stretching away in the magnificence of foliage to the southeast, lit up by the warm color of sunset, presented a noble landscape. I asked myself if this vast solitude would remain unchanged, or whether civilization in some form would ever penetrate to this region? It cannot be that this immense valley will always be the haunt of a few wild animals. Will the future now seeming to dawn upon us bring some change? How soon will a busy crowd of workmen take possession, and the steam whistle re-echo where now all is silent? In the ages to come, how many trains will run to and fro from Ocean to Ocean, carrying millions of passengers? All these thoughts crowded upon me in view of that peaceful scene, lighted by the last rays of the sinking sun as it dropped behind the Selkirk mountains. I do not think that I can ever forget the sight as I then gazed upon it.

The Rogers Pass-1883.

It was in the valley of the Columbia that I first met Major Rogers. We all enjoyed the hospitalities of his camp when we emerged from the toils of the Kicking-Horse valley. Here we remained from Saturday night until Monday morning.

Refreshed and prepared for the journey before us, we were up early, and at eight were in a canoe floating down the Columbia. We had 20 or 30 miles to go in this way, and there was ample time to discuss the chances of getting through to Kamloops. I was aware that by descending the Columbia to Boat Encampment and thence continuing by the river to Eagle pass, we could avoid the Selkirks wholly, but my present object was to learn all I could from Major Rogers. He had for two seasons been engaged on the discovery of what might prove a considerably shorter passage for the railway across the Selkirk range, and was confident that he would succeed. He proposed to accompany us part of the distance, and to send his nephew, Mr. Albert Rogers, with us as far as we might desire. We camped at the mouth of Beaver river, some thirty miles from our starting point. Next day we followed the rough and recently made trail by the Beaver river itself, a large stream passing through an open canyon for four or five miles. It is quite unnavigable. There are few places where it can be forded. We proceed through a flat, well-timbered valley half a mile in width. There is a dense growth of cedar, spruce and cottonwood; and such magnificent cedar! Four feet and more in diameter. We have now an undergrowth which is the genuine flora of the Pacific slope.

As we advance, dense smoke surrounds us, for we are reaching a region where

fires have been burning ahead. With difficulty we continue our advance, hour after hour, in the hope of finding a spot where the horses can pasture, but none is to be seen. There is no alternative but to camp in the midst of the burnt timber. Our poor horses could only nibble the leaves of the devil's club in the attempt to satisfy hunger.

In the morning we continue our journey, passing through a tall forest until we reach a rugged mountain defile leading up to the summit which we are to cross. The mountain peaks rise high above us. Five miles from our last night's camp we leave Bear creek, a branch of Beaver river, and follow a small stream to the south. Half a mile further brings us to the summit. We are now 4300 feet above the sea, surrounded by mountains of all forms, pyramidal, conical and serrated. They are marked in bold relief on the lofty sky line.

As we rest at the summit, Major Rogers describes to us the history of the discovery of the pass. Eighteen years before, Mr. Walter Moberly had ascended the Illecillewaet river on an exploration for the government of British Columbia. He was the first white man to traverse its banks. He ascended the Illecillewaet to the forks, and followed the more northerly branch some thirty miles farther, until it terminated in a cul-de-sac among snowy mountains. The other branch he was unable to follow, as the season was then advanced, and his Indian guide declined to accompany him. In his report he spoke hopefully of a route by that branch, and recommended that it should be examined before a road was finally determined on. It was upon this hint that Major Rogers acted. Three years back he traced the Illecillewaet to the forks, and then followed the eastern branch. This branch also proceeded from two streams, the most southerly of which he followed. With his nephew he climbed a mountain on its northern bank, and from the summit he looked down on the meadow on which we were now resting.

A party had been detailed to cut out a trail westward, which we are to follow as far as it is made passable. Beyond that point our party will be the first to pass across the Selkirk range from its eastern base on the upper Columbia to ' the second crossing of that river. The horses are still feeding and we have some time at our command. As we view the landscape we feel as if some memorial should be preserved of our visit here, and we organize a Canadian Alpine Club. The writer, as a grandfather, is appointed interim president, Dr. Grant secretary, and my son, S. H. Fleming, treasurer. A meeting is held, and we turn to one of the springs rippling down to the Illecillewaet and drink success to the organization. Unanimously we carry resolutions of acknowledgment to Major Rogers, the discoverer of the pass, and to his nephew for assisting him.

The summit on which we stand is a dry meadow about a mile in extent, with excellent grass. Our horses being satisfied, 'some are actually rolling in the grass, the hour has come to leave the pleasant meadow in the Rogers pass and pursue our journey. The animals are loaded with their packs. At last we are fairly under way. Our descent is rapid. We soon come in sight of a conical peak rising about fifteen hundred feet, above the surrounding lofty mountains. It stands out majestically among its fellows, and we thought it was a fitting subject for the virgin attempt of the Alpine Club. It now bears the name of Mt. Sir Donald, and Major Rogers declared it would be the summit of his ambition to plant on its highest point the Union Jack on the day that the first through train passed along the gorge we were travelling.

We descend slowly enough, but with increased rapidity of actual descent, crossing a series of avalanche slides with a growth of tall alder bushes, the roots interlaced in all

directions. We soon find ourselves five hundred feet below the summit. Our course had been westerly through a valley flanked on both sides by high mountains. We have difficulty in finding a place to pitch our tent, but finally secure a nook with area enough on the low gravelly bank of a brook of crystal, eighteen inches wide, but so small is the space available that the camp fire must be placed on the opposite side of the rivulet; the murmur of its waters at my feet was the sound by which I fell asleep.

The following morning, we continue through the valley walled in by mountains, the height of which must be counted by thousands of feet. We trudge slowly along the newly cut trail high up among the rocks, to descend again to the flats with its alders and devil's club, until at last we reach a surveyors' camp, twenty-four miles from the summit. Our horses have now to leave us, it being impossible for them to proceed further. The men must carry on their shoulders what we require, through an untrodden forest without path or trail of any kind. We are turning our backs on civilized life and its auxiliaries, again to meet them, we trust, at Kamloops, still many miles away.

We knew nothing of the country before us and had no assistance to look for from the world behind. We were following a tributary of the Columbia to the waters of that river, and this was the one guide for our direction. The walking was dreadful, climbing over and creeping under fallen trees of great size; wading through tall ferns reaching to the shoulder, and millions of devil's club viciously stabbing as we passed. We camp for the night on a high bank overlooking the Illecillewaet. Three days' march carry us scarcely more than ten miles. Rain falls incessantly. We reach the lower canyon of the Illecillewaet, and climb from rock to rock, grasping roots and branches, scrambling up almost perpendicular ascents, swinging ourselves occasionally like experienced acrobats and feeling like the clown in the pantomime. At some places the loads have to be unpacked and the men draw each other up by clinched hands from one ledge to another. We pass cautiously along a steep slope where a false step is certain disaster; creep under a cascade over a point of precipitous rock to comparatively safe ground beyond. So the story goes from day to day. Finally, after many vicissitudes, we reach the junction of the Illecillewaet and the Columbia, and the worst part of our journey to Kamloops is over.

The First Through Train-1885.

These memories which I have recalled and briefly dwelt upon in the foregoing pages seem to culminate in an occurrence which may be regarded as an epoch in Canadian mountaineering. I allude to the passage of the first railway train through the solitudes of the mountains, along the precise route wearily travelled step by step less than three years before, up the Bow river, through the Kicking-Horse valley, and over the Selkirks by Rogers pass.

The railway had been opened for traffic between Montreal and Winnipeg for some time, when, on the evening of October 27th, 1885, the regular Winnipeg train leaving Montreal had attached to it a private car containing three directors of the Canadian Pacific railway, Lord Strathcona, Sir William C. Van Horne, and the late Mr. George H. Harris. A fourth director (the writer) joined at Ottawa. A delay of two days took place at Winnipeg. Finally the party left on November 2nd, for the far west. Beyond Winnipeg the train became "special." It was the first Transcontinental train crossing Canadian soil. It reached the western crossing of the Columbia in fifty-six hours after leaving Winnipeg. The railway track some miles ahead was not yet completed, and we could not at once proceed. There was still a gap between the rails laid from the east and

those from the west. The delay gave time for reflection, and it was not felt to be tedious among the surprising wealth of mountain scenery on every side. For myself I could not help contrasting the luxurious travelling which the railway afforded with the experience of my little party journeying westward through the mountains in 1883. The special train remained for part of a day and night at a place which has received the name of Revelstoke almost the identical spot where a couple of years before we found ourselves in a seriously embarrassing situation from the near prospect of starvation. At other times on the journey I usually took my stand on the rear platform watching as we passed the changing scenery and trying to recognize the ground laboriously passed over on the former journey.

Early on the morning of November 7th the hundreds of busy workmen gradually brought the two tracks nearer and nearer, and at 9 o'clock the last rail was laid in its place to complete the railway connection from Ocean to Ocean. All that remained to finish the work was to drive home the last spike. This duty devolved on one of the four directors present—the senior in years and influence, he who is now known the world over as Lord Strathcona. No one could on such an occasion more worthily represent the Company by taking hold of the spike hammer and giving the finishing blows.

It was indeed no ordinary occasion. The scene was in every respect noteworthy, from the groups which composed it and the circumstances which had brought together so many human beings in this spot in the heart of the mountains, until recently an untracked solitude. The engineers, the workmen, every one present appeared deeply impressed by what was taking place. It was felt by all to be the moment of triumph. The central figure—the only one at the moment in action—was more than the representative of the railway company. His presence recalled memories of the Mackenzies, Frasers, Finlaysons, Thompsons, McLeods, MacGillivrays, Stuarts, McTavishes, and McLoughlins who in a past generation had penetrated the surrounding mountains. Today he is the chief representative of a vast trading organization in the third century of its existence.

The spike driven home, the silence for a moment or two remained unbroken. It seemed as if the act now performed had worked a spell on all present. Each was absorbed in his own thoughts. The silence was, however, of short duration. The pent-up feelings found vent in a spontaneous cheer, the echoes of which will long be remembered in association with Craiggellachie. In a few minutes the train was again in motion. It passed over the newly-laid rail amid further cheering, and sped on its way, arriving the following morning at Port Moody, where a connection was made with the Pacific on November 8th, 1885. At that date the city of Vancouver was an unbroken forest.

The passage of the first railway train from Ocean to Ocean must, I think, be recognized as an important epoch in Canadian mountaineering. Before the existence of the railway the Rockies could only be approached by toilsome journeys occupying months or more than months. Now all is changed, and our mountain region, a rich heritage, is made accessible to the world, and many persons may now enjoy the privilege of participating in the healthful and noble sport of the Alpine Club of Canada.

EDITORIAL NOTE

Such a noteworthy event as the attainment of his eightieth birthday by the founder of the first Alpine Club of Canada, at the summit of Rogers pass in 1883, and the Patron and Honorary President of the Alpine organization formed last year at Winnipeg, cannot fail to be of the very deepest interest to all our members,

and, owing to his many scientific and commercial achievements, to the British Empire.

Thanks to the four sons of Sir Sandford Fleming, we have secured the privilege of presenting to the public with this volume a reduced facsimile of a birthday address presented to their father by his descendants on the day when he reached the mature age of eighty years, January 7th, 1907. The original is a beautifully illuminated sheet, about double the size of the appended copy, which is merely in outline. It furnishes a terse but eloquent autobiography.

We are indebted, in part, to these gentlemen for the explanation which follows. Two of them accompanied their father across the mountains, Major Frank Fleming in 1872, and Sandford Hall Fleming in 1883. The first by the Yellow Head pass, the second by the Bow river and Rogers passes.

They mention that their father at first hesitated to give his assent to the publication of the address, for the reason that however interesting it might be to him and to his children, and however much he and they might appreciate the proposal to incorporate it in the Canadian Alpine journal, it was after all "merely a family matter, a record of service on the one hand and of loving family devotion on the other, in itself of little or no public interest." The request having been pressed by the Editorial Committee, Sir Sandford said "On public grounds I can see one reason only for waiving my objection. In the centre of the address there is a diagram intended to illustrate the worldencircling Imperial Cable project, respecting which the public mind still needs educating, and no doubt publication of the address with the forthcoming Journal and a reference to this feature of it in the text, would have an educative tendency, productive of good."

It is difficult at a glance to grasp the full significance of the proposal to establish an unbroken chain of state-owned cable-telegraphs connecting all the self-governing British communities in both hemispheres, but by those who have studied the matter, it is regarded to be of immense Imperial importance. At the three Colonial Conferences assembled in 1887, 1894 and 1902 the subject was under consideration. At the two first mentioned, Sir Sandford, representing Canada, as one of the delegates, took a prominent part in the discussions, and his matured views were placed before the Conference assembling in London on April 15th, 1907. For twenty years he has had the keenest desire to promote the project and has never spared himself or lost an opportunity of advancing it. The Empire Cable scheme is one of his highest ideals. He believes most thoroughly that, when eventually consummated, it will, by bringing all the autonomous units of the Empire around the globe into one friendly neighborhood, electrically and telegraphically, become the indirect means of quickening trade, making more effective the ties of sympathy, more enduring the bonds of sentiment, and thus add strength and stability to the great sisterhood of British nations - the development of the new century we have entered on.

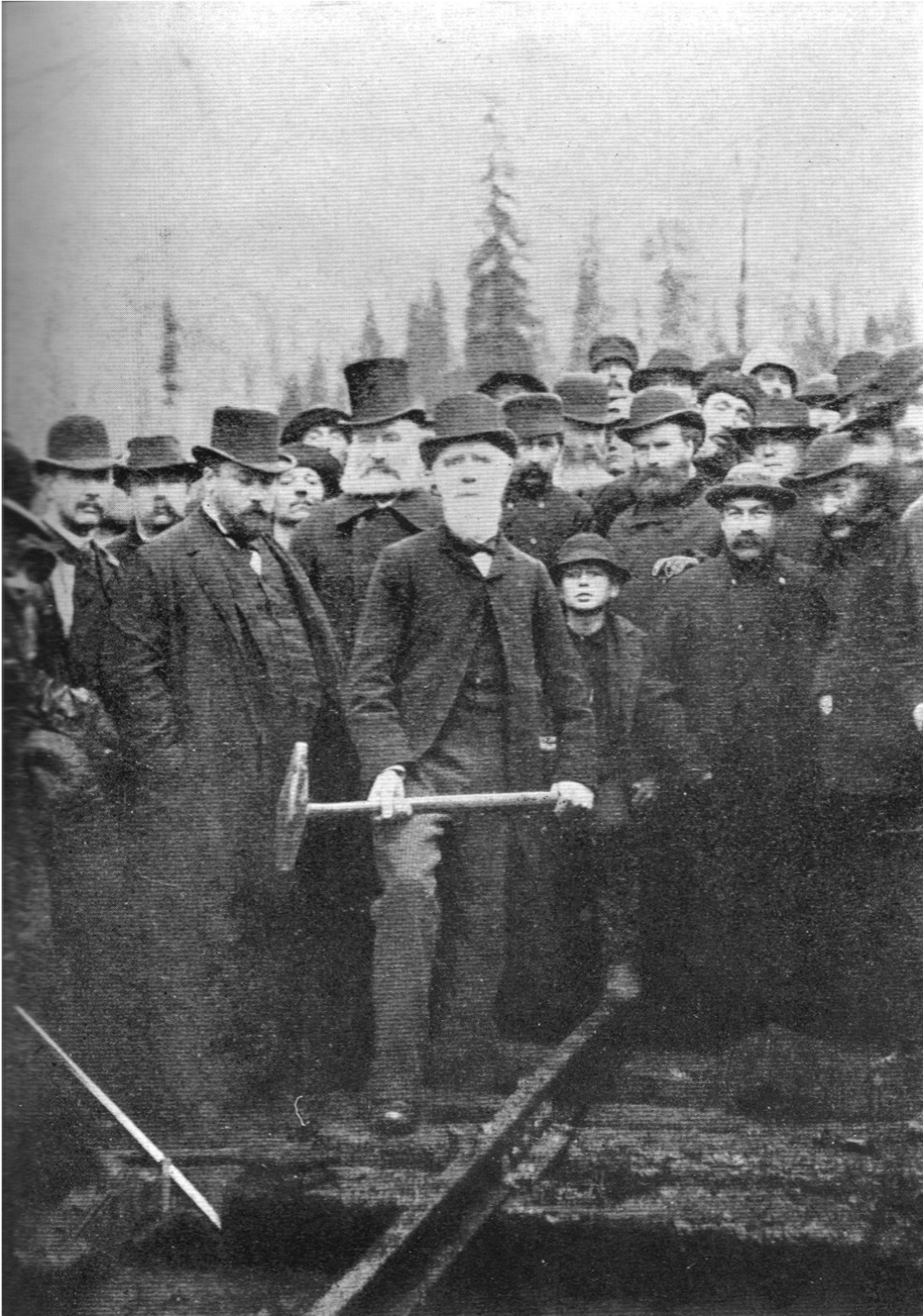


Figure 6
DRIVING THE LAST SPIKE AT CRAIGELLACHIE

THE CANADIAN ROCKIES, A FIELD FOR AN ALPINE CLUB

Wheeler, Arthur O.

The first question is: What constitutes a field for an Alpine Club? The second question, and one of primary importance, is: Do the Rocky mountains of Canada fill the required conditions?

With reference to the former, it is necessary to trace the origin of the word "Alpine." We have the Latin word *alpes*, meaning a high mountain, and said to be of Celtic origin. The Irish *ailp* and its Gaelic equivalent *alp* have the same meaning as the Latin. The word *alp* is identical with the word *alb*, which would seem to be synonymous with the word *albus*, meaning white. We have, therefore, by a process of deduction, a meaning for the word *alps*, of high white mountains, or mountains clad with snow, holding stored in their recesses more or less extensive bodies of the same material.

An Alpine Club is one that has for its field of operations a tract of country fulfilling the above conditions. And herein lies the difference between an Alpine and a Mountain club: while any mountain tract will supply the requirements of the latter, those of the former can only be satisfied by a region where there is a permanent snow line, above which snow and ice may be found throughout the year.

Do the Rocky mountains of Canada fulfil the required conditions? To ascertain this fact, it is only necessary to apply to the Department of the Interior at Ottawa for a topographical map of the Rocky or Selkirk mountain ranges, or to look up the maps and text in "Baedeker's Guide to Canada."

Better still, pay a visit to the region. It will not be necessary to leave the train to obtain a view of vast snow-fields and glaciers. If you can spend a few days by the way, a trip to some of the alpine, glacier-hung valleys will soon convince you; for, in these deep recesses, high above timber line, tumbling ice-falls break in every direction through openings in the rock battlements and sweep in broken cascades of crystal ice to the morainal flats below. Following the path of the mountain goat from crag to crag, until sky-line is reached, the eye wanders over fields of purest white, rolling gently in billowy mounds, broken only by islands and reefs of jagged rock. Many of these snowfields are of considerable extent, varying from ten square miles in the Illecillewaet, twenty in the Wapta, and thirty in the Brazeau, to between one hundred and two hundred square miles in the Great Columbian snow-field.

In a new and as yet inadequately mapped country, such as Canada, it is impossible to do more than approximate the area that may be described as "alpine." Roughly speaking, it can be placed at 250,000 square miles. This area is embodied by the Cordilleran or Rocky Mountain chain, embracing four principal ranges of mountains and numerous sub-ranges and groups. Enumerating from east to west, we have the Rocky Mountain or Main range, the Selkirk range, the so-called Gold range, and finally the Coast range, lying along the Pacific ocean.

Each of these ranges has its own distinct characteristics. In the Main range, the rocks, generally speaking, belong to the Paleozoic period, and consist for the most part of grey and blue limestones, sandstones, quartzites, slates, shales and conglomerates. They have been carved, by the processes of erosion and weathering, into many and varied

styles of architecture, rising in such a profusion of fantastic towers, minarets, spires and obelisks as to delight the eye of the most exacting seeker after the picturesque. In these limestone rocks, of the Silurian and Devonian series, are seen fossil sea-worms and shells, and other relics of the low order of life in a by-gone age. They are found even at the very summits of some of the peaks, at an altitude of 10,000 feet above the level of the sea their former home. At the other places, beds containing fossilized species, closely allied to the trilobite, are to be found. One of these, on the slopes of Mt. Stephen, at an altitude of 7000 feet, has become famous.

In this range, the valleys are wide, owing to the susceptibility of the rock formations to the erosive power of ice and water. Their sides, clad with bronzegreen pine and dark blue spruce, sweep upward to open parklands, dotted with golden larch; then, to sunny alplands, where the ground is soft with a carpet of pink heath and white heather and where other alpine flowers of rare beauty and brilliance grow. Hidden in the recesses of these forests and high aloft, surrounded by snow, ice and rock-falls, are lakes of magic hues, like quaint jewels in rare old settings; turquoise green, in Hector, Bow and Emerald lakes; turquoise blue in Peyto lake; transparent emerald in Yoho lake; bright cerulean blue in McArthur and Turquoise lakes; royal blue in Lake Louise; even brilliant yellow may occasionally be seen. It is a land of leaping waterfalls and rushing torrents, of fierce sunlight and black shadow, of rosy alpen-glow and purple twilight, a land of enchantment, where extremes meet; for it is but a step from grim, gaunt and cruel rocks to sunny alps, brilliant with the bloom of rare, exquisite flowers, and teeming with animal life, quaint and uncommon as the surroundings.

The Selkirk range lies west of the Main range. It is practically a vast island of rock, ice and snow, insulated by giant loops of the Columbia and Kootenay rivers. The material composing it is of a much older and harder formation, consisting chiefly of archaean rocks: grey, pink, green and white quartzites, glittering mica-schists, argillites and rocks of gneissic character. The valleys are narrow, and the mountain masses rise swiftly up, their sides scored and seamed by giant scours. The fantastically carved limestone shapes of the Main range are lacking.

The two most striking features of the range are its impenetrably luxuriant forests, filling up the valleys, and the immense accumulations of snow and ice stored in its mountain recesses, high up among the clouds. The former contribute much to the seeker after the picturesque in Nature, and the latter are a source of joy to the true alpine enthusiast. Both effects are from the same cause, viz.: the large amount of precipitation deposited in the form of snow, accumulating from year's end to year's end until the entire cap of the range appears in perspective as an endless succession of snowfields, with precipitous black faces of rock rising at intervals from their midst, where the sheer is too steep for snow to lie. Nor is this to be wondered at when it is considered that the average snowfall at the summit of the range is thirty-six feet, with an additional rainfall of thirteen inches; making in all an annual precipitation of fifty-seven inches of water. In comparison may be mentioned the annual average snowfall of about fifteen feet, and annual precipitation of about thirty inches, at the summit of the Main range.

The excessive precipitation in the Selkirks is due to the fact that it is the first high range of mountains to intercept the moisture-laden clouds borne eastward from the Pacific ocean by prevailing winds. The decreasing pressure, as this current is deflected upward over the range, causes a rapid cooling of the air and a consequent deposit of the

large bodies of snow found in these mountain fastnesses.

Where, in the Main range, the slopes are clad with pine, spruce and larch, according to altitude, in the Selkirk range, Douglas fir, hemlocks, cedar, giant spruce and balsam take their place. These forests of green, so deep in color as to appear almost black, rise grandly to the snows, and often amidst the trees may be seen crystal cascades of ice, tumbling in a wild confusion of seracs down rocky beds.

The Selkirk range is remarkable for the number, purity and picturesque formation of its glaciers. In size they may not compare with the ice-rivers of other ranges, but what they lack in size, they more than make up in their wonderfully crevassed surfaces and in the grotesque seracs that are formed where they break over cliffs and rock ledges. Specially beautiful are the hanging and confluent glaciers, high up on the mountain sides, dropping tons of crystal ice daily to the trunk streams below. Splendid examples of these may be seen above the Battle glaciers at the head of Battle creek, and in the hanging valley of Cougar creek; also, in the Main range the narrow gorge, known as "The Death Trap," leading between Mts. Victoria and Lefroy to Abbott pass. During the warm summer days the roar of ice falling from these upper glaciers is incessant.

The Gold range, situated westward beyond the Columbia river on its southern course, resembles the Selkirk range, but here the great ice-plough of a bygone age has done more serious work, and the sharp peaks and jagged edges of the Selkirks give place, as a rule, to rounded domes and elevated plateaus, covered most of the year by snow. The rock formation is more purely achaean and consists chiefly of grey gneisses, varying from massive to schistose, and highly micaceous.

The Coast range, reaching into the far northland, is cut and intersected by many inlets from the sea. These inlets are often narrow and enclosed by precipitous sides of rock, over which cascades fall hundreds of feet to tide-water below. The steeps are clad with forests of tropical luxuriance, through which it is only with great difficulty a passage can be forced, and giant trees of fir, cedar and balsam grow nearly to the summits of the mountains. As you proceed northward, the timber-covering becomes more scant until, at length, it is found only at the bottom of the lower valleys.

There can be little doubt that the characteristics outlined above, furnish not only a worthy field for an alpine organization, but a field of immense magnitude, and one that will continually offer something new for many years to come. It is true we have not the great height of other mountain systems of the world. Mt. Blanc, the giant of the European Alps, is 15,780 feet above the sea; Mt. Tacoma, in Washington, is 14,526 feet; Popocatepetl and Orizaba, in Mexico, are 17,500 and 18,300 feet; Mt. McKinley, in Alaska, is said, by a recent explorer, to be 20,300 feet, and the Himalayas reach the enormous altitude of 29,000 feet. Against all this, except in a few isolated cases-Mt. Logan, 19,500; Mt. Hubbard, 16,400; Mt. Vancouver, 15,600; Mt. Augusta, 14,900, and others in the Yukon Territory, with Mt. Robson, 13,700, and Mt. Columbia, 12,700, in British Columbia,-we can only boast a general altitude of 10,000 to 12,000 feet; but, for primeval forests, beauty of glaciers and labyrinthine organization, the Rockies of Canada cannot be surpassed.

Up to the completion of the Canadian Pacific railway in 1885, there was no thought of mountaineering in Canada. Prior to that date, by one year, attention was first called to the claims of the Canadian Rockies as a field for alpine work, and the great attractions they offered to mountaineers, by the Honorary President : and Patron of our

Club, Sir Sandford Fleming, K.C.M.G., who had the year before made a journey on foot through this rock-bound wilderness, along the route it was proposed to lay the rails. In his book, "England and Canada, a Summer Tour between Old and New Westminster," he frequently refers to the massive, snow-clad peaks and crystal ice-falls of the Rocky mountains as affording a suitable field for mountaineers.

In 1888 the Royal Geographical Society, represented by the Rev. William Spotswood Green* and the Rev. Henry Swanzy, made explorations and rough topographical surveys in the vicinity of Glacier, near the summit of the Selkirk range. They then made the first ascent of Mt. Bonney (10,200 feet), at that time an arduous two-day climb from Glacier station. As a result, Mr. Green's able and instructive book, "Among the Selkirk Glaciers," appeared in 1890, giving a delightful and humorous description of the range and of his climbs and surveys.

It was in 1890 that the region was visited by representatives of the English and Swiss Alpine Clubs : H. W. Topham of the former, and Emil Huber and Carl Sulzer of the latter. Both parties realized that, at that early date, the most accessible alpine material lay in the Selkirks; so they made their headquarters at Glacier and, joining forces, accomplished many splendid climbs together.

This year also, Professor Charles E. Fay* of the Appalachian Mountain Club of Boston, visited the Selkirks and was so impressed with what he saw that he not only repeated his visit but brought many others with him, the result being : first, the formation of an Alpine section of the Appalachian Club, and eventually the organization of the American Alpine Club, of which Professor Fay is now President. From 1890 on, "Appalachia," the organ of that Club, set forth the conquests made by its members in the Canadian mountains, and furnishes much instructive and interesting reading.

An account and map of the expeditions of Professor A. P. Coleman** and Professor L. B. Stewart of Toronto University, accompanied by L. Q. Coleman,** to the headwaters of the Athabaska river, by new and unmapped routes, will be found in "The

* Honorary Member of the Alpine Club of Canada

** Active Member of the Alpine Club of Canada

Geographical Journal" of January, 1895. These trips, made in 1892 and 1893, resulted in the discovery of Fortress lake, lying directly upon the Continental watershed, and in the dethroning of Mt. Brown, on the west side of the Athabaska pass. The mountain was climbed by Professor Stewart and L. Q. Coleman and the altitude fixed, by barometric readings, at 9050 feet instead of over 16,000 feet, as it is, even at the present date, shown in standard geographies and on published maps. At this time, eight peaks over 9000 feet above sea level were climbed, and three over 10,000 feet. A later expedition in 1903 resulted in the mapping of the Brazeau snow-field, never before visited by white men.

In 1894, W. D. Wilcox, S. H. S. Allen and two other young college men visited Lake Louise, of which the striking beauty had already been realized to such an extent that the Railway Company had built a small chalet on its borders to accommodate a few visitors. On this occasion, they discovered Paradise valley, where the Club will camp during the present summer. The explorations then made and, the following year, to the headwaters of the Bow river, resulted in Mr. Wilcox's artistic and beautifully illustrated book, "Camping in the Canadian Rockies," which has since been amplified and brought up to date as the author pushed his investigations farther afield, both north and south, accompanied in the latter direction by Henry G. Bryant of the Philadelphia Geographical Society.

The late Jean Habel of Berlin, a noted explorer and enthusiastic mountaineer, explored the Yoho valley in 1897, and it was due to his representations that it first attained notoriety. Again, in 1901, he travelled to the headwaters of the Athabaska river, visited Fortress lake, and gazed upon the mighty Mt. Columbia, which he designated in his records as "Gamma."

Subsequently, we have records of explorations and first climbs, in 1897, 1898, 1900 and 1902, by Dr. J. Norman Collie,* Hugh E. M. Stutfield, G. P. Baker and Hermann Woolley in the mountaineer's paradise on the north side of the Blaeberry river, along whose banks lay the old Howse pass route of early furtrading days. These have been embodied in a splendid book : "Climbs and Explorations in the Canadian Rockies,"

* Honorary Member of the Alpine Club of Canada.

written jointly by Mr. Stutfield and Dr. Collie. Accompanying the book is the only existing detail map of the region.

In 1901, and following years, came Mr. Edward Whymper* with four Swiss guides. The same year, the Rev. James Outram captured Mt. Assiniboine, and, in 1902, he made his big killing in the north country, first explored by Collie, Stutfield, Woolley, and Baker. Mts. Columbia, Bryce, Lyall, Alexandra and many others succumbed to his attacks, a truly wonderful mountaineering record for one summer. Mr. Outram has set forth his achievements in a well-written and charmingly descriptive book, entitled, "In the Heart of the Canadian Rockies.

Each year two or three travellers penetrate into the wilderness of snow-clad peaks and rushing glacier torrents, described in the works named, and some publish accounts of their impressions, but they follow only the beaten paths of the pioneers and see the sights they have seen.

Minor explorations have been made of valleys and passes opening from the main routes along the Bow and Saskatchewan headwaters by members of the Appalachian Mountain Club, among whom may be named : C. S. Thompson, G. M. Weed, Rev. H. P. Nichols, C. L. Noyes, and H. C. Parker;* also, at the sources of the Beaverfoot river by J. H. Scattergood. Accounts of these investigations will be found in the various numbers of *Appalachia* appearing since 1890. There are but two deviations from the beaten line of travel that have given us mapped results : Collie and Stutfield's exploration of the Bush river and vicinity, on the western side of the Main range, and Wilcox and Bryant's expedition to the headwaters of the Kananaskis river.

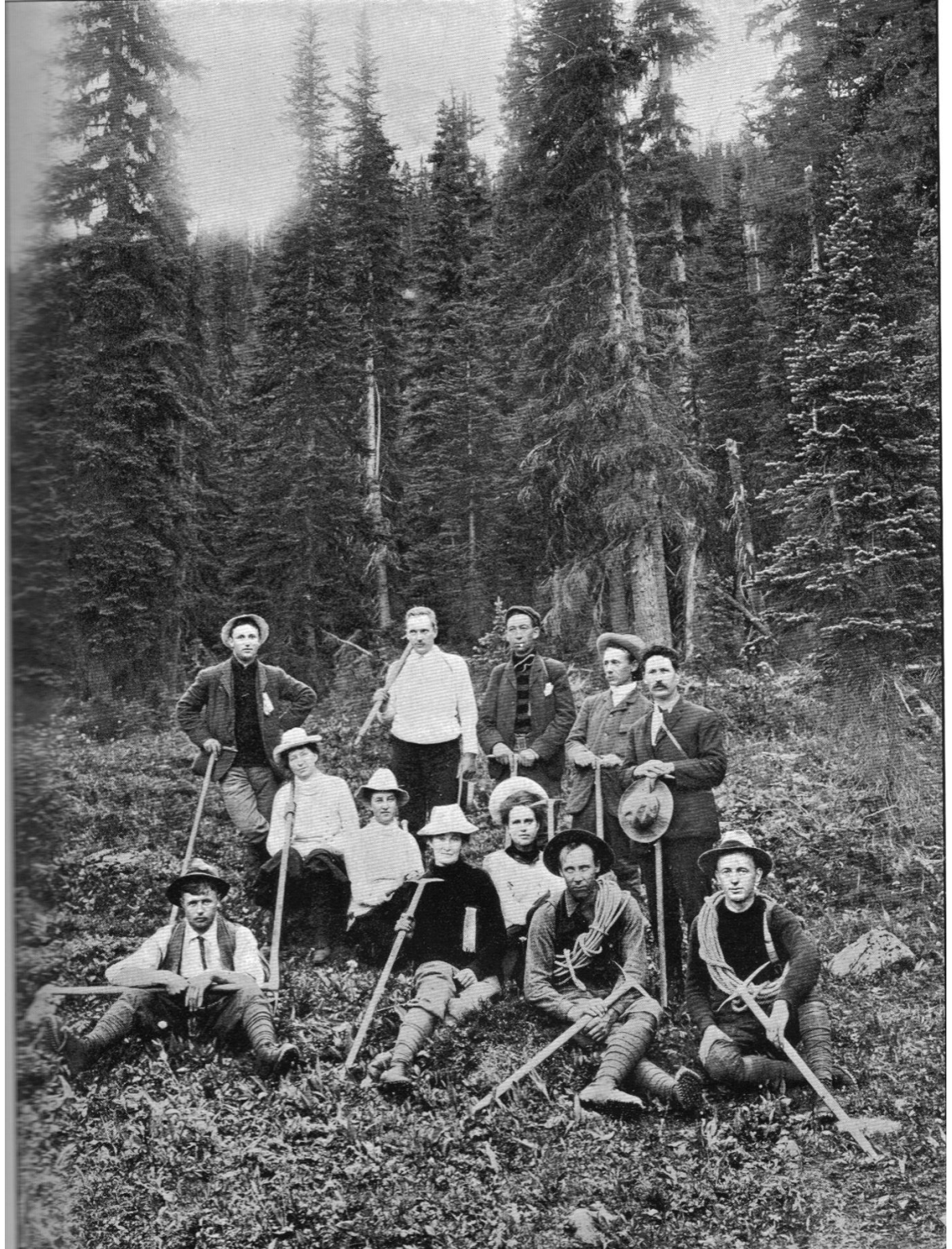
Notwithstanding the large amount of information contained in the books referred to, our absolute knowledge of Alpine Canada is confined to a strip of little more than ten miles on either side of the Canadian Pacific railway, possibly some five or six thousand square miles, and what may be seen by travelling the paths cut by Collie, Stutfield, Baker, Wilcox and a few others. The books published all cover, practically, the same

Life member of the Alpine Club of Canada.

ground, with the exception of the trips up the Bush river and to the Kananaskis headwaters. The region lying between the Columbia river on the west, the Blaeberry on the south, and the Saskatchewan on the east, is unknown territory except to the pioneers who have published its fame. The only map we have of it is the one accompanying Dr. Collie's book, and that is admittedly a "sketch map." This field alone, embracing from 20,000 to 25,000 square miles, the finest alpine country of the entire Continent, is sufficient to supply an alpine club with work, both scientific and athletic, for many years to come. In the Selkirks, north of Mt. Rogers and south of Mt. Purity, lie unknown tracts, with peaks, towers, pyramids and pinnacles, rising from wide snow-fields, that are unknown, unnamed, and unmapped, and have only been seen from Selkirk summits near the railway and from the more distant Rockies.

The Dominion Government is steadily pushing its topographical surveys into the unknown territory, but these surveys are slow and costly and some adequate return must be in sight before, they can be undertaken.

The books, etc., published by the authors named have attracted a great many people to the region, and, to meet the demand, the Canadian Pacific Railway Company have erected a number of hotels at beautyspots along the line, which have been enlarged and modernized, until now the acme of luxury may be found in the heart of these wilds, where the many forces of Nature that contribute so largely to a civilized world are seen at work. A list of the publishers of the accounts of the expeditions named above will be sent on application to the writer. It is strongly recommended that each members of the Club study these writings and thus obtain such elementary knowledge of our alpine tracts as at present exists, with a view to increasing that knowledge by making more extended explorations into the partly known districts, and organizing methods for reaching the parts that are quite unknown.



