John Meenehan, 1222 Euclid Street, N. W., Adams 3297, is the new editor of Up Rope. John is well known to the members of the Washington Rockclimbers both as an expert climber and as a speleologist. Although he has been busy working on the movies taken of local climbers, he has offered to take on the additional responsibility of UP ROPE. We know the readers of UP ROPE have a treat in store for them for we are certain that there will be many interesting issues during John's tenure as editor.

We also want to take time out to thank all the members who have contributed articles and news, for without their help our task would have been insurmountable. We especially want to thank Elizabeth Vos who addressed a great many of the envelopes and Eleanor Tatge who has helped us with the typing of the June issues.
Travel over Ice and Snow. I intend to discuss this subject at somewhat greater length than the others, because it is the one about which the novice usually knows nothing, yet about which he should know the most. No man can call himself a mountaineer who has not had extensive experience, during a number of seasons, on glaciers, ice, and snow. The great mountains of the world all fundamentally represent problems in snow and ice-craft. Probably 80 percent of alpinism is carried out on ice or snow, or in close proximity thereof. In no true alpine region will the beginner be able to avoid travel over glaciated territory and at the same time engage in more than one or two major ascents.

First of all, I should like to give a few tips on travel across glaciers.

a) Glacier Travel. I shall not give a detailed description of glaciers, because such descriptions are available in any standard mountaineering text. There are several types of glaciers. For purposes of this study, however, all glaciers are divided into two parts during the summer season: the lower portion, where bare ice is everywhere present; and the upper portion, which consists of névé, and which is snow-covered. There is also an intermediate section, partly snow-covered and partly bare, but which should be considered, for our purposes, as belonging to the upper portion.

The main danger encountered on glaciers is the presence of crevasses. On that part of the glacier which consists of bare ice, crevasses are all open and visible and can easily be avoided. Unless they are unusually large or numerous, and unless it is necessary to make very wide jumps in order to cross them, it is not essential to put the rope on when crossing this section of the glacier. Travel here is generally simple except where steep ice is encountered, and such ice should be avoided by the novice. In jumping crevasses, however, one must remember to jump well clear to the far side, because the lip frequently consists of rotten ice, which may crumble under the jumper's weight.

Should the beginner be in doubt in the lower, bare-ice part of the glacier, as to whether or not to assume the rope, he should never hesitate to put it on.

As soon as snow is encountered, things become more complicated. If the party be obliged to travel on any snow at all the men should rope up at once, even if the snow is only inch-deep and there is ice below. As a rule, an inexperienced party should not venture onto the snow-covered portions of a glacier, but if this becomes necessary, the party must consist of at least three and preferably four or five persons on one rope. There is danger of hidden crevasses, the leader should sound the snow ahead of him with his ice-axe handle at each step. Most of the time, except in early morning when snow is frozen, the axe will sink about halfway to the hilt in the snow and some effort will be required to sink it farther. This indicates the presence of ice at some distance beneath or at least the presence of a very strongly bridged crevasse, which may be crossed without risk.

If, on the other hand, the axe sinks easily to the hilt in the snow, a passage should be sought elsewhere, since this points to the presence of a crevasse which is weakly bridged. Should the leader decide to cross here despite the warning, he must request his second man to belay him from a safe point. The leader must then proceed cautiously, keeping a tight rope between him and his belayer. He should get down on all fours and crawl over the crucial spot in order to distribute the load. Once in a safe position, the others must be belayed over one by one.

The belayer's best position is to drive his axe firmly into the snow, hilt deep, pack the snow immediately around his axe and assume a kneeling position next to the axe and between it and the person he is
belaying. This increases the strength of the belay point. The belayer should feed the rope out from around his hip and around the axe, and should keep a constant watch on the leader.

While on a glacier, a roped party should travel some distance apart, preferably from 20 to 30 feet. The rope between the climbers should be kept taut wherever the crevasse danger is present, and must not be carried in coils. The party should move at right angles to the general direction of crevasses. If this is impossible, the group should travel in echelon so that the entire party may not fall into the same crevasse. If the direction of crevasses is impossible to ascertain, the party should travel in V-formation. In such cases, every man should prod for crevasses, since each man is making a separate track.