Harmon, Byron

Figure 7
A PARTY OF GRADUATES AND GUIDES RETURNED FROM THE OFFICIAL CLIMB OF
MT. VICE-PRESIDENT

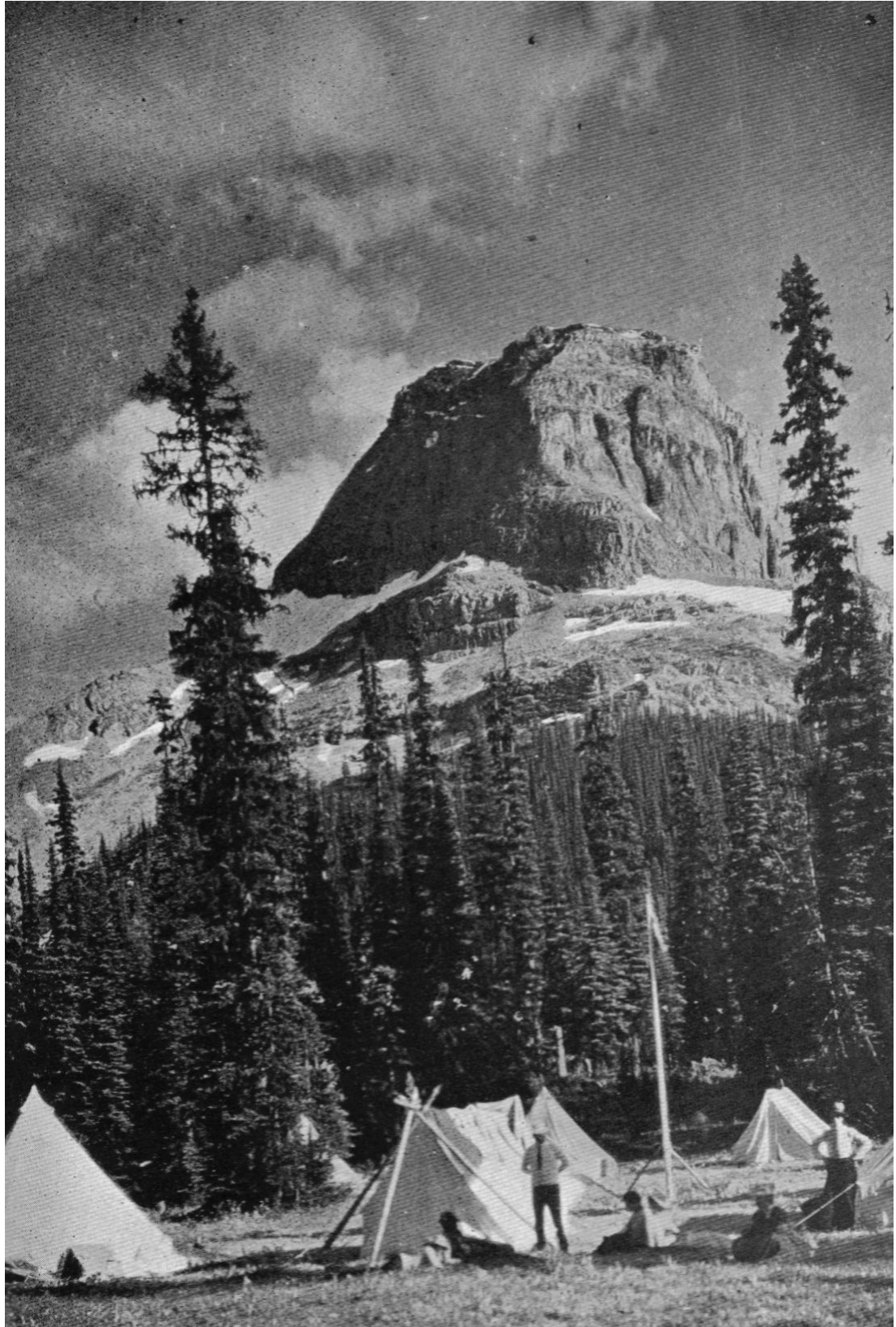


Figure 8
MOUNT WAPTA FROM YOHO CAMP

CANADA'S FIRST ALPINE CLUB CAMP

YEIGH, FRANK

The wayfaring globe-trotter who chanced to reach Field station, on the Canadian Pacific railway, on the evening of July 8th, 1906, must have wondered at the scene of excitement and activity revealed in that spacious hostelry. For undoubtedly excited the groups of fellow-travellers were, and with rare good cause, for were we not the lucky folk privileged to be present at the christening of the Alpine Club of Canada, on the occasion of its first annual camp in the Rocky mountains. Tenderfeet and old-timers alike were equally seized with a delicious fever of expectation. From England, from the United States, and from many corners of Canada the alpinists-in-embryo had thus foregathered at this appointed rendezvous under the shadow of Mt. Stephen, the grim old King of the Rockies. Some were armed with ice-axes and alpen stocks-and umbrellas, and all were laden with impedimenta, the wonderful contents of which were not revealed till the next morning, when the actual start was made by the actual members of an actually formed Alpine Club for Canada!

No wonder we were excited! For once in our blessed lives we all saw the sun rise and flood the awesome canyon of the Kicking Horse as the darkshadows of the night were dispelled. Soon after sun up the thin long line of amateurs, with Excelsior written on face and in eye, crossed the bridge over the Kicking-Horse and took to the road that leads through a silent forest aisle to Emerald lake. That seven-mile path through the trees, with a snow-enshrined peak closing the view at either end, stirred every heart and led to an exaltation of spirit and buoyancy of life that never left us. Most of the campers were first trampers over this bit of road, a few following in the comfortable carriages or perched aloft on the commisariat wagons. Striking to a degree were the costumes worn by the mountain invaders, and while not so stylish as an Easter day parade at Atlantic City, there was more variety; yes, one may safely assert, infinitely more variety.

So we were really off at last! The months of anticipation had ended, the days of realizing delight had come as we trudged off the first few miles. Why an Alpine camp? may be asked. A clause of the Constitution reads, and when a Constitution speaks let all listen : "A summer camp in some suitable part of the mountain regions shall be organized in each year for the purpose of enabling graduating members to qualify for active membership, and the members generally to meet together for study in the alpine districts of Canada."

It was no small task to plan such a camp, to be placed on a summit 6000 feet above the sea, and at a distance of nearly a score of miles from the nearest railway station. It was an even greater task to provide at such an inaccessible spot for a hundred people and to carry thereto on pack ponies the thirty or forty tents, with necessary equipment and provisions. The Club, moreover, was at the time only four months old, having been organized in Winnipeg in the previous March. Never before had a camp on such a large scale been attempted, especially by such a youthful organization. The project was, therefore, a somewhat daring one and was made possible of successful achievement by a strong union of forces on the part of governments, railway companies and individuals. This unity of action was brought into play not as a mere whim or from any

selfish motive, but in a spirit of patriotism worthy of all praise and emulation. The Dominion Government contributed assistance to the value of \$500, the Alberta Government contributed \$250, private subscriptions amounted to \$170, and four of the principal mountain guides and outfitters gave their services and the services of their men, horses and outfits free of charge, to make the first camp a success. These men are : R. E. Campbell of Laggan and Field, Martin and Otto (now Otto Bros.) of Field, Leancoil and Golden, E. C. Barnes of Banff, and S. H. Baker of Glacier. All honor is due them, for they cannot well afford to curtail the profits of their short seasons. The Canadian Pacific Railway Company was no whit behind. It loaned the Club two Swiss guides for the week of the Camp, loaned tents, canopies and other outfit, and placed its cooks in the Company's Yoho camps at the disposal of the Club. Tents also were loaned by the Royal North-West Mounted Police at Calgary and Banff, and bunting by the Superintendent of the Rocky Mountains Parks. Taken all round, the greatest interest and enthusiasm was shown, not only in the formation of the Club itself, but in the organization of its first camp.

Let us return to the straggling procession of Alpinists as they round up at the Emerald Lake Chalet. The 'world yet awaits the heaven-gifted artist of brush or pen who will transmit to canvas or paper the transcendent beauty of this mountain lake nestling so peacefully at the base of mighty Mt. Burgess

"a lofty precipice in front, A silent tarn below."

It was at Emerald lake that the real part of the first day's work began, involving the traverse of the broad glacial delta on its northern shore and the ascent of the steep cliff wall that appeared to bar all further progress, and yet that had to be negotiated if the Camp was to be reached before nightfall. It was a case of fun and work combined, and fun and work make a fine team when well mated. The ceremony of initiation into mountain work was here observed. First came the passage of an endless number of streams flowing from the Emerald glacier, thousands of feet higher. Pioneering the first section of the party was the Rev. Dr. Herdman, of Calgary, who proved himself to be a born mountaineer. Those who followed him as a vanguard had many lively experiences in negotiating the mad little rivers, for the log bridges had been swept away as the waters rapidly rose under the influence of the summer sun upon the glacier. Soon all traces of earlier trails were lost as search was made for suitable fords, until at last the pack ponies were requisitioned as bridges to carry the pilgrims over safely.

After the delta, the deluge, as a storm broke over us, giving the invaders of the hills their first, but not their last, nature bath. After the delta and the deluge, the initial bit of stiff up-grade climbing, of nearly a thousand feet, tested strength and breath. The rest cure soon became popular, and while the second wind was whistled for, entrancing glimpses were had of the lake valley, of the enclosing ranks of peaks, and, nearer at hand, of the massive buttresses of Mt. VicePresident, carrying on their granite slopes tumultuous floods of milk-white waters to the lake reservoir of emerald hue. A dense forest of spruce succeeded the stiff climb; wherein, for the time, the wonder-world of summits was obscured, but wherein another wonderworld of Nature unfolded itself in flower and fern and forest growth, of heath and heather, Painter's Brush and Yellow Columbine; of Anemones, Gailardias, and many another botanical specimen, making



Kinney, G. R.

Figure 9
MOUNT BURGESS AND EMERALD LAKE



Figure 10
Meal Time

brilliant the floor of this Forest of Arden At last, the summit of Yoho pass! At last, that striking picture of a tented town nestling amid the realm of trees ! . You remember it, do you not, fellowcamper? the white canvas homes for a brief day amid avenues of greenery, under a sky of blue, with grey old Wapta and Michael's mount standing sentinel, three thousand feet higher still. You remember, do you not?-as if we could ever forget-the incomparable scene beside the incomparable Yoho lake, holding in its translucent waters all the emerald and amethyst shades in Nature's color box. You recall the welcoming camp fire of huge dimensions, and the yet more welcome aroma of THINGS TO EAT as cooked by that cheerful Celestial, Jim Bong, otherwise known as Ping-Pong. May his fat shade never grow less.



Freeborn, F.W.

Figure 11

MOUNT VICE-PRESIDENT THE OFFICIAL CLIMB

The Camp, made gay with banners and flags and bunting of many colors, was divided into three sections : Residence Park, Official Square, and the horse paddock. The arrangements were perfect to a detail, thanks to the forethought and hard work on the part of the President, Mr. Arthur O. Wheeler, and his efficient staff. The dining tent accommodated one hundred, where meals were served from early morn till late night. A bulletin board kept the members acquainted with the daily programmes. In the centre of the Square the big fire burned unceasingly, brightening up for the evening hours, when it was surrounded by as many fire worshippers as there were occupants of the tents, and where were heard more Demosthenian eloquence and oratory, more jokes and quips and antique chestnuts, and more accomplished entertainers than ever gathered on a mountain summit before. It is a pity the journal cannot hold within its pages all that was said and sung and done around that cheerful camp fire.

But we were in Camp Yoho for the express purpose of going farther and climbing higher than even the 6000 feet altitude of the Camp site. Thus there were daily exploring and climbing trips in all directions. The mountain selected for the official climb is known as "The Vice-President," so called by Mr. Edward Whympier, of Matterhorn fame, in

honor of the VicePresidency of the Canadian Pacific railway. Its altitude is 10,050 feet. The peak was selected on account of the varied phases of mountaineering presented.

The first official climb was made on Tuesday, July 10th, the party leaving the camp at 5.30 a.m. and arriving at the summit of the Vice-President at 11.30 a.m. The return was made in three and a half hours. Two ladies then graduated, viz.: Miss K. McLennan, of Toronto, and Miss E. B. Hobbs, of Revelstoke. Official ascents were made on the four following days, but the one named made the record time, i.e., ascent and return in nine and a half hours. In all forty-four members graduated, of whom fifteen were ladies. Not one graduating member who attempted the climb failed. Do not think, because there were no failures, the climb was an easy one. Not so ! It is a peak presenting many difficulties and some danger. The average time of ascent was seven hours and of descent three and a half hours, making altogether an average climb of ten and a half hours—a pretty fair test and initiation for those who were, for the most part, absolute novices.

It goes to show that right here in Canada we have the very best of mountaineering material, and it only needs a little fostering care to develop to the fullest extent this latent talent.



Figure 12
RESIDENCE PARK - YOHO CAMP

There were a number of other mountains climbed, eight in all, not counting Michael's mount, which was taken en route for the Vice-President. The two highest were Mt. Collie and the President, both over 10,000 feet. The climb of Mt. Collie was made by J. D. Patterson of Woodstock, under the auspices of the Club. He was accompanied by the Swiss guide, Gottfried Feuz. Curiously enough, the mountain was ascended on the same day by a lady member of the Club, but one who was not visiting at the Camp, by a different route, and the two climbers met on the summit of the peak. The lady was Miss Henrietta L. Tuzo, of Warlingham, England. Of the others, Mt. Wapta seemed to be the

favorite, ascents having been made of it by four separate parties, by two different routes. The other mountains ascended were : Mt. Burgesstough one of the lowest, one of the most difficult climbs,-Mt. Field, Mt. Marpole, and the peak lying between it and Mt. McMullen, both as far as known, virgin ascents. The unnamed peak was christened "Amgadamo."

Bordering the palisades of the Vice-President for a mile or more is the Emerald glacier, and to the Emerald glacier the Club campers made their way in detachments. It proved to be not the least delightful of the series of excursions, as for the majority it was their first experience in ice climbing. Again, variety marked every mile of the way. Again, entrancing vistas of distant peaks were unfolded at many a turn in the switchback trail, and with each higher altitude gained, the panorama grew in vastness and magnificence. Nature never duplicates her canvases, especially amid the mountains.

Crossing in part the same route as that covered by the Upper Yoho trail to Inspiration point, with its superb and dramatic picture of the Takakkaw falls on the far side of the valley, a turn to the left was made by the guide in order to reach the foot of the ice-sheet whose gleaming edges hung suspended far above us.

A stiff bit of ascent over a boulder-strewn incline gave each one unexpected surprise practise in baseball catching, as descending rocks were caught and hurled aside in order to prevent a rock-slide.

Rounding a ticklish corner of rock-wall and crossing a noisy little stream, rejoicing in its escape from the ice caverns, the snow line was reached and a snowballing match was indulged in to celebrate the summer day event. And while it was under way, what would have been a shower in the valley became a sleet storm up aloft, at the elevation of 8000 feet above the sea, the wind driving the frozen sand-like flakes with stinging effect against our faces. But the sunshine soon returned with its grateful warmth, and with it a revival of spirits and a quickened pace up the ice-steps cut for us by our leader. At last, the main icefield was reached, with its miniature mountains of ice known as seracs, its deep chasms and moulins, and its undersurface streams making their way to lower levels. On either side gaping crevasses reached to unknown depths, the wonderful coloring of their green-blue walls fascinating the eye while they terrified the mind at the thought of what a misstep might result in. An occasional halt enabled the alpen-stock travellers once more to revel in a sweeping vision of our giant hills, where

"Hills peep o'er hills, and Alps on Alps arise."

Then there was the two-day trip up the floor of the Yoho valley and back by its upper trail. That experience was worth the whole journey to the scene, no matter from what far-away distance. One stood entranced amid the scenic grandeur : the wonderful coloring, the titanic peaks guarding the vale, and the distant views of other alpine giants. The beholder rejoiced in such a revelation of Nature, he rejoiced in the freedom of the open, in the chance to breathe the pure air of the hills, in the rare opportunity of living among the Kings of the Cordilleran range. We had sped across God's plains to reach the Rockies, now we were living amid God's hills. In the silent watches of the night, when we camped near the Laughing falls, God's stars seemed to hover nearer than ever before, and on every hand were God's rivers and cascades and forests and glacial streams and icefields capping the summits.



Figure 13

OUR BIVOUACS ON THE YOHO TRAIL(1)

"I to the hills will lift mine eyes." Often rang out the words of the grand old psalm, as hillward and mountainward the eyes of all were instinctively lifted in solemn worship and in admiring praise. A fit temple in which to worship the Creator of this and all worlds was the Yoho. It was a rare day in summer when we thus meandered over the alluring trail, past the Takakkaw falls -Canada's highest Niagara-past the Laughing falls and the Twin falls, and many another no less beautiful, to the great Yoho glacier at the upper end of the valley, with its giant caverns, showing strangely blue and green, and from the throats of which the streams had their birth that later made the Yoho river. I would like the space to tell of that night in the Yoho around our camp fire, of the tales told by Jack Otto-honest Jack Otto,-of the bear stories that fell from his lips till the sight or sound of a fat old porcupine made us believe we were face to face with a grizzly! I could fill a book, if it were not too bulky, with all that might be recorded of the Yoho tramp, up and down this Yosemite of Canada, and of the charming upper trail journey homeward, when from lofty platforms of rock we saw the entire fifteen-mile valley lying below us as in a picture, bordered by the Cathedral spires on the south and the Yoho glacier on the north.

In the- matter of Science, work was begun by placing a row of metal plates across the ice tongue of the Yoho glacier to mark its rate of flow down its bed. Rocks also were marked to show the advance or retreat of the ice. This year, further observations will be made, and the several movements ascertained. A full account of the operations carried out will be found in these pages.

Financially, the camp proved a success, and after all expenses were paid there was a sufficient sum in hand to partially reimburse the outfitters for their gratuitous outlay, and, even then, a small balance was paid in to the funds of the Club. This was made possible by the great enthusiasm that prevailed throughout, leading to a generosity on the part of the visitors that was most pleasing and encouraging, and fully repaid those who had spent much time and labor in making preparation for the event.

The great success of the camp was almost wholly due to the skill, energy and

business-like determination of the outfitters-the men in buckskin-who started out to make the camp a success and did so. No whit behind were the ladies present, all of whom gave the heartiest assistance in all matters wherein feminine skill is most required-in helping the cook, decorating and waiting on the tables, and generally making themselves charming around the camp fire. Much wit and artistic talent were displayed to help make the evenings pass pleasantly, and particularly, in this respect, are the thanks of the assembly due to Miss Edna Sutherland of Winnipeg.

The camp broke up on the 16th of July, but two more days were required to pack up and remove the outfit. Some few stayed until the last moment. When returning home, many reached Mt. Stephen House by way of the Burgess pass trail.

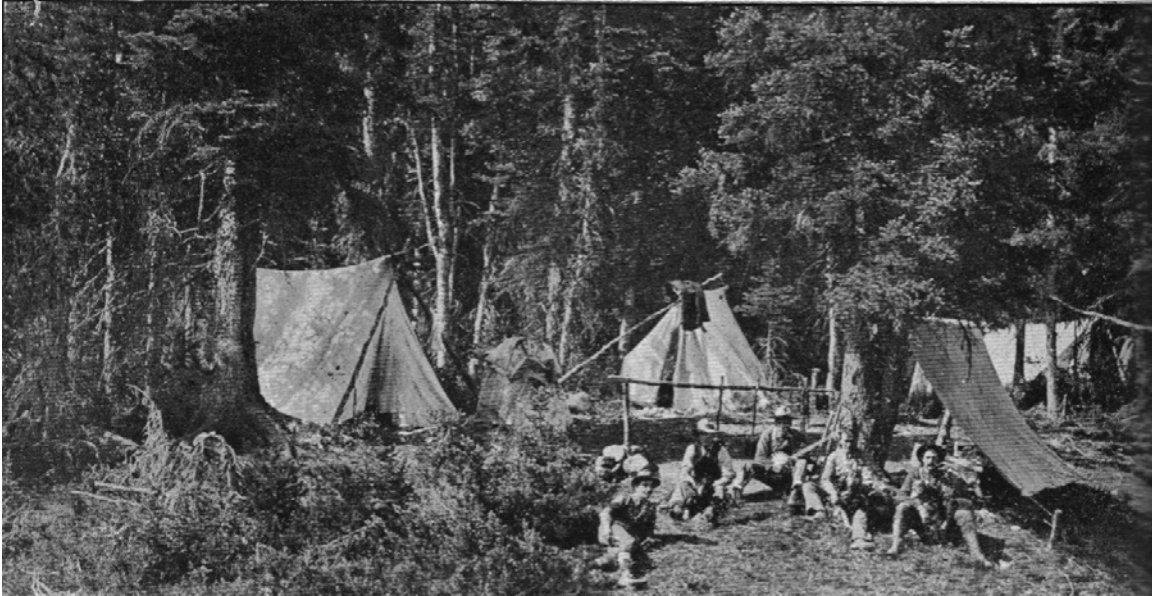


Figure 14

OUR BIVOUACS ON THE YOHO TRAIL (2)

In all, the camp was designed for one hundred persons, but one hundred and twelve attended, and the arrangements were such that one hundred and fifty might as easily have been accommodated.

Throughout the entire gathering, there was a harmony, a hail-fellow-well-met feeling, an unexpressed but very apparent resolve by each individual to have the time of their lives, that resulted in a most pleasurable and instructive outing, proving clearly that, not only has Canada the material to create a first-class Alpine Club, but has the proper people ready and willing to take advantage of the opportunity offered by such a Club to learn something of and thoroughly enjoy the grand mountain regions that are the heritage of each and every Canadian. One of the richest assets of the Dominion are her mountains, and the Alpine Club of Canada hopes to have a share in enabling the Canadian people to realize upon the asset.

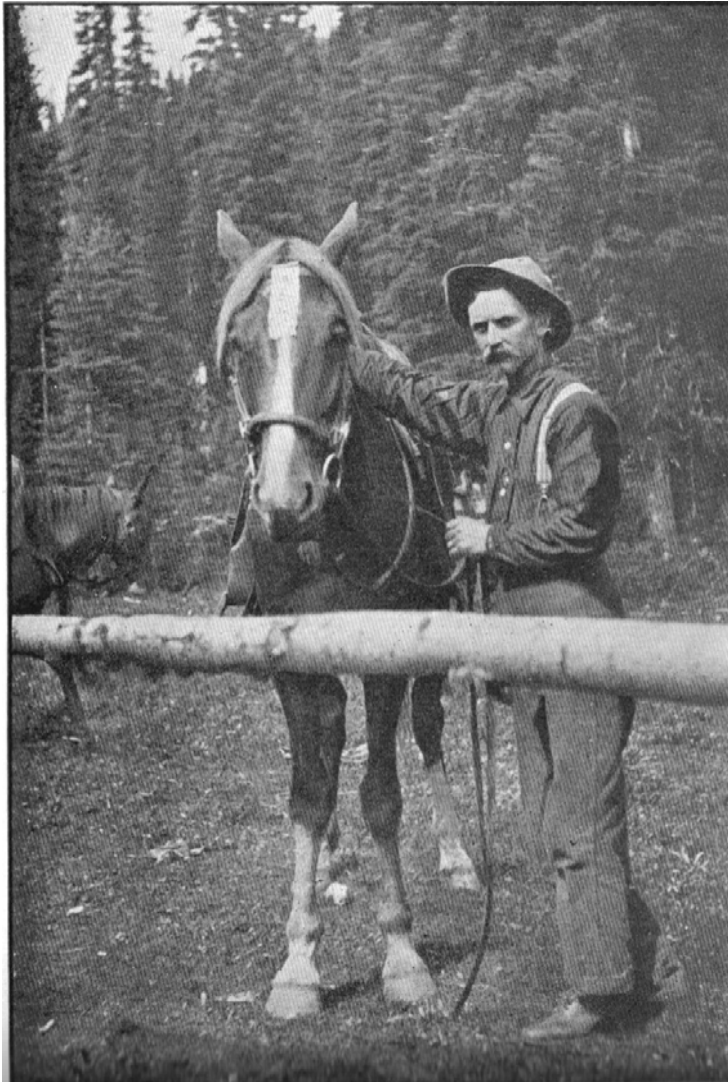


Figure 15
THE MEN IN BUCKSKIN



Figure 16
TWO VETERANS

HOW WE CLIMBED CASCADE

Connor, Ralph

Just beyond the Gap lies Banff, the capital of the Canadian National Park, a park unexcelled in all the world for grandeur and diversified beauty of mountain scenery. The main street of Banff runs south to Sulphur mountain, modest, kindly and pine-clad, and north to Cascade, sheer, rocky and bare, its great base thrust into the pine forest, its head into the clouds. Day after day the Cascade gazed in steadfast calm upon the changing scenes of the valley below. The old grey face rudely scarred from its age-long conflict with the elements, looked down in silent challenge upon the pigmy ephemeral dwellers of the village at its feet. There was something overpoweringly majestic in the utter immobility of that ten thousand feet of ancient age-old rock ; something almost irritating in its calm challenge to all else than its mighty self.

It was this calm challenge, too calm for contempt, that moved the Professor to utter himself somewhat impatiently one day, flinging the gauntlet, so to speak, into that stony, immovable face : "We'll stand on your head some day, old' man." And so we did, and after the following manner.

We were the Professor, by virtue of his being pedagogue to the town, slight, wiry, with delicate taste for humor; the Lady from Montreal, who, slight as she was and dainty, had conquered Mt. Blanc not long before; the Lady from Winnipeg, literary in taste, artistic in temperament, invincible of spirit; the Man from California, strong, solid and steady; the Lady from Banff, wholesome, kindly, cheery, worthy to be the mother of the three most beautiful babes in all the Park and far beyond it; and the Missionary.

It was a Thursday afternoon in early September of '91, golden and glowing in smoky purple hues, a day for the open prairie or for the shadowy woods, according to your choice. Into a democrat we packed our stuff, provisions for a week, so it seemed, a tent with all necessary camp appurtenances, and started up the valley of the little Forty Mile creek that brawled its stony way from the back of the Cascade. We were minded to go by the creek till we should get on to the back of old Cascade, from which we could climb up upon his head. Across the intervening stretch of prairie, then through the open timber in the full golden glory of the September sun, and then into the thicker pines, where we lost the sunlight, we made our way, dodging trees, crashing through thickets, climbing over boulder masses, till at last the Professor, our intrepid driver, declared that it would be safer to take our team no further. And knowing him, we concluded that advance must be absolutely impossible. We decided to make this our camp.

To me a camp anywhere and in any weather is good, so that it be on dry ground and within sight, and better within sound, of water. But this camp of ours possessed all the charms that delight the souls of all true campers. In the midst of trees, tall pines between whose points the stars looked down, within touch of the mountains and within sound of the brawling Forty Mile creek and the moaning pines. By the time the camp was pitched, the pine beds made and supper cooked, darkness had fallen. With appetites sharpened to the danger point, we fell upon the supper and then reclined upon couches of pine, the envy of the immortal gods. With no one to order us to bed, we yarned and sang,

indifferent to the passing of the night or to the tasks of the morrow, while the stars slowly swung over our heads.

At last the camp was still. Down the canyon came the long-drawn howl of a wolf, once and again, and we were asleep; the long day and the soothing night proving too much for the shuddering delight of that long, weird, gruesome sound. We turned over in our sleep and woke. It was morning. The Professor had already "fixed" the horses and was lighting the breakfast fire. Unhappily, we possessed the remnants of conscience which refused to lie down, and though the sun had given as yet no hint of arriving, we persuaded ourselves that it was day. A solid breakfast, prayers, and we stood ready for the climb, greener at our work than the very greenest of the young pines that stood about us, but with fine jaunty courage of the young recruit marching to his first campaign.

An expert mountain-climber, glancing down the line, would have absolutely refused to move from the tent door. With the exception of the Lady from Montreal, who had done Mt. Blanc, not one of us had ever climbed anything more imposing than Little Tunnel, one thousand feet high. While as to equipment, we hadn't any, not even an alpenstock between the lot of us. As for the ladies, they appeared to carry their full quota of flimsy skirts and petticoats, while on their feet they wore their second-best kid boots. It was truly a case of fools rushing in where angels pause. Without trail, without guide, but knowing that the top was up there somewhere, we set out, water-bottles and brandy-flasks-in case of accident-and lunch baskets slung at the belts of the male members of the party, the sole shred of mountaineering outfit being the trunk of a sapling in the hand of each ambitious climber.



Figure 17
CASCADE

As we struck out from camp, the sun was tipping the highest pines far up on the mountain side to the west. Cascade mountain has a sheer face, but a long,

sloping back. It was our purpose to get upon that back with all speed. So, for a mile or more, we followed the main direction of the valley, gradually bearing to our right and thus emerging from the thicker forest into the open. When we considered that we had gone far enough up the valley, we turned sharply to our right and began to climb, finding the slope quite easy and the going fairly good. We had all day before us, and we had no intention of making our excursion anything but an enjoyment. Therefore, any ambition to force the pace on the part of any member was sternly frowned down.

By 10 o'clock we had got clear of the trees and had begun to see more clearly our direction. But more, we began to realize somewhat more clearly the magnitude of our enterprise. The back of this old Cascade proved to be longer than that bestowed upon most things that have backs, and the lack of equipment was beginning to tell. The ladies of our party were already a grotesquely solemn warning that petticoats and flimsy skirts are not for mountain climbers. And it was with some considerable concern that we made the further discovery that kid boots are better for drawing-rooms. But in spite of shredded skirts and fraying boots, our ladies faced the slope with not even the faintest sign of fainting hearts.

An hour more, and we began to get views; views so wonderful as to make even the ladies forget their fluttering skirts and clogging petticoats and fast disintegrating boots. But now we began to have a choice of directions. We had never imagined there could be so many paths apparently all leading to the mountain top, but we discovered that what had appeared to be an unbroken slope, was gashed by numerous deep gorges that forbade passage, and ever and again we were forced to double on our course and make long detours about these gulches. In the presence of one unusually

long, we determined that it was time for our second breakfast, to which we sat down, wondering whether there had ever been a first. A short rest, and we found ourselves with our stock of water sadly diminished, but our stock of courage and enthusiasm high as ever, and once more we set out for the peak whose location we began to guess at, but of whose distance away we could form no idea.

By noon the Professor announced, after a careful estimate of distances, that we were more than half way there, and that in an hour's time we should halt for lunch, which double announcement spurred those of the party who had been showing signs of weariness to a last heroic spurt. It was difficult to persuade any member of the party as we sat waiting for the baskets to be opened, that we had had one breakfast that morning, not to speak of two. After lunch the Professor declared that, having been brought up on a farm, he had been accustomed to a noon spell, and must have one. Being the least fatigued, or the most unwilling to acknowledge fatigue, this suggestion of a noon spell he could afford to make. So, stretched upon the broken rocks, we lay disposed at various angles, snuggled down into the soft spots of the old bony back. We slept for a full half-hour, and woke, so wonderful is this upper air, fresh and vigorous as in the morning. We packed our stuff, passed around our water-bottles, now, alas ! almost empty, tied up the bleeding right foot of the Lady from Winnipeg with a portion of the fluttering skirt-remnants of the Lady from Montreal, seized our saplings, and once more faced the summit.

Far off a slight ledge appeared directly across our path. Should we make a detour to avoid it? Or was it surmountable? The Professor, supported by the majority of the party, decided for a detour to the left. The Missionary, supported by the Lady from

Winnipeg, decided that the frontal attack was possible. In

half an hour, however, he found himself hanging to that ledge by his toe-nails and finger-tips, looking down into a gully full of what appeared to be stone, in alpine vocabulary scree, and sliding out into space at an angle of forty-five degrees or less, and the summit still far above him. Hanging there, there flashed across his mind for a moment the problem as to how the party could secure his mangled remains, and having secured them, how they could transport them down this mountain side. He decided that in the present situation his alpenstock added little to his safety and could well be dispensed with. As it clattered down upon the broken rocks far below, he found himself making a rapid calculation as to the depth of the drop and its effect upon the human frame. Before reaching a conclusion, he had begun edging his way backward, making the discovery that all mountain-climbers sooner or later make, that it is easier to follow your fingers with your toes, than your toes with your fingers. The descent accomplished, the Missionary with his loyal following reluctantly proceeded to follow the rest of the party, who had by this time gone round the head of the gulch, or the couloir in expert phrasing, and were some distance . in advance. A stern chase is a long chase, and almost always disheartening. But in this case the advance guard were merciful, and, sitting down to enjoy the view, waited for the pursuing party to make up.

It is now late in the afternoon, and a council of war is held to decide whether, with all the return journey before us, it is safe to still attempt the peak. We have no experience in descending mountains, and, therefore, we cannot calculate the time required. The trail to the camp is quite unknown to us, and there is always the possibility of accident. Besides, while the climbing is not excessively steep, the going has become very difficult, for the slope is now one mass of scree, so that the whole face of the mountain moves with every step.

Still, the peak is very perceptibly nearer, and the party has endured already so much that it is exceedingly loath to accept defeat. Then, too, the atmosphere has become so rare, that the climbing is hard on the wind, as the Professor says. The ladies, despite shredded skirts and torn shoes, however, are keen to advance, and without waiting for further parley, gallantly strike out for the peak. It is decided to climb for an hour. So up we go, slipping, scrambling, panting, straining ever toward the peak. We have no time for views, though they are entrancing enough to almost make us content with what we have achieved. For an hour and then for half an hour, the ladies still in advance, we struggle upward. The climbing is now over snow and often upon hands and knees, but the scree is gone and the rock, where there is no snow, is solid.

At length the Professor demands a halt. In spite of desperate attempts at concealment, various members of the party are flying flags of distress. We are still several hundred yards from the coveted summit, but the rose tints upon the great ranges that sweep around are deepening to purple and the shadows lie thick in the valleys. If we only knew about the descent, we might risk another three-quarters of an hour. The ladies begin to share the anxiety of the men, knowing full well that it is they who constitute the serious element in the situation. With bitter reluctance they finally decide that they will not ask the men to assume any greater responsibility than they already bear. It is agreed that the men shall make a half-hour dash for the summit, while the ladies await their return. Stripping themselves of all incumbrances, the Professor and the Missionary make a final attempt to achieve the peak, the Californian gallantly offering to remain with the

ladies. After a breathless, strenuous half-hour, the Professor, with the Missionary at his side, has fulfilled his threat and accomplished his proud boast. Breathless but triumphant, we are standing upon the head of the old Cascade.

We dare only take a few minutes to gaze about us, but these are enough to make indelible the picture before us. Down at our feet the wide valley of the Bow with its winding river, then range on range of snowstreaked mountains, with here and there mighty peaks rising high and white against the deep blue. One giant, whose head towers far above all his fellows, arrests the eye. There he stands in solitary grandeur. Not till years after do we learn that this is the mighty Assiniboine. But there are no words to paint these peaks. They are worth climbing to see, and once seen they are worth remembering. I close my eyes any day, and before me is spread out the vision of these sweeping ranges jutting up into all sorts of angles, and above them, lonely and white, the solitary sentinel, Assiniboine.

Without a word, we look our fill and turn to the descent. A hundred yards or more and we come upon our party who, with a reckless ambition, have been climbing after us. But the whole back of the Cascade lies now in shadow, and, though half an hour will do it, we dare not encourage them to take the risk. The party has been successful, though individuals have failed. And with this comfort in our hearts and with no small anxiety as to what awaits us, we set off down the slope. It is much easier than we have anticipated until we strike the scree. Here, for the first few steps, we proceed with great caution, but after a short time, becoming accustomed to have the whole mountain slip with us, we abandon ourselves to the exhilaration of tobogganing upon the skidding masses of broken rock and touching here and there the high spots, as the Professor says, we make the descent with sevenleagued boots till we reach the timber. It is here we meet our first accident for the day. The Lady from Winnipeg has the misfortune to turn her ankle. But there is no lack of bandages in the party. In fact, by this time the ladies' skirts consist chiefly of bandages, so that with foot well swathed, and stopping now and then for repairs to the ladies' boots, slipping, sliding, stumbling, leaping, we finally, in a more or less battered condition, arrive at camp. The indomitable Professor, aided by the Missionary and the Man from California, set about supper. But long ere it is ready the rest of the party are sound asleep. They are mercilessly dragged forth, however, to the refreshment of tea, toast and bacon, for which they are none too grateful, and after which they drop back upon their pine beds into dreamless sleep. It takes us a full week, the greater part of it spent in bed, to realize that mountain-climbing, sans guides, sans mountaineering boots, plus petticoats, is a pastime for angels perhaps, but not for fools.

On the upper part of the mountain, the Professor and I were greatly excited over what appeared to be the fossil remains of a prehistoric, monster, and if its jawbone had not weighed several hundred pounds--the backbone must have weighed several tons--we would have carried it down as a present to the Museum. We left them behind us, and they are there to this day for some anthropologist to see.

CAMPING IN THE CANADIAN ROCKIES

Vaux, Mary M.

We may take Laggan as a starting point, as more good trips are available from there than from any other point in the mountains. The trip may be either long or short, varying from a day's ride to Moraine lake or Paradise valley, a three-day excursion to Lake O'Hara and McArthur lake, to a week or more as far as the Pipestone pass, returning by the Bow. On any of these trips, it is well to make an elastic arrangement, so that one can stay a day or two longer than the actual time required; for there is much delight in a quiet day in camp, when you do not have to do your twelve miles on foot, or your fifteen miles on horseback, and can sleep as long in the morning as you wish, get acquainted with the flowers and birds, and enjoy the delights of a quiet walk; where there is really time to receive deep mental impressions. For a four-days' trip, there is no place more delightful than Lake O'Hara—a lovely clear sheet of water, filtered through the rock slide at its head. Its banks are carpeted with flowers; in front are seen, in succession, Mts. Biddle, Hungabee, Yukness, Lefroy, Victoria, Huber, and Wiwaxy peaks, while behind come

Cathedral, Stephen and Oderay; so that one is almost bewildered by the number and grandeur of them all. Then, a short walk of three miles brings you to Lake McArthur, a true alpine lake, with glaciers from the slopes of Mt. Biddle breaking off in miniature icebergs; and where the grassy moss-grown slopes are a favorite feeding ground of the mountain goat. Their beds and rolling places are frequently seen; and the noise of falling rocks, as they climb to a point of vantage, aids you in discerning their retreating forms.

By following the stream that feeds Lake O'Hara, a beautiful chain of lakes is discovered, with cascades and waterfalls between, ending in Lake Oesa, whose surface is only melted for a very few weeks at midsummer. Or, if one wishes a still higher climb, one can venture across Abbot pass (9000 feet above sea) and down the Victoria glacier to Lake Louise. But this is only safe with an experienced Swiss guide, as the pass is frequently traversed by avalanches on its northern side. Unfortunately, there are no fish in any of these waters, although it is stated that the lakes are well provided with trout-food.

From Hector station to Lake O'Hara it is about ten miles, over a good trail. The earlier miles are marred by burnt timber, but the lake and its surroundings well repay any discomfort of this part of the way. In addition, several other short excursions can be made to advantage, and a little exploring done on one's own account.

Now as to appliances and outfit: To begin with, a good tent is required, plenty of warm blankets, and a canvas sheet to spread under and over the blankets on the bough-bed, to prevent dampness from above and below; then, a small pillow is a great luxury, and takes but little room in the pack. Of course, it is presupposed that the women of the party wear rational clothes: knickerbockers, a flannel shirtwaist, and knotted kerchief at the neck; stout boots, with hobnails, laced to the knee, or arranged for puttees; woollen stockings, a felt hat with moderate brim, and a sweater or short coat completing the outfit. A light waterproof coat, opened well behind, to allow it to part over the horse's back, and which may be fastened to the saddle, is very necessary in a region where storms must be expected frequently. Each person should be provided with a canvas bag, which

can be securely buttoned, wherein to place the necessary toilet articles. An extra pair of light shoes, a short skirt to wear in camp and a golf cape with hood, add greatly, to the comfort of the camper; also a good-sized piece of mosquito netting, to keep off intruding bulldogs, if you wish to rest in the tent in the heat of the mid-day sun; while a hot water bottle and a box of mustard may be tucked in along with a few simple medicines in case of emergency. On two occasions I would have given a great deal for a mustard plaster, and on a third occasion it was of great value.