It is important to understand the structure of glaciers in order to select the safest and best route along them. Generally speaking, however, the following rules will provide a fairly reliable guide for the beginner:

A moraine is frequently—but not always—the best route up a glacier.

Crevasses tend to be fewer and wider at the center of a glacier, and to run transversely to the course of the glacier. They are inclined to be more numerous and smaller at the edge and to run diagonally. These are, of course, glittering generalities which do not always hold true. On the big Alaska glaciers, for instance, the crevasses usually run transversely, horizontally, and diagonally all at once, to the horror of the traveller, who is left standing on an ice cube, surrounded by bottomless depths to plot an impossible route through the labyrinth.

Ice falls should be avoided or circumvented by the beginner, partly because of the danger of falling ice, partly because they are likely to involve complicated ice techniques with which he is not familiar. The expert usually avoids them too. If a person must cross under them he should cross in the early morning only, before the sun strikes the ice, and should move as rapidly as possible. There are usually easy ways around ice falls, so that it should not be necessary for the beginner to become tangled in them.

The beginner should remember that conditions on a glacier, like conditions on a mountain, are far safer in the early hours of the day than they are in the afternoon. A safe snowbridge at dawn may be ready to collapse by noon.

The novice will find it convenient to take advantage of any extensive hollow ground in the course of the glacier. Such ground, because there is little movement of the ice, is often remarkably free of crevasses.

The best way of finding a reliable route up a glacier is to inspect the glacier first from a high point nearby and pick a way which seems most free of crevasses and ice falls. A good reconnaissance job on the day preceding a glacier climb may save hours of ponderous and complicated crevasse-hopping.

b) Rescue Methods. Despite all precautions even the best mountaineer may fall into a crevasse. Usually the climber merely puts a foot through a hole. If he quickly distributes his weight he is likely to fall no farther. In such cases it is essential to be familiar with one of the several standard rescue methods, such as the Bilgeri or the Prussic knot methods and their variants. It is almost impossible, even for a large party, to lift a man out of a deep crevasse by brute force.

The Bilgeri method is the speediest and the most practical, but is useless if the rope is caught or frozen at the lip of the crevasse. The Prussic knot method is slower, requires the use of Prussic coils and considerable labor on the part of the victim. On the other hand, it is perhaps somewhat surer than the Bilgeri method. The Prussic knot system is the standard crevasse-rescue technique employed today by professional guides in Switzerland.
The beginner should at all events practice some sort of crevasse rescue method and be familiar with its technique before engaging in an extended glacier excursion.

c) Ice Climbing. No apprentice mountaineer should engage in ice-climbing nor should he attempt any ascent where ice-climbing techniques will be necessary. Ice-climbing is a highly delicate art and a trained craftsman is essential as a leader on any ice-climb. It is extremely difficult to hold a fall on ice or to check one unless one has had extensive practice in so doing. Ice pitons, while considerably improved since pre-war days, still provide only a slim margin of safety and are not entirely trustworthy. Safe crampon technique takes time to learn and cannot easily be mastered without a skilled instructor. A great many spectacular feats can be done on ice, but they can only be accomplished safely by a solid mountaineer who is well aware of the risks he is taking.

d) Snowcraft. The whole scope of snowcraft and snow-climbing is a subject which covers many volumes. Technique, the study of avalanches, winter mountaineering, skiing, observation and experience all play a part. In the summer months most snow slopes in the Canadian Rockies and Interior Ranges, as well as on most mountains of the United States, are safe from avalanche unless there has been a snowfall within the past three days, or unless the slope is overhung by an ice-fall or cornice. In such cases, the beginner will do well to avoid the slope altogether. If he must venture onto it, he should get beyond the danger point as rapidly as possible and keep away from the avalanche track.