The food taken is largely a matter for personal selection. We have eliminated canned things very largely, and find the change to dried foods not at all distasteful -of course, with the proviso that they are properly cooked. Bacon, ham, tea, coffee, evaporated cream, butter, oatmeal, rice, beans, flour, canned tomatoes, canned soup, onions, potatoes, pickles, marmalade, cheese and dried fruits can be so prepared that, with hunger sauce, there is nothing left to be desired in the way of a larger bill of fare. Trout and game are always a welcome addition to the larder. Cakes of chocolate and raisins may be added to the list, when it is desirable to have something in the pocket on a day's climb, and the return to camp is uncertain. In all preparations it must be remembered that the altitude at which we camp is considerable, and that a necessary attribute towards a good time is to be warm and comfortable at night, when the thermometer may probably fall to 289, and there will be ice along the brook-sides, in the morning. Then, do not forget the cold dip in the mountain stream, as the crowning luxury of all. A camera is a very delightful adjunct, for it is pleasant to have some tangible results to show, on your return home. A kodak, if no larger instrument can be managed, yields most satisfactory results, although the better records from a larger-sized camera are an increased delight, when one has the patience and skill to obtain them. For changing plates in camp, an improvised tepee can be made of the blankets, and, if this is done after sundown, is quite satisfactory. We have never known plates to be fogged by the operation. Cut films are more convenient than glass plates, as they are so much lighter and not subject to breakage, although not so easily handled. The actinic properties of the light are very great and care must be used to avoid over-exposure. It is very desirable to develop the plates as soon as possible, for in this way you can more readily understand the conditions and change the exposures to suit. We have found medium plates better than the quick ones, especially with a rapid lens. Telephoto work has not been very satisfactory, as on high places the wind is so great that it is not possible to obtain a sharp picture, with the unsteady condition of the camera, when the long draw is in use. We have also found that panoramas, made with the ordinary camera, give a better idea of extended views than can be had by any other method.' The panoram cameras, as a rule, distort so much that they are useless when great heights and depths are to be rendered.

Then, when you return to civilization, you will have many happy memories, and the "call of the wild" will so enter your blood, that you will count the days till you can again be free among the everlasting hills.



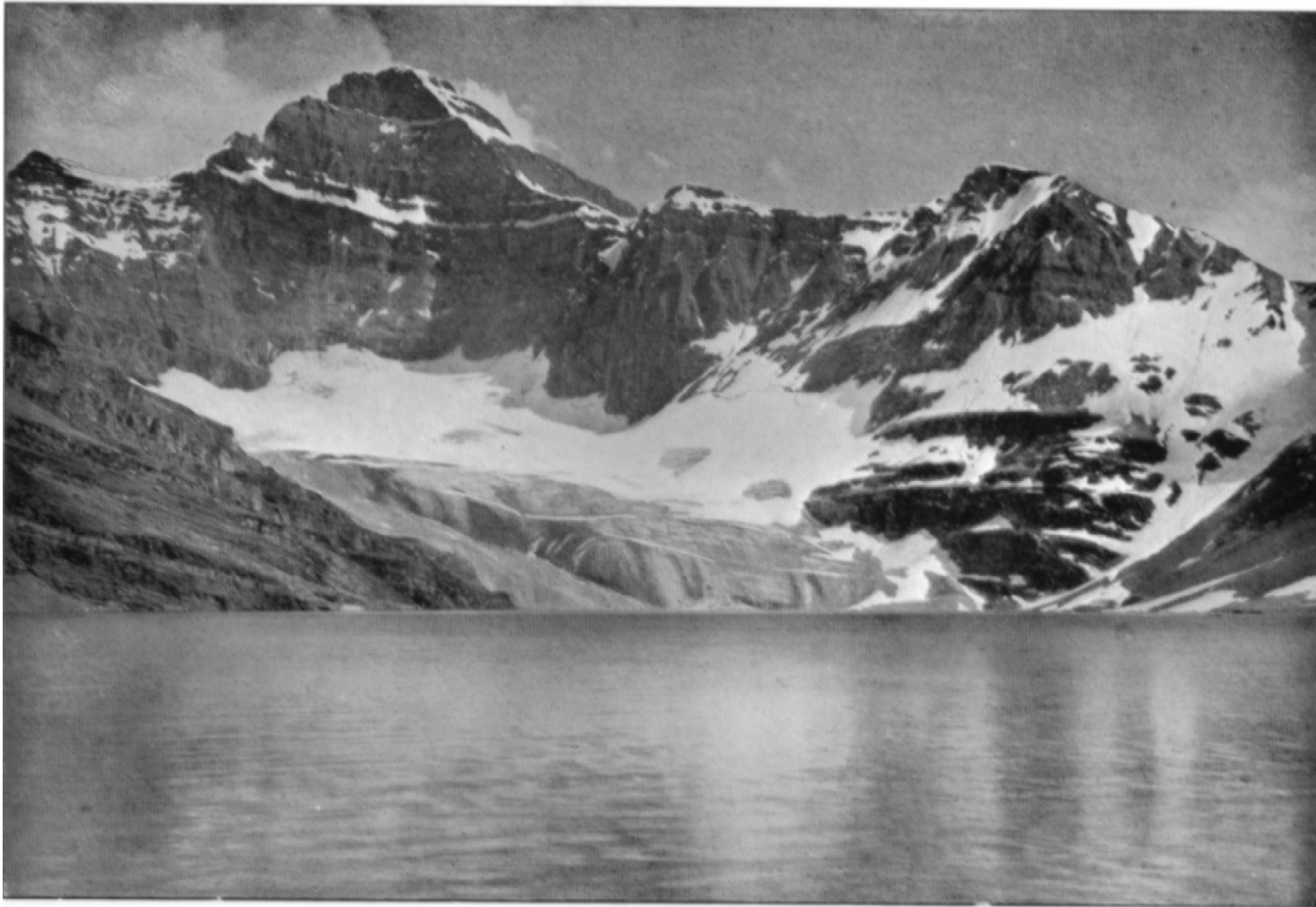
Yeigh, Frank

Figure 18
AROUND THE CAMP FIRE



Warner, D.

Figure 19
CROSSING TWIN FALLS CREEK - YOHO VALLEY TRAIL



Vaux, Mary M.

Figure 20
MOUNT BIDDLE AND LAKE McARTHUR

Mountaineering Section.

THE ASCENT OF MT. GOODSIR

Fay, Charles E.

I well remember how deeply I was impressed at the time of my first visit to the Canadian Alps in 1890 by the sight of the superb Ottetail range, as the eastbound train approached the old bridge over the creek of that name, and the peculiarly alpine features of the range were revealed, with the portentous towers of Mt. Goodsir looming in the distant background. Though we had just passed a glorious day at Glacier House and had revelled in the grandeur that the intervening journey offers in so rich measure, this seemed the fitting climax. Little did I suspect that I was to return to these scenes again and again, that I was even destined to be of the first party to scale the frowning, glacier-crowned rampart dividing the Ottetail from the Ice River valley, to tread the virgin snows of the summit of Mt. Vaux, and to have the alternate experiences of failure and success in assaulting the highest peak of the monarch of them all.

At that time the name of Goodsir was, to be sure, on the Palliser map, but it was not yet generally recognized as belonging to the mass that now bears this name. Indeed, it is more than doubtful whether Dr. Hector intended to apply it here, and not rather to some peak of the Bow range.* In the first photograph of it that I saw on sale in those early years, the massif was entitled "The Beaverfoot Mountains." In his report to the Minister of the Interior for 1887, Mr. McArthur, of the Topographical Survey, mentions its triad of summits as the "Three Sister Peaks," and then says : "The 'Three Peaks,' as I have named them, are the highest that are established by my survey, the western one towering 11,000

* See Appalachia, vol. xi, p. 131.

feet above the sea." Later measurements have not diminished its relative height, but have accorded it an altitude of 11,676 feet, making it thus the highest of the Canadian peaks south of the line of the railway, or indeed north of it until one reaches the great peaks near the sources of the Athabaska.

Little wonder, then, that it made an early appeal to the alpine instinct growing stronger in me with each new visit to that inspiring region. But it was not until the year 1901 that an opportunity offered to make a real assault upon it. Kind Fortune gave me as companions two men of utterly different mould, yet pleasantly complementing one another—the Rev. James Outram and Mr. J. H. Scattergood—both athletes of the intellectual type, both accustomed to physical conquests, one twenty, the other thirty years my junior—but for that glorious week we were all of one age. It joined to us as our guide the honest, kind and trustworthy Christian Hasler, under whose leadership Professor Parker and I had already, two years before, scaled Mt. Dawson.

Our main camp was to be established in Ice River valley, and around to it we sent Ross Peacock by way of the Beaverfoot valley. This was as yet traversed by nothing more definite than an old Indian trail, but almost immediately was to furnish ready access to Ice river by a good wagon road. The troubles Scattergood had endured there, the year before, he hits narrated in *Appalachia*.* We ourselves were to leave the railway at the bridge over Ottertail creek and make our way to a bivouac at timber-line at the high sources of Haskins creek, just below a promising looking cleft at the rear of Mt. Hurd. From here we hoped, with an early start, to find a lead up to the ice-field that covers the broad eastern slope of Mt. Vaux, to scale its virgin summit, and thence to find our way down to the Ice river by the glaciers sweeping southward. And all this, with numerous other unexpected details, we accomplished with perfect success, turning up at our camp in the late afternoon of our second day.

Up to that time, as far as I am aware, none but prospectors had visited this upper portion of the Ice River valley. Our camp was at the southern edge of a large meadowy

* Vol. ix, p. 289f

glade of perhaps ten acres in extent, possibly a mile and a half above the junction of the stream from Zinc gulch and the main stream. It was a beautiful pastoral picture, with the pack horses browsing in the plentiful herbage--the more striking from its wild surroundings and the news that a grizzly bear had accorded but a surly welcome to Ross on his arrival a few hours before. Studying his plantigrade tracks in the gravel of the river bed, photographing the unfamiliar aspect of the Chancellor and other leading features of the picture, and refreshing ourselves in general idleness from the somewhat strenuous labors of the day before, we passed the forenoon, and soon after our simple dinner we set forth for the high bivouac from which we should make our attack on Goodsir the following day. To reach it, we followed a short distance down the valley, then up the eastern sloping path of an avalanche, overgrown with rank hellibore--a torrid stretch, then over the crest of this ridge and across the torrent-washed rubble of the ravine from which spring the two great towers.

At about 7000 feet and at the very base of a spur from the southern, higher peak, near to a refreshing rill, we found two gnarled firs with ample tops, promising a tolerable shelter in case of a sudden shower, and under these we spread our blankets with good hope for the morrow. The sun set clear, the stars gleamed with joyous brightness, and with such omens we saw ourselves already the victors over the untamed monster at whose feet we dared to lie so serenely. But "man proposes."

At crisp daylight we were astir, and after a formal breakfast set out at a good pace over the lower flanks of the first ridge south of our bivouac. The evidences of the earlier presence of the gold-hunter were about us; indeed we had been fully twenty minutes under way before we passed the last trace of such a visitation, a claim-stake with the name of the prospector and the bounds of his claim. We merely gave it a sidelong glance in passing, for it seem to have been tacitly agreed that no one of the three should first call a halt, so that it, was fully an hour before we made our first stop, and then for the purpose of putting on the rope at the beginning of the first real climbing. Still it had not been severe, save as a test of lung power.

Considerable snow lay at the base of the rocks we skirted, and unfortunately it was soft and little promising. At about 10,000 feet, not far, if I remember, above where one ridge joins another striking more to the south, we paused for our second breakfast. Things were now growing more interesting. A superb prospect had opened over the western ridge of the Ice River valley to the gleaming snows of the limitless line of the Selkirks, and near at hand were the forbidding crags and cornices of our own peak. Just above us rose the snowy shoulder over which we were to pass, and from that rose a steep cliff seen in all our reconnaissances, which was apparently the chief obstacle in-the way of our success.

Again getting under way, we soon were upon that shoulder, anti anon making our way under most ticklish conditions to the base of the hindering cliff. A narrow arete of several rods in length connected it with the snow shoulder, and this arete was itself ominously corniced, and with snow in a most treacherous state. Seldom have I seen Hasler so trepidant, so insistent that the ice-axes should be so planted as not to serve as levers to start a crack that would imperil the entire party, should the cornice fall; but, in good time, we were standing at the base of the cliff.

On either side of us, steep couloirs swept down thousands of feet; before us rose this beetling face of dark rock, with little snow-patches here and there revealing possible

stations, between which only cracks and slight protuberances offered scanty holds for foot and hand. Hasler led off and attained the first anchorage; then Scattergood boldly followed. My turn came next, and I remember having some doubts as to the entire safety of the sport of alpinism for the next few minutes; indeed, for the next half hour. On my reaching the anchorage, the same tactics were repeated by the first two, after which Outram came up to my level, and I then went forward. Our third station brought us to the top of the cliff-and to the end of our ascent.

A most ominous situation revealed itself. The final peak was before us, and its summit hardly three hundred feet distant-a great white hissing mass,-a precipice on the hidden left side, a steep snowslope of perhaps 65 to 70 digression the right. Under the July sun its whole surface was seemingly in a state of flux, slipping over the underlying mass with a constant, threatening hiss. A second narrow arete led across to this final summit. This, too, was corniced, and in a remarkable way. The swirl of the wind had produced an unusual spectacle. At the beginning and at the end, the cornice hung out to the right; in the middle, a reversed section of it overhung the abyss on the left.

The two similar ones could doubtless have been passed. To cross the middle of the section meant trusting ourselves to the sun-beaten slope already in avalanching condition. Indeed, while we studied it, and as if to furnish the final argument to our debate, the snow on our right impinging against the cornice, well back upon which Hasler was standing, broke away, and down went a well-developed avalanche a couple of thousand feet over that much-tilted surface, and vanished in a sheer plunge that landed it perhaps three thousand feet below that. It was a suggestive and persuasive sight. Feeling sure that we had seen enough for one day, we beat a careful retreat. With even greater caution we descended the cliff in reversed order, and, with well-justified trepidation, returned over the treacherous arete to the snowy shoulder. Never did I feel less certain of the safe outcome of a climb, or breathe more freely on leaving snow, surely the worst condition in

which it was ever my fortune to meet it. We glissaded down the lower greasy snows, made good time below our bivouac, and dusk found us with colossal appetites back at the lower camp and Ross's bannocks. And so, repulsed, we turned our back on the sullen mountain, yet harboring intentions of getting even with it on some future occasion.

None offered the following year, but, in 1903, my friend Parker, just back at Field from an unsuccessful try at Goodsir with the two Kaufmanns as guides, wrote me of their discomfiture by reason of a heavy snowfall encountered at about 10,000 feet, invited me to hurry out from the East and join him in another attempt, as soon as the melting of the snow would permit. No urging was necessary. I came with allhaste, and at once we were under way, with Christian Kaufmann and Hasler as guides. We were encamped well into the Ice River valley by six o'clock of the day on which we left Leancoil at noon; such was our eagerness, and such the quick access by the new wagon road. The following day we moved our camp up into Zinc gulch; starting in summer heat and meeting a chill blast with snow squalls as we arrived at our chosen camping spot shortly after noon. This camp was almost at the identical height of the bivouac -of 1 901, but south of the great peak. Dubious weather conditions prevailed for the rest of the day; but we turned in early with good hopes for the morrow, which were dashed about two o'clock by Kaufmann's report that it was snowing. Morning revealed a picture more appropriate to Christmas than to mid-July. The evergreens were bearing wintry loads of wet show, and the grey sky gave

little promise of good weather. In any event, Goodsir was secure from assault for the present; for how long it was impossible to say. Many inches must have fallen higher up, and, of course, prudence counselled awaiting its disappearance. We had come relying on steady atmospheric conditions, intending to make quick work of it, and so were scantily furnished with supplies. Fortunately, Nixon, our outfitter, had come along with us on his handsome grey, rather for an outing than for business. After a brief council, he was despatched back to Leancoil to send up supplies for a prolonged siege. It was now or never.

As the day wore on, the sun came out, and to our great relief, we saw the clinging snows on the peak diminish hour by hour, as we studied it in a practiceclimb to the col joining "Little Goodsir"--the third "Sister"--to Zinc mountain, whose crags rose above our camp on the south. It was soaring just above these that the waning moon looked down on our party on the following morning--July 16th--as we prepared our breakfast. By the first good daylight we were under way. The first hour was similar to that of our climb of two years before, and led us up to our roping place on that occasion. In general, our course from here to the cliff was identical with that of the former trip, but, to our great satisfaction, the snow was in perfect condition, and so remained the entire day.

Accordingly, we made sufficiently good time, with the same stops as before. The arete from the shoulder to the base of the cliff was now child's play. The cliff was the same old story, though I recall one variant the hand and foot holds on one occasion lost their grip on the man passing between the first two anchorages, and left him for a moment in a state of what might be called "suspended animation." Arriving at the top, all was changed from the conditions of 1901. The broken arete was indeed under a draping of recent snow, but no cornice was in evidence. It was "plain sailing"--and, yet very interesting, for the arete was so narrow and thin that one astride it could have his left leg vertical over a sheer drop, at first indeed overhanging, of hundreds if not thousands of feet, while its mate pointed down that 70° slope of snow, as silent now as it was noisy in 1901. At eleven o'clock we were on the summit--Goodsir was ours. The repulse of two years before was forgotten, and our affections went out to the graceful peak, no longer a sullen monster, and, for the joys of that one glorious hour spent on its pure snowy summit, we granted it our love for a lifetime.



Figure 21
THE SUMMIT OF MOUNT GOODSIR
South Tower



Figure 22
THE NORTH GABLE OF THE SOUTH TOWER
Mount Goodsir



Fay, Charles E.

Figure 23
THE NORTH TOWER OF MOUNT GOODSIR



Fay, Charles E.

Figure 24
THE CLIFF AND SUMMIT OF MOUNT GOODSIR (11,676 FT.)
AS SEEN IN 1901

THE ASCENT OF MT. HUNGABEE

Parker, Herschel C.

On August 3rd, 1897, it was my good fortune to be a member of the party that made the first ascent of Mt. Lefroy.

During this trip, from Abbot pass and the summit of Lefroy, we gained splendid views of the grim cliffs and lofty summit of the great "Chieftain." I think some of the party must have felt, even at this time, a strong desire to conquer so fine a peak.

I made a rapid trip through the Canadian mountains in the summer of 1899, but had little opportunity for climbing. Through the courtesy of my friend, Professor Fay, however, I was able to join him in the first ascent of Mt. Dawson. When I returned to the Canadian Alps in the summer of 1903, prepared for serious climbing, I found that four of the most notable peaks remained unclimbed : Mts. Hungabee, Deltaform, Goodsir, and Biddle.

After the "Conquest of Mt. Goodsir" on July 16th, I returned to Lake Louise, and with Christian and Hans Kaufmann prepared for an attack on Mt. Hungabee. It may be remembered that Mr. Thompson and Mr. Weed, with Hans Kaufmann as guide, had made a gallant attempt on the mountain some time before this, but when near the summit the climbing became so difficult that they were compelled to turn back. For a long time, and from many points of view, Christian told me he had carefully studied the mountain and decided on what should be the exact route of ascent. While the lower portion of this route probably presented considerably greater difficulties than the one previously attempted, it appeared to offer a good chance of attaining the final summit. I think, in giving a short account of the climb, I can scarcely do better than quote from an article I wrote for "Appalachia" a short time after the trip was made.

On the morning of July 10th, with a week's provisions, silk tent, and mountaineering equipment, we made a rather late start from Lake Louise. A packhorse carried most of our "impedimenta" as far as Moraine lake. Here, assuming the heaviest of packs, we proceeded slowly up the Valley of the Ten Peaks, and, crossing the high pass between Neptuak and Hungabee, made a rapid descent to Prospector's valley, where we arrived in good time to make camp.

Leaving camp next morning at 3.50, we made our way up Prospector's valley to within about a quarter of a mile of the Opabin pass, whence, taking to an arete, we had a fairly easy and interesting climb of possibly two thousand feet. At this point further progress was barred by a wall of vertical cliffs. Directly in our path this rocky battlement was broken by a narrow icy couloir and a much narrower chimney filled with ice. After inspecting the couloir, Christian decided that the chimney would be the safer means of ascent, and so, after seeing that Hans and I were in as secure positions as the circumstances would permit, and with directions not to move from our places close against the rock, he disappeared around an angle and commenced the perilous climb.

It was only by watching the rope that Hans and I could judge the progress Christian was making above us. For minutes at a time, it seemed, the rope would be motionless, then inch by inch it would slowly disappear up the chimney, and the crash of

falling rocks and ice would warn us that we must cling even more closely and find what protection we could beneath the rocky wall.

At last Christian gave the signal that I was to follow, first cautioning me most earnestly not to knock any rocks down on his brother Hans, for a slight mishap to any member of the party in a position like ours might mean a catastrophe for all. A short space of breathless effort, a strong pull on the rope from Christian, and I stood by his side at the top of the chimney. Then, slowly and carefully, Hans made his way up and joined us.

Above us we could see a smooth, steep slope leading to the final summit arete. This slope consisted of snow, covering treacherous rock, but, thus early in the morning and while in shadow, it was in fine condition, and we made our way easily to the great shoulder of the mountain just under the final peak and almost overhanging Paradise valley. On this shoulder, a second breakfast was eaten, and we anxiously studied the route that we must follow. The summit was only a few hundred feet above us, but the arete, broken by vertical cliffs at this point, was impossible to scale. We had only one alternative left, to make an exciting traverse over a tremendously steep snow-slope at the base of these cliffs, and so reach the final cone.

We did not discuss the possible dangers of such a course, but cautiously made our way beneath the cliffs, turned a most sensational corner almost in mid-air above Paradise valley, and then scaled a nearly perpendicular cliff by means of a convenient crack. We were now on the arete but a very short distance from the summit. Only one more difficulty confronted us a narrow "gabel," or break in the arete, only a few feet in width, it is true, but with a nearly sheer descent of thousands of feet on either side. This gabel must be crossed to reach the summit. The arete was far too narrow to allow a jump being made with safety; so, slowly and carefully, while firmly grasping the rock on one side, Christian thrust his feet forward until they touched the other and his body bridged the chasm; then a strong forward swing, and he stood safely beyond the gap. For me, aided by the rope, the matter was far less difficult, and soon we made our way over the intervening arete, gained the corniced summit, and Hungabee, the grim old "Chieftain," at last was conquered.

It was now 10.40 a.m., almost exactly seven hours since we left camp, and Christian warned us that we should not stay long, on account of the dangerous snow-slopes we must cross on our return. Hans wished me, however, to determine the altitude by means of the hypsometer, so I "boiled a thermometer," a proceeding which, on account of the high wind, consumed some time, so that it was nearly an hour later when we were finally ready to start downward. We reached the point where we had halted for breakfast, without difficulty, but from here down the hot sun beating on the snow was fast changing it to the consistency of slush, which threatened to avalanche at any moment. We crossed this safely, however, and arrived at the rocky shoulder just above the chimney. It seemed to me hardly more than three minutes after we had left the snow-slope before a portion of it, including almost our very footsteps, slid downward and disappeared over the cliffs below us.

The descent of the chimney was not an inviting proposition, for the condition had entirely changed since morning, and it was now spouting water. We did not hesitate long, but descended as rapidly as possible and soon emerged at the other end, somewhat wet but very happy, for now our difficulties were at an end. From here the way was

comparatively easy, and camp was reached about six o'clock, after a most entertaining and glorious day.

The difficulties of any expedition, no matter how serious, always appear to diminish with the years through which we look back at them, and so, at the present time,, cannot accurately estimate the quality of this climb. Under certain conditions, for example if the "chimney" should be free from ice and the slopes above from snow, two of the greatest difficulties would ,certainly be removed. It seems to me, however, that the ascent of Mt. Hungabee can never prove to be an easy one, and that it will always be found a most interesting climb for the expert mountaineer.



Parker, H.C.

Figure 25
THE SWISS GUIDES CHRISTIAN AND HANS KAUFMANN,
WHO ACCOMPANIED PROFESSOR H.C.PARKER
ON THE SUMMIT OF MOUNT HUNGABEE



Parker, H.C.

Figure 26
THE SUMMIT OF MOUNT HUNGABEE (11,447 FT.) SHOWING FOOTPRINTS OF THE TRAVERSE

THE ASCENT OF MT. BALL

Patterson, John D.

It came about in this way:

On the 31st of May, 1904, journeying from Calgary to Glacier, in the hope of spending an idle day or two under the hospitable roof of Glacier House, and while the train was making its usual twenty-minute stop at Field, I had the good fortune to see in an eddy of the crowd which was swirling restlessly along the station platform, the bronzed, cheery faces of those sturdy Swiss mountaineers and guides, the Kaufmanns Christian and Hans.

My resolution to spend but two days in the mountains and to do no climbing so early in the season, was not proof against the call of the Rockies that came with the warm hand clasps of those friends of the previous summer, and "Is the snow in good condition?" seemed under the circumstances, the only possible greeting.

That the snow was not "good" did not matter, when Hans, following my inquiring gaze to the top of the mountain in the shadow of which Field is so comfortably tucked away, said that we might try Mt. Stephen. Five minutes later my bags, recovered from various parts of the train, were being carried to a room in the Mt. Stephen House.

In the evening of the following day, content in the successful ascent of Stephen, our conversation naturally turned to the mountains, and to a discussion of the virgin peaks within easy reach of the railroad. Mt. Ball and the north tower of Mt. Goodsir were, in the estimation of the guides, best worth attempting, and of these two, Christian, doubtless influenced, good sportsman that he was, by the memory of his defeat when, with Mr. Edward Whymper's party, three years previously, an unsuccessful effort had been made to reach the summit of Mt. Ball, declared it to be the better mountain.

All this could have, of course, but one ending. The journey to Glacier was abandoned, and before the afternoon of June 2nd was far advanced, a little pack train of four horses was on the trail from Banff to Castle Mountain station, where, alighting from the train early next morning, we found it awaiting our arrival.

While the packs were being adjusted, the guides found a man-Joe Smith-to ferry them over the Bow river, and at once started off, agreeing to meet the ponies on the trail not far from the mouth of Little Vermilion creek. This proved a fortunate arrangement, for the water at the ford was so deep that the horses had to swim, and on account of the swift current they could carry only light packs. Two crossings had to be made before our small amount of impedimenta, the packer and myself were safely landed on the opposite bank.

The trail to Vermilion pass lay along the north side of Little Vermilion creek, and was frequently intersected by timber roads leading to the camps long ago deserted, though doubtless busy enough in the days when ties and bridge timbers were being secured for the construction of the railway.

A bridge in fair repair, about five miles from its mouth, made easy the crossing of the turbulent creek. Between the bridge and the pass we followed the shore of a little lake which, our packer assured us, could always be relied upon to yield a fair basket of trout.

A good deal of snow was encountered in the pass, and the ponies which had not been halted for a midday feed and rest, gave evidence that the work was telling on them. Once well over the summit, however, the trail was better; the two miles to Mr. Whympers former camping ground was quickly negotiated, and free of their packs, the tired animals were soon quietly feeding in the abundant grasses at the foot of the slide opposite the camp.

It was now four o'clock; eight hours had been required to cover the ten or twelve miles that lay between us and the railroad. The trail over which we came had an especial interest, as we realized that we were following the footsteps of Sir James Hector, then Dr. Hector, who had given to Mt. Ball its name, when in 1858, with the Palliser expedition, he had crossed the Vermilion pass on his way to the Kootenay.

Reluctantly enough, we turned out of our blankets at two o'clock on the morning of June 4th, and at three precisely, in the uncertain light, we commenced our climb. The way led through timber, thick at first, but gradually becoming more open as we made our way upwards. This forest had apparently never been burned over, and everywhere the ground, the fallen trees and the rocks were deeply covered with thick mosses.

The guides, yesterday so cheerful and talkative, were now as silent almost as the trees about us. Earnest work was ahead, and it was delightful to observe their keen eyes noting every fragment of the mountains appearing through the open spaces. No one had ever gone that way. Landmarks might be valuable before the day was done. An hour or more had gone, when at timber-line a low rock wall, easily surmounted, brought us well upon the buttress at the west flank of Mt. Ball. The ledge upon which we landed was wide, but covered with scree to an extent that made the going slow, and when the slope was at all pronounced, somewhat uncomfortable.

About nine o'clock we rested for a few minutes, and shortly afterwards came to a snow-field from which we had a good view of Storm mountain, and could see the route taken by Mr. Whympers in 1901. From this point we kept to the arete, and had some interesting rock work because of the loose snow, which made it impossible often to ascertain the condition of the rocks in which we were seeking to establish hand and footholds. At eleven o'clock, upon leaving a small table, from which we enjoyed extended views to the northeast and south-west, we found a col lying between it and the mass of the mountain crowned by the summit -our goal,- and owing to the treacherous condition of the snow, the very crest of this col, sharp as it was, had to be followed. Fortunately it was not more than forty feet across, for even with the confidence which the rope inspired, it was far from pleasant with such uncertain footing, either to look down upon the precipitous snow-field to the one side, or at the short and hardly less steep slide terminating at the edge of a perpendicular rock wall, on the other. From this point the ascent was more rapid, and no further difficulty was experienced until we arrived at the edge of a snowfield leading to a saddle about 150 feet below the summit. From the earnest conversation of the guides, held in their own language, which I did not understand, it was evident they feared that the snow might avalanche if an attempt were made to cross it. Consequently, we kept close to the wall marking the western edge of this field, and by clinging to projections from the rock and cutting steps in the bergschrund when opportunity offered, we climbed the steepest part of the slope and then quickly made our way to the saddle.

Upon rounding a bastion at the point where we came to the edge of the snow-

field, just referred to, it was evident that we should succeed in getting to the top, but from the saddle itself we had our first view of the actual summit, which too evidently was upon the cornice overhanging the northerly face of the mountain. The extent of the overhang and the probable security of the huge cornice were carefully noted, and as soon as the final climb up the rounded side of the snow-field lying above us was made, we were happily congratulating one another upon having accomplished the first ascent of Mt. Ball. Before venturing upon the cornice, I left my place in the middle of the rope and had an end made fast to me to enable the guides to anchor as far back as possible, while upon hands and knees to guard against breaking through the crust, I made my way to the actual crest of the mountain, 10,825 feet. It was then 12:35 o'clock, or nine hours and thirty-five minutes since we left camp. The weather was clear and we were favored with good views of the peaks in the surrounding ranges.

The conformation of Hungabee, and especially of Deltaform, made them easily distinguishable among the Ten Peaks. In the direction of Mt. Assiniboine the atmosphere was comparatively thick, and we did not have a satisfactory view of that splendid mountain. As there were no stones at the top, we built a cairn at a point where the rock outcropped on the saddle just below, and then, luncheon finished, we spent a considerable time in looking at the interesting crevasses in the glacier lying under the north face of the mountain and in examining the massive cornice overhanging the glacier on the mountain top. A suggestion of this most interesting feature may be had through a reference to the accompanying photograph, taken in connection with his topographical work, and kindly supplied by Arthur O. Wheeler, F.R.G.S., etc. We arrived in camp again at about six o'clock, having made the descent without noteworthy incident, in five hours.

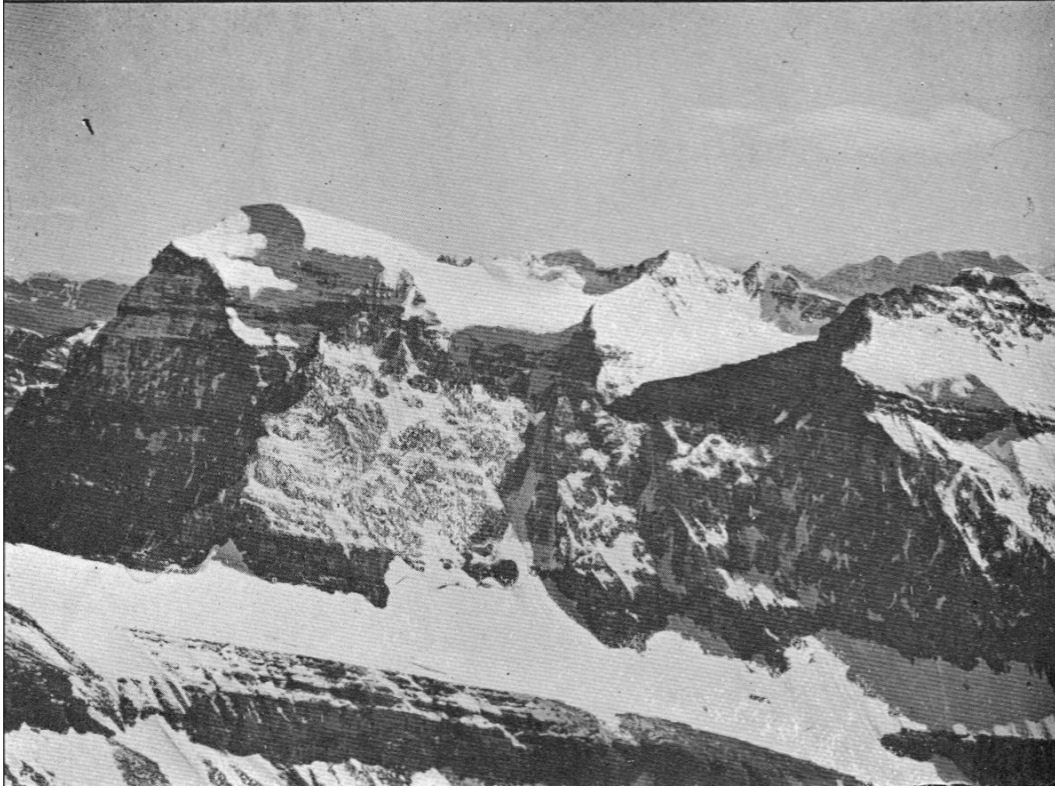


Figure 27
MOUNT BALL FROM STORM MOUNT

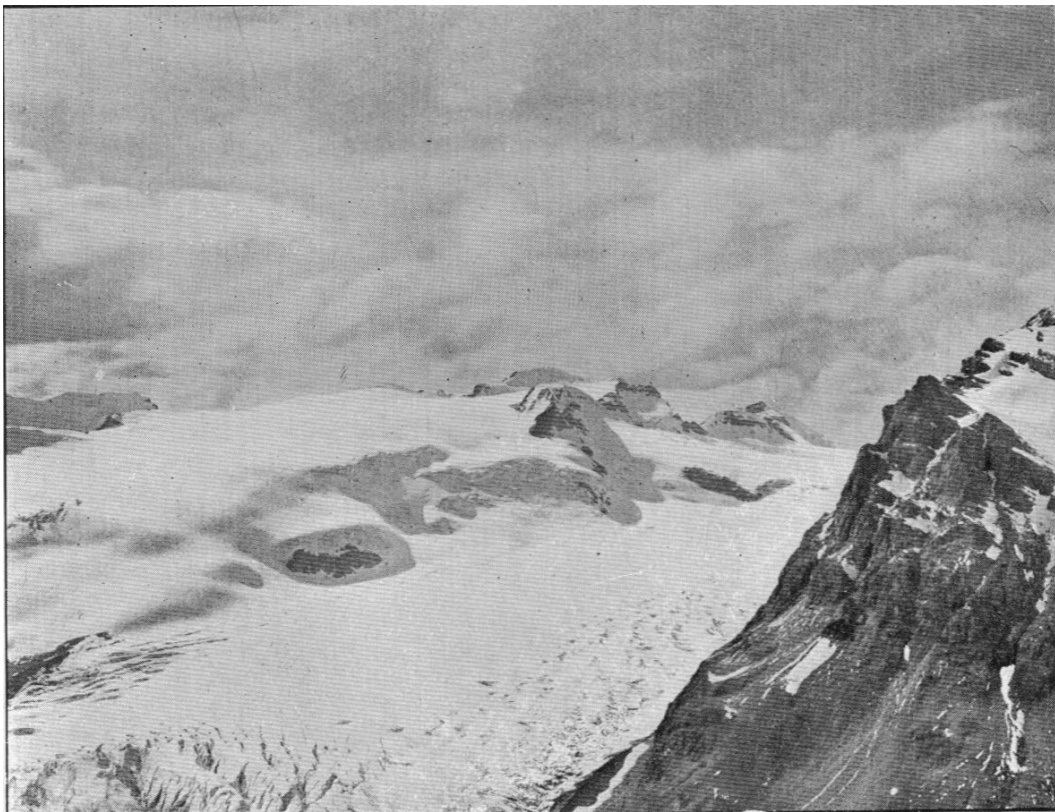


Figure 28
THE WAPTA ICEFIELD - MOUNT COLLIE IN DISTANCE

THE ASCENT OF MT. ASSINIBOINE

Benham, Gertrude E.

We—that is, Christian and Hans Kaufmann (Swiss guides) and myself—left Laggan at 9 a.m. on August 1st and travelled on No. 96 as far as Banff, where Bill Peyto, who was outfitting our party, met us and escorted us up to his house, to wait while the final arrangements were being completed. About noon the cavalcade started, our party consisting of Christian, Hans and myself, Jimmy Wood and Jesse Trot, packers, and seven horses—Jimmy riding on Pet, Peyto's beautiful mare, who was accompanied by her little foal Baby; Jesse on Toby; Grey, for my use; the guides taking it in turns to ride Wilcox, while Cree, Pinto and Buckskin carried the packs. I walked for the first four or five miles, much to Jimmy's astonishment, and he kept inquiring about every half mile if I was not tired, but at last I was obliged to mount, to cross a creek. Soon after four o'clock, we reached the place where our first camp was to be, and which is generally known as Porcupine camp, though that name might apply equally well to any other place where I have camped in the Rockies, as porcupines abound everywhere. Christian and Hans put up the tents and cut boughs for our beds, while Jimmy unsaddled and hobbled the horses, and Jesse made a fire and fetched water in preparation for our evening meal. This over, and everything washed and tidied up, we sat and rested for a while before retiring to bed, the men enjoying their pipes, while I knitted. We fastened the tents well down, all round, with logs and stones, to prevent the porcupines coming in. It was a good thing we did so, as I heard them walking round several times during the night, their quills scratching against the canvas. They and the gophers are very destructive, especially to leather, and we had always to be very careful to leave nothing out at night where they could get at it.

The next morning we were up at five o'clock, as breaking up camp, fetching and packing the horses, etc., usually takes some time, to say nothing of cooking and eating breakfast, and it was generally eight o'clock before we got started on our day's march. The first part of our second day's journey was through pine forests, where, however, there was a good trail, though somewhat steep in places. We climbed up to Simpson's pass, and about eleven o'clock reached a wide, grassy plateau surrounded by hills with patches of snow here and there. About mid-day we made a short halt for lunch, but did not stop to unsaddle the horses, as we wanted to reach the camping-place at the foot of Burnt Timber hill, that night if possible. Our luncheon place was in a garden of purple asters and other mountain flowers, which added beauty to the scene, but we did not stay longer than was necessary, and soon continued our journey over the summit of the pass to Burnt Timber hill. This hill, as its name implies, is covered with the remains of trees all charred and dead by some long-ago fire, many of them fallen to the ground, often several one on another, while others are so unsteady that it would not need much to make them fall also; so that, in addition to the hill being very steep, it is very bad going, especially for the horses. However, we all arrived at the bottom, without any mishap, and were soon busy fixing our camp for the night. After supper, Jimmy amused himself by catching a gopher, with a noose of string which he placed outside its hole, and then when it put its head out,

he drew the string and the gopher was caught. After we had kept it a little while I let it go, and it ran down its hole, dragging the whole length of string with it, and then there was a great commotion in gopher-land-such squeaking, while I suppose he was telling his adventures to his family. The next day's march was varied by the behavior of Pinto, one of the pack horses. When we came out of the forest into the open, he took it into his head to roll, and this loosened his pack and sent it to one side, so he set to work to kick it off, and we saw our things flying in all directions. Fortunately the boxes of provisions, which he had carried the previous day, had been put on Cree, or else everything would have been smashed; but, as it was, nothing was damaged, as he was only carrying tents and bedding. When he had got rid of his pack, he bolted, and both Jimmy and Jesse had a long chase before they could catch him, and they began to fear they had lost him. Although we had seen Mt. Assiniboine in the distance from Simpson's pass, it did not come into view again till we were nearly through our last day's march, and then we saw it in all its grandeur and beauty. It stands on an undulating, grassy upland, dotted here and there with groups of pine-trees, with a beautiful lake lying at its foot, while the lower peaks around seem to add to the height and majesty. We made our camp as near to the base as possible, so as to shorten our climb the next day, and then set to work to prepare dinner, for which we were all ready. The weather, scenery and everything were delightful, but the mosquitoes and bull-dogs were very much the reverse. I suppose they do not get many visitors, so they make the most of those who do come. During the daytime the bull-dogs (very large horse flies) came around in hundreds. The poor horses were bitten by them till the blood flowed. Jimmy made a "smudge," around which the horses crowded to try and get a little relief from their tormentors, but it takes a good deal to keep off a bull-dog, and when he is once settled nothing short of a hard hit will move him.

The bull-dogs struck work during the afternoon, but almost before they had left, the mosquitoes began, and I think they were worse, for they kept on during the night.

At three o'clock next morning, Christian called me and I got up, but we had not brought any candles with us, and dressing in a tent in the dark is a somewhat difficult operation. However, after groping and feeling round, I found all my necessary things, and then went out to breakfast by firelight, the moon being, in the last quarter did not give us much light. At four o'clock we three started. We went up a very steep snow-slope, which required some step-cutting, as the snow was so hard, and near the top there was a good deal of danger from falling stones. After we had reached the glacier, we had a fairly level stretch around the base of the peak to the ridge on the right hand, which we crossed and descended into a snow-basin on the other side. We then traversed a snow-slope and loose stones and rock till we were right round the farther side of the mountain and could find a practicable ridge by which to reach the summit. Some of the rocks were covered with ice, which made climbing very difficult, but on our descent the sun had turned the ice to water, and we got several shower-baths. The rocks were very rotten and interspersed with patches of snow and ice; and, when coming down, the snow was in such bad condition that we dared not trust it; so, accordingly, had to come by a different route to that by which we had gone up. When nearing the top, we thought possibly the other side of the ridge might be an easier way of ascent. Our present route lay chiefly along steep slabs of rock covered with loose stones, and here and there patches of ice which necessitated step-cutting. Accordingly, we worked our way to where there was a narrow cleft between two

high rocks, but when we could look over, we saw the other side was a sheer precipice, with no hand-hold or foot-hold possible, so we had to retrace our steps and continue the traverse over the stones and ice. When near the ridge, we found the remains of a mountain-rat or some small animal, with teeth and claws and fur still good, which had evidently been dropped by some large bird, as no animal could have lived up there. We reached the summit at two p.m. but though the day was cloudless there was too much smoke from forest-fires, in the horizon, to get a very distant view. The summit was much corniced, so we gave it a wide berth, and after a short stay began the descent.

Having no lantern with us, we hurried on, as we did not want to be benighted on the mountain, but the loose stones made care necessary and we did not reach our camp till 8:45 p.m., just as night was setting in. Jimmy and Jesse were on the lookout, and fired their gun when they saw us on the snow-slope, and when we arrived in camp we found a nice hot supper all ready.

EDITORIAL NOTE.

Miss Gertrude E. Benham's modest and unassuming account of her ascent of Mt. Assiniboine would not lead the reader to suppose that she was the first and only lady to set foot upon its summit, 11,860 feet above the sea.

Although several attempts had been made, the summit was not reached until 1901, when the Rev. James Outram, accompanied by the Swiss guides, Christian Hasler and Christian Bohren made the first ascent (see "In the Heart of the Canadian Rockies," by the Rev. James Outram, published by MacMillan & Co., New York). But one other party made the ascent between that by Mr. Outram in 1901 and by Miss Benham in 1904.

Presumably, Miss Benham's wonderful record of mountains climbed in the European Alps, in New Zealand and in Japan, the first including among one hundred and sixty climbs, Mont Blanc, the Matterhorn, Monte Rosa the Weisshorn and the Jungfrau, has lead her to regard but lightly her ascent of Mt. Assiniboine.



Francklyn

Figure 29
MOUNT ASSINIBOINE, SHOWING NORTH AND EAST FACES

THE ASCENT OF MT. HERMIT

Gray, Rev. S. H.

Few travellers on the west-bound Canadian Pacific express will forget the impressive moment when the train enters the giant gateway that opens to Rogers pass, the railway summit of the Selkirks. Rising on either hand are the towering masses of Mts. Tupper and Macdonald. This is Rogers pass, and the little station which bears that name is close by the summit. Looking back, as the train descends the grade to Glacier House, one commands an inspiring view of the Hermit range, of which Mt. Tupper is the beginning. The next to attract his notice is the compact group of peaks known as Mt. Rogers. Between this group and Tupper, and modestly receding into the background, is a sell-knit and shapely rock-mass, with a fine apron of nevi spread beneath it, called Hermit mountain. Possibly there is something in the name and the more apparent loneliness of the peak that invites acquaintance. At any rate, it had an attraction for the Rev. Dr. Herdman, whose enthusiasm was contagious enough to induce the Rev. A. M. Gordon and myself to join him in an attempt to climb it. Hermit, as far as we knew, had never been climbed, and that added to our zeal.

We met at Glacier House on the afternoon of August 3rd, 1904. After enjoying a good meal at the hospitable house, we set forth on a five-mile walk to Rogers pass. Edouard Feuz and his son were our guides. Leaving the rails a little east of the Pass station, we climbed the well-made trail to the cabin which the railway company has built for the convenience of mountaineers, thereby earning their heartfelt gratitude. We reached the cabin about nine p.m., with plenty of daylight left to boil the kettle and get comfortably fixed for the night.

At three o'clock Feuz gave the word to rise. A moment's struggle to realize where we were, and here at last was the great day. What mountaineer ever forgets that moment when he first opens the flap of his tent or the door of his hut and draws the breath of the mountain air, with the silence of the eternal hills about him? After a bite to eat, we struck off to the right, circling giant rocks and leaping small torrents, walking rapidly in the uncertain light. It was light when we reached the glacier, and clear enough to take photos when we reached the neve. The southern face, the broadside of Hermit, was directly before us. There appeared to be several feasible routes to the summit. The left or western side of the mountain rose in a sharp angle from the glacier; the eastern side was a long arete of easy grade and apparently afforded a sure, if long, route to the peak. Mr. Wheeler has included in his splendid set of maps—the second volume of his great work on the Selkirks—a fine drawing of Mts. Rogers and Hermit, and has in it marked our route on Hermit as lying along this eastern arete. That is the obvious route, and Mr. Wheeler is in no way to blame for the mistake. Feuz chose another and far more interesting mode of attack. A narrow and steep couloir leads up the face of the mountain from the neve, from which it is separated by a bergschrund. We put on the rope, crossed the cleft by a bridge at the right, worked across to the centre of the couloir, and at once commenced its steep ascent. This was a fine climb on good, stiff snow, and, though at the top somewhat alarmingly steep, was sure and safe.

The couloir led us almost directly to the shoulder of the eastern arete, at no great distance beneath the peak itself, to which, however, all progress seemed barred by a precipitous wall of rock. We had breakfast at this point-nine o'clock-and had leisure to look back on one of the noblest and grandest panoramas it is given man to see. The great peaks of the Summit range, from Tupper on the right to our nearest neighbor, Rogers, on the left, with Macdonald, Sir Donald, Dawson and Bonney in the centre, were clad in the soft pink light of the rising sun. From the side of Mt. Hector I have seen this light covering that beautiful ice-mountain, Balfour, and resting on that terrible display of rock and ice-that tortured world of barren crags, which one views from Lefroy; but these scenes lacked something of the mystery of distance and contrast of color and contour which took one's breath away on Hermit. Truly, Hermit is the mountain for the view which no man can describe, or forget. Turning about, we witnessed another spectacle, only less impressive. The Rockies lay that way, a solid wall of vast and unexplored grandeur, above which hung a rich canopy of cloud fired from the east

Feuz did a little reconnoitering here, to find a way round the precipice above us. He found it on the north face of the mountain, and we were soon at work with the axes on the snow. This difficulty being surmounted with comparative ease, there remained only a rock-stairway to be climbed to reach the peak. This was grand work, enlivened by long reaches and undignified pushes from below. An ice-axe would be shoved into a cleft above to yield a foothold for the first man. The rope from above solved the problem for the rest. After an hour or less of this fine exercise, we reached the summit, on the run. There was no cairn, and, as no record of a previous ascent is extant, we were likely the first to gain the top of Hermit.

This first peak (10,194 feet) ran down again into a depression of 100 feet or so, and then up again into a second peak, the second peak again into a third and fourth. We visited each in turn and found them good climbing. The descent from the third peak was quite precipitous, and was quite the hardest piece of work we had yet encountered.

After a good rest on the fourth or most westerly peak, we commenced the descent by the western arete. It was a matter of working from ledge to ledge. Except when one looked from the extreme edge of these ledges, he could see nothing below but the white of the glacier; but a little traverse, north or south, invariably led to an opening to a lower ledge. Falling stones were the worst danger. Feuz ducked in time to escape one half as big as his head. I got one on the ankle, but not to amount to anything. The ledges became narrower and the pitch steeper, the farther we descended. Probably, we covered more than half the distance to the glacier in this way, and might have made the whole descent by the arete, but for a moment of indecision for which I take all the blame. Dr. Herdman and Mr. Gordon had been on the rope with Feuz, and the younger guide and I were roped together. Young Feuz was leading and doing it with accuracy and speed. All went well until we dropped down five or six feet to a sloping ledge covered with scree, and nothing in sight below but the glistening white of the glacier. Carefully he picked his way to the edge and then swung, himself sideways to a projection or ledge hidden from us. Here I asked Feuz senior to give me a roper from behind. There was a little hesitation. Mr. Gordon, intrepid climber as he proved himself on this and another climb we had together, wanted to take my place. But the cautious senior guide "thought otherwise, and called us back. We all roped together then, and left the arete for good.

Making a long traverse of the southern face on a wide and easy ledge, we came at

length to a wider and less steep couloir than the one which we had ascended in the morning. We glissaded this to the bottom, lying prone and shooting down at toboggan speed, pulling up with the axes before reaching the bergschrund. Feuz tested the bridge and then shot over it safely on his back. We followed, and the glacier was reached.

This ended the interesting part of the climb. Dr. Herdman, never weary, wanted to climb Swiss peak and make a red-letter day of it, but, as this would have meant getting back to Glacier House at midnight, nobody seconded the motion. All that sticks in the memory concerning the return to the cabin was the intolerable glare of the sunlight on the glacier and the wearisome ploughing through the soft, wet snow. We reached the cabin at four p.m., and after a meal, started down the path to the railway and footed the ties five miles to Glacier House, reaching the hotel at seven o'clock.

Hermit is well worth climbing-Mr. Gordon and I climbed Lefroy, a week later, with Hans Kauffmann, and were amply rewarded, but the long, steady pull up that interminable snow and ice incline is not to be compared, from the climber's point of view, to the varied and exciting work on snow and rock which one meets with on Hermit; and, while the view from Lefroy is one of awe-inspiring grandeur, it does not compare in richness and variety of form and color with the view from Hermit. This, of course, is a matter of taste, but I think my companions will share my view.

THE FIRST ASCENT OF THE CENTRAL PEAK OF MT. BAGHEERA

Jackson, W. S.

To most men, who have done somewhat more than the ordinary show-peak climbing, who have got beyond the educational drudgery of the art, and grown enthusiastic for the most delightful of all forms of outdoor exercise, there comes the desire of conquering a virgin peak. A vague idea at first, then a shadowy possibility, it soon becomes a positive yearning to stand where no human foot has stood before, scale at least one soaring point free from cairns and luncheon cans, before axe and rope are laid by for ever. In the Alps there are none such left to conquer, though there is at least one whereon, though sometimes climbed, the foot of man has never stood. The mountaineer thirsting for fame is reduced to forcing new paths by forbidden routes up or down the oft-climbed peaks. Or else he must seek more distant fields; the Caucasus, the Himalayas, or the Rockies. Some such thoughts as these passed through my brain, as, after leaving Calgary in the early summer of 1905, the mighty barrier of mountains unfolded itself stretching north and south into vanishing distance. But nearer investigation brought disappointment. Everything seemed to have been done already. To find a decent virgin peak, it would be necessary to hire some sort of an outfit-ponies, tents, and drivers. It did not sound comfortable, and it did sound expensive. It is true that I was shown from the top of Temple one of the Ten Peaks that had perhaps never been ascended; but it was a long snow-grind, and I wanted a climb. If all mountains were long snow-grinds, there would be few keen mountaineers. It was the same story again at Field. In all the tossed sea of snow that lies around Mt. Stephen, there were no wave crests within easy reach that had not been topped. Hope had sunk very low when I reached Glacier. But here, Mr. Bell-Smith, the climber's friend, pointed out on his relief map two still unconquered summits, Mt. Tupper and the central peak of three-headed Bagheera. My holiday had only a short time to run, and there was Sir Donald still waiting as an absolute necessity. Everyone was talking of the wonders of the newly-discovered Caves of Cheops. That settled it. On the morrow, Edouard Feuz, Jr., and I started for Deutschmann's camp at the caves. We followed the railway and found the trestles across the Illecillewaet very unpleasant. The trail to the caves gave a glimpse into the beauties of the forests of the Selkirks. The cool shadows were delicious after the blazing sunshine on the rails. A family of grouse, tamer than barnyard fowl, squatted resolutely in our path. Leaving the trees, ferns and devil's-club were exchanged for flower carpets of lovely hues. The trail descended to the banks of the Cougar brook, which is crossed several times by convenient ice bridges, the remains of winter snows. We camped for the night at the Caves, where Deutschmann received us most hospitably and showed us some of the wonders of the place, discovered by himself the preceding autumn.

In the morning we made a somewhat tardy start along the bank of the upper Cougar brook, till we neared the foot of Mt. Bagheera. There we made our first mistake.

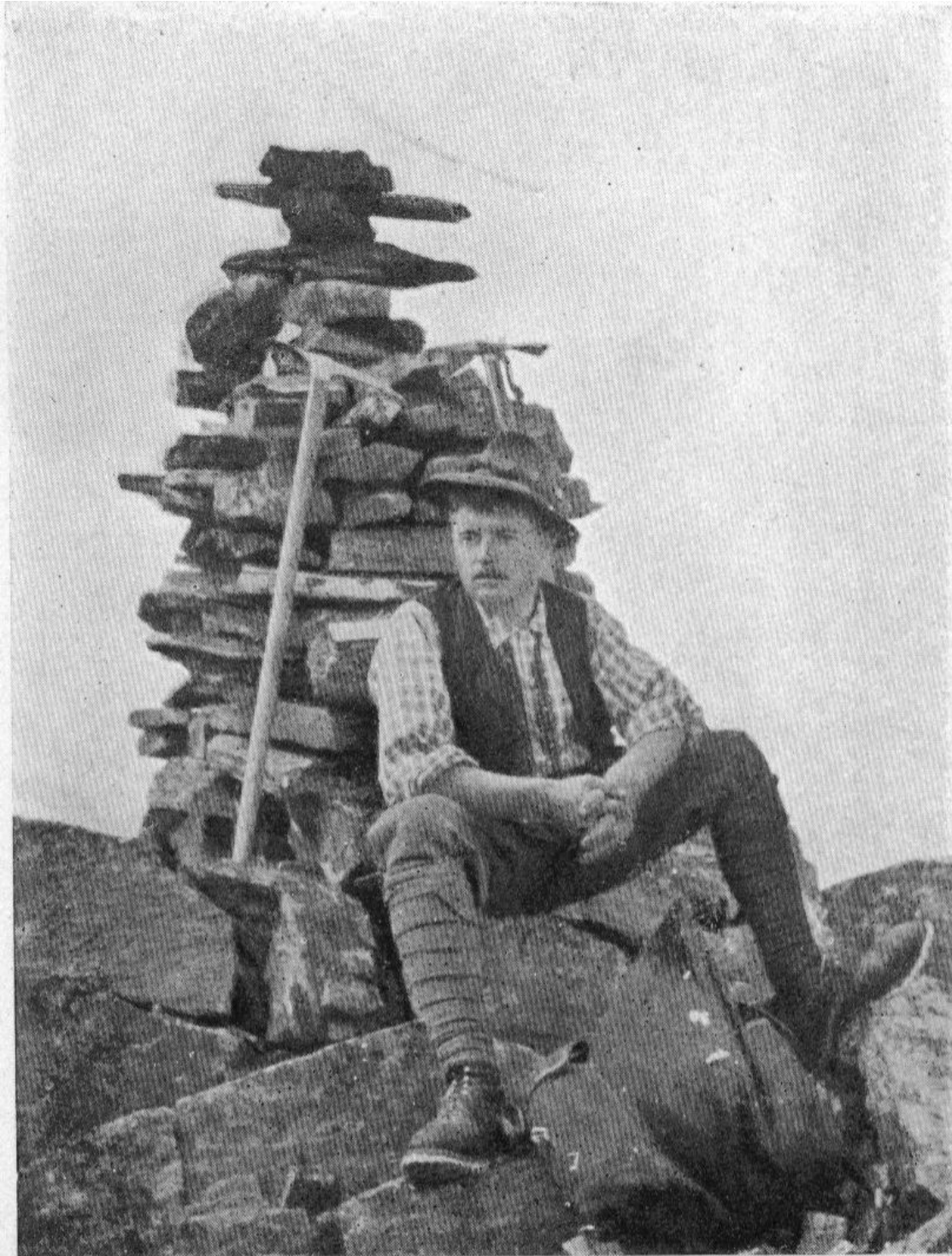
We began by ascending the brushcovered bank lying almost directly under Catamount peak. The going soon began to get boggy, the farther we went, the wetter it became, till we were actually wading, and my feet were soaked for the rest of the day. Emerging at length from this dismal swamp, we mounted the steep snow-slopes above, heading for the notch that separates Catamount from Bagheera. Midway were found beautiful waves of red snow, varying from pink on the crests to crimson in the troughs. This curious phenomenon is due to the presence of a tiny alga, which also accounts for the green snow elsewhere. Scrambling up the rock-work at the head of these slopes, we bore to the left of the notch till we reached the arete. Henceforth we had nothing but good sound rocks to the finish. Steadily working upwards, the projecting eastern point came into view, and seemed at first to be the promised summit; but climbing to it, the centre peak rose some 200 feet above us, looking quite imposing and Doigt de Dieu-like, as seen edge-wise from below. It had been hot work with the sun on one's back all the way, but Feuz frowned on all suggestions of rest and tobacco, and we again attacked the arete. This was largely composed of blocks of white and black marble, and gave firm and generous holds for hand and foot. We soon stepped over the edge of the little platform that formed our Hochste Spitze, and I stood for the first and probably the last time on a virgin peak (9106 feet). Here we found a little breeze, and sat down to enjoy the magnificent view. Far to the north stretched the endless snow-peaks that the Swiss range hides from the Glacier side. Sir Donald presented the grandest view of himself and his satellites that I was privileged to enjoy. Nearer at hand, across a big gulf, rose the eastern peak, of almost equal height (9096 feet). The air was clear as crystal, though two days later from the top of Sir Donald we could hardly see twenty miles away.

When inner cravings had been satisfied, we built an artistic cairn, took some photographs, and prepared to descend. It was now nearly midday. Reflecting on the probable condition of the snow-slopes, we started straight down the southern face of the mountain at right angles to the Cougar valley. It became hot again at once. The holds were sound but generally small, and a projecting inch was often all that could be found. Being pioneers, we came of course on an occasional pitch that threatened to cut us off. But Feuz skilfully turned them all, with the aid of the instinct that develops in the best Swiss guides. At length we came to a rather nasty bit. My feet, stewing in soaking boots, felt raw, the sharp rocks had torn my sodden puttees, and I was almost inclined to welcome Feuz's proposal to make a diagonal cut across a steep, doubtful-looking snow-bank. He anchored himself in the edge of the little bergschrund, and I started gingerly to kick steps in' the slope. I have always hated unstable snow, and my hatred was soon justified. After a dozen steps, the surface began to slide and I with it, until the rope tightened and swung me clear underneath Edouard. The breath was almost squeezed out of me, but I hung on to my axe and was soon on the edge of the bergschrund. We cut down this till we got to the rocks below : some more scrambling, a rather rocky glissade, and we were on the banks of the Cougar once more.

The walk back to the railway was weary work for one of us; but at the tank we found Mr. Bridgland and a party of brother officials, and with the kindness of fellow-mountaineers, they entertained us in a way that soon revived our spirits, and it was not till dusk that we took to the ties for the return to Glacier House.

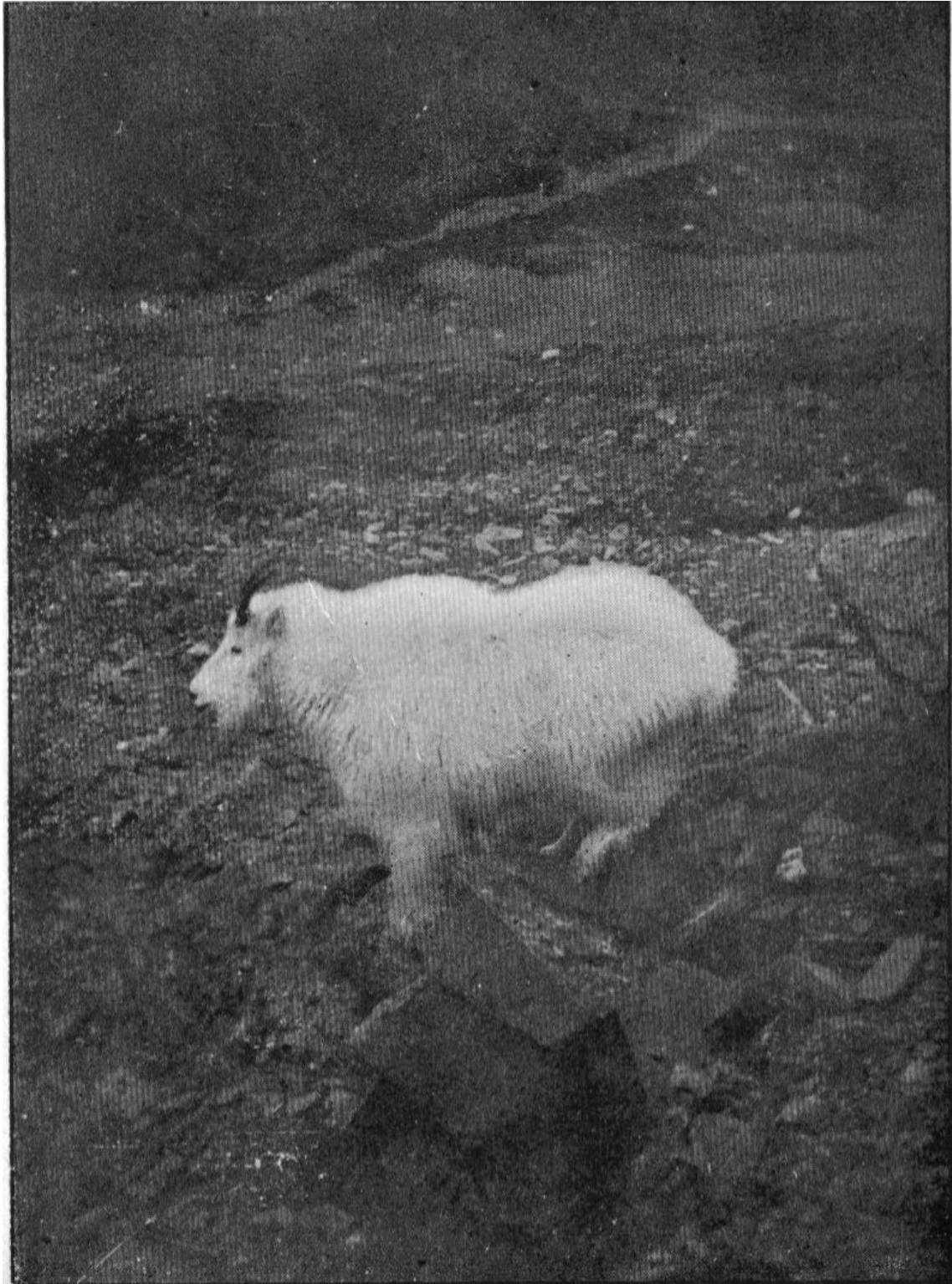
Thus ended a delightful trip and interesting climb, for which I tender my warmest thanks to Edouard Feuz, Jr.; whatever merit there is in the performance, it is wholly due

to his care and skill.



Jackson, W.S.

Figure 30
E. FEUZ, JR., AT OUR CAIRN ON
MOUNT BAGHEERA



Simpson, J.

Figure 31
ONE OF THE DENIZENS OF COUGAR VALLEY

THE ASCENT OF MT. MACOUN

Herdman, Rev. J. C.

Mt. Macoun stands up, like an arched horse's neck, eight or nine miles south from Glacier House, near the summit of the Selkirk range. It is a unique and separate peak, the corner mountain on the southeast of the great Illecillewaet neve, overlooking the Beaver valley, the Prairie hills, the Spillimacheen river, Grizzly creek, and Bald mountain.

The massif was named "Macoun" in 1888 by the Rev. W. S. Green, whose charming book, "Among the Selkirk Glaciers," was published in 1890, in honor of the distinguished Professor, Dominion Naturalist and Botanist, who had spent many summers in the West in the study of science.

In the month of August, 1902, I made the first ascent of this mountain with Edouard Feuz, Sr., one of the most capable of the guides brought out from Switzerland by the Canadian Pacific Railway Company. Not only romantic, but in every way enchanting, was the day's tour. We left the hotel at 5:20 a.m., took the east side of the great glacier, and as we climbed, the mists were suddenly swept out of the valley by the triumphant sunlight. We passed little streams and cascades, and, at 8 o'clock, gained Perley rock, an island of stones surrounded by snow-banks and ice-tongues. In order to reach it we had to cut steps like a staircase up a steep snow-slope. So delightful was the view from this platform of rock, that we spent ten minutes looking at the mountains and the scenery. Around us were Mt. Abbott, Glacier crest, Mts. Lookout, Green, Sir Donald, Uto, Eagle, Cougar, and below the seracs of the glacier and many waterfalls. Then we tramped up to the crest of the neve, about 4200 feet above Glacier House, and the Illecillewaet valley was suddenly shut out. Instead, a new panorama, south and west, opened up to our eyes Mts. Bonney, Fox, Donkin, Selwyn, Purity, Dawson, Fish creek, Glacier circle, and many large white snowfields. We kept to the left of the neve, and had no difficulties with crevasses, but our steps were in basins, formed by the winds whirling the snows around. Then Mt. Macoun rose into view. But the problem was, how to get our feet on the mountain? It was surrounded by a high escarpment of snow, with spaces between the vertical banks and the green ice which clung to the mountain sides. Fortunately, scouting about, we found a tongue running out, in a circuitous manner, which joined another tongue, a little lower in height. It was a very narrow peninsula to traverse, and at the end of it we had to step carefully, but the guide jumped from one strip to the other, plunging his ice-axe into the snow, and I followed; thus we reached the side of the mountain in safety.

Next came a difficulty which I have never seen, before or since, in any mountain range: a crack, three to six feet wide, separated the shoulder we were on from the main mass and the walls looked perpendicular. This sharp cut into the mountain may have been limited, but where we stood, because of the rough boulders, there was no way of getting past, and I imagined for some moments that our climb was completely blocked. But Feuz lighted his pipe and studied the walls carefully. Finally he discerned two small ledges,

opposite one another, so he descended several feet, leaped over the chasm and rested his ice-axe in a rift between the rocks. Then he cleverly scaled the face of the wall to where a large stone stood, round which he lashed the alpine rope, holding me to the ledge after my jump and pulling me up the steep ascent. But he pulled so actively that I felt myself almost cut in two, and yelled to be released. After this crisis, we were on the under side of the summit. All the way along its crest there was a large cornice, and this was the only occasion when the guide spoke warningly. He told me not even to speak, because, in Switzerland, the vibration of a voice sometimes starts a small avalanche; but we soon found that the overhanging cornice was frozen firmly to the crest, instead of being a shifting stretch of snow. Soon we saw a gap and, cutting holes through the ice, reached the summit. No cairn had been erected there, so it was manifest that no foot had ever climbed the peak. We built up a "stone-man" and left the record of our climb in his care. Then I got ' up on his shoulder and gave a good leap several feet higher than the summit. Afterwards I learned that Macoun was computed from survey stations as four to twelve feet lower than the Club's standard of 10,000 feet above sea-level, but I feel that I attained the height.

We decided to go back another way. The vertical wall faces at the crack were the difficulty; for the ledge on the opposite side being higher, the jump would have to be strenuous. Besides, Swiss guides always like to make different trails. So we dropped down on the west side of the mountain, leaving at 12:45 p.m. Then we attempted three descents, but found them fearfully precipitous. The guide put me to the front, which was the right plan, for if I had slipped he was there to hold me back with the rope. But we found the descents too dangerous and rapid, and were compelled to climb up again and go partially over towards the south end. Here Feuz lighted his pipe once more, and studied the rock face that we had to encounter. Soon he detected some little ledges and a few crevices.

Down we went; never before did I have such a descent. His words to me were reassuring and made me feel a Swiss guide myself. We had to grasp the mountain side two or three times with knees and arms outstretched, as there was no hold for boots and fingers. A little stone struck the guide, breaking the pipe which he had fastened to his vest, while I took calmly some cuts and bruises. The vertical descent soon widened out, and at the southwest end of the mountain, a wide sweep of snow took us clear over to the Illecillewaet neve.

We walked nearly in the centre of the snow-field for some miles, and had to rope up again, getting among complicated crevasses. Then we had a good glissade down to Perley rock and reached Glacier House a few minutes after six o'clock. No one, I understand, has ever scaled this peak since our ascent, but it should be tried -again, as the delight of the scenery is unsurpassed. In fact, from the summit of Macoun, I discerned rivers running north, south, east and west the Beaver, the Duncan, the Spillimacheen, and Fish creek.



Figure 32
EDOUARD FEUZ OF INTERLAKEN
The Crack Swiss Guide of the Selkirks

THE CLIMB OF CROW'S NEST MOUNTAIN

McTavish, P. D.

The discoverer of Crow's Nest² pass is Mr. Michael Phillips, now of Elko, B.C. In the early sixties he came as a Hudson's Bay Company's employee to Fort Sheppard, and subsequently went to Wild Horse, near the present town of Fort Steele, when that place was in the midst of its gold excitement. In the latter sixties he spent his time trapping along Morrisey and Michel creeks, and it was while thus employed that he discovered the pass. Standing at its summit, he looked out across the quiet,, forest-clad valley, which lay so calmly beneath him, the whole presenting the appearance of a great basin. Mr. Phillips thought it resembled a huge crow's nest, and in speaking of the pass thereafter, he referred to it as the "Crow's Nest" pass. It is quite natural that the mountain of striking appearance that stood near by should receive the same name.

Like the sacred Fuji Yama of Japan, Crow's Nest mountain rises abruptly out of the earth, with no other mountains within miles. In fact, so striking is this that the Peigan Indians had a beautiful legend as to its origin. According to this legend, the Great Spirit, with his daughter, the Spirit of Water, was walking near where the mountain now stands, when the Spirit of Fire saw them, and at once became enamored of the fair maiden and determined to capture her. But the Great Spirit divined his intention, and caused the fair Spirit of Water to descend into the bowels of the earth. Thus eluded and disappointed, the Spirit of Fire became enraged, descended after the maiden, and in his fury caused such terrible internal havoc that the Great Spirit commanded him to come forth out of the earth. In obedience to the command, the Spirit of Fire came forth, raising his head and shoulders above the earth, thus forming the mountain. "Now stand thou there forever,"

² Now written "Crowsnest " by a ruling of the Geographic Board of Canada.

commanded the Great Spirit. The fair Spirit of Water then descended into the earth and subdued the flames caused by the enraged Spirit of Fire. Since when all has been peaceful. This beautiful legend serves to prove to us that even the aborigines of our country recognized the singular, isolated appearance of this grand old mountain. The gentle forest-clad slopes lead up on all sides to the timber line, at an altitude of about 7000 feet, and from here a perpendicular band about 500 feet in height encircles the entire mountain, after which there is a succession of steep, rocky slopes and perpendicular faces until it finally terminates in a huge symmetrical dome. From the Crow's Nest branch of the Canadian Pacific railway, the mountain looks truly majestic, and often I had cast longing eyes upon it, wondering if it were possible for amateurs to successfully make the ascent. True, Mr. Tom Wilson, the well-known mountaineer of Banff, accompanied by two Swiss guides, had reached the top; but the difficulties they had encountered did not tend much to encourage the novice. My friend, Mr. Keith Whimster, and I talked the matter over, and it was finally arranged that we should make the attempt. Mr. George Harrower of Lethbridge and Mr. L. Stauffer of Frank made up the remainder of the party.

On August 19th, 1905, we met at Coleman, the Canadian Pacific railway station nearest the mountain, and all 'necessary arrangements were 'made for the climb on "the morrow. At two o'clock a.m. we were aroused from our peaceful slumbers. There was hurried and muffled tramping of big boots along the hallways, and finally an attack upon the dining-room, where a breakfast awaited us. When we had eaten to repletion (we had a long day ahead of us), we adjusted our packs, and by three o'clock were in our saddles and off.

It was a glorious night, with moon and stars shining brightly. As we galloped along the Old Man river, now skirting a hill with the stream far below, now rushing along by its margin, now plunging into the darkness of a dense copse of timber, or halting to splash through a little rippling brook, it was truly grand. After going five miles west, we turned due north and bore directly upon the object of our attack, which could just be discerned through the dim light of earliest dawn. How defiantly it seemed to smile, towering some 6000 feet above us, and how we wondered what the day would bring forth. Would we really reach the top, or was inglorious defeat, with its attendant chaffing from our incredulous friends, awaiting us? On our right the Livingstone range rose to a height of 8000 to 9000 feet, and when the first rays of the rising sun peeped timidly over its serrated summit, mingling with the silvery light of the waning moon, the transition from night to day was beautiful. We enjoyed some fine effects in white and black; each clump of trees and valley appearing perfectly black, whilst the dim light of dawn revealed the whiteness of the surrounding snow-capped mountains.

The ride along the winding trail was most enjoyable, and led us finally to a deserted lumber camp, beautifully located in a little glade. It was now 4:30 o'clock, and from this close range, looking through the tree tops, Crow's Nest mountain appeared really grand, but alarmingly defiant. We dismounted, tethered our horses, relieved ourselves of every pound of superfluous dunnage, arranged our packs firmly and comfortably, and at five o'clock started off into the woods by a path which led towards the mountain. After about two miles' travelling we left the path and blazed a trail of our own, which necessarily hampered our speed, so that it was after eight o'clock before we emerged above the timber line. A long slope of loose rock led up to a perpendicular wall

several hundred feet high, and as we looked at it, we decided that we had met our Waterloo. Realizing the impossibility of making an ascent here (on the west side of the mountain), we travelled about a mile to the left, during which time we gradually worked to the top of the sloping stretch of loose rock. This brought us to the northwest corner, where a very interesting needle of rock engaged our attention for a short time. On our left was a bare, steep face of rock some 400 feet high, that led up to a crevice, which in turn led to the top of the face. This seemed our only possible chance of getting up, and we believed that once this face had been negotiated, the rest of the climb would be comparatively easy. The climbing was very difficult, but extremely interesting. When we had reached a point about 300 feet high, we found it impossible to proceed further, as the rock arched outwards, baffling all attempts at ascent. We then led off some 40 feet to the left along a very narrow ledge of rock, in the forlorn hope of finding a way up to the coveted crevice, but this ledge terminated abruptly, and we found ourselves gazing into a sort of semi-circular amphitheatre some 500 feet in depth. Not caring to risk climbing over such a place as this, we were reluctantly forced to the conclusion that we must retreat, and so the descent began. This climb, however, was extremely interesting, and we found our rope a very useful part of our equipment.

Near where we descended, was a great crevice, leading up about 400 feet, and resembling the space left in a whole cheese when a thin wedge-like piece has been removed. We grasped at this as a sort of last straw, entered it, and began a scrutinizing examination of the walls on either side. At length we detected a small ledge which led up a short way to a little dome of rock, beyond which we could not see. But we had hopes, and indulging temporarily in the pleasures of hope, we contented ourselves for a sufficient length of time to dispose of a few sandwiches, which, needless to say, we enjoyed immensely, as it was now nearing ten o'clock, and we had breakfasted shortly after two. The recollection of that lunch always provokes a smile. We sat in a row, on a ledge of cold, damp rock, a dejected quartette, with our feet dangling over a perpendicular drop, beneath which was a small glacier; the water dripped about us and pebbles of various sizes hurled themselves from the heights above; a cold, chilling wind whistled up through the sunless canyon as we sat shivering there; while we were still feeling chagrined over our recent defeat. It was a disconsolate meal, but in memory lives as a most pleasant and amusing incident.