The beginner must not undertake any climb along a corniced ridge where cornices cannot be circumvented by climbing on rock. Cornices are extremely dangerous. The beginner must not stand on cornices no matter how safe their appearance.

The novice should not attempt the ascent of any snow slope over 35 degrees steepness. He should climb a snow slope only under conditions where he can kick steps and need not use crampons. He must remember that a slip on frozen snow can be almost as dangerous as a slip on ice. He should use the same belaying technique as the one described for crevasse crossing, except that the belayer should pack the snow below the axe. The climber should scrupulously avoid all slopes which have an underlayer of ice within ice-axe sounding distance of the surface. Such slopes can be very treacherous, as the line of separation between ice and snow forms a lubricating layer that is likely to avalanche.

The novice should not glissade, but should climb down a slope step by step, unless that slope flattens out completely within two or three hundred feet and unless there are no protruding rocks intervening. He must never glissade in crevassed territory or where the possibility of hidden crevasses exists.

Generally speaking, the novice who has no benefit of expert companions will be wise to avoid climbs on ice and snow and will restrict his activities to rock ascents on a type of terrain with which he is familiar.

Injury. In cases of serious injury, where the injured person cannot descend unassisted or with the help of the climbing party, it is imperative that aid be summoned at once. In a three-man party, the injured person should be given first aid, made comfortable, treated for shock, and, if possible, left alone while the other two members of the party descend for assistance. This is the only case in which a beginner may be left unaccompanied in the mountains, and then it is only recommended because his companions should not seek aid alone. In a four-man party, one person should remain with the injured man while the others go down for help.

Equipment. It goes without saying that no climber should start out on a trip without first checking his equipment for reliability. A
poor rope once was the cause of a near fatality on the gentle slopes of Popocatepetl.

**Conclusion.** It is extremely difficult to find an adequate safety talisman for the beginner in the mountains. I feel, however, that if the general principles expounded above are rigorously observed by the novice, and if, in addition, he displays reserve and consideration in his ventures, limiting his first climbing season to straightforward and well-known ascents, his life expectancy will be reasonably good.

Of course, the beginner can choose to disregard these rules and achieve a certain amount of spectacular success. However, this success, if any, promises to be short-lived.--Andrew J. Kauffman.

**UPS AND DOWNS**

June 13 (cont’d)

The Indigestion Climb was easy for those with indigestion and indigestable for some others. John Meenehan and Ted Waller made a climb just to the right of the S. C. and Ken, Arnold, and Dolores made an upward delicate traverse on a nearby face.

While Don continued his instructions on the hot rocks most of the others made a beeline for Juliet’s Balcony to go swimming, merely pausing at the Flat Iron climb to straddle climb the inside corner. When we arrived at Juliet’s Balcony to go swimming, we found that a baker’s dozen snakes had the same idea and we were hard pressed to get rid of them so we could use the same spot. To be perfectly truthful there was a debate among the boys about their desire to go swimming but you know the breed of girls we’ve developed. We went swimming. J. M.

June 20

Valerie Bradt
Tom Melville
June Mosburg
John Reed
Joan Price
Doug Price

Harald Drewes
Arnold Wexler
Ted Schad
John Meenehan
Nancy Rogers
Chris Scoredos

This Sunday’s trip took the climber’s to the Maryland side of Great Falls. Most of the climbing took place at the base of the falls where belaying was practiced under the supervision of Arnold Wexler. John Meenehan was the guinea pig. John Reed, Harald Drewes, Joan Price and Ted Schad made two beautiful piton leads and traverses. Across the swirling waters of the Potomac, following an hour or two of rope slinging the boys were able to hook a projecting rock and very skillfully rigged up an submarine aerial traverse. Led by John Reed the group was able to traverse across the swirling waters of the river. It was a beautiful aerial submarine traverse and well executed. In the afternoon most of the group went swimming.

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We hear Sally Chamberlin has returned from Switzerland and will attend the Columbia University graduate school. She’ll be looking around for a job teaching French this fall. We certainly hope you find something around Washington Sally, we’d like you to go rockclimbing with us again.

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