Having temporarily satisfied the cravings of the inner man, who, by the way, demands considerable attention when one is mountain climbing, we eagerly proceeded upwards to ascertain what awaited us beyond that obtruding dome. With some difficulty we surmounted this, and found ourselves at the base of a beautifully straight, but very perpendicular, chimney, about six feet in width and two hundred feet high. This offered possibilities, so we immediately proceeded to climb to its top. Arriving there, a short shaly slope led to a similar chimney, up which we climbed. We now found ourselves at the top of that first circular band which begirts the mountain, and felt that victory was within our grasp. For some time we encountered a series of steep, rocky slopes and perpendicular faces, which led to a long slope of about 1000 feet, after which the climbing again became fairly difficult, but for only a short time, as we had reached the final dome, and at 12:15 o'clock we stood upon the summit, a most jubilant party. Here we found the cairn of rock left by Mr. Wilson's party, but being very amateurish, we failed to examine the glass jar in its centre, which Mr. Wilson subsequently informed me

was there, and which contained the names of the former party. The remnants of an old flag we captured as our lawful booty, and carried off as a souvenir, leaving in its stead a new one, floating upon the cairn of rock which we erected beside the other.

We then sat down to enjoy the magnificence of the panorama stretching before us in all directions. Standing isolated in the midst of a beautiful valley, many miles from any other mountain, the view from Crow's Nest mountain is truly grand. At our feet lay the town of Coleman, whose houses seemed mere packing-boxes, while the emerald hues of Crow's Nest lake sparkled resplendently in the sunlight. To the east was the stately Livingstone range, and through its gaps the prairie, vast and illimitable, stretched away as far as the eye could see. To the south, the "Big Chief," a bold peak standing near the International Boundary line, could be seen, while westward rose majestically the triple peaks near Fernie, known as the Sphynxes, but more commonly called the Three Sisters. The snow-capped peaks and glaciers to the north looked most resplendent, and seemed to continue on and on until finally they merged with sky and beautiful cumulus clouds into one glorious and indescribable blending of beauty. The sun shone brightly and the day was calm and still, with no sound whatever to bespeak the presence of any living thing, and as we sat there silently enjoying the grandeur of it all, even a whisper seemed a sacrilegious disturbance of the utter silence that was everywhere about us.

At last it was time to go, as we had many miles to travel through the woods, and darkness is not slow in settling there. So after taking many pictures, we gave one last look at the magnificent surroundings, and the descent was commenced. It was now 14 o'clock, just twelve hours from the time our dreams had been disturbed. We reached the old camp at 17:30 o'clock, had a light lunch, saddled our horses, and rode home through the calm of the summer evening's twilight. Arriving there about 20:30 o'clock, we found that our cairn had been espied by means of a telescope, so that even those of our acquaintances, who smiled incredulously at our attempting the ascent, were forced, though not reluctantly, to forego the pleasure of friendly banter, which we feared when starting in the morning. To any desiring a pleasant trip and a delightful, interesting and remunerative climb, I can heartily recommend the ascent of Crow's Nest mountain.

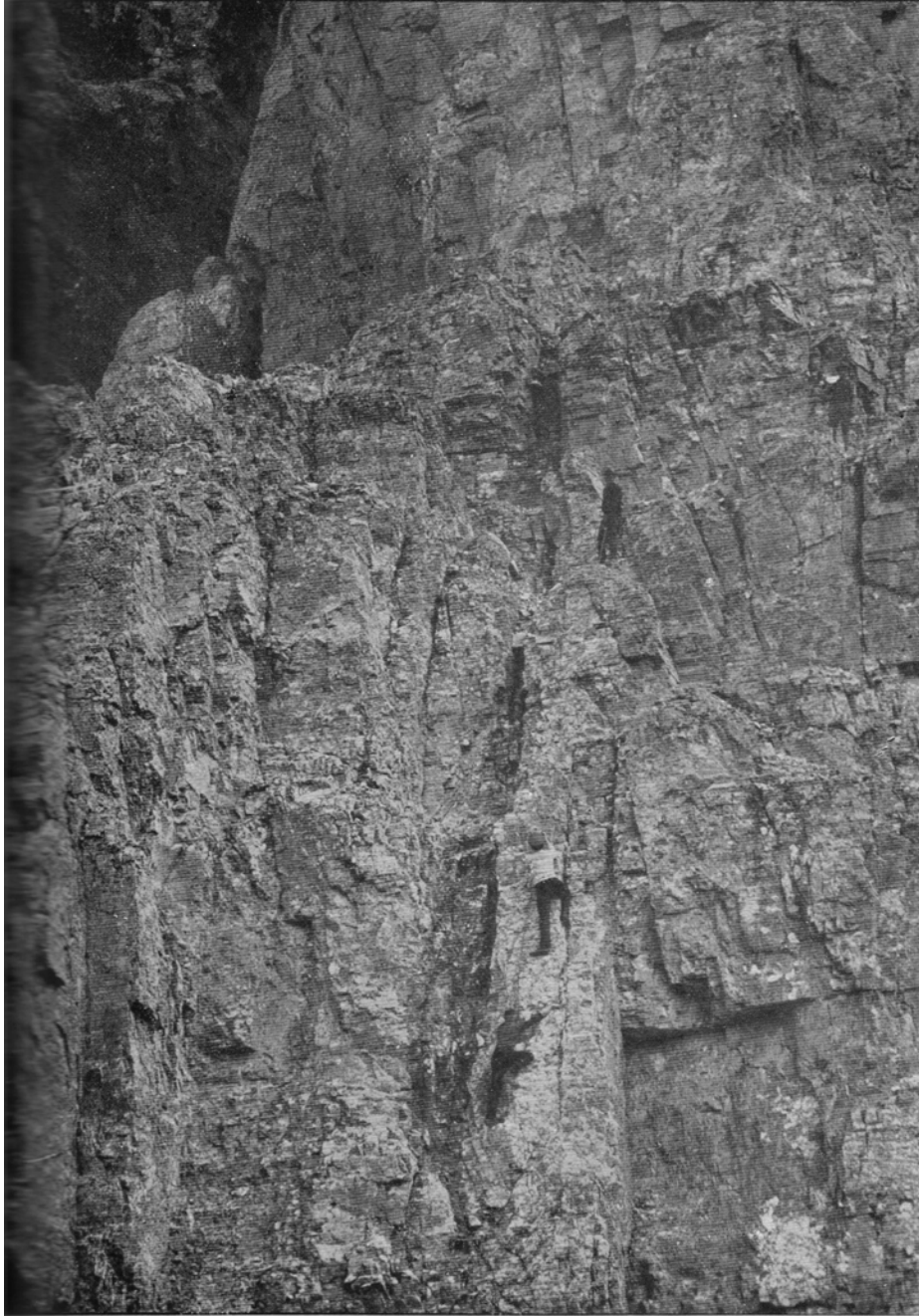


Figure 33
CLIMBING PRECIPICES ON CROWS NEST MOUNTAIN

THE ASCENTS OF MTS. MARPOLE AND AMGADAMO

Gordon, A. M.

Dunn, Alex.

Mcrae, A. O.

The last day of the camp was its climax. Some of the members had left toward the end of the week, others departed on Monday. But three of us remained to climb Mt. Marpole—Dr. A. O. McRae, Rev. Alex. Dunn, and Rev. A. M. Gordon.

We were richly rewarded. True, we had to rise at the unearthly hour of 3:45 in the morning, but even this had its compensations. After early breakfast, Dunn and Gordon set out from camp at five o'clock, in company of the guides, Edouard and Gottfried Feuz. Soon we were joined by Dr. McRae, and the party of five began to ascend the valley toward the mountain. It was weary work following the bed of the stream and then trekking up a long slope of slippery shale to the place where the actual climbing began. — But, once we had to pick footholds and often handholds carefully, there was no more fatigue. Mt. Marpole is lower than the Vice-President, but gives more opportunity for actual climbing. Here we saw the real thing. First, the guides took us to the top of the unnamed mountain east of Mt. McMullen, and on its summit they built a cairn or "stone-man," to show that we had made the first ascent. Then they led us along the rocky ridge or arete, traversing the mountain from west to east. There were ascents and descents which no one but an expert or a fool would attempt alone. Thanks to the guides, however, these were made without difficulty.

At one point we had to cross a glacier between two peaks. The usual method would be for the foremost guide to cut steps, for the others on the rope to follow, steadying themselves with their ice-axes. But this takes time; so our guides clambered up the snow cornice at the edge of the glacier, and passed over to see how the snow lay. The guides decided to risk it; we crossed on the cornice; and breathed freely when we stood on solid rock again.

The only actual mishap was the loss of his hat by one member of the party. The breeze carried it gaily into the valley a couple of thousand feet below; even for this mishap the guides were prepared, Gottfried promptly produced from his rucksack a cloth cap, and the climber exchanged the hat of the cleric for that of the mountaineer. So on we went, over rock and glacier, until we came to a rock which would defy even a mountain goat. The upward slope of thirty or forty feet was steep, the ledges were all turned the wrong way. It looked as if nothing but a fly or a limpet could hold on. But in some wonderful fashion Gottfried made his way up, taking the rope with him, and then by means of the rope he pulled us up one by one. A few minutes more of easy work brought us to the summit. So far as we knew, we were the first to stand there. A second "stone-man" was erected to mark this event. It was now half-past two o'clock. All along we had had brilliant sunshine. After enjoying the superb view for three-quarters of an hour, we began the descent towards the glacier lying between Mt. Marpole and The President. From time to time Edouard would reconnoitre : standing on the edges of a cliff overhanging space, he picked out the route, and we got down as easily and safely as if we had been walking on prairie. Then came a walk over a snow covered glacier and a

delightful descent, with opportunity for "glissading." This part of the journey was made in quick time, as the weather had changed.

Sometimes on the mountains, one has the experience of standing in sunshine and looking down on a thunderstorm below. We were in the midst of the thunderstorm. Nowhere is the lightning so vivid or the reverberation of the thunder so stunning as among the hills. It is a fine experience to go through such a thunderstorm, but one not far from danger. The polished steel handles of the ice-axes attract the lightning. In this way several men in Switzerland have been killed. Our guides did not linger on the heights. They took no chances. They pushed down into the valley with all speed, pausing only to test the snow-bridges spanning the crevasses on the glacier. We reached the valley free from all harm. The one drawback was, that the hail and rain deluged us from head to foot. Yet this was a trifle, and we could look forward to a roaring fire, dry tents, dry clothes, and a good supper on our return. And that is a very different thing from returning to cold grub, wet blankets, no tents, and no fire. Finally, we came to the Upper Yoho trail, and we trudged along, a weird-looking, bedraggled company, rather tired, very hungry, and altogether happy. The arrival in camp at eight o'clock was all that we looked for, and an hour and a half later we were sleeping the sleep of the just. No more exhilarating or healthful day's sport could be imagined. We cannot speak too highly of the skill and care shown by our two young guides. Without them the expedition would have been impossible. Owing to them it was an unqualified success.

MT. STEPHEN

Kinney, Rev. G.R.B..

It was .in October of 1904, about the twenty-first, I left Field at eight o'clock in the morning, for a solitary stroll to the fossil bed on Mt. Stephen. A dense cold fog filled the valley, and promised good opportunities for cloud pictures later in the day. So, besides my lunch, prospector's pick and chisels, I took two cameras, a tripod, plates and holders. For an hour the trail to the fossil bed was followed; now going through the fragrant groves of spruce and fir over their thick carpets of moss, now crossing the noisy, foaming stream on a rustic bridge, but ever up, and always plunging through the heavy clouds of mist. As timber limit was neared, the clouds became broken with many a rift; and then, finally, I emerged above them into the glorious sunshine of a serene day. At my feet lay a sea of hurrying clouds, dazzling white in the brilliant sunshine of that October morning. Its massive swirling billows broke in silence on a soundless shore, and swept in gentle surges over the fossil bed, where once rolled the mighty ocean. Field with its tourists and its noisy, puffing traffic, was no more; it lay fathoms deep in that fleecy, fluffy flood.

On the right, across a few miles of clouds, Mt. Field arose abruptly, its snows glistening pure and white in the sun, with Mt. Wapta just peeping over its broad shoulders. Immediately opposite, Mt. Burgess reared its rugged crest. Between lay that most beautiful of passes, Burgess pass. This trinity of gems seemed an island in the midst of a matrix of down. Across another inlet of this sea of clouds, the ivory, peaks of the

Van Horne range and Ottertail mountains formed a . gleaming row of fangs, guarding the approaches to the mainland beyond.

After taking a few pictures, the rest of the beautiful morning, from ten o'clock, was spent in gathering fossils and studying that old sea bed. With hammer and chisel, I opened Nature's book, and there, page after page, were trilobites of rarest form. Thousands, yea, millions of years ago, those shell fish had crawled slowly along the old sea bottom. Time had heaped a mountain upon them, had raised their ocean floor to a lofty plateau of a mighty continent, had hardened their mud to slate, and their shells to stone. About one o'clock, having eaten my lunch, the desire seized me to take a few views from the peak of Mt. Stephen. So, depositing the trilobites at the gnarled roots of an old dwarfed fir, and shouldering the load of cameras, etc., I set out for the summit. It only took a few minutes to climb to the top of the spur immediately above the fossil bed and to get above the last of the struggling timber growth, when there burst into view a scene that beggars description: Cathedral mountain, its perpendicular heights searching the very heavens, formed one unbroken wall of a vast amphitheatre. There, ridge on ridge, tier on tier, the parallel ledges, cushioned with snow, rose in countless numbers for thousands of feet. In such places as these the spirits of the mountain sit and watch the changing scenes of the hills in the vast arena before them. Sometimes it is a procession of sheep, or goats, or deer, or bear, or the eagle gracefully sailing. Sometimes it is the frisking mountain rat, or the whistling marmot, or the busy haymaker curing his crops of hay on the hot rocks of the slide. Or again it is the grand orchestra of the hills, breaking forth in the roar of the avalanche, the scream of the wind, the fall of the cataract, or the crumbling of the peaks.

For a mile or more it was easy going over a gentle slope covered with rocks and snow. The clouds had gradually broken up before the genial warmth of the sun, and the Kicking-Horse river seemed a little thread of silver that wound, with countless twists and turns, in a level valley below. Field, with its roundhouse and trains and big hotel, seemed but a little dot, and when an engine whistled, a thousand echoes tossed the sound from side to side, from peak to peak, from canyon to canyon, until it was lost in immensity.

The climb was uneventful up to the time the cliffs near the top were reached. It had been a fairly easy slope all the way. The snow began at timber line, and was hard enough to walk on its top. Mt. Dennis was slowly left behind and sank to a mere hillock beneath. Mts. Field and Burgess gradually slipped down until Wapta and then the Vice-President, with an emerald glacier in its lap, came in full view from behind.

By making a detour, I could have found an easier way, but, having no guide and never having been there before, I began to climb the wall of rock immediately in front. It was a most difficult climb. The short day was nearly ended, the warmth of the sun had given place to a raw, cold wind, and my pack being large and heavy, got in the way. Nearing the top of this almost vertical cliff, my numb fingers slipped and I barely escaped a sheer fall of fully one hundred feet. Surmounting the cliff, it proved but a vanguard of many. Height on height of barefaced cliffs offered their resistance in succession, each crowned with snowcovered ledges. Gradually, however, they were vanquished, one by one, and at last I stood on the glorycrowned summit, ten thousand five hundred feet above the sea.

Mts. Field, Burgess and Wapta lay far beneath. President and Vice-President gleamed and glistened in the near distance. Cathedral mountain, close by, seemed almost on a level. Here, there, everywhere, some in groups, others in serried ranks, were massed the war-scarred veterans of an innumerable host-the rugged remnants of a vast ancient

plateau, stretching north, southeast and west, as far as the eye could see. All this vast array of snow-clad peaks, frowning precipices, glistening glaciers, and yawning gulfs, was burnished with the glowing hues of the setting sun. I watched him sink behind the distant fringe of peaks in the west, and when he was gone, how lonely and chill those somber old masses seemed. I shouted aloud, but my voice was immediately swallowed up in that awful stillness, for there was nothing to give it an echo.

I did not stay long on the summit, for the raw, cold winds that had frozen the snow in crystals several inches long chilled one to the bone. The darkness of night began to swallow up the distant hills, and it was necessary to get down the cliffs while there was still light to see the way. I had gone but a short distance when, following a ledge around more to the south, I made a grand discovery. There, filling a steep, rugged ravine that seemed to extend all the way to Cathedral mountain, was a smooth pathway of snow, steep as the roof of a house. One question flashed to my mind would it be frozen too hard? I cautiously tried it. Yes! it was hard, but with care it could be travelled. By launching out freely and letting the whole weight come down on each foot at a time, the heels could be forced a couple of inches into the solid snow. Here, indeed, was the best kind of speedy going : swing out one foot, spring from the other, and land on the heel in an inch or two of snow. Each stride covered a distance of several feet, and it was possible to run down that steep precipice of snow as fast as I liked, but my life depended on each heel getting that little two inches of a hold; one slip would mean a fearful slide to death. There was no danger, of crevasses, for it was all new snow.

In an amazingly short time a descent of hundreds of feet had been made, until, finally, the bottom of the cliffs were reached. Then I started across and down that long, tedious slope of snow and boulders. The weary slope at last was ended, and I reached the rockwork, where someone had been prospecting for copper just above the fossil bed. Here I carefully felt the way down in the darkness, guided only by the light of the half-obscured stars, found my fossils and rejoiced because home was near. The lights of Field twinkled far below.

With a load of fifty pounds or more in weight, weary, hungry, and thirsty, I found the trail at the foot of the fossil bed, when the going was easier. Then, at last, I came to the brook, and drank deeply of its cold, sparkling waters. On again through the midnight darkness of the woods, where, the air was warm and balmy, until the welcome lights of Field came into view. I arrived safely at eight p.m., having enjoyed in twelve hours that which will take more than a long lifetime to forget.

EDITORIAL NOTE.

So far as we are aware only four climbs, other than Mr. Kinney's, have been made of Mt. Stephen without the aid of Swiss guides, viz.: the two ascents, by the Government Topographer, J. J. McArthur and his assistant, T. Riley, in 1887 and 1892; an ascent by Abbot, Fay, Field and Thompson in 1895; and an ascent by A. O. Wheeler's party in 1904. Never before or since has the climb been made by one man alone, and at a time of the year when the conditions are such as to be almost prohibitive. For this reason, if no other, the feat is remarkable.

The mountain has now become the stock climb from Mt. Stephen House, the Canadian Pacific Railway Company's tourist hotel at Field, B.C. When making it, one, and often two Swiss guides are employed. The magnificent view from the summit more than repays the exertions of the climb.

GLOSSARY OF MOUNTAINEERING TERMS

Their Meanings as Used in Literature Relating to the Alpine Tracts of Canada.

Wheeler, Arthur O.

Aiguille	A needle like rock tower or pinnacle, isolated from a central mass.
Alpenstock	A long stout staff, shod with a sharp steel point, used by mountaineers.
Alps, Alplands	The open grasslands, meadows or slopes above timber line; usually clad with heath, heather. and beautiful mountain wildflowers.
Amphitheatre	A natural circular area, surrounded by rising ground, usually rock or snow masses.
Arete	The sharp ridge, edge or rocky spur of a mountain; used in connection with snow as well as rock.
Avalanche	Falling bodies of snow or ice, loosened from their hold by the heat of the sun.
Berg	The integral rock mass rising above a snowfield ; also, in the absence of snow, above the slopes of debris, or the alplands at its base.
Bergschrund	The crevasse formed between the edge of a body of snow and a rock berg; one of the chief difficulties and dangers to be overcome in mountaineering.
Boulder Clay	A stiff, tenacious clay containing boulders of all sizes; found in the moraines of a glacier; corresponds to "till."
Cache	A hiding place; a store of provisions, etc., hidden for future use.
Cirque	A circle of rock peaks.
Col	The crest of a neck or pass between two mountain peaks, usually though not necessarily covered with snow.
Confluent Glacier	One, tributary to a trunk glacier; generally flowing from a greater elevation.
Cornice, Snow Cornice	An overhanging edge of snow at the crest of a mountain peak or ridge, caused by drifting.
Couloir	A steeply ascending gully, gorge or ravine in the side of a mountain or rock peak; generally, though not necessarily, filled with snow.
Crampon	A steel frame, set with sharp spikes, strapped to the boot to facilitate climbing on ice.
Crevasse	A fissure or crack formed in a snow field or glacier ; caused by non elasticity of the ice when moving down the uneven surface of its rocky bed. Longitudinal crevasses are formed in the direction of the flow; transverse crevasses at right angles to the flow.
Divide	The height of land between two drainage basins. The watershed.
Dry Glacier	The portion of a glacier showing clear ice through melting of the

	snow covering.
Fire	Accumulated snow while in a granular condition and before it has been consolidated into the ice of a glacier; corresponds to the neve or snow field forming the source of a glacier.
Forefoot	The part of a dry glacier adjoining the terminal moraine.
Gendarme	Name applied to an isolated rock tower or pinnacle, separated from the mass of which it had originally been a part.
Glacier	The form in which snow falling on the higher parts of a mountain range, above snowline, finds its way down into the valleys. The ice overflows from a firn or neve.
Glacier Table	A block of stone, a boulder, supported by a column of ice which its shade has preserved from melting; generally seen on a dry glacier:
Glissade	To slide down a steep snow slope; performed sitting or standing according to the conditions of the snow. An ice axe or alpenstock is used to steer by.
Grat	An edge or sharp ridge; corresponds to "arete."
Hanging Glacier	An overhanging glacier, formed in a crevice on the cliffs of a mountain side.
Hanging Valley	A tributary valley opening high up on the side of a main valley; often carved out by glacial erosion. It is generally marked by an abrupt step at the mouth, due to the eroding agency having continued its work in the main valley long after it had ceased in the hanging valley.
Height of Land	The watershed between two drainage areas. A crest from which the ground slopes in opposite directions; corresponds to "divide" or "watershed."
Hoodoos	The name given in Western Canada to certain grotesque columns, the products of erosion, left standing on the slopes of mountains and deep gulches.
Ice Axe, Ice Pick	A tough wooden staff, about 3 ft 6 in. long, with an adze shaped steel head at one end and a sharp spike at the other. Opposite the adze, the head is drawn to a point, some times set with teeth. It is used to cut steps in steep ice or snow slopes.
Ice Fall	The dry glacier.
Langthal	A long valley. The depression between moraine and the mountain side, usually filled with snow.
Massif	A central mountain mass. The dominating part of a range of mountains.
Mittlegat	A middle edge or ridge, as for instance the rock edge between two snow fields or part; of a glacier.
Moraines	The rock debris transported by a glacier and deposited at its base, along its sides, or between two separate ice flows. They are respectively named : terminal, lateral, and medial moraines.

Moulin	A nearly vertical shaft or circular cavity worn in the ice of a glacier by a surface rivulet falling into a crevasse, down which it pours in a sub-glacial cascade.
Neve	The accumulated snow forming the source of a glacier; corresponds to "snow field" or "firn."
Nunatak	A crest or ridge of rock appearing above the surface of an ice field or glacier.
Reentrant	Rocks are spoken of as being at a reentrant angle, i.e., their faces slope inwards from the perpendicular.
Roche Moutonnees	A group of scattered knobs of rock, rounded and smoothed by glacial action; so called from their resemblance to a flock of sheep lying down.
Rock Fall, Rock Slide	An accumulation of broken rock fallen from the cliffs above, through disintegration of their masses; often of considerable extent.
Rucksack	A bag, especially adapted to the back, for carrying the impedimenta of a mountain climber.
Schrund	A crack or crevasse in the ice of a glacier.
Scree	Loose, broken shale at the foot of a cliff; slopes of debris fallen from above through disintegration.
Seracs	Fantastic pillars of ice formed on a glacier by the intersection of longitudinal and transverse crevasses where the grade of its rock bed is broken by ledges or steps.
Snow Mushrooms	Accumulation of snow in the woods on trees, stumps, etc., resembling giant fungi of the species named. They are seen of great size and variety along the Canadian Pacific railway through the Selkirks.
Snout	The most advanced part of a dry glacier; corresponds to "forefoot."
Striae, Striation	Grooves, or scratches http://cut.in/cut in rocks or boulder clay by the action of ice moving down an incline.
Summit	The highest point of a mountain or peak. The lowest part of a mountain pass. The highest crest of a ridge.
Talus	The mass of rock fragments lying at the base of a mountain cliff, formed by the accumulation of pieces brought down from above by the action of gravity, frost, rain, etc. ; equivalent to "scree" or "debris."
Till	A stiff clay containing boulders of all sizes up to several tons weight; often smoothed and striated by glacial action.
Tongue	The extreme end of a glacier; corresponds to "forefoot" or "snout."
Watershed	The divide between two drainage systems or catchment areas. The height of land between streams flowing in opposite directions.

THE MOUNTAIN WILDFLOWERS OF WESTERN CANADA

Henshaw, Julia W.

There is a region in Western Canada where the most exquisite wildflowers in the whole world bloom above the clouds; not singly or in groups, but in beds and banks these blossoms of every hue, and size, and form flourish with a rich luxuriance in the alpine meadows of the Rocky and Selkirk ranges, that recalls those tropical gardens only to be found on the irrigated fringe of the desert. Yet how much more ethereal in texture and coloring are these hardy alpine plants, growing at an altitude of from 3000 to 9000 feet above the level of the sea, than their fellow-flowers which grace the sultry lands of the Orient.

In the Western mountain ranges lies the real Garden of Nature in Canada. It is a wild garden, and wild are its surroundings, a beautiful wilderness of wilding bloom, fragrant with the breath of Heliotropes and Violets, and glorified by the sheen of scarlet Indian Paint-brushes, yellow Arnicas, and purple Phacelias.

Among the mountains there are plants peculiar to each particular locality, though there are also hundreds of species which abound equally in all the various districts. At Banff, in the Rockies, the wildflowers are within the reach of all; for there they grace the lowlying meadows in every direction, are found in the thick forests, and out upon the dry stony slopes of the hillsides. At this spot it is quite unnecessary to climb

in search of them, as is more or less the case at Lake Louise and Glacier, for they seem to cover the whole locality with a richly colored profusion, which rivals the flowerbeds in cultivated gardens.

The Banff Hotel stands on the cliff, high above the confluence of the Spray and the Bow rivers; steep banks broken by large rocky prominences sweep down from its wide verandas to the boiling torrents below, and here in sheltered nooks and crannies grow the curiously-branched Coral-roots (*Corallorhiza innata*), while the tendrils of the white and purple Vetches trail over the stones, and the Wild Clematis (*Clematis Columbiana*) winds its leaf-stalks around the branches of adjacent bushes. Lower down you will find huge clumps of the Service-berry (*Amelanchier alnifolia*), an attractive shrub bearing many clusters of snowwhite blossoms amid its pale green foliage, and farther on the Fireweeds flare and flash like torches burning in the long grass.

Along the banks of the Bow river stretch flat meadows where conifers grow sparsely, and the pungent scent of pine and balsam fills the air with subtle sweetness. The ground is covered with dry moss and a tangle of short green growths, above which tower tasselled rushes. Here flourish the exquisite white blossoms of the One-flowered Wintergreen (*Moneses uniflora*), which has been so aptly named the "Single Delight," its waxen-petalled cups bent downwards close to the soil, and its delicate fragrance floating forth on the July breeze..

The roads which thread the forests and lead to those hot sulphur springs which gush forth out of the mountain-sides in copious streams, are fringed by the small plant-like shrubs of the Birch-leaved Spiraea (*Spiraea lucida*), crowned in August by big clusters of creamy blossoms faintly tinged with pink, which smell extremely sweet, and are particularly attractive to the eye of the traveller. Just where the road ends and the trail,

which leads to the crest of Sulphur mountain surmounted by the Government Observatory, begins, you will find vast beds of the White Dryas (*Dryas octopetala*) growing in dry soil and exposed to the full glare of the sun, its silver-backed foliage carpeting the earth, and each large white corolla holding up a heart of gold.

Then, should you leave the open road and seek to follow the narrow trail as it winds upward towards the eternal snows, what a wealth of bloom you will encounter on every side. Great orange lilies flaming out from a bank of ferns, the yellow-flecked magenta Calypso (*Calypso borealis*) growing irk its solitary beauty from a single bulb with a single leaf at the base of its slender stem, Columbines, Garlics, Monks-hoods, Anemones—there is no end to the floral treasures that spring to life at every step. Or should a happy inspiration seize you to visit the Cave and Basin, where one of the hot sulphur springs has been utilized to supply the magnificent swimming baths, and an ancient geyser, now extinct, has hollowed out a marvelous cave of eccentric formation, you will be rewarded by the sight of quite a different set of plants; for there the warm overflow of the water gushing down the hillside, nourishes wonderful clumps of bright blue Lobelia, huge azure Gentians, Asters, Sunflowers, purple Mints, Butterworts, and sweetest and most fascinating of all, the large showy spikes of the Ladies' Tresses (*Spiranthes Romanzoffiana*), and the pale pink clusters of the Fly-spotted Orchis (*Orchis rotundifolia*).

Banff is by no means the only locality in the Rocky mountains where flowers abound. In the vicinity of Lake Louise the Western Anemone (*Anemone occidentalis*), with its white translucent cups, veined and tinged with purple, covers the higher slopes of the hills, following up the retreating line of the melting snows, in springtime and, later on, decorating the mountains with its fine feathery seed-heads. Here, too, the Wild Heliotrope (*Valeriana sitchensis*) grows in profusion, the pink Swamp Laurel (*Kalmia glauca*) and the White Mountain Rhododendron; Heaths and Heathers, red, rose, and white, carpet the earth beneath the Lyalls Larches, and are among the last vegetation seen at "tree-line"; the Globe Flower (*Trollius laxus*), a great white bloom with a heart of gold, pushes its way up through the icy coverlet of winter, and the Romanzoffia, with its petals of pure velvet, nestles in the crevices of the rocks at an elevation of 8000 feet.

Field is the place where you will find the large Yellow Lady's Slipper (*Cypripedium pubescens*) in all its rare perfection. On a long moraine which stretches up from Emerald lake to the foot of the Yoho valley, these huge orchids grow in thick clumps in the month of July. They are weird, uncanny flowers with big yellow pouches and long spiral petals, and very strange does it seem to find there, flourishing on alpine heights, those plants that we are accustomed to associate with South African jungles and tropical surroundings.

As if in contradistinction to the exotic growth of these giant Orchids, you will also find at Field the hardy Ox-eye Daisy (*Chrysanthemum Leucanthemum*), the white Canada Violet, the Ragworts, the Honeysuckles, the Cow Parsnips, and the Harebells, rioting all over the meadows, and clothing the earth with a coat of many colors.

At Glacier the Yellow Adders Tongue (*Erythronium giganteum*) is, perhaps, the most attractive plant to travellers. I have seen these pale yellow blossoms, amid their pallid green leaves, glimmer at dusk with a lambent light beneath the shining star-sown fields of heaven, and at dawn have seen the whole mountain-side break into bloom with exquisite odorous flowers, as if a mantle had been flung about the shoulders of the slopes,

while at each step one had perforce to crush them under foot, so closely clustered did they grow among their smooth, spear-like shoots.

To the true lover of nature there is no greater pleasure than to stand where the snow-crowned mountains tower up to heaven, where the thin blue tint of the sky is stretched out over stony bastions, rising above the tall green conifers, and the alpine streams, ice-born in the heart of the sparkling glaciers, form a silvery network enmeshing myriads of bright-hued blossoms which bud and blow at the bidding of the summer sun. Such is the Garden of Nature where the mountain wildflowers of Canada grow

"Twixt the green and the azure sphere."

When you leave the Chalet Hotel at Lake Louise to follow the trail which leads into the Valley of the Ten Peaks, you begin the long slow ascent that ends on the shoulder of Mt. Temple, from whence you obtain an exquisite view of Moraine lake. Here you enter the wonderful flower-fields of the valley, where blossoms of every hue sweep in great waves of color from "treeline" down into the depths, 3000 feet below. Here the Indian Paint-brushes - (*Castilleia septentrionalis*) and Painted-cups (*Castilleia miniata*) are to be found in all their glory, scarlet, red,, pink, white, yellow and orange they abound on every hand. Mingled with them grow golden-silvery Hairy Hawkweeds (*Hieracium Scouleri*), Harebells (*Campanula rotundifolia*), Phacelias (*Phacelia sericea*), cherry-tipped Eriogonums (*Eriogonum umbellatum*), blue-eyed Speedwells (*Veronica alpina*) and a dozen different species of Vetch, Saxifrage and Rock-cress.

An alpine meadow is a spot of supreme beauty, where the Wild Clematis (*Clematis Columbiana*) and Macoun's Gentians (*Gentiana Macounii*) are blue as the sky overhead, while the Yellow Columbines (*Aquilegia flavescens*) toss their heads in the passing breeze' and a thousand flowers spangle the grass, their starlike faces upturned to meet the smile of the sun. These alpine gardens, held close in the curved arms of the hills, or set like jewels on the bare breast of the stone bastions, are one of the great marvels wrought by Nature in the recesses of the Western mountains, the contrast between the beauty of the blossoms and their barren surroundings being as vivid as it is enchanting.

The Bunch-berry (*Cornus Canadensis*) is a dweller in the dense forests, where its white cruciform flowers and scarlet fruits are familiar to all travellers. So also is the Queen-cup (*Clintonia uniflora*), so named by me in English in 1903, the name being now adopted in the Canadian nomenclature of plants; for queen it certainly is of all the lovely flower-cups which grow in the mountain valleys, its pure white petals forming a chalice fit for the First Lady in our land, and its large pale green leaves constituting a fitting background for so ethereal a bloom.

On the dry sunny flats at an elevation of from 4000 to 5000 feet above the level of the sea, the Giant Sunflowers (*Helianthus giganteus*), Great-flowered Gaillardias (*Gaillardia aristata*), full-fringed Golden-rods (*Solidago Canadensis*, *S. decumbens*) and Heart-leaf Arnicas (*Arnica cordifolia* *olia*) flaunt their gay golden petals ; tall and handsome plants they are and very attractive. Close beside them grows the frail little Wild Flax (*Linum Lewisii*), which droops as soon as it is gathered and withers at a touch, the humble Narrow-leaved Puccoon (*Lithospermum angustifolium*) , the Yellow-Rattle (*Rhinanthus Crists-galli*), Tall Lungwort (*Mertensia paniculata*) and Loco-weed (*Oxytropis Lamberti*), bushes covered with softlyblushing Prickly Roses (*Rosa acicularis*), flanked by flocks of Pink Everlastings (*Antennaria parvifolia* var. *rosea*) and warm-scented Clovers (*Trifolium pratense*), realms of rose where the calm of green

things growing tempers the lure of the coral and carmine, and the grasses are gossiping as the migrant hosts of the Dandelions march on through Summer's wide-set door, with all their golden banners unfurled to the southern wind.

Close beside the alpine lakes upon whose bosoms float flat lily-pads, and along the ' margin of those streams where wet-loving water-weeds wind their tendrils about the drooping, dripping willow wands and Blue-eyed Grasses (*Sisyrinchium angustifolium*) twinkle like azure stars in the green firmament of the moss, the pale globular blossoms of the Small Wintergreen (*Pyrola Minor*) hang in pearls upon each juicy stalk and myriads of Red Monkey-flowers (*Mimulus Lewisii*) glimmer like lamps in the gloom of the thickets.

Very early in the Spring the Pasque Flowers (*Anemone Nuttalliana*) appear in the land, their purple cups with silvery linings opening wide long before the fringed fern-like foliage develops about the thick downy stems. Very high up on some tiny plateau held in a hollow amongst the hills, some play-ground of the sun, where a patch of verdure is laid in the earth's brown lap, dew-drenched at dusk, ripened to sapphire by the sun at noon, wind-wrinkled by the gales that blow crisply off the glaciers, these large leaf-whorled Pasque Flowers spread in purpling waves across the waste, and turn the plateau into a paradise of flowers from whose violet rim runs the warm wine of loveliness.

To the traveller the wildflowers of the Rocky and Selkirk mountains are a wonderful revelation of the prodigality and color-painting of Nature in these alpine regions ; while to the botanist they are a constant

source of interest and delight. There is no more beautiful, rich or varied alpine flora in the world than that of the British Empire, and it is the proud boast of Canada that within her Western borders grow the choicest specimens of many mountain wildflowers.

EDITORIAL NOTE.

The foregoing article by Julia W. Henshaw, author of " Mountain Wild Flowers of Canada," published by William Briggs, of Toronto (price \$2,00), was originally written for the Standard" of Montreal. It is now republished by permission of that paper, with amplifications, for the information of our members. No visitor to the Canadian Rookies should come without Mrs. Henshaw's book. Written in a most delightful and artistic manner, it furnishes a text that, while appealing to the layman in the simplicity of its language, does not neglect the scientific aspect of the subject. It is designed with the purpose of enabling the traveller to identify the various species seen and it fulfils its mission well.



Henshaw, Julia W.

Figure 34
YELLOW ADDER'S TONGUE (ERYTHRONIUM GIGATEUM)



Henshaw, Julia W.

Figure 35
GREAT-FLOWERED GAILLARDIA
(GAILLARDIA ARISTATA)

GLACIER OBSERVATIONS

VAUX, GEORGE, JR

VAUX, WILLIAM S.

Of all the phenomena that attract the nature lover in the high mountains, possibly none is more interesting or appeals more strongly to the imagination than the glaciers.

These vast bodies of ice, slowly meandering from the highest peaks and snow-submerged valleys, calling to mind that epoch when the polar ice cap covered the whole of Canada and the northern part of the United States, ever pushing onward with resistless force, give us a picture of the operation and unchangeableness of natural laws, which is most impressive.

Whilst the glaciers of the Canadian Rockies and Selkirks cannot compare in size with those of Alaska and other far northern latitudes, there are probably no other mountain ranges in the world where the conditions are more favorable for glacial study and observations. All the various types may be seen, and their location is such that they may be visited with the greatest ease by the tourist, and a continuation of observations made and records kept, which in the future will be of the greatest value in solving the many problems that are as yet unanswered respecting the action of glaciers. In no way can the Alpine Club of Canada do more to further scientific interests than by taking steps to carry on some work of this sort systematically each year.

Though much of it has already appeared in the Proceedings of the Academy of Natural Sciences of Philadelphia, it seems to be not amiss to give here a brief resume of the work which we have done on the glaciers of this region, in the hope that it may prove not only interesting, but also that it may serve as a starting place and prevent duplication of effort. We shall, therefore, run the risk of repeating what is familiar to most of the readers of the Canadian Alpine Journal and, for continuity of treatment, say a word as to the theory of glaciers.

Broadly speaking, a glacier may be said to be a mass of ice of sufficient volume to flow down from an elevation. With the heavy precipitation of snow characteristic of high mountain regions, it is one of the provisions of Nature by which an indefinite accumulation of snow and ice cannot occur.

The Rocky mountain system in southern Canada consists of four principal ranges. Beginning with the west these are : the Coast range, the Gold range, the Selkirk range and the Main or summit range of the Rocky mountains, the two former being much lower. If now one will examine a map of the Pacific ocean upon which the currents are marked, he will see that the great Japan current flows in a northeasterly direction along the Asiatic coast, until it divides, one branch continuing through Behring sea and strait into the Arctic, whilst the other and larger portion takes a great sweep to the east, until it strikes the American continent, when it turns southward, and flows parallel to the coast. Necessarily there is an enormous amount of evaporation from this great volume of warm water and the winds blowing over it are laden with moisture. Their prevailing direction is from west to east. Carrying their burdens of water vapor, they are responsible for the moist and mild climate of the northern portions of the Pacific coast of Northern America. Where these winds meet the cooler land currents of air, some precipitation occurs, but they are not seriously depleted of their moisture until they strike the cold Selkirks, when

the precipitation is very heavy. As a result of this the air current rises and so crosses the mountain range, only to be met beyond by the still colder and loftier Rockies, where most of the balance of the moisture is lost. Herein we see why the western slopes of these mountains have a much heavier rain and snowfall than the eastern slopes and why it is that the great plains stretching from the foothills to the centre of the continent are comparatively so dry.

In the lower levels this precipitation is in the form of rain, during most of the year at least. But when we reach the elevation of the higher mountains it is almost entirely fine granular snow, even in midsummer. On bright days part of this will evaporate, but the greater portion keeps on accumulating, until as the result of the pressure of the superimposed weight of new snowfalls, it gradually becomes compacted into hard solid ice. This ice is like that which forms in our rivers and lakes, except that its internal crystalline structure is different, owing to the different way in which it was formed. Now, if this were the end, the situation in our regions of high mountains would be very different from what it is, for the snow and ice would keep on increasing indefinitely, as the amount of melting at such high levels must be quite small, and conditions analogous to those of the polar regions would ensue. But Nature comes to the rescue. With the increasing pressure caused by the weight of the ice, to which is added the attraction of gravitation, the ice starts to flow; very slowly, but none the less surely. It is hard for us to conceive of so brittle a substance as ice, as we know it, flowing. Yet it does; and doubtless the internal structure of the ice, above referred to, aids in this. But any ice under pressure is more or less plastic. The pressure exerted on these great bodies of ice by the weight above is tremendous, and their onward motion is resistless. Its effects are seen in the way in which ledges of the hardest rock are smoothed off, and often times most beautifully polished and grooved by the ploughing over their surfaces of rocks and stones caught in the ice. Possibly the simile frequently used of the way in which thick mortar will run when poured out of a bucket gives as good an idea as any of the manner in which the ice composing a glacier flows. The region of transformation of snow into ice is called the neve.

There is still another and distinct apparent movement of glaciers, which is even more evident than that above described. Naturally when the ice stream reaches the lower and warmer altitudes, melting goes on more rapidly, until finally the end of the ice wastes away, and a stream or river ensues. Now, it is for only a very short time in each year, in the latitude that we are considering, that the temperature is such that the amount of daily melting of ice exactly corresponds with the daily advance produced by the flow of the glacier. Hence it is that we have an oscillation of the tongue, which in winter will gradually extend farther down the valley, whilst in summer it will gradually retreat. This same result of advance and retreat may also be produced by protracted changes of weather conditions as more or less precipitation, higher or lower mean annual temperature. Such must last, however, for terms of years in order to produce anything more than a temporary effect upon the glacier. This characteristic has long been noted, and it is found that usually through long cycles, varying from a dozen upto thirty or more years, the glaciers of a given region will show each year a net advance and then again for a succeeding period successive annual recessions. Our Canadian glaciers are no exception to this rule, and during the time they have been observed retreat has been the almost universal movement. Now, for a brief account of our personal observations on the various

glaciers which we have studied

Illecillewaet Glacier (Glacier House).

Its proximity to the Glacier House and the ease with which it can be reached, has caused this glacier to be more visited and more studied than any other in the whole region. Its size is not such as to cause it to command unusual attention, as there are many others which greatly exceed it. But its location has attracted attention to it ever since the opening of the Canadian Pacific railway, and from 1887 to the present, there have been more or less continuous records made. Our work has consisted

(a) In mapping the end of the glacier, with its several moraines and surroundings, showing

their conditions through a number of years.

(b) Taking a series of "test photographs" in successive years, from the same position.

(c) Measuring the amount of recession from year to year.

(d) Measuring the rate of flow.

Several maps of the Illecillewaet glacier have been made. We have drawn two, one in 1899, and the other in 1906. Both are from actual surveys and photographs, showing the limits of the ice, the various adjacent moraines, and the rocks marked by various investigators. They may be found in the Proceedings of the Academy of Natural Sciences of Philadelphia.

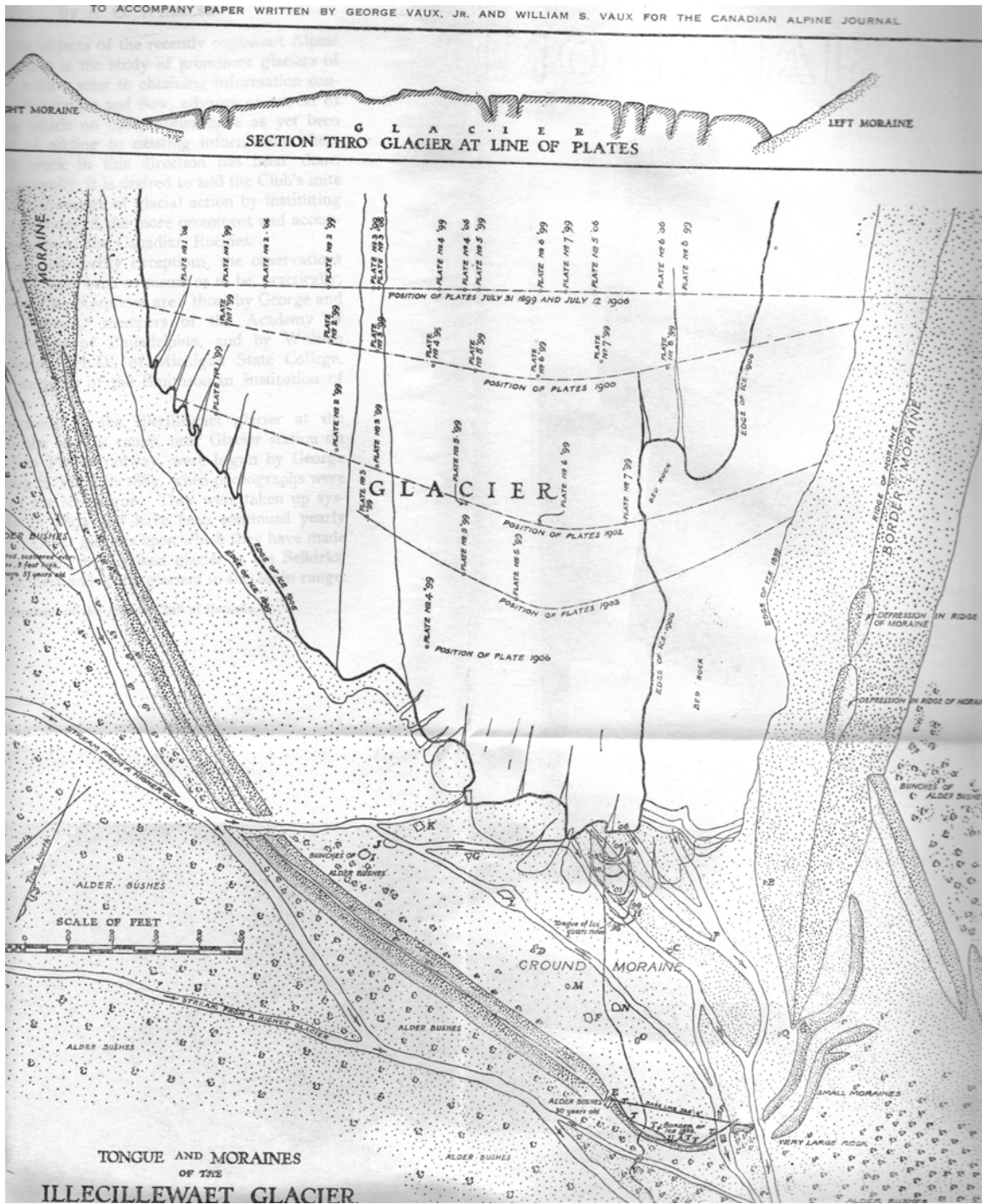


Figure 36

TONGUE AND MORAINES of the ILLECILLEWAET GLACIER

Each year since 1899 we have taken a 6/x8/ photograph from a large boulder, located to the right of the trail, soon after it emerges from the forest. These pictures form a most interesting series, and a comparison of them gives a very accurate idea of the many changes in the ice as they have occurred.



Figure 37

**TEST PICTURE OF THE ILLECILLEWAET GLACIER FOR THE YEAR 1905
Showing The Left Lateral Moraine, Mount Lookout in Centre**

Numerous individuals have marked rocks in the bed moraine of this glacier, giving bases from which to calculate the amount of recession. By correspondence and otherwise we have endeavored to collate all of this information, and it is recorded in these maps. The first systematic marking was done in 1888 by the Rev. W. S. Green. He daubed with tar a number of boulders adjacent to the ice, and its limitations that year may be easily made out by following these marked rocks. Our own work has also included the marking of the edge of the ice as it was in 1887 upon a large boulder beside the trail, just as one emerges from the alder bushes. A photograph taken at that time by us, and showing this huge rock imbedded in the ice, gave the basis for the mark. We have also marked several rocks in the bed moraine, and from one of these having on it a circle and cross the measurements have been made since 1900.

The following table gives the results of the observations for recession:

*Illecillewaet Glacier, Recession of Tongue of Ice
from Rock C.*

Date of Observation.	Distance Tongue of Ice to Rock C.	Recession of Ice since previous year,
Aug. 17, 1898.....	60 feet	
July 29, 1899.....	76 "	16 feet
Aug. 6, 1900.....	140 "	64 "
Aug. 5, 1901.....	155 "	15 "
Aug. 26, 1902.....	203 "	48 "
Aug. 25, 1903.....	235 "	32 "
Aug. 14, 1904.....	240½ "	5½ "
July 25, 1905.....	243 "	2½ "
July 24, 1906.....	327 "	84 "

The most detailed and probably the most interesting work we have done, however, is the measurement of the rate of flow. Rev. W. S. Green made some observations, 'but, as he was not equipped with proper instruments for the work, his results were not very satisfactory. In 1899 our own work of this sort began. A base line was laid out on the right moraine, at a point about 1000 yards above the tongue of the glacier. We had provided a number of square steel plates, painted bright red and lettered for identification. With the assistance of a transit these were laid out across the glacier in a straight line, and at points as nearly equidistant as possible. Some days later, and again in subsequent years, the position to which the ice had carried these plates was measured by trigonometric methods, and then the rate of flow calculated.

As time went on some of the plates were lost through their slipping into crevasses, or from other causes. We have reason to believe, however, that none of them were disturbed by visitors, which is a satisfaction. Finally they had flowed so far down that none of them could be seen from the ends of the base, and in 1906 a new set of plates was laid out. The interval of time at our disposal was too short to permit of any very satisfactory deductions from this new line of plates, apart from obtaining the rate of summer flow, but we are hoping to secure measurements the coming summer, which may add to the amount of knowledge we possess on this subject.

The following tables summarize what has already been done:

ILLECILLEWAET GLACIER.

Table Showing Motion of Line of Plates, 1899 to 1906.

Number of Plate.	Position of Plates on July 31, 1899.	Distance below original line on August 6, 1900.	Daily Motion 1899 to 1900.	Distance below original line on August 28, 1902.	Daily Motion 1900 to 1902.	Distance below original line on August 28, 1903.	Daily Motion 1902 to 1903.	Distance below original line on July 22, 1906.
1.....	On line.	1,044 ins.	2.82 ins.	3,455 ins.	3.21 ins.	Lost	—	Lost
2.....	On line.	1,488 ins.	4.00 ins.	4,446 ins.	3.04 ins.	Lost	—	Lost
3.....	On line.	1,716 ins.	4.64 ins.	4,848 ins.	4.18 ins.	6,216 ins.	3.73 ins.	On border moraine 10,200 ins.
4.....	On line.	2,112 ins.	5.71 ins.	Lost	—	Lost	—	Lost
5.....	On line.	2,220 ins.	6.00 ins.	5,850 ins.	4.84 ins.	7,740 ins.	4.87 ins.	Lost
6.....	On line.	2,280 ins.	6.16 ins.	6,312 ins.	5.51 ins.	8,388 ins.	5.65 ins.	Lost
7.....	On line.	2,160 ins.	5.84 ins.	6,504 ins.	5.79 ins.	Lost	—	Lost
8.....	On line.	2,040 ins.	5.51 ins.	Lost	—	Lost	—	Lost

Error! Objects cannot be created from editing field codes.

Asulkan Glacier (Glacier House).

Our work here has been on the same lines as on the Illecillewaet, though our observations have not been as continuous, and no map was made and no attempt to measure the rate of flow till 1906.

As respects recession, this glacier has shown more changes than some of the others. In 1901, a distinct advance occurred which lasted for about three years. Then recession again ensued. Our series of observations was somewhat interfered with, because the large boulders in the moraine, which were employed to mark our datum line, were shoved forward by the ice in its advance, entirely obliterating the primary base line for our measurements.

Table Showing Changes in Tongue of Asulkan Glacier.

Aug. 12, 1899.... "Rock opposite lined with snout."
 Aug. 8, 1900.... Snout receded 24 feet.
 Aug. 6, 1901.... Ice *above* rock 20 feet, 4 feet advance.
 Aug. 30, 1903.... Ice *below* rock 16 feet, 36 feet advance since 1901.
 July 23, 1906.... Ice lines with test rocks, or is in same position as in 1899.

The method employed in 1906 to measure the rate of flow was identical with that used on the Illecillewaet. The accompanying table gives the results so far secured.

Table Showing Average Daily Motion of Plates on Asulkan Glacier between July 13 and 23, 1906.

Plate.	Total Motion.	Average Daily Motion.	Remarks.
No. 7.....	24 in.	2.4 in.	Near right edge of ice.
No. 8..	39 "	3.9 "	63 feet from R. edge.
No. 9.....	55½ "	5.5 "	157 feet from R. edge.
No. 10.....	67 "	6.7 "	325 feet from R. edge.
No. 11.....	67 "	6.7 "	415 feet from R. edge.
No. 12.....	63 "	6.3 "	Close to left edge.
Boulder	89 "	8.9 "	On left moraine, resting on ice foot.

Wapta Glacier (Yoho Valley)³

In 1901, when we first visited this glacier, we marked on the bed rock the extent of the tongue, and also took test photographs from a large boulder high up on the right moraine. This work was repeated in 1904 and in 1906. The work of the Scientific Section of the Alpine Club will demonstrate the rate of flow.

The recession from 1901 till 1904 was 89 feet, an average of about 30 feet per

³ Now known as Yoho Glacier.

annum. From 1904 till 1906 apparently the glacier was practically stationary.

Victoria Glacier (Lake Louise).

We have made some measurements to show the recession of the Victoria glacier. Its whole lower portion is so deeply buried in morainal material that the tongue is very difficult to distinguish. The motion is also complex, as there is a sideways movement across the main stream caused by the inflow of the Lefroy glacier. The tongue at present appears to be on the left side. Here the recession appears to have been about 17 feet per annum between 1898 and 1903; since then, there has practically been no movement.

We have also endeavored to approximate the rate of flow of this glacier at two different points, one near the forefoot, and the other about two miles further up. These observations were made with the aid of some large boulders, and the prismatic -compass, by which means the position of the rocks was located in successive seasons relative to fixed points not on' the ice. The amount of the flow was about 147 feet during the year 1899-1900.

We have also visited and photographed a number of other glaciers, but on none of them have we made any accurate measurements and observations.' In the interests of science, it is much to be hoped that the number of glaciers studied will be very largely extended. The field is an extensive one and there are many problems to be solved.

OBSERVATIONS OF THE YOHO GLACIER

WHEELER, A. O.

One of the objects of the recently organized Alpine Club of Canada is the study of prominent glaciers of the region, with a view to obtaining information concerning the formation and flow, advance or retreat of those upon which no observations have as yet been made, and of adding to existing information where some little work in this direction has been done. Speaking generally, it is desired to add the Club's mite to scientific knowledge of glacial action by instituting yearly observations of the more prominent and accessible ice-cascades of the Canadian Rockies.

With two noteworthy exceptions, the observations made thus far have been so casual as to be, practically, of no value.

The exceptions are: those by George and William S. Vaux,⁴ members of the Academy of

Natural Sciences of Philadelphia, and by William Hittell Sherzer, Ph.D., of Michigan State College, under the auspices of the Smithsonian Institution of Washington. Investigations of the Illecillewaet glacier at the summit of the Selkirk range, near Glacier station on the Canadian Pacific railway, were begun by George and William S. Vaux in 1887, when photographs were obtained of the ice-tongue. They were taken up systematically in 1894 and have been continued yearly since then. Other glaciers upon which they have made observations are: the Asulkan glacier in the Selkirks, and the Victoria and Yoho glaciers in the Main range.

The results of their labors-and a good deal of it has been hard work-are set forth in a number of monographs written for the proceedings of the Academy of Natural

⁴ Active members of the Alpine Club of Canada.

Sciences of Philadelphia and for "Appalachia," the publication of the Appalachian Mountain Club of Boston, and subsequently issued as excerpt copies.

The expedition of Dr. Sherzer was made in 1904, supplemented by additional observations in 1905. He applied his investigations to five glaciers : The Victoria, Wenkchemna and Yoho in the Main range, and the Illecillewaet and Asulkan glaciers in the Selkirk range. The account of his surveys and observations is given to the public in a most instructive and splendidly illustrated monograph, reprinted from Smithsonian Miscellaneous Collections (Quarterly issue), Volume 47, Part 4, No. 1567. In it Dr. Sherzer gives a description of the several glaciers, their sources, surroundings, action and general characteristics, and draws most interesting and conclusive deductions from his notes. The theory here advanced that the origin of "Block moraines" is due to seismic disturbance, is valuable in view of the fact that, at the present date, no snowfield or glacier in either range carries a load of rock fragments of sufficient size to form moraines similar to those studied by Dr. Sherzer under that name. The moraines referred to were found at no great distance from the ice-tongues of the Victoria, Wenkchemna and Illecillewaet glaciers.

Owing to close proximity of the Club's annual camp for 1906, the Yoho glacier was the first taken up, and the initial work last summer is now set forth

The triangular elevated area of mountain peaks and ridges bounded on the eastern side by the trough of the Bow and Mistaya rivers, on the western side by the trough of the Amiskwi river, Blaeberry river and Middle Fork of the Saskatchewan river, and on the

south by the trough of the Kicking-Horse river and Bath creek, comprises the Waputik mountains along the Bow river, the President range along the Amiskwi river, and a high range of peaks, as yet without specific name, extending into the apex of the triangle. It contains approximately 400 square miles and nearly through its centre lies the line of the Continental watershed, attaining a maximum elevation of 10,731 feet above the sea in Mt. Balfour, situated near the centre of the tract.

The accumulated ice and snow collected in the interior basin, or series of basins, of this mountain area is named on Government maps the "Waputik Snowfield." This snow or icefield-the latter a more appropriate term, for the snow is but a shallow covering-is practically cut in two by Mts. Gordon and Olive and the ridges of which they form a part. The northern and larger part is the one with which we have to do at the present, and, for the sake of convenience, it is here spoken of as the "Wapta icefield." It has an area of approximately from twenty to twenty-five square miles, and is enclosed in a basin surrounded by Mts. Gordon, Olive, Thompson, Baker, Aysha peak, Mts. Collie, Habel and McArthur, Isolated and Yoho peaks, together with their connecting ridges.

In its turn, the icefield is divided into three principal component parts by lateral rock ridges having precipitous escarpments facing westerly and covered on the eastern sides by snow, where it has piled up in great mounds and slopes. The most western section drains to the Yoho valley, which opens southward from the centre of the tract, chiefly by the Habel glacier, the source of Twin Falls creek. There is also an outflow to the north, between Mts. Habel and Collie. The next section drains both north and south, but chiefly to the south, the iceshed lying close to the northern edge. It furnishes the supply for Yoho glacier, the principal source of the stream of that name. Section No. 3 contains the Continental watershed and drains in small part to No. 2, but chiefly to the east by the Bow glaciers, forming the main source of the Bow river, and by Peyto glacier,

a source of the North Saskatchewan river. There are a number of minor overflows, but those named are the principal.

Owing to its position, balanced astride of the Continental divide, the Wapta icefield is of exceptional interest. It feeds four good-sized streams. Two lead through mountains and rolling plains to the Atlantic-ocean and two, by a wilder and more broken route, through canyons and dense forests to the Pacific: on the north the Blaeberry river, on the south the Kicking-Horse river, both tributaries of the mighty Columbia; and on the east the Bow river, flowing to the Saskatchewan by a devious southern route, and Mistaya river, flowing direct to the Saskatchewan and thus to Hudson's bay.

The Yoho glacier is the largest outflow from the Wapta icefield. It has little length-less than two miles,- breaking almost directly from its neve between the rocky steeps of Mt. Gordon on the east and Yoho peak on the west, the latter separating it from the Habel glacier. On account of the short run between rock-bound sides, the glacier carries a very small amount of debris and is of remarkable purity. For the same reason its moraines are poorly developed. A short distance above the tongue, the ice stream divides and flows around a knob of rock or "nunatak," which it covered at an earlier date and has now almost wholly encircled by a moraine. The eastern arm is small. At the head of this rock outcrop the main flow breaks into a series of beautiful seracs, reaching across the entire channel in chaotic confusion. The rock sides of Yoho peak, show very distinctly the "plucking" or stripping action of the ice when the glacier was much larger and far more powerful than at present. The accompanying illustration shows the dividing rock embossment surrounded by moraine and the wildly broken seracs extending across the glacier. The action of the glacier as an irresistible plane, shaving off the mountain side, is well depicted on the left hand.

The main stream of the Yoho river issues from a fine cave which it has hollowed out in the ice-tongue. The front of the forefoot is precipitous, rising sharply about 150 feet. The slope then assumes a more gentle phase, and walking on the ice between the crevasses, which are here longitudinal, is an easy matter.

On the 14th of July, a committee of five members of the Alpine Club left camp with one of the daily parties making the round trip of the Yoho valley. They stopped for the night at Laughing Falls camp and started early next morning for the glacier. On the road they picked up Mr. George and Miss Vaux, who were camped several miles nearer the ice.

Three independent sets of observations were made to establish initial data from which to start a series of annual observations: (1) to obtain rate of flow; (2) to ascertain retreat or advance; (3) to observe the annual change in the ice formation at the snout. For the first, a row of metal plates were fixed in position across the main ice stream. A suitable base line was then carefully measured along the mountain slope on the eastern side, at a height overlooking the ice. While reaching this position, an interesting feature was noticed in a long line of piled-up tree trunks in various stages of decay, parallel to the trend of the glacier. The adjoining slopes have been swept clear of timber by an avalanche, and are now covered by scrub growth and a few small trees, indicating that, at the time of the avalanche, the ice of the glacier was on a level with the tree trunks. It is at the present time several hundred feet distant and many feet below. In his monograph, Dr. Sherzer refers to this feature and states that he measured the oldest living tree he could find growing in the path of the avalanche, and it had only 47 rings of growth.

Six plates, eight inches square and a quarter-inch thick, having on the under side a piece of inch and a quarter pipe, one foot long, to act as an anchor, were now set at approximately regular distances across the width of the glacier, at a place where the surface was slightly undulating, and as nearly as possible at right angles to the flow. At each point where a plate was set a hole was bored, in the ice with an augur and the anchor dropped into place. A surveyor's transit was next set at each end of the measured base and angular readings taken on poles placed in the centre of the plates, thus fixing their position accurately with regard to the established base line. The ends of the base line, on prominent boulders embedded in the mountain side, were carefully marked with red paint and a suitable inscription. Similar readings taken from the same base points at any future date will at once indicate the changed position of the plates and, provided there has been no local displacement, will give an accurate estimate of the flow of the surface of the glacier at each point where a plate was set.

The plates and method were the same used by Messrs. George and William S. Vaux for the Illecillewaet glacier. It was now found-and has since been learned that the same experience applied to the Illecillewaet glacier-that the kind of plate used was, not a good one; for, returning across the ice later on, it was seen that each plate was raised more than an inch above the surface, owing to the melting of the ice where exposed to the sun, which had not taken place to a similar extent at the bottom of the holes. It is presumed this will continue, day by day, until, the plate topples over. Even then, it should remain stationary on the surface, unless struck by a rolling boulder or undermined by a rivulet.

Work was next carried to the moraines in front of the ice-tongue, on the east side of the river. They are of a somewhat nondescript character and represent rather incipient lateral moraines, formed by the icenose during its protracted retreat, than perfectly formed terminal moraines. The valley floor is here traversed by rock ribs, grooved and polished by the ice, stretching down it longitudinally. On one of these moraines two, deeply imbedded, boulders were marked with red paint and the distance measured to the nearest ice for future reference. Photographs, also, were taken from the boulders for annual comparison of the changes occurring in the ice front through melting and disintegration.



Figure 38
SHOWING ICE SNOUT OF YOHO GLACIER ON JULY 15, 1906, FROM VIEW 6 1/2 FEET
NEARER ICE THAN THE VAUX MARKS OF 1902

Mr. George Vaux pointed out the marks placed by Miss Vaux in 1901, which were still quite legible. At that date a line was drawn in red paint down one of the rock ribs referred to, as nearly as possible at right angles to the flow of the most advanced ice. It was now found that the most advanced ice had retreated about seventy-six feet, yielding an annual average retreat of fifteen feet. This, however, would not necessarily represent the retreat for any one year, for the Ice may have been stationary or even have advanced a little during the period.

In his notes of the Yoho glacier, Dr. Sherzer writes "In August, 1901, independent marks were established by Miss Vaux and H. W. DuBois, from the former of which it was found that the ice here has retreated 111 feet in three years, or at an average rate of 37 feet a year. This measurement was made to the glacier itself and not to the detached block which has been the nose. Measured to the block, the distance was 92.1 feet, giving an average of nearly 31 feet a year, with a retreat of 23 feet for the year 1903-4." The measurements now made were to the nearest ice. Mr. Vaux's marks were renewed and the present farthest point of advance marked on the same rock rib, at a distance of seventy-six feet.

On the western side of the stream, a gigantic boulder was found, marked with the legend, "Sr., A, 81 171'04. To ice 79.4 ft." The marks and measurement were made by Dr. Sherzer in 1904. A measurement now made to the nearest ice gave 79.6 feet, showing that the ice was, practically, in the position it had occupied when the previous measurement was made.

The accompanying map of the tract here referred to as the Wapta icefield is

copied from a topographical map of the Yoho valley section of the mountains, now in course of preparation from Government photographic surveys, and is reproduced by permission of Dr. E. Deville, Surveyor-General of Dominion lands.

During the annual camp of the Club for 1907, the above observations will be checked and the changes noted for contribution to a series of records. Observations, also, will be commenced on the Horseshoe glacier at the head of Paradise valley, where the annual camp will be held.



Figure 39
VIEW OF THE ICE FOREFOOT OF THE YOHO GLACIER FROM ROCK No. 2

**FIELD NOTES OF OBSERVATIONS.
TAKEN ON THE YOHO GLACIER.**

July 15th, 1906
TO OBTAIN RATE OF FLOW.

Readings taken on plates set across the ice forefoot of the Yoho Glacier, from a base on the eastern mountain slopes,

Readings at Sta. A.

Circle Right.		Circle Left.	
A		A	
=	360.00'	360°00'	180.00'
1 =	282°07'	282°07'	102°06'
2 =	275°40'	275°40'	95°39'
3 =	273.44'	273°44'	93°43'
4 =	270°54'	270°53'	90°52'
5 =	268°58'	268°57'	88°56'
6 =	267°46'	267°65'	87°44'
87°46'			

For advance or Retreat.

On terminal moraine on east bank of river, rock No. 1, marked :-

" A.C.C., No. 1, July 15, 1906.

Nearest ice 27.1/2 ft."

At highest point of moraine, at a distance of 79.3 feet southerly from rock No. 1, took photograph of most advanced ice.

(See Plate)

Rock No. 2, on same moraine, marked :-

" A.C.C., No. 2, July 15th, 1906, 33.6 ft."

Took photograph of front of glacier from this rock.

Mr. George Vaux renewed the marks placed by Miss Vaux in August, 1901.

The marks were :-" V | X, Aug., 1901."

These were placed on west face of a rib of rock on the east side of the river, as nearly as possible at right angles to the line of the most advanced ice.

Took photograph of front of glacier at a point along rock rib, 6J feet nearer to the ice.

Marked this point " V. P."

(See Plate)

At a point 76.5 feet northerly, along the same rock rib, marked west face of rock as follows ;—

A. C. C.		July 15, 1906	
Pt. of ice with		in line rock mark'd "A" on opp. bank (Sherzer)	Sight line is parallel to face of glacier as nearly as could be judged.

On west bank of stream, on old lateral moraine, found large boulder marked by Dr. Sherzer as follows :—

"Sr"
"A 8/17/04"
"X To ice 79.4 ft."

Measured from this boulder to nearest ice on left hand = 79.6 feet ; and to nearest ice on right hand = 89.5 feet.

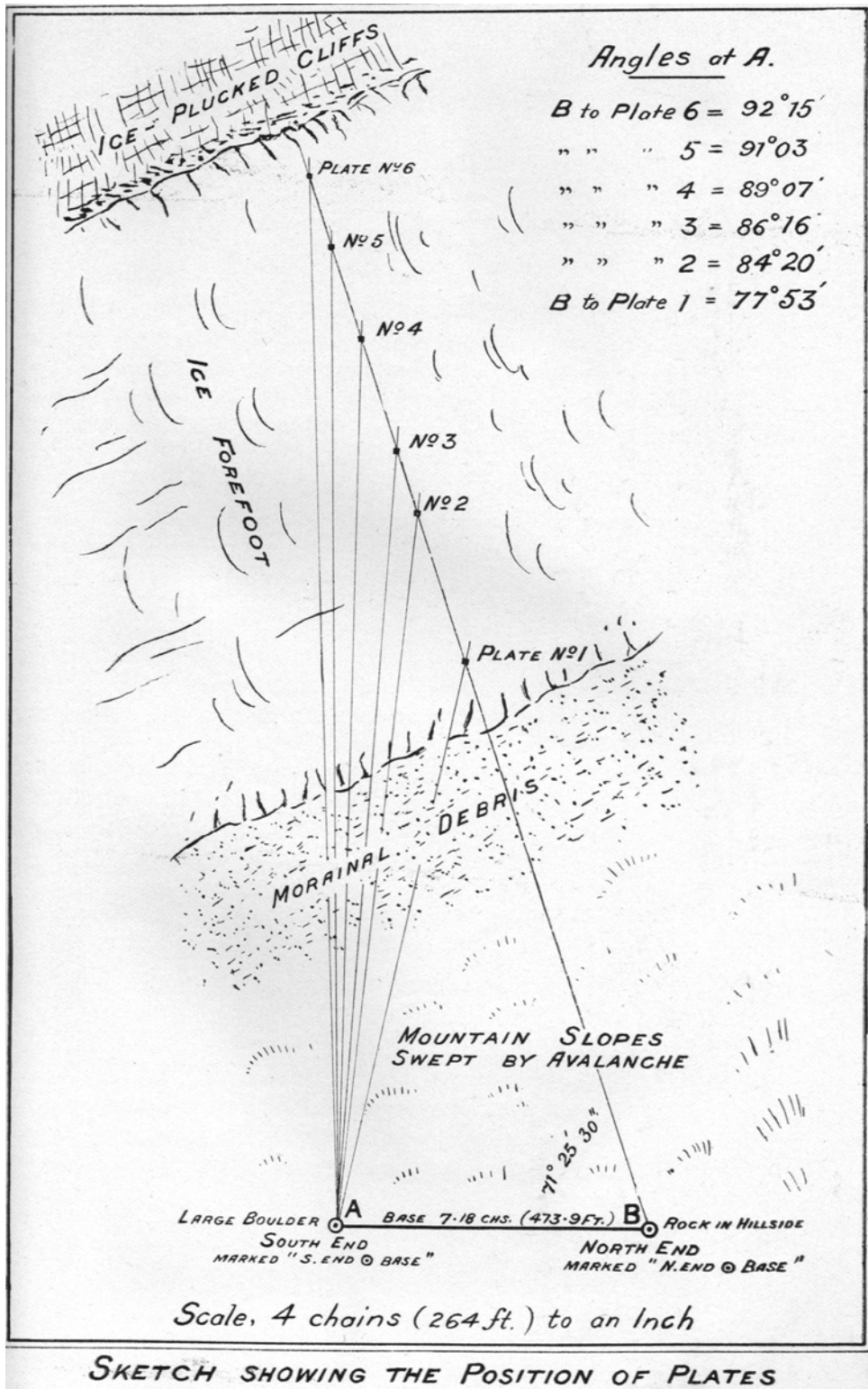


Figure 40
 SKETCH SHOWING THE POSITION OF PLATES

Official Section

ALPINE CLUB NOTES

The Editorial Committee desires to acknowledge with sincere thanks the hearty response to its request by contributors" of articles to the first issue of the Canadian Alpine journal; also contributions of photo-graphs for illustrative purposes from the following Sir Sandford Fleming, Mrs. J. W. Henshaw, Miss M. Vaux, George Vaux, Jr., Howard DuBois, Prof. Chas. E. Fay, Prof. H. C. Parker, Rev. S. H. Gray, Frank Yeigh, F. W. Freeborn, W. T. Robson, W. Nicholson, F. C. Brown, A. O. Wheeler, M. P. Bridgland, W. S. Jackson, P. D. McTavish, and D. Warner.

Attention is called to the excellent illustrations in this volume by Byron Harmon. Mr. Harmon at-tended the Yoho camp, and obtained a fine lot of alpine and camp views. Full sets or any number required, can be had on application. His studio at Banff is prepared to furnish most artistic and beautifully finished views of the Rocky mountain region, particularly of the vicinity of Banff, at a low cost.

The pictures here reproduced were presented to the Club by Mr. Harmon.

It is understood that the Rev. Geo. R. B. Kinney, of Michel, B.C., has a series of fine views taken during the camp week, which may be had on application. Several of them appear in this volume.

We wish also to tender our sincere thanks to the Detroit Photographic Company, who have kindly volunteered to place their series of Canadian Rocky Mountain views at our disposal for illustrative purposes. The fact that we have not taken advantage of the offer is due to the large amount of illustrative material supplied to the journal by our own members.

We now take this opportunity of calling the attention of our members to the magnificent Rocky mountain views placed on the market by this company. They are from the camera of the well-known traveller and lecturer, Mr. G. H. Peabody, whose work is justly celebrated for artistic effect and clearness of detail. The Company sells these beautiful seven by nine-inch views, with highly glazed finish, for the moderate sum of fifty cents each.

The Alpine Club of Canada will always be glad to give information to parties desirous of visiting the Canadian Rockies for the purpose of camping, hunting, fishing, exploring, or viewing the scenic splendors of the region. It will also place such parties in communication with reliable outfitters and guides, a number of whom are connected with the Club.

Requests for the above information should be addressed to the President, Arthur O. Wheeler, Box 167, Calgary, Alberta, Canada.

It is suggested to members who contemplate making trips in the Canadian Rockies for the purposes above named, that they should secure the services of those outfitters and guides who warmly supported the organization of the Club, and who gave their services and outfits free of charge to make a success of the first summer camp at the summit of the Yoho pass. That they are competent men is well illustrated by their splendid work at the camp.

Their names are :

R. E. Campbell, Laggan and Field;
 Otto Bros., Field, Leancoil and Golden;
 E. C. Barnes, Banff ;
 S. H. Baker, Glacier.

It is desired, specially, to bring to the notice of our members, Mrs. J. W. Henshaw's recently published book, "The Mountain Wildflowers of Canada," embracing the flowering plants within the tract of country lying between the prairie and the Pacific ocean, along the line of the Canadian Pacific Railway. The book is an excellent work and will undoubtedly become one of the text-books of the region, upon this particular subject.

The plan of arrangement by colors, much simplifies the grouping of specimens collected, and the indexing under both English and scientific names renders identification easy. The book fills a long-felt want by those who are not scientific, and Mrs. Henshaw has conferred a great boon on the public by her splendid work.

It may be had from Wm. Briggs, of, Toronto-price \$2.00.

It will be seen by reference to the Librarian's report that contributions to our library already amount to seventeen volumes, the majority valuable works relating to the Canadian Rocky mountains. The President also has in hand a large number of photographs and maps awaiting a suitable building in which they can be set up. Every possible endeavor should be made by our members to augment this nucleus of a library.

A movement is now on foot to obtain a suitable building at a suitable spot, where these valuable books, maps, and photographs may be placed to the best advantage. The matter will be brought up at the coming annual meeting in Paradise valley.

The Executive of the Club will always be pleased to furnish to members, as far as it can, information concerning the mountain regions of Canada, and mountain regions generally. It is hoped to publish with our next issue a complete bibliography of the Canadian Rockies.

Those desiring information on the subjects indicated above are requested to address

The Secretary of the Club, Mrs. H. J. Parker, 160 Furby street, Winnipeg, Manitoba.

REPORT OF SECRETARY

The Editorial Committee of this journal has asked me to give a sketch of the Alpine Club, with a report of its progress up to April 15th of the current year. To begin before the beginning, it was foreshadowed twenty-four years ago on a clear, bracing, sunny day, when Sir Sandford Fleming, K.C.M.G., his son, S. Hall Fleming, the late Principal Grant of Queen's University, and party with pack train emerged from the slow, difficult forest trail and rested at the welcome meadow on Rogers' pass. Inspired by the glacier-mountains rising far and high about them, they resolved themselves into a

Canadian Alpine Club; elected officers; passed a resolution of gratitude to Major Rogers, discoverer of the pass; proposed the conquest of the most formidable peak in the whole region; drank the Club's health in a stream sparkling at their feet; and so ended. But the incident was prophetic as well as gay and picturesque. And that the element of gaiety was in it, Sir Sandford gives evidence, when he tells how these grave and reverend seniors performed a game of leapfrog as an act of Olympic worship to the deities in the heart of the Selkirks.

Since that day on Rogers pass, the alpine idea has been stirring in the Canadian mind, faintly at first and slowly, but gradually increasing until it gathered enough momentum to be called by that potential term—a movement. In the winter of 1905-6, appeals were made privately and through the press to persons proper to the project—appeals which won a response justifying the calling of a meeting in March, when twenty-eight delegates from every part of the Dominion gathered in Winnipeg, and the movement assumed tangible form. On March 27th, Mr. A. O. Wheeler, F.R.G.S., assisted by the Rev. Dr. Herdman, gave an illustrated lecture, "The Wonderland of Canada." On the following day at noon Mr. Wheeler addressed the Canadian Club on Canadian Mountaineering, and in the afternoon the Club was formally organized, with seventy-nine members, Sir Sandford Fleming being chosen as Patron and Mr. Wheeler as President. Both by hearty acclamation. The inaugural dinner followed in the evening, when some stirring speeches were made born of experiences in rare altitudes, and the healths of the King (God bless him!), the Club and its officers, were drunk with all the enthusiasm of a young mountaineering organization.

The seventy-nine members of a year ago have, up to the present date of writing, increased to two hundred. Membership is divided into five grades: Honorary, Associate, Active, Graduate and Subscribing. The first named consists of those who are eminently distinguished in mountaineering, exploration or research. Among the eight elected as honorary members of the Alpine Club of Canada, are Professor Charles E. Fay, President of the American Alpine Club; Edward Whymper and Dr. J. Norman Collie, of the English Alpine

Club, and Colonel the Hon. A. Laussedat, of the Geographical Society of Paris. Associate members are those who may not or may be able to qualify as active members, yet who wish to strengthen the Club by contributing twenty-five dollars annually to its maintenance. The first to volunteer as an associate member was Mr. J. D. Patterson, Woodstock, a well-known climber. Sir Sandford Fleming, and Mr. Wm. Whyte, Second Vice-President, Canadian Pacific Railway Company, followed. and then the Rev. C. W. Gordon, D.D., and E. B. Drewry, Esq. To these original associate members, other five have been added during the year. Active members are those who have made an ascent of at least 10,000 feet above sea level in some recognized alpine region; or those who have contributed to Canadian Alpine literature by scientific publications, based upon personal experience. Graduating members are those not yet qualified for active membership, but who are given two years to become so. This probation is not renewable under the auspices of the Club. Subscribing members are those who wish to keep in touch with the Club by receiving its reports and other literature. They have no other privileges. Active members pay \$5.00 annually, or \$50.00 for a life membership. We have one life member—Professor Herschel C. Parker of Columbia University. The annual fee for graduating and subscribing members is \$2.50 and \$2.00 respectively.

The Constitution provides for a summer camp in some strategic place, where graduating members may qualify for active membership, and all except subscribing members may foregather for climbing and mountain study. The first session of this school of mountaineering was held July 9-16, 1906, on the summit of the Yoho pass, between two grey rock-peaks, by the margin of a mountain tarn of purest emerald-green, the most limpid and radiant eye that alplands ever opened to see blue sky, withal. Forty-four graduated to active membership and one hundred or more members were in attendance at some time during the week. Eight high mountains were climbed and daily excursions made to contiguous points of interest, and into the Yoho valley to the Wapta glacier, where metal plates were set out to measure its movement.

For the unqualified success of this first annual "meet" of the Club, first credit is due to the President, whose generalship, including a patient and amiable faculty for detail, won encomiums from all. Thanks to Mr. Wheeler, the "meet," which began as an experiment, ended as an institution. Hearty thanks are owing to many others, but notably to Mr. J. D. Patterson; to the Dominion and Alberta Governments; to the C. P. R. Company, the Royal North-West Mounted Police, the Superintendent of the National Park; and last but not least, to those fine fellows and true lovers of the hills, the men in buckskin-our mountain outfitters. Without the generous help of all these, the Yoho camp had not been possible.

The next session of this charming summer school will be in Paradise valley, where there are a score and more glacier mountains near at hand. The present indications are that the attendance will be much larger than last year. The camp will be situated on a beautiful meadow at the foot of the Horseshoe glacier, at the base of Mt. Hungabee, which closes the valley on the south. These delightful summer outings are no idle holiday. There is no foolishness in mountaineering; it is too vigorous a pastime. Even the nonsense that may escape at intervals around the camp-fire takes on a sober coloring from the grim old heights, that have kept watch for ages over these gaily-flowered alpine meadows and sombre green wooded valleys.

During the Christmas season, the President made an Eastern tour, giving illustrated lectures at Winnipeg, Toronto, Woodstock, Collingwood and Ottawa, thereby awakening interest in mountaineering and adding somewhat to the Club's exchequer. In Ottawa, he addressed the Canadian Club on Canadian mountaineering.

On January 11th, a meeting was held at Winnipeg to discuss the affairs of the Club. The meeting was adjourned to Calgary for the 17th of January. It was decided to publish the first issue of the Canadian Alpine Journal under the auspices of the Club, and \$800.00 of the Club's revenue was voted for this purpose. It was also decided to contribute \$50.00 to help pay for the handsome marble monument recently erected in honor of Sir James Hector at Laggan station by his friends in Canada, the United States and England.

The affairs of the Club are in its own hands under the Executive, which advises and acts independently, if the Club may so direct. Election to membership is by vote of the whole Club through the ballot. The standard of qualification may not be lowered, but as climbing becomes more general, it will certainly be raised. The Alpine Club of Canada is as democratic as the Church itself: any man of good character who fulfils the conditions of active membership, is eligible.

The first annual meeting was held on the summit of the Yoho pass by the light of

the camp-fire, when the President gave an address and the Secretary and Treasurer presented reports. The officers were all re-elected, and Mr. S. H. Mitchell was appointed Assistant Secretary. Mr. Mitchell is both efficient and willing, and has borne the burden of the Secretary's work ever since. Very few days pass without letters of enquiry or applications for membership.

The Club is growing fast, but not too fast. The only royal road to membership is by the "Associate" way of twenty-five dollars a year. It is a worthy way and an honorable for men whose circumstances will not permit them to qualify, by way of crag and precipice and glacier; and it is money invested in nationhood, yielding a far-off interest, not of tears but of noble, patriotic temper. For the Alpine Club of Canada will, more than any national sport in the Dominion, weld together the provinces in the bonds of brotherhood; and furnish training in the more Spartan virtues of times of peace. It will not be many years before it will have entrenched itself deep in every province between the two oceans, when its membership will be in the thousands, and each and every Canadian mountaineer make the Club's motto his own-"sic itur, ad astra."

Parker, Elizabeth, Secretary.

STATEMENT OF TREASURER

to 31st December, 1906.

Receipts.

Proceeds of illustrated lecture by Messrs. Wheeler and Herdman, on "The Wonderland of Canada," of the 27th of March, 1906	\$ 17 45
Associate members' fees	\$150 00
Active members' fees •	\$332 00
Graduating members' fees	\$92 00
Proceeds of summer camp in the Yoho valley.	\$26 47
Total	<u>\$617 92</u>

Disbursements.

Printing and stationery	\$ 49
	03
Typewriting	\$1 50
Postage and express	\$19
	60
Bank exchange and commission	<u>\$ 80</u>
Total	<u>\$70</u>
	93

Balance on hand	\$546
	99

D. H. Laird, Treasurer.

22nd April, 1907.

We have examined the books and accounts of the Treasurer of the Club to 31st December, 1906, and find them correct and that the above is a correct summary.

S. H. Mitchell,

J. Holmes Graham.

REPORT OF LIBRARIAN

The library of the Alpine Club comprises seventeen volumes, all of which have been donated. They may be enumerated in order of donation, as follows:-"The Selkirk Range," two volumes, from the author, A. O. Wheeler; "Dent's Mountaineering," from S. H. Mitchell; "Among the Selkirk Glaciers," by the Rev. W. S. Green, presented by Ferdinand Melnecke; "England and Canada, a Summer Tour between Old and New Westminster," from the author, Sir Sandford Fleming, K.C.M.G.; "Mountain Wildflowers of Canada," by Julia W. Henshaw, the author; "The House of Sport," composite authorship, from S. H. Mitchell; "Climbing in the Himalayas," from Dr. J. Norman Collie, the author; also "Climbs and Explorations in the Canadian Rockies," by H. E. M. Stutfield and Dr. J. Norman Collie, presented by Dr. Collie; "A Guide to Zermatt and the Matterhorn," from Edward Whymper, the author; "Camp Fires in the Canadian Rockies," by Hornaday and Phillips, presented by the Secretary; four volumes of "Appalachia," covering the years of mountaineering in the Rockies and Selkirks, from the Appalachian Mountain Club; an edition de luxe, "California and Alaska and over the Canadian Pacific Railway," by William Seward Webb, presented by W. T. Robson; and "Canada," painted by T. Mower Martin, described by Wilfrid Campbell, the gift of Clark Bros. & Co., Winnipeg.

In addition, the Club has received by purchase the first number of a series of monographs, called "Alpina Americana," to be published yearly by the American Alpine Club.

Mr. Tom Wilson of Banff, himself a collector of Rocky Mountain literature, has kindly volunteered to keep watch for the acquisition of rare old books dealing with early history relating to the Canadian mountains.

It is perhaps worth noting that of the seventeen volumes forming the nucleus of the library, eight were written by our own members, and the Appalachian volumes also contain much matter contributed by members of our Club.

We hope that the library will be augmented during the current year, by many valuable additions, and that the Club will enact some legislation by which these books may be made accessible to members, such as the establishment of a library building at a suitable point in the mountains.

Respectfully submitted.
Parker, Jean, Librarian.

YOHO CAMP**CIRCULAR ISSUED****The Alpine Club of Canada****FIRST SUMMER CAMP IN THE YOHO PARK**

The camp is for the purpose of enabling members of the Club to meet in the mountain regions of Canada, and graduating members to qualify for active membership by climbing a mountain at least 10,000 feet above sea level.

The camp will open on Monday, July 9th, and close Monday, July 16th.

A start for the camp will be made from Field station on the Canadian Pacific Railway, early on Monday morning. Members attending are requested to arrive at Field, if possible, by the evening train of July 8th, but the morning train throughout the week will be met.

The number of persons who can attend the camp is limited to one hundred.

Charges.

Active members will be charged one dollar (\$1.00) per day while at the camp, to cover board and equipment. This does not include hotel expenses.

All graduating members who attempt to qualify for active membership and reach 9,000 feet above sea level will be charged at the above rate.

All graduating members who fail to reach 9,000 feet above sea level, and all persons other than members, will be charged at the rate of two dollars (\$2.00) per day.

The altitude of the camp is 6,000 feet above sea level.

Active members are privileged to bring their wives or husbands, who will be charged at the rate of two dollars (\$2.00) per day. Otherwise, except in the case of the press, it is necessary to be a member of the club to attend the camp.

All nominations for membership must be proposed by three members and be in the hands of the Secretary of the Club before the 1st of June.

Members to be eligible for the privileges of the camp must be in good Standing; that is, have paid their dues for the current year.

The above charges include transport of baggage, and, as far as possible, of visitors to and from the railway and to and from the various points of interest in the Yoho valley, for which excursions will be arranged daily.

No person attending can bring more than forty pounds of baggage. If in excess of that amount they will be refused transport until the weight has been reduced to the required limit. Baggage should be as light as possible, and should consist of two pairs of blankets, weighing about fifteen pounds, a small feather pillow, a change of clothes and boots, toilet articles, etc. No trunks or boxes can be handled.

Those climbing require heavily soled leather boots, well set with Hungarian nails. Knickerbockers, puttees, sweater and knockabout hat furnish the most serviceable costume.

No lady climbing, who wears skirts, will be allowed to take a place on a rope, as they are a distinct source of danger to the entire party. Knickerbockers or bloomers with puttees or gaiters and sweater will be found serviceable and safe.

Each member who Intends to climb should bring a pair of colored glasses. Colored mica glasses are suggested. These can be bought from any druggist at about 50c. per pair.

As the number of persons who can attend the camp is limited to one hundred, you are requested to notify the Secretary of the Committee (Mr. H. G. Wheeler, Banff, Alberta,) as soon as possible. The applications to attend will be accepted in the order in which they are received, due allowance being made for distance.

Please state on what date you will arrive at Field and for how many days you will remain in camp.

On arriving at Field, all whose applications have been accepted, will be supplied with Club badges. Persons unable to produce their badges will not be afforded transportation to the camp.

An endeavor will be made to obtain reduced rates from the Canadian Pacific Railway, and if successful those booked to attend will be duly notified.

Please take notice that under the Constitution the First Annual Meeting of the Club will be held at the Yoho camp.

In order to become effective at the meeting, all nominations for membership and proposed amendments to the Constitution should be in the hands of the Secretary of the Club not later than 1st of June next.

Nomination slips may be had from the Secretary of the Club on application.

Amendments to the Constitution require to be proposed by five active members.

H. G. Wheeler,

Secretary, Yoho Camp Committee, Elizabeth Parker,

Banff, Alberta.

Secretary, Alpine Club of Canada,

160 Furby Street, Winnipeg, Man.

REPORT OF CHIEF MOUNTAINEER

The mountaineering was in charge of M. P. Bridgland, assisted by H. G. Wheeler, both of the Topographical Survey of the Rocky mountains. Two Swiss guides, Edouard Feuz, Jr., and Gottfried Feuz, of Interlaken, were loaned by the Canadian Pacific Railway Company, and one of these usually accompanied each official climb. A number of other gentlemen, who had had experience in mountaineering, rendered good service to climbing and exploring parties, viz.: The Rev. Dr. Herdman, J. D. Patterson, E. O. Wheeler, Rev. A. M. Gordon, P. D. McTavish, the Rev. Geo. Kinney; Rev. A. O. MacRae, D. N. McTavish and Rev. J. H. Miller.

MT. VICE-PRESIDENT (10,049 feet above sea level).

The camp was opened officially on July 9th. On the 8th the chief mountaineer, accompanied by the two Swiss guides, the Rev. Dr. Herdman and P. D. McTavish started for Mt. Vice-President, to select the best route for the ascent by other members of the Club. The object was to choose a route as varied as possible, affording, not only rock-work, but also some work on snow and ice; further to select suitable resting places and to establish a 9,000-foot elevation, so that advantage could be taken of the privileged rates to climbers reaching that height above sea level.

Leaving the camp at 6 a.m., the party followed the trail to the summit of the Yoho pass and then, turning to the right, headed for the lower part of the shoulder extending southward from Michaels Mt. The bushes were wet and everyone was soaked, but in about half an hour the shoulder was crossed near timber-line. The party then traversed a long rock slide and worked its way up some steep snow slopes to the arête between Michaels Mt. and the main mass of the mountain, reaching it at 8:30.

From this point the way led along the arête, which was badly broken in places, offering some very interesting bits of rock-work. In one spot it narrowed down to a

knife-edge, descending abruptly to the glacier on either side. About two hours' climbing along this arete brought the party to Angle peak,⁵ beyond which it was an easy walk across the snowfield to the final peak, about a mile distant and one hundred feet higher. The summit, 10,049 feet above sea level, was reached at 12:30 p.m., after six and a half hours of steady climbing.

A short time was spent at the summit for rest and refreshment, and then the descent was commenced. Near Angle peak the party turned to the right and travelled down the centre of the snowfield, enjoying a short glissade near the crest. A little further, a large cave was crossed on a snow-bridge and some steep snow slopes descended to the lower part of the neve. A short walk across the snowfield followed, and then a number of crevasses. These were crossed on a narrow neck of ice and, passing directly below a group of seracs, the party worked its way down to the level tongue of the glacier below, which afforded an easy path to the lateral moraine. It was now a simple matter to cross the rock-slide and go down through the forest to the trail leading to the camp, which was reached at 6 o'clock.

On July 10th the first official climb in connection with the camp was undertaken. The party was in charge of M. P. Bridgland and the Swiss guide, Gottfried Feuz, assisted by the following active members of the Club, viz.: J. D. Patterson, Rev. Geo. R. B. Kinney and P. D. McTavish. The trail to Inspiration point was followed until above the heavy timber, when turning sharply to the left, the open alps below Michaels Mt. were passed through and the shoulder crossed a little higher up than on the previous occasion. The rock-slide was then traversed and the same route followed as on the 8th.

From the time the rock-slide was crossed until the summit was reached, rain fell steadily, accompanied by a cold wind, and much of the time it was impossible to see more than a few yards ahead. The party remained at the summit half an hour. It was too

⁵ Angle peak, as indicated by the name, is a sharp angle of rock rising above the mountain. The name was first applied by the Rev. James Outram and is here used for lack of a better.-ED.

cloudy to see anything and too cold to remain long.

The descent was by the route selected on the previous occasion as far as the shoulder of Michaels Mt., where the party turned to the left and crossed over to the trail by the way followed in the morning.

Left camp at 5:30 a.m. and reached the summit at 11:30. The descent was commenced at 12 o'clock and camp reached at 3:25 p.m. Time of ascent, 6 hours; time of descent, 3 hours 25 minutes; total for climb, 9 hours 25 minutes.

The following graduated to active membership:

Dr. A. M. Campbell C. R. Merrill
 R. Haggen H. W., McLean
 Miss E. B. Hobbs Miss K. McLennan
 Stanley L. Jones D. N. McTavish. T. Kilpatrick

On July 11th the party was in charge of M. P. Bridgland and the Swiss guide, Edouard Feuz, assisted by the active members, P. D. McTavish and the Rev. J. H. Miller.

The day was fine and the route followed the same as on the previous day. The party remained at the summit' one- and a half hours.

Left camp at 6 a.m.; arrived at the summit at 1:30 p.m.; commenced descent at 3 p.m., and arrived at camp at 6:30.

Time of ascent, 7 hours 80 minutes; time of descent, 3 hours 30 minutes; total for climb, 11 hours.

The following graduated to active membership:

T. A. Hornibrook W. Nicholson
 Mrs. Stanley Jones Miss A. R. Power
 J. W. Kelly Rev. J. R. Robertson
 Miss L. E. Marshall Miss A. M. Stewart S. H. Mitchell

On July 12th the party was in charge of H. G. Wheeler and the Swiss guide, Edouard Feuz, assisted by the active members, E. O. Wheeler and the Rev. A. M. Gordon. With the exception of a few slight showers towards evening, the weather was all that could be desired.

The party left camp at 6 a.m. and reached the summit at 12:30. The descent was commenced at 1:30 and camp reached at 5 p.m.

Time of ascent, 6 hours 30 minutes; time of descent, 3 hours 30 minutes; total for climb, 10 hours.

The following graduated to active membership:

F. C. Brown Miss Jean Parker
 J. A. CampbellMiss F. Pearce
 P. M. Campbell C. B. Sissons
 Miss M. T. Durham Miss E. R. Smith
 Geo. HarrowerH. M. Snell
 H. G. LangloisD. Warner Rev. A. O. MacRae

On July 13th the party was in charge of M. P. Bridgland and H. G. Wheeler, assisted by the active members, Rev. G. R. B. Kinney, Dr. A. M. Campbell and D. N. McTavish.

The weather was showery during the morning and fine and bright for the rest of the day. The same route was followed for the ascent, but as it had been found that the snow-bridge over the cave was unsafe, owing to the continued warm weather, the party when returning followed the arête a short distance past Angle peak, and then descended to the snowfield, reaching camp by the usual route.

A start was made from the camp at 6 a.m. and the summit reached at 1 p.m. The descent was commenced at 2 p.m. and the camp reached at 6:10.

Time of ascent, 7 hours; time of descent, 4 hours 10 min-utes; total for climb, 11 hours 10 minutes.

The following graduated to active membership:

Rev. Alex. Dunn	D. H. Laird
Miss I. W. Griffith	A. H. Smith
B. Harmon	Miss E. Sutherland
	Miss A. L. Laird



Figure 41
ON THE SUMMIT OF MOUNT VICE-PRESIDENT

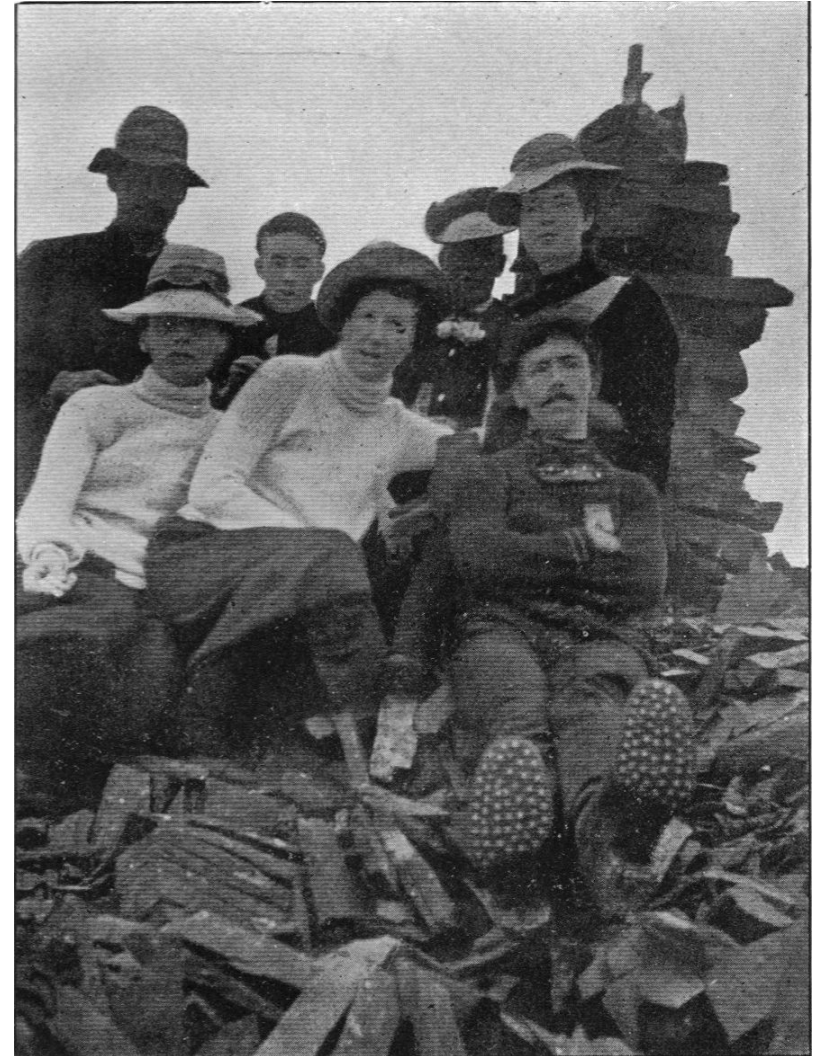


Figure 42
ON THE SUMMIT OF MOUNT BURGESS

MT. PRESIDENT

(10,287 feet above sea level).

On July 14th the party was in charge of M. P. Bridgland and the Swiss guide, Edouard Feuz, assisted by the active member, E. C. Barnes.

The weather was all that could be desired, bright sunshine prevailing throughout the day. As it was a small party, the route was changed so as to give a most interesting rock climb up the face of Michaels peak to its summit, from which point the arete was followed to join the line of previous ascents.

On reaching the summit of Mt. Vice-President, it being an ideal day, the guides continued the climb to the summit of the President, while the party was resting. A steep descent led to a snow col about two hundred feet below the summit of the Vice-President, and a similar ascent on the opposite side led to the summit of the President. The trip there and back took an hour, a short time being spent in building a cairn on the highest rock point.

The party left camp at 5:50 a.m. and arrived at the summit at 12:45. The descent was commenced at 3 p.m. and camp reached at 6:35.

Time of ascent, 6 hours 55 minutes; time of descent, 3 hours 35 minutes; total for climb, 10 hours 31 minutes.

The following graduated to active membership:

J. H. Graham Miss J. M. Porte
H. G. H. Neville Miss J. L. Sherman

Taken as a whole the official climb was a marked success, forty-two graduated to active membership. Of this number fifteen were ladies. There was not one case of failure, a fact that speaks well for the stuff of which our graduating members are made. While the climb was not a dangerous one, it was distinctly strenuous, and the facts that it presented nearly all the varied conditions of mountain climbing and for the best time made took 9 hours and 30 minutes show that it was a feat of very considerable magnitude for young men and women in their first attempts at mountaineering, and one well worthy of commendation.

In addition to the official climbs a number of others were made:

MT. BURGESS

(8,463 feet above sea level).

On July 10th a party in charge of the Swiss guide, Edouard Feuz, Jr., made the ascent of Mt. Burgess, a climb of considerable difficulty.

The names of those participating were as follows:

J. A. Campbell Miss E. R. Smith
Miss A. G. Foote H. M. Snell
Miss A. R. Power Miss A. M. Stewart Rev. J. R. Robertson



Edouard Feuz
Swiss Guide

H.G. Wheeler
Asst. Guide

M.P. Bridgeland
Chief Guide

Goldfried Feuz
Swiss Guide

Figure 43
GUIDES IN CHARGE OF CLIMBING - YOHO CAMP



Figure 44
A WELL EARNED REST - MOUNT VICE-PRESIDEN

MT. WAPTA

(9,106 feet above sea level).

On July 11th the following gentleman made the ascent of Mt. Wapta, under the guidance of Gottfried Feuz, viz.:

Dr. P. M. Campbell D. Warner
Rev. A. M. Gordon . E. O. Wheeler
Rev. Dr. MacRae

The party started at 8 a.m., spent 45 minutes on the summit and returned to camp at 2:15 p.m. The climb was made from the Burgess trail by way of the west face.

On July 12th a party, consisting of M. P. Bridgland, Miss L. E. Marshall and P. D. McTavish made the ascent of Mt. Wapta via the southwestern arête.

On July 13th the third climb of Mt. Wapta was made, by way of the west face, under the leadership of Edouard Feuz, Jr. Those who took part were as follows:

S. H. Baker Miss Francis Pearce
S. H. Mitchell C. B. Sissons
Miss Jean Parker E. O. Wheeler

On July 14th a fourth climb was made of the same mountain by D. N. McTavish and C. R. Merrill, under the guidance of Gottfried Feuz. The climb was made up the

northeast face and was found to be a difficult one, taking from 9:30 a.m. until 3 p.m. for the ascent. The descent, by the usual route, was commenced at 4 p.m. and camp reached at 5:50.

MT. COLLIE

(10,315 feet above sea level).

On July 12th, J. D. Patterson, accompanied by the Swiss guide, Gottfried Feuz, ascended Mt. Collie from a camp pitched the night before at the foot of the Twin falls. The ascent was made by way of the Yoho glacier and the return on the opposite side of Yoho peak, by way of the Twin falls. By a curious coincidence, the peak was climbed on the same day by Miss Henrietta L. Tuzo, a member of the Club, but one who was not visiting the camp. Under the care of the Swiss guide, Christian Kaufmann, she made the ascent by a different route, and the two parties met upon the summit.

MT. FIELD

(8,645 feet above sea level).

On July 12th, under the guidance of the Rev. J. C. Herdman, the following party made the ascent of Mt. Field:

Rev. Alex. Dunn D. H. Laird
J. W. Kelly S. H. Mitchell Miss A. L. Laird

MTS. AMGADAMO AND MARPOLE

(9,537 feet and 9,822 feet above sea level).

On July 16th, in charge of the Swiss guides, Edouard Feuz, Jr., and Gottfried Feuz, the Rev. A. O. MacRae, the Rev. Alec. Gordon and the Rev. Alex. Dunn made the first ascent of Mt. Marpole, and en route made the first ascent of the peak which they named Amgadamo. An account of the climb will be found among the pages of the mountaineering section of this volume.

Respectfully submitted.

Bridgland, M. P., Chief Mountaineer.

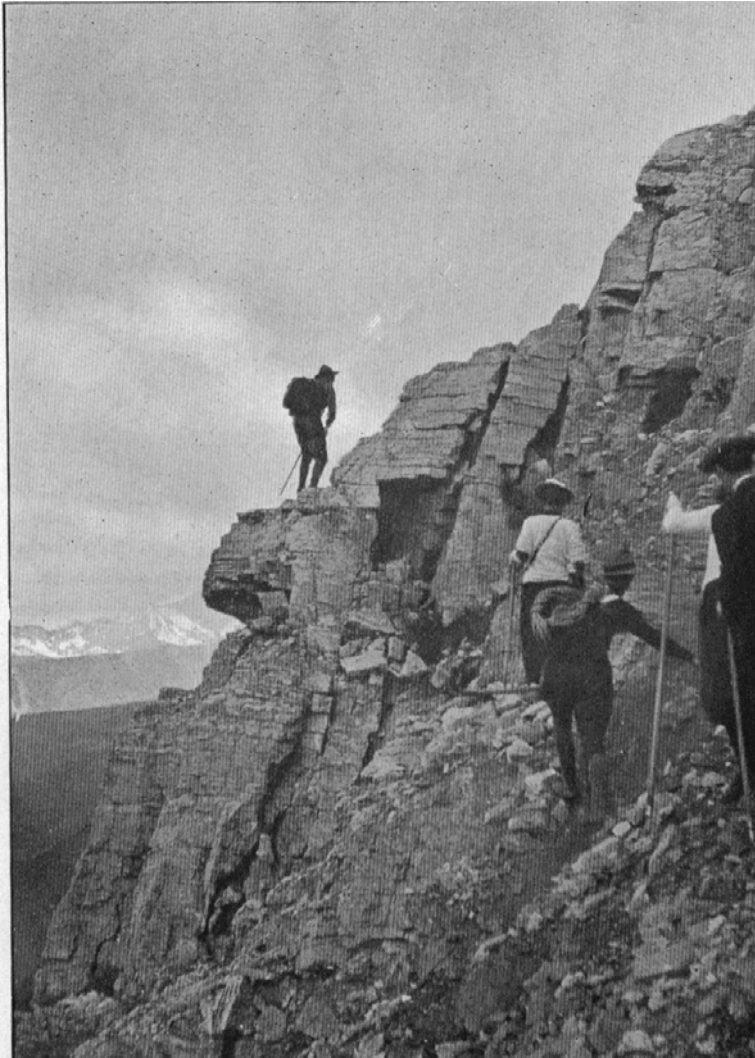


Figure 45
AN AWKWARD CORNER
Mount Vice-President

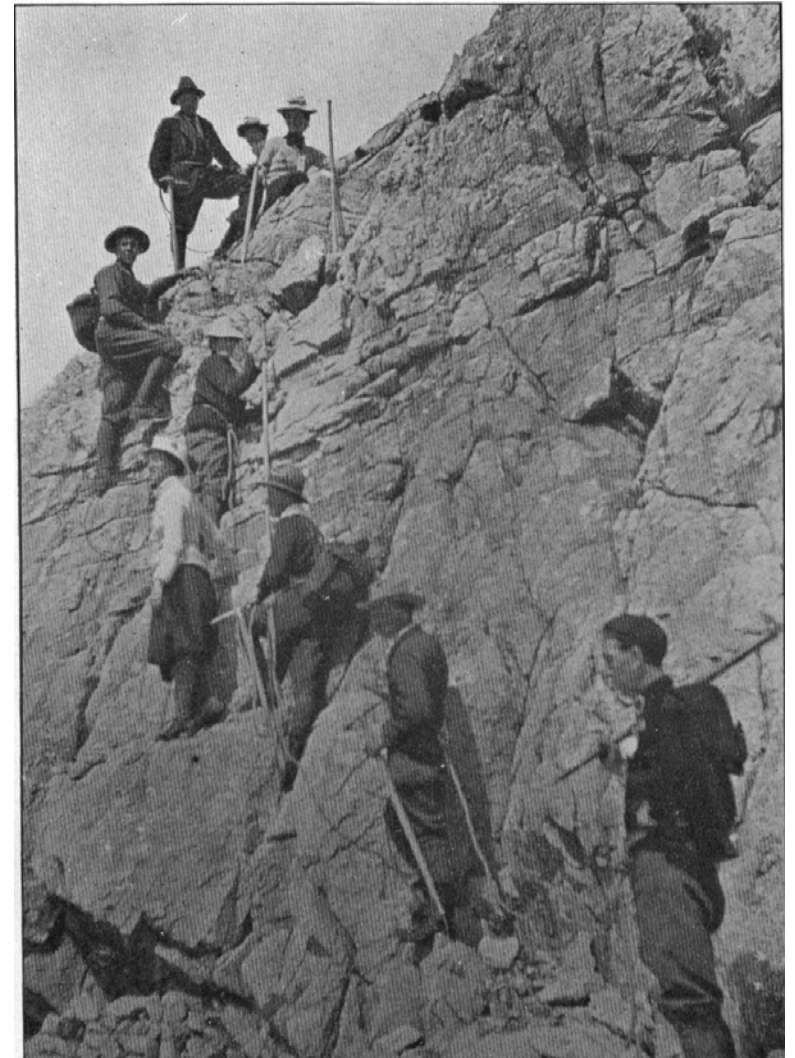


Figure 46
A PIECE OF ROCK WORK
Mount Vice-President



Figure 47
THE UPPER SNOW FIELD
MOUNT VICE-PRESIDENT

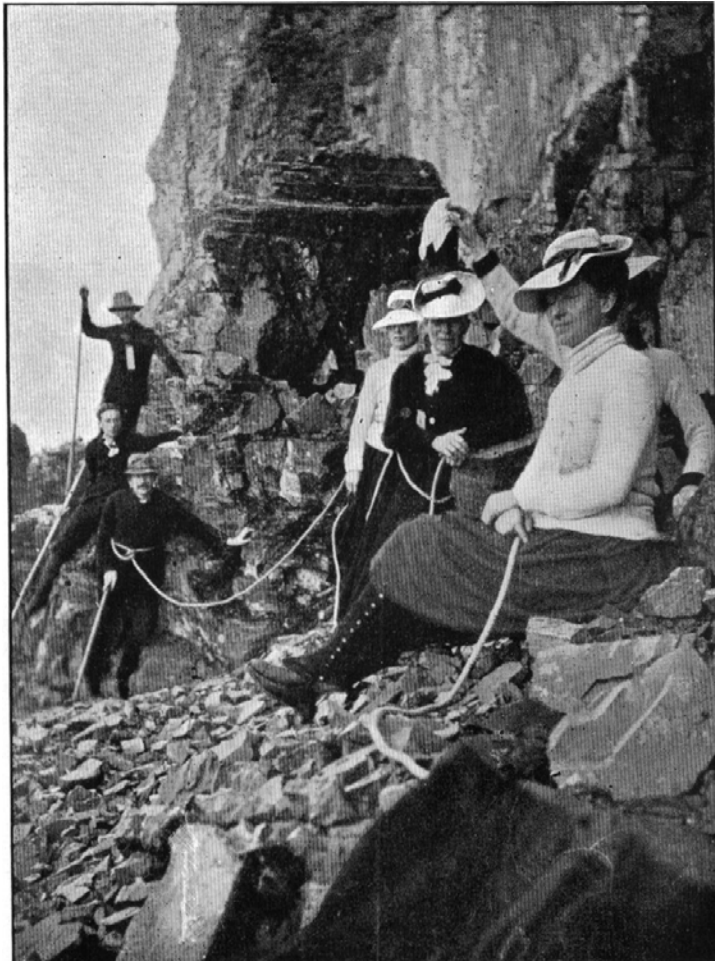


Figure 48
A CLIMBING PARTY
MT. BURGESS

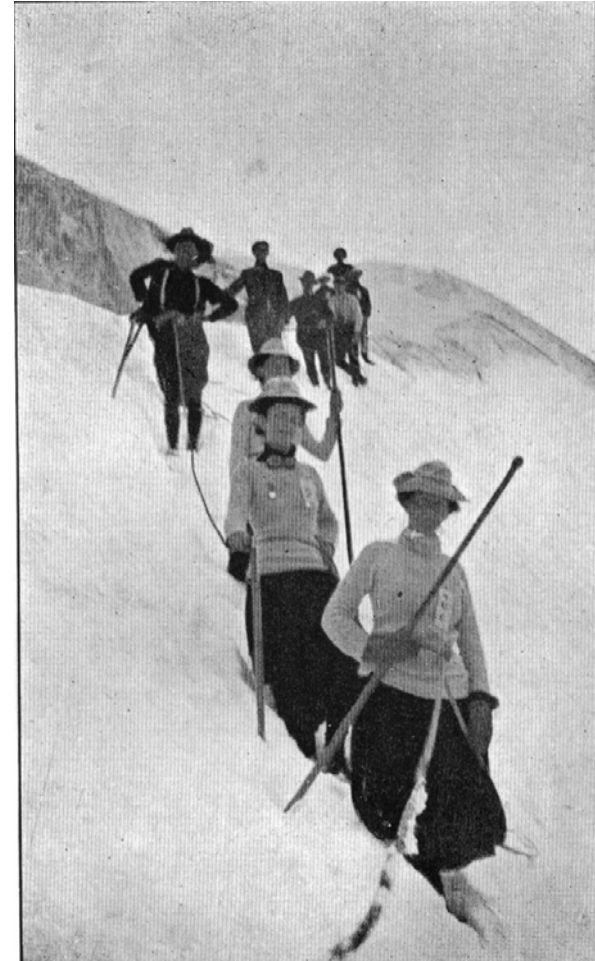


Figure 49
DESCENDING THE GLACIER
Mt. Vice-President



Figure 50
LAUGHING FALL CAMP, Yoho Valley Trip

TRIPS

Among other events of the camp week the following trip: require special mention, viz.:

A two-day trip around the Yoho valley, starting out by the lower trail and returning by the upper. A night was spent at a camp close by the Laughing falls. This trip took in all the varied and strikingly beautiful alpine scenery of the valley and presented a seemingly endless panorama of towering peaks, waterfalls, glaciers, snowfields, ice-cascades, precipices lakes and forest, almost bewildering in their spectacular effects, and filling the beholders with wondering delight.

Four such trips were made, on consecutive days, and in all: sixty persons were taken round the valley. Each party was accompanied by a number of ponies to carry the baggage for the night out, for crossing mountain torrents and to afford mounts for those who were tired. This trip was voted the feature of the camp.

Three trips were made, under the leadership of the Rev. J. C. Herdman, to the glacier below the northeastern escarpment of the President range, known as the Emerald glacier.

Twenty-seven persons participated in these trips, and much enjoyment and general information concerning glaciers were derived there from.

A special trip was made to the close vicinity of the Takakkaw falls, under the leadership of H. G. Wheeler. The party consisted of nineteen, and were greatly delighted with the trip.

On the 14th and 15th, a special committee, representing the Scientific section of the Club, made a trip to the Yoho glacier for the purpose of initiating yearly observations of its various changes and rate of flow. A full report of the expedition will be found in the Scientific section of this volume.

In addition to the above, trips were made daily to Inspiration point, reached by a corkscrew trail branching from the

Upper Yoho valley trail at a point near the camp. This point is well named, for the view from it not only takes one's breath away in wonder, but fills the mind with an inspiration that it never again loses. Also, to Lookout point on the Lower Yoho valley trail, presenting a magnificent view of the full majesty of the Takakkaw falls, with its thousand feet of a sheer drop. The Burgess trail seemed a favorite, and many visitors came to and returned from the camp by that route, from which the Presidents range and Emerald mountains with their glaciers, icefalls and torrents, are seen to the greatest advantage; while below, Emerald lake nestles in a setting of deep green forest.

A word with regard to these trails of the Yoho valley: They are the outcome of the artistic, engineering skill and keen appreciation of the value of magnificent alpine scenery as a boon to mankind, possessed by the late E. J. Duchesnay, Assistant General Superintendent of the Pacific Division of the Canadian Pacific railway. In the location of, the pony trail around the Yoho valley and below Mts. Wapta and Field, every possible vantage point has been grasped with a skill that could only have been realized by a true lover of Nature.

RECEIPTS AND EXPENDITURES for Yoho Camp**Receipts.**

Grant, Government of Alberta	250 00
Private subscription	170 00
Paid in for board and accommodation	458 25
Paid in for distribution among employees	61 00
Auction sale of ice-axes	75 75
Surplus supplies sold	263 87
Total	<u>\$1,278 87</u>

Expenditures.

Provisions	\$613 12
Stationery, printing, postage, telegrams	38 93
Expressage and freight	49 60
Wages	93 00
Camp outfit	123 95
Distributed among employees	59.50
Bonuses to outfitters	239 00
Purchase of fee-axes	30 00
Railway fares of employees	5 30
Total	<u>\$1,252 40</u>
Balance paid in to general fund	\$26 47

Wheeler, Arthur O.
Chairman of Camp Committee.

CONSTITUTION

1. The name of the Club shall be "The Alpine Club of Canada."

2. The objects of the Club are:

(a) The promotion of scientific study and exploration of Canadian alpine and glacial regions.

(b) The cultivation of art in relation to mountain scenery.

(c) The education of Canadians to an appreciation of their mountain heritage.

(d) The encouragement of the mountain craft and the opening of new regions as a national playground.

(e) The preservation of the natural beauties of the mountain places and of the fauna and flora in their habitat.

(f) The interchange of literature with other alpine and geographical organizations.

WORK OF THE CLUB.

3. The work of the Club shall be:

(a) The exploration and study of Canada's alpine tracts; and, with this end in view, it shall gather through its members literary material and photographs for publication and dissemination, and such publications shall be placed on record with the Secretary and Librarian, and be distributed to the members of the Club and to corresponding organizations.

(b) The promotion of the study of glaciers and glacial action in Canada, and of art as applied to mountain regions, for which purposes glacial and art sections shall be formed.

(c) The organization of a corps of reliable guides and out-fitters, who shall be available in connection with the work of the Club.

(d) The sphere of action of the Club shall not be confined to Canada alone, but may extend to all the high mountain ranges of the world, and one of the objects of this organization shall be to obtain information concerning other alpine regions and to come closely in touch with those who are interested in all such matters.

MEMBERSHIP.

4. Membership shall be of five grades, viz.:

Honorary Members. Those who have pre-eminently distinguished themselves in mountaineering, exploration or research and in the sacrifice of their own interests to the interests of the Club shall be eligible for Honorary membership. Honorary members shall be elected only by a two-thirds majority of the recorded votes of the Club.

Active Members. (a) Those who have made an ascent of not less than ten thousand feet above sea-level in some recognised mountain region; their eligibility for election to be decided by the Executive Board.

(b) Those who for eight years prior to the date of organization have been annual visitors to Canada's mountain regions and have contributed to a knowledge of the same by means of scientific or artistic publication.

(c) Except as hereinafter specified, Active members only shall be entitled to vote.

(d) Active members may obtain life membership by the payment of fifty dollars, and shall thereafter be exempt from the payment of all dues.

Associate Members. Those who are unable to qualify as Active members, but,

owing to the objects of the Club, desire to affiliate therewith and lend a helping hand towards its maintenance.

Graduating Members. Those who desire to become Active members, but are not yet qualified. They will be given two years to qualify, but such probation is not renewable.

Subscribing Members. Those who are unable to take an active part in the outdoor work of the Club, but desire to keep in touch with it by receiving its publications and exchanges.

OFFICERS.

6. (a) The officers of the Club shall consist of a Patron, a President, Vice-Presidents, a Secretary, a Treasurer, and a Librarian, who shall be elected to office biennially.

The President and Vice-Presidents shall not hold office for more than two consecutive terms.

(b) Officers of the Club shall be elected from the Active membership, but, if it be distinctly in the interests of the Club, as determined by the Executive Board, they may be elected from any other grade except that of Graduating or Subscribing membership, and for their term of office shall be vested with the powers and privileges of Active membership. In such case, however, the election must be by a two-thirds majority of the recorded vote of the Club.

ADVISERS.

6. (a) In addition, there shall be elected not less than three advisers, who, together with the officers, shall constitute the Executive Board of the Club. Their tenure of office shall be governed by subsection (a) of section entitled "Officers." Only residents of Canada shall be eligible for office upon the Executive Board.

(b.) Advisers may be elected from any other grade, excepting that of Graduating or Subscribing membership, and for their term of office shall be vested with the powers and privileges of Active membership.

EXECUTIVE BOARD.

7. The Executive Board shall have the general charge, superintendence and control of the affairs, interests and property of the Club. It shall pass upon the eligibility of all proposed members and shall arrange and direct the working details and publications of the Club. The Executive Board shall have power to make by-laws for its own government, not inconsistent with this Constitution, which by-laws shall be submitted by the Board at the first annual meeting thereafter.

NOMINATION AND ELECTION OF MEMBERS.

8. Every nomination for membership must be made by not less than three members of the Club. Such nomination, with a statement of the qualifications of the proposed member, shall be submitted to the Executive Board, which shall pass upon the eligibility of the candidate. A ballot containing the names of such -candidates as have been approved by the Executive Board, together with a statement of their qualifications and the names of their sponsors, shall be sent by the Secretary to each Active member. Such ballots as are returned to the Secretary within six weeks after they were sent out

shall be canvassed by the Executive Board and the result declared in the minutes of the Board and in the next circular issued to members. A majority of the votes cast shall elect.

NOMINATION AND ELECTION OF OFFICERS.

9. The election of officers shall take place at every alternate annual meeting. Two months before such meeting, the President shall appoint a Nominating Committee of five Active members. This Committee shall prepare a list of candidates for the ensuing term and report it to the Secretary.

A ballot containing these nominations shall be mailed to each Active member at least six weeks before the date of election. At the meeting appointed for the election, these ballots shall be cast and the result declared. In case of a failure to elect, the existing officers shall hold over until their successors are elected.

DUES.

10. (a) Annual dues for Active members shall be five dollars.

Annual dues for Associate members shall be twenty-five dollars.

Annual dues for Graduating members shall be two dollars and fifty cents.

Annual dues for Subscribing members shall be two dollars.

(b) Members in arrears for two years, to whom have been mailed the usual notice for dues and a final notice, shall forfeit membership.

HEADQUARTERS.

11. The headquarters of the Club shall be at the city of Winnipeg.

CONSTITUTION ANNUAL MEETING.

12. An annual meeting of the Club for the election of officers and the transaction of other business shall be held at the Club's summer camp, or, failing a summer camp, at the Club's headquarters during the month of January.

QUORUM.

13. Seven Active members shall constitute a quorum of the Club for the general transaction of business, and three members of the Executive Board shall constitute a quorum of that Committee for the general transaction of business.

SUMMER CAMP.

14. A summer camp in some suitable part of the mountain regions shall be organized in each year for the purpose of enabling Graduating members to qualify for Active membership, and the members generally to meet together for study and climbing in the alpine districts of Canada.

SPECIAL MEETINGS.

15. Special meetings of the Club may be called by the President or by a Vice-President and the Secretary, acting under his authority. In such case due official notice shall be mailed to all members six weeks before such meeting, stating the purpose for which it is called.

LIBRARY.

16. A library or libraries shall be established where the publications of the Club and books, maps, photographs and works of art relating to mountain scenery shall be gathered together and filed for the use of its members.

AMENDMENTS.

17. Amendments to the Constitution and By-laws may be made at any regularly called meeting of the Club, provided that such amendment or amendments shall have the signatures of not less than five Active members of the Club and are acquiesced in by two-

thirds of those recording their votes.

All such amendments shall be mailed by the Secretary to as members, on printed ballots, six weeks in advance, together with the names of the five members proposing the changes. Such ballots as have been returned to the Secretary shall be canvassed by a committee appointed by the President and the result declared at the meeting aforesaid.

List of Members.**HONORARY MEMBERS**

MRS. H. J. PARKER,
Winnipeg, Manitoba, Canada.

J. NORMAN COLLIE, F.R.S.,
London, England.

E. DEVILLE, LL.D., F.R.S.C.,
Ottawa, Ontario, Canada.

CHAS. E. FAY, Litt. D.
(President American Alpine Club)
Tufts College, Mass., U.S.A.

REV. W. S. GREEN, M.A., F.R.G.S.,
Dublin, Ireland.

COLONEL A. LAUSSEDAT,
Institute of France, Legion of Honour, Geographical Society of Paris,
Yzeure, Canton d'Allier, France.

EDWARD WHYMPER,
London, England.
Associate Members a. vv

ASSOCIATE MEMBERS

MRS. G. A. ANDERSON,
Box 508, Calgary, Alberta.

MRS. P. BURNS,
Calgary, Alberta.
E. L. DREWRY,
Winnipeg, Manitoba.

SIR SANDFORD FLEMING, C.E., K.C.M.G., LL.D.,
Chancellor, Queen's University, Kingston, Winterholme, Ottawa, Ontario.

REV. C. W. GORDON, D.D. (Ralph Connor),
Winnipeg, Manitoba.

J. D. PATTERSON,
Woodstock, Ontario.

MRS. C. W. ROWLEY,
Calgary, Alberta.

R. STEWART SOLOMON,
Box 82, Cape Town, South Africa.

BYRON E. WALKER,
President, Canadian Bank of Commerce,
Toronto, Ontario.

WILLIAM WHYTE,
Second Vice-President, Canadian Pacific Railway, Winnipeg, Manitoba.

ACTIVE MEMBERS

* Original Member.

*Armstrong, L. O. Can. Pac. Ry. Co., Montreal, Quebec.

Ascents: Over 10,000 feet above sea level in the Spillamacheen Mts.

*Baker, S. H. Banff, Alberta.

Ascents: In the Canadian Rockies, Main range-Mts. Shields, Wilcox, Wapta and Cascade; Pobokten, Howse, Bow and Yoho peaks. In the Selkirks---Mt. Afton.

*Barnes, E. C. Banff, Alberta.

Mountain ascents in Wyoming, Montana and Idaho.

In the Canadian Rockies-Mt. Vice-President.

Bathurst, H. M. Winnipeg, Manitoba. Ascents: Monte Christallo, Dolomites, Tyrol. Benham, Miss G. E. 44 Dartmouth Rd., Brondesbury, London, N.W., England.

Ascents: More than one hundred and ninety mountain ascents in Europe, Canada, New Zealand and Japan; the following are the principal: In the European Alps-Mont Blanc, Monte Rosa, Lyskamm, Dom, Matterhorn, Weisshorn, Jungfrau, Dent Blanche, etc. In Canadian Rockies, Main range-Victoria, Lefroy, Temple, Stephen, Balfour, Assiniboine, Fay, Gordon, etc. In the Selkirks--Sir Donald, Dawson, Bonney, Rogers, Swiss Peak, etc. In New Zealand-Mt. Earnslaw. In Japan--Fuji Yama.

*Bridgland, M. P. Calgary, Alberta. Topographical Survey of the Canadian Rocky Mts.

Ascents: Numerous ascents in the Canadian Rockies; among others: In Main

range-Mts. Temple, Daly, Gordon, Hector, Balfour, Stephen, Habel, Vaux, etc. In the Selkirks-Mts. Rogers, Fox, Selwyn, Bagheera, etc.

*Brown, F. C. Calgary, Alberta. Ascents: In Canadian Rockies-Mt. Vice-President.

Burr, Allston, Chestnut Hill, Mass., U.S.A.

Ascents: In Canadian Rockies-Mts. Victoria, Lefroy and Stephen. In the Selkirks-Mt. Sir Donald.

* Original Member.

Active Members

Burwash, A. P. Ferrybank, Alberta.

Ascents: In Canadian Rockies-Mt. Coleman.

*Campbell, A. M., M.D. General Hospital, Winnipeg, Man.

Ascents: In Canadian Rockies-Mt. Vice-President. *Campbell, D. Innisfail, Alberta.

Ascents: In Canadian Rockies-Mt. Chaba.

*Campbell, J. A., M.D. Keene, Ontario.

Ascents: In Canadian Rockies-Mts. Vice-President and Burgess.

*Campbell, P. M., M.D. Lethbridge, Alberta.

Ascents: In Canadian Rockies-Mts. Vice-President and Wapta.

*Campbell, R. E. Laggan, Alberta.

Ascents: In Canadian Rockies-Mts. Vermillion, Cascade, Rundle, Aylmer, Inglismaldie, Prospectors' peaks, Niles, Stephen, Victoria, Aberdeen, etc.

Carson, P. A.

Topographical Surveys Branch, Ottawa, Ontario.

Ascents: In Canadian Rockies-Storm Mt., Mts. Mc-Arthur (Signal 18) and King. In the Selkirks--Mt. Bonney.

*Coleman, A. P., M.A., Ph.D.

School of Practical Science, Toronto, Ontario.

„ Exploration to headwaters of Saskatchewan and Athabaska rivers in 1892 and 1893. Exploration and mapping of Brazeau snowfield in 1903.

Ascents: In Norway-Mt. Galdhopiggen. In Canadian Rockies-Misty Mt., Castle Mt., Mt. Stewart, Mt. Brazeau to 10,500 feet, and a number of unnamed peaks at headwaters of the Saskatchewan, Athabaska and Brazeau rivers. In France-Grand Sablier (Dauphiny). In Mexico-Mts. Orizaba, Colima, Nevada de Toluca.

Coleman, L. Q. Morley, Alberta.

Exploration to headwaters of Saskatchewan and Athabaska rivers in 1892 and 1893. Exploration of Brazeau snowfield in 1903.

Ascents: In Canadian Rockies-Misty Mt., Mts. Stewart, Brazeau and Brown.

*Cowdry, E. V. Waterford, Ontario.

Ascents: European Alps-The Jungfrau, Mettelhorn,

Dent du Midi, Gorner-grat, Metteinberg, Mouchjoch.

Comstook, B. 8. 45 Murray St., New York City, U.S.A. Ascents: In Canadian Rockies, Selkirk range-Mt. Dawson.

Cowdry, N. H. Waterford, Ontario. Ascents: In Switzerland--Gorner-grat. Minor climbs in Switzerland, Corsica and Rockies.

Cummin, Miss E. P.
113 West Monument Ave., Dayton. Ohio, U.S.A. Ascents: In Cascade Range-Mt. Hood (Oregon).

Curtis, R. F. 25 Kinross Rd., Boston, Mass., U.S.A.
Ascents: Gray's peak (Colorado). In Canadian Rockies-Mt. Balfour, Abbot pass. In Selkirks-Eagle peak and Mt. Lookout.

*Dunn, Rev. A. Calgary, Alberta.
Ascents: Ben Nevis (Scotland), Pilatus and Rigi (Switzerland). In Canadian Rockies--Three Sisters (Crowsnest pass), Mts. Vice-President, Marpole (first ascent) and Field.

*Durham, Miss M. T. Golden, British Columbia. Ascents: In Canadian Rockies-Mt. Vice-President.

Finlayson, Miss A. Victoria, British Columbia. Ascents: In Switzerland--Piz Languard and Gornergrat.

Forde, J. P. Can. Pac. Ry. Co., Revelstoke, B.C. Ascents: Mts. Skikist and Windsor (Coast range, British Columbia).

*Freeborn, F. W. 445 W. 21st St., New York City, U.S.A.
Ascents: Breithorn and Gornergrat (Switzerland). In Canadian Rockies-Mts. Temple, Victoria and Whyte, etc. In the Selkirks-Mt. Rogers.

*Gordon, Rev. A. M. Lethbridge, Alberta.
Ascents: Monte Rosa (Switzerland). In Canadian Rockies-Mts. Lefroy, Vice-President and Marpole (first ascent). In the Selkirks-Mt. Hermit.

*Graham, J. H. Winnipeg, Manitoba.
Ascents: In Canadian Rockies-Mt. Vice-President.
*Gray, Rev. S. H. Dundas, Ontario.
Ascents: In Canadian Rockies, Main range-Mt. Lefroy. In the Selkirks-Mt. Hermit.

Griffith, Miss I. W. Banff, Alberta.
Ascents: In Canadian Rockies-Mt. Vice-President.

*Haggen, R. A. Revelstoke, British Columbia.
Ascents: In Eastern Selkirks-Boston Pk. and others.

*Haggen, R. Revelstoke, British Columbia.
Ascents: In Canadian Rockies-Mt. Vice-President. In the Selkirks-Mt. Begbie (first ascent).

Harmon, B. Banff, Alberta.
Ascents: In Canadian Rockies-Mt. Vice-President and Cascade Mt.

*Harrower, G. Lethbridge, Alberta.
Ascents: In Canadian Rockies-Mt. Vice-President Crowsnest Mt. In the Selkirks-Eagle peak.

*Henshaw, Mrs. J. W.

Box 29, Vancouver, British Columbia.

Author "Mountain Wildflowers of Canada."

Eight years of botanical work in Canadian Rockies.

*Herdman, Rev. J. C., D.D. Calgary, Alberta.

Ascents: In Scotland-Ben Nevis and Ben Lomond. In Canadian Rockies, Main range-Mts. Stephen, Vice-President, Aberdeen, Field, Yoho peak, Fairview, etc. In the Selkirks-Mts. Macoun (first ascent), Macdonald, Hermit (first ascent), Avalanche, Lookout, Begbie (first ascent), etc. In Coast range-Mt. Cheam.

Hebbe, Miss E. R. Revelstoke, British Columbia.

Ascents: In Canadian Rockies-Mt. Vice-President. In the Selkirks-Mt. Revelstoke.

Hornibrook, T. A. Calgary, Alberta. Ascents: In Canadian Rockies-Mts. Vice-President and Fairview.

Hyde, F. O. Lethbridge, Alberta.

Ascents: Mts. Harrison and Old Baldy (San Jacinto range, S. California).

Jackson, W. S. Upper Canada College, Toronto, Ont.

Ascents: In Canadian Rockies-Mt. Temple. In the Selkirks-Mts. Sir Donald and Bagheera (first ascent).

Jardine, Mrs. A. B. Stavely, Alberta. Ascents: In Japan-Fuji Yama and Asama Yama.

*Jones, Stanley L. Calgary, Alberta.

Ascents: In Canadian Rockies-Mt. Vice-President. *Jones, Mrs. Stanley L. Calgary, Alberta.

Ascents: In Canadian Rockies-Mt. Vice-President. *Kelly, W. J. Winnipeg, Manitoba.

Ascents: In Canadian Rockies-Mts. Vice-President and Field.

*Kilpatrick, T. Can. Pac. Ry. Co., Revelstoke, B.C. Ascents: In Canadian Rockies-Mt. Vice-President.

*Kinney, Rev. G. R. B. Michel, British Columbia.

Ascents: In Canadian Rockies-Mts. Stephen and Vice-President. A number of climbs between 8,000 and 10,000 feet in vicinity of Crowsnest pass.

*Kirk, J. A. Revelstoke, British Columbia.

Ascents: Mountains in the Kootenays of British Columbia.

*Langlois, H. G. 149 Rusholm Road, Toronto, Ontario.

Ascents: In Canadian Rockies-Mt. Vice-President.

*Laird, D. H. Winnipeg, Manitoba.

Ascents: In Canadian Rockies-Mts. Vice-President and Field.

*Laird, Miss A. L. Portage la Prairie, Manitoba. Ascents: In Canadian Rockies-Mts. Vice-President and Field.

*Marshall, Miss L. E. Taber, Alberta. Ascents: In Canadian Rockies-Mts. Vice-President and Wapta.

*Merrill, C. R. Stettler, Alberta. Ascents: In Canadian Rockies-Mts. Vice-President and Wapta.

Miller, C. F.
420 School Lane, German Town, Philadelphia, Pa., U.S.A,
Ascents: In Canadian Rockies, Main range-Mt. Stephen. In the Selkirks-Mt. Rogers. Peaks in Switzerland.

*Miller, Rev. J. H. Field, British Columbia, Ascents: In Canadian Rockies-Mts. Stephen and Vice-President.

*Mitchell, 8. H. 567 Spence Street, Winnipeg, Man,
Ascents: In Canadian Rockies-Mts. Vice-President, Wapta and Field.
Morrison, J. C. Revelstoke, British Columbia. Ascents: Pike's peak (Colorado).

*MacRae, Rev. A. O., D.D.
Western Canada College, Calgary, Alberta.
Ascents: In Canadian Rockies-Mts. Vice-President, Marpole (first ascent) and Amgadamo (first ascent). Mt. Baker (near Nanaimo). London Mt. (Kootenays). Mt. Goatfell (Island of Arran).

*McArthur, J. J. Dept. of the Interior, Ottawa, Ont. Topographical Surveys, Canadian Rocky Mts.
Ascents: In Canadian Rockies-Mts. Stephen, Field, McArthur (Signal 18), Storm Mt. and others. In the Selkirks-Mts. McKenzie, McPherson, etc.

*McEachran, Miss K.
505 Sherbrook Street W., Montreal, Que. Ascents: In Canadian Rockies-Mt. Stephen.

*McLean, H. W. Calgary, Alberta. Ascents: In Canadian Rockies-Mt. Vice-President.

*McLennan, Miss K. 115 Avenue Road, Toronto, Ontario.
Ascents: In Canadian Rockies-Mts. Vice-President and Rundle.

*McTavish, D. N. 1010 Harwood Street, Vancouver, B.C.
Ascents: In Canadian Rockies-Mts. Vice-President and Wapta.

*McTavish, P. D. 1010 Harwood Street, Vancouver, B.C.
Ascents: In Canadian Rockies-Mts. Vice-President and Wapta, Crowsnest Mt., Turtle Mt., Mts. Fernie and Lizzard.

*Neville, G. H. Wetaskiwin, Alberta.
Ascents: In Canadian Rockies-Mt. Vice-President. *Nicholson, W. Calgary, Alberta.

Ascents: In Canadian Rockies-Mt. Vice-President. *Otto, W. J. Golden, British Columbia.

Ascents: In Canadian Rockies-Mts. Vaux, Hunter and Yoho peak.

*Paget, Very Rev. Dean, M.A., D.D. Calgary, Alberta.
Ascents: In Switzerland--Piz Languard, Gorner-grat, etc. In Canadian Rockies--Paget peak.

(Parker, H. C., Ph.D.
21 Fort Green Place, Brooklyn, N.Y., U.S.A. Topographical investigations in

Bow Valley, Alberta

(1903). Explorations in Mt. McKinley region,
Alaska (1906).

First ascents in Canadian Rockies: Mts. Hungabee, Deltaform, Goodsir, Biddle,
Lefroy, Dawson and Gordon.

Ascents: Mts. Sir Donald, Victoria, Temple and Stephen. In Western United
States-Sierra Blanca, Mts. Rainier, Shasta and Hood. In Switzerland--Mont Blanc and the
Matterhorn.

*Parker, Miss J. 160 Furby Street, Winnipeg, Manitoba.

Ascents: In Canadian Rockies-Mts. Vice-President and Wapta.

*Patterson, J. D. Woodstock, Ontario. Ascents: In Canadian Rockies-Mts.
Lefroy, Stephen, Vice-President and Collie. First ascent, Mt. Ball.

*Pearce, Miss F. Calgary, Alberta. Ascents: In Canadian Rockies-Mts. Vice-
President and Wapta.

*Peyto, W. E. Banff, Alberta.

Ascents: In Canadian Rockies-Observation peak (Bow pass). To 10,750 feet on
Mt. Assiniboine (with Rev. James Outram).

*Plewman, R. E. Rossland, British Columbia. Ascents: In the Selkirks, B.C.-
Mt. Sir Donald.

*Port, Miss J. M. Kelowna, British Columbia. Ascents: In Canadian Rockies-
Mt. Vice-President.

*Power, Miss A. R., M.A. Calgary, Alberta. Ascents: In Canadian Rockies-
Mts. Vice-President, Burgess and St. Piran.

Raymond, Miss M. P. West Newton, Mass., U.S.A.

Ascents: Of more than fifty climbs in the European Alps and Canada the
following are mentioned-In the Canadian Rockies, Main range-Mt. Victoria. In the
Selkirks-Mt. Sir Donald. In Switzerland--Rothorn, Finsteraarhorn, Great Schreckhorn,
Grand and Petit Don, Dent du Geant, Matterhorn, Ober Gabelhorn, Dent Blanche, Eiger,
Lauteraarhorn, Jungfrau, Monch, etc. Climbs in the Dolomites.

Ritchie, John, Jr. Box 2795, Boston, Mass., U.S.A.

Ex-President Appalachian Mountain Club.

Ascents: Jungfrau (Switzerland). In Appalachian mountains, Mt. Washington and
others.

Robertson, Rev. J. R. Revelstoke, British Columbia.

'Ascent.: In Canadian Rockies-Mts. Vice-President And Wapta. In the Selkirks-
Cougar Mt., Mt. Begbie (first ascent).

Rowley, C. W. Canadian Bank of Commerce, Calgary. Ascents: In Canadian
Rockies, Main range-Mt. Aberdeen.

*Schaffer, Mrs. Chas.

Philadelphia, Pa., U.S.A. (coo Geographical Society of
Philadelphia).

Eight years' botanical work in the Canadian Rockies. Investigations at headwaters
of Saskatchewan river.

*Sherman, Miss J. L. Sioux Falls, South Dakota, U.S.A. Ascents: In Canadian
Rockies-Mt. Vice-President.

*Simpson, James Banff, Alberta. Ascents: In Canadian Rockies-Mt.

Murchison, Wilcox and Pyramid peaks.

*Sissons, C. B., M.A. Revelstoke, British Columbia.

Ascents: With Photo-Topographical Survey of Canadian Rocky Mts., climbed among others-Mts. Vice-President, Wapta, Ogre, Amiskwi, Glenogle, Twin Glacier.

Smith, A. H. Woodstock, Ontario. Ascents: In Canadian Rockies-Mt. Vice-President.

Smith, Miss E. R. Calgary, Alberta. Ascents: In Canadian Rockies-Mts. Fairview, Burgess, Vice-President and Cascade.

*Snell, H. M. Winnipeg, Manitoba. Ascents: In Canadian Rockies--Mts. Vice-President and Burgess.

*Stewart, Miss A. M. Calgary, Alberta.

Ascents: In Canadian Rockies: Mts. Vice-President, Burgess and St. Piran.

*Sutherland, Miss E. Winnipeg, Manitoba. Ascents: In Canadian Rockies-Mt. Vice-President.

*Tuzo, Miss H. L.

The White House, Warlingham, Surrey, England.

Ascents: Ortler (Eastern Alps). In the Canadian Rockies, Main range-Mts. Victoria, Collie and Mt.

Tuzo (Peak seven of the Ten Peaks, first ascent). In the Selkirks-Mts. Sir Donald, Bonney, Rogers, Afton and Swiss and Eagle peaks.

*Vaux, G. Jr. 404 Girard Building, Philadelphia, Pa., U.S.A.

Glacial studies in the Canadian Rockies and Selkirks of British Columbia, since 1887.

Ascents: In Canadian Rockies-Mt. Stephen. In the Selkirks-Mt. Sir Donald. Gray's peak (Colorado).

*Vaux, Miss M. M. 1715 Arch Street, Philadelphia, Pa., U.S.A.

Ascents: In Canadian Rockies-Mt. Stephen and Abbot pass. In the Selkirks-Mt. Avalanche. Glacial studies.

*Vaux, W. S. 807 Bailey Building, Philadelphia, Pa., U.S.A.

Investigations and surveys of glaciers in the Canadian Rockies and Selkirks of British Columbia, since 1887.

*Warner, D. C. P. R. Telegraphs, Winnipeg, Manitoba. Ascents: In Canadian Rockies-Mts. Vice-President and Wapta.

Watt, J. 17 Maple Avenue, Toronto, Ontario. Ascents: In the Selkirks of British Columbia-Mt. Sir Donald. Climbs in Switzerland and Corsica.

*Wheeler, A. O., F.R.G.S. Box 167, Calgary, Alberta. In charge, Photo-Topographical Survey of the Rocky Mts. of Canada.

Ascents: In the Canadian Rockies, Main range-Mts. Hector, Temple, Gordon, Daly, Vaux, Thompson, etc. In the Selkirks-Mts. Dawson, Sir Donald, Purity, Fox, Rogers, Wheeler (first ascent), Swiss peak, etc.

*Wheeler, E. O. Box 167, Calgary, Alberta.

Ascents: In Canadian Rockies, Main range-Mts. Hector, Gordon, Thompson, Vice-President, Wapta, Storm Mt., Observation peak, etc.

*Wheeler, H. G. Box 167, Calgary, Alberta. Photo-Topographical Survey of the Rocky Mts. of Canada.

Ascents: In Canadian Rockies, Main range-Mts. Hector, Temple, Gordon, Daly, Balfour, Vaux, Thompson, Observation peak, etc. In the Selkirks-Mts. Dawson, Rogers, Fox, Purity, Selwyn, Wheeler, etc.

*Wilkie, O. B. M. Trout Lake, British Columbia. On Canadian Topographic Survey for determination of Alaska Boundary.

Ascents: Climbs in Lardeau and Kootenay Districts of British Columbia.

*Wilson, T. Banff, Alberta.

Ascents: In Canadian Rockies, Main range-Mts. Stephen, Wilson, Aylmer, Cascade, King, Storm Mt., Crowsnest Mt., Wind Mt., Bonnet peak.

GRADUATING MEMBERS

Adams, Miss C. Havergal College, Winnipeg, Manitoba.

Alexander, J. H. Toronto, Ontario (coo H. H. Campkin & Co.)

Allison, E. K. Regina, Saskatchewan.

Amphlett, G. T. Standard Bank, Cape Town, South Africa.

Anderson, G. A., M.D. Box 508, Calgary, Alberta.

Anderson, H. E. Calgary, Alberta.

Armstrong, T. B., M.D. Indian Head, Saskatchewan.

Atkins, H. B. Didsbury, Alberta.

Ballentine, A. P. Box 894, Calgary, Alberta.

Barnard, Miss E. A. Hamilton, Ontario.

Barnes, Miss E. Bismarck, N. Dakota, U.S.A.

Barnes, Miss L. Bismarck, N. Dakota, U.S.A. Bell, F. 121 Carlton Street, Winnipeg, Manitoba.

Bill, Miss N. A. 121 Carlton Street, Winnipeg, Manitoba.

Bleasdale, H. Regina, Saskatchewan.

Burch, R. E. Winnipeg, Manitoba.

Burnett, Miss E. M. Calgary, Alberta..

Burwash, Miss E. M.

Columbia College, New Westminster, B.C.

Campbell, Miss M. W. Steele Block, Winnipeg, Manitoba.

Campbell, Mrs. P. M. Lethbridge, Alberta.

Campbell, Mrs. R. E. Banff, Alberta.

Cancellor, H. Field, British Columbia.

Coffin, Rev. F. S. Canmore, Alberta.

Cook, E. M. Revelstoke, British Columbia.

Cook, Miss M. Banff, Alberta.

Craig, H. S. Leduc, Alberta.

Crane, W. L. Indian Head, Saskatchewan.

Crawford, A. Calgary, Alberta.

Culp, N. Saskatoon, Saskatchewan.

Dalton, W. T. 1972 Robson Street, Vancouver, B.C.

Darling, Godfrey Box 84, Calgary, Alberta.

Duval, Miss L. E. 59 Donald Street, Winnipeg, Man.

Davenport, Miss A. J. Sturgis, S. Dakota.

Eakin, J. I. Lethbridge, Alberta.

Edwards, R. C. Calgary, Alberta.
 Ferguson, Rev. T. J. S. Didsbury, Alberta.
 Fernie, Miss E. S. Golden, British Columbia.
 Field, Miss F. M. Winnipeg, Manitoba.
 Foote, Miss A. G. Calgary, Alberta.
 Fournier, Miss E. M. Box 107, Indian Head, Saskatchewan.
 Fraser, A. W. Box 1441, Calgary, Alberta.
 Fraser, Rev. Thurlo Portage la Prairie, Manitoba.
 Gillis, C. H. Vancouver, British Columbia (c/o E. H. Heaps).
 Gillis, Miss S. Revelstoke, British Columbia.
 Graham, T. H. Morley, Alberta.
 Griffith, Mrs. H. Banff, Alberta.
 Griffith, Mrs. J. E. Golden, British Columbia.
 Haggith, Rev. W. J. Banff, Alberta.
 Harcourt, Rev. J. R.
 Edmonton, Alberta (coo Geo. Harcourt, Dep. Min. Agriculture)
 Hart, A. R. Calgary, Alberta.
 Hart, F. W., M.D. Indian Head, Saskatchewan.
 Harvey, James Indian Head, Saskatchewan.
 Harvey, Miss Margaret Indian Head, Saskatchewan.
 Harvey, Miss Mary Indian Head, Saskatchewan.
 Haverson, Miss R.
 Pinecrest, Balsam Ave., Balmy Beach, Toronto.
 Herapath, Miss V. K. Banff, Alberta.
 Herdman, F. W. Trout Lake City, British Columbia.
 Hoar, O. D. Field, British Columbia.
 Hood, R. B. Calgary, Alberta.
 Houston, Miss M. B. Box 250, High River, Alberta.
 Hugg, Miss A. M. Box 188, Regina, Saskatchewan.
 Hugg, Miss M. L. Box 188, Regina, Saskatchewan.
 Hutchinson, Miss A. Sioux Falls, S. Dakota, U.S.A.
 Hunt, J. S. Gleichen, Alberta.
 Hunt, W. G. Calgary, Alberta.
 Keith, D. North Battleford, Saskatchewan,
 Klingenhagen, Miss A. Ferry Hall, Lakeforest, Ill., U.S.A.
 Lally, T. Banff, Alberta.
 Lang, L. L. Winnipeg, Manitoba.
 Lee, J. K. Box 447, Calgary, Alberta.
 Lee, S. C. Portage la Prairie, Manitoba.
 Lennox, Miss M. Revelstoke, British Columbia.
 LeSueur, Miss E. O. Box 821, Calgary, Alberta.
 Lewis, F. B. Revelstoke, British Columbia.
 Lindmark, C. F. Revelstoke, British Columbia.
 Lindner, Miss E. F. Calgary, Alberta.
 Lyman, Otis A. Banff, Alberta.
 Martin, Mrs. Edwards Box 503, Winnipeg, Manitoba.

- Mason, C. K. Winnipeg, Manitoba. Miller, A. E. Revelstoke, British Columbia.
- Miller, H. H. Box 1127, Calgary, Alberta.
- Morrison, Mrs. J. O. Revelstoke, British Columbia.
- Murray, R. H. Halifax, Nova Scotia.
- McArthur, J. A., M.D.354 Carlton Street, Winnipeg, Manitoba.
- McCull, Miss M. F. Grand View Villa, Banff, Alberta.
- McDonald, C. R. Revelstoke, British Columbia.
- MacFarlane, Miss G. Revelstoke, British Columbia.
- MacFarlane, Miss M. Education Dept., Regina, Sask.
- MacKay, Miss H. Winnipeg, Manitoba.
- MacKeller, Miss E. Winnipeg, Manitoba.
- McKillican, W. C. Calgary, Alberta.
- McKittrick, M. T. 622 McIntyre Block, Winnipeg, Man.
- McNeill, John, Box 1416, Calgary, Alberta.
- Overend, F. C. Bankhead, Alberta.
- Palmer, H. J. Banff, Alberta.
- Palmer, Mrs. H. J. Banff, Alberta.
- Parslow, Miss E. M. Calgary, Alberta.
- Peterson, Miss M. E. Calgary, Alberta.
- Patterson, Miss A. E. Lethbridge, Alberta.
- Patterson, Miss R. Calgary, Alberta.
- Patterson, W. A. Western Canada College, Calgary, Alberta.
- Patteson, T. E. Lethbridge, Alberta.
- Pearce, Miss P. Calgary, Alberta.
- Percival, J. W. Calgary, Alberta.
- Porteous, H. M. Winnipeg, Manitoba.
- Prest, Mrs. O. H. Cranbrook, British Columbia.
- Procurier, Rev. C. A., M.A. Revelstoke, British Columbia.
- Reading, A. L. Revelstoke, British Columbia.
- Reld, J. A. Box 712, Regina, Saskatchewan.
- Reilly, C. B. Calgary, Alberta.
- Salton, Rev. G. F., Ph.D. 243 Lisgar Street, Ottawa, Ontario.
- Sayre, A. J. Calgary, Alberta.
- Sharpe, Miss D. 24 Elm Street, Brookline, Mass., U.S.A.
- Sharpe, Miss M. Revelstoke, British Columbia.
- Sherman, Miss M. F. Sioux Falls, S. Dakota, U.S.A.
- Sloe, J. H. N. 42 Broadway, New York, U.S.A.
- Smith, B. S. Calgary, Alberta (C.P.R. Irrigation Office).
- Smith, C. H. Revelstoke, British Columbia.
- Springate, Miss 2 St. James Place, Winnipeg, Manitoba.
- Stone, W. E. President, Purdue University, La Fayette, Indiana, U.S.A.
- Sutherland, E. G. Royal Bank of Canada, Calgary, Alberta.
- Taylor, Miss L. Taber, Alberta.
- Taylor, W. J. Woodstock, Ontario.
- Walker, F. G. Western Canada College, Calgary, Alberta.

Walker, W. J. S. Calgary, Alberta.
Watson, Miss H. Kingston, Ontario, (Box 436, Winnipeg).
Watt, A. B. Saturday News, Edmonton, Alberta.
Will, J. S. Manitoba College, Winnipeg, Manitoba.
Wilson, Dr. G. B. Winnipeg, Manitoba.
Wilson, L. C. Calgary, Alberta.
Wheeler, Mrs. A. O. Calgary, Alberta.
Wright, C. A. Calgary, Alberta.
Yeigh, F. 667 Spadina Ave., Toronto, Ontario.

SUBSCRIBING MEMBERS

Chisholm, J., F.I.A. Crossfield, Alberta.
Leigh, Mrs. E. 50 Albany Ave., Toronto, Ontario.

NOTICE

All members whose names, letters, addresses, etc., are not entered correctly are requested to notify the Secretary so that a proper entry may be made in the next issue.
Address: Mrs. H. J. Parker, 160 Furby Street,
Winnipeg, Manitoba.