

SNOW SLOPES FOR NOVICES.

SNOW slopes appear to be much steeper than they are. The average angle is about 45° ; a slope of 60° is very steep, and even steeper pitches may be encountered. But the angle is of less moment than the condition of the snow, which varies considerably. For climbing, uniformly hard snow is desirable, but recent winters have been too mild to provide much of this variety. Certain conditions may be dangerous, *e.g.* hard crust over powder; soft snow over ice.

Steps are cut with the floor sloping slightly inwards, and the body therefore tends to lean towards the slope. There is, too, a desire to grasp any available handhold, and this exaggerates the leaning position. The foot is then no longer flat on the step and there is danger not only of the foot slipping but also, in certain conditions of snow, of the edge of the step breaking away. *The body must be kept upright*, if necessary by pushing away from the slope with the axe. Hanging on to the axe (driven into the snow) is usually unnecessary and always ungainly.

The leader is held responsible for the safety of his "rope," but it is not to be supposed that the novice on the rope has no responsibilities or that the mere act of roping is an absolute safeguard from accident. The necessary precautions should be thoroughly understood before starting to climb at all. The rope is only a safeguard if it be kept *all but taut between each member of the party all the time*. Then, if the man below slips, he comes immediately on the rope and is easily held. With a slack rope, the falling member may attain considerable speed before the strain comes on the rope, and the resulting jerk may dislodge the whole party. The practice of carrying a coil of rope in one hand has little to commend it. It becomes a source of annoyance, distracts the attention, and is often a sign that the rope is too long for the party! The case of a falling leader is not discussed here; the leader must not fall, because a body falling from above is very difficult to stop

—and also because these notes must go into a stipulated number of pages!

When the party is moving together, the climber is responsible for the rope ahead of him. (The leader has none, but he has eyes in the back of his head.) But in difficult places, where the party is moving one at a time, the stationary member is responsible for the rope of the moving climber, be he in front of him or behind him. The rope must not be allowed to run slack or to catch on protruding rocks. If it is coiled up as it is taken in, it will not become tangled. It is better, however, to have both hands on the rope; the "slack" will generally look after itself. The rope does not cover up bad climbing nor does it justify a difficult ascent by an inexperienced party.

The ice axe is intended primarily for cutting steps, but, since snow slopes do not afford the safety of natural "hitches," as rock climbs do, the axe may also be used as an excellent artificial substitute. If properly driven in, up to the head, it is capable of withstanding a very considerable strain. If the snow is not deep enough to take the axe the belay will be inadequate, and a better stance must be sought. The angle is important; the axe should be either vertical or leaning very slightly towards the slope. In hard snow, it may be necessary to get above the axe and to use the weight of the body as the driving force. The rope is passed over the axe (once) *close to the snow*. As the man below moves up, rope is taken in over the axe; it is paid out in similar fashion when descending and it is essential that the rope runs freely. These precautions are taken when the party is moving one at a time, and it is the leader's duty to see that they are being observed. Where "safing" is necessary, a good stance (*i.e.* a larger step) is equally necessary. The above method is suitable for bringing up the man below, but in really difficult places a better form of belay may be required to safeguard the leader. Should the leader fall, he must come on the axe with a jerk if the method described above is used. He may, also, fall on the wrong side of the belay. But the method of belaying on rock may be used to overcome these objections.

The second man belays his waist rope (the length going to number three) securely round the axe, and passes the leader's rope over one shoulder and under the other arm. In the event of the leader slipping, rope is taken in quickly over the shoulder (there won't be time to take in much!) and the jerk comes first, not on a rigid belay, but on the second man's waist. This lessens the chance of the rope breaking at the belay and, although it appears to be unkind to the second man, it is the method universally adopted on rock and on difficult snow. Its chief merit is that it allows of *both hands on the rope*. He will be a strong man who holds a falling leader with one hand on the rope and one elsewhere.

Beginners sometimes complain that it is difficult to make the turns when ascending steps cut in zig-zag. This is probably due entirely to lack of confidence; the novice should attempt the turn off the inside foot and then off the outside foot to discover which method is easier. It is a matter of anatomy and personal preference. In zig-zag the foot is across the slope; when the steps are cut one above the other the toe is kicked into the slope. There are no turning difficulties, but the straight-up method encourages the tendency to lean forward besides hampering the swing of the axe. For these reasons, several famous climbers have advocated the zig-zag method. The novice should practice downhill as well as up. We avoid a descent (other than by a path) even on our practice climbs in February, and blame the short day! The writer fears to suggest an earlier start.

Having found his balance on steps already cut the beginner should make every effort to obtain practice in cutting (or stamping) steps either "on the rope" or on a safe slope. The common faults are cutting steps too far apart and "nibbling" at hard snow. The difficulties of step-cutting are sometimes greatly exaggerated, and one is sometimes left with the impression the art takes a life-time to perfect. Presumably Alpine guides are at the peak of their form at four-score and ten! In the Alps, where the guide, or leading amateur, may have to cut several hundred

steps in ice, it is an art not perfected in a season. On the very much shorter Scottish climbs, energy need not be conserved to the same extent, and even on hard snow the average climb should not be laborious if the leader is in good condition. Very often a scrape of the adze will clear away sufficient snow to make an adequate step. The size of the step will depend on the degree of difficulty and on the capacity of the party. In steep places, the step is made larger and the upper rim is cut away to accommodate the leg. Few strokes are required if they are well aimed. Energy is saved by adopting a rhythmic swing and an equable rate of speed. Opinion will be divided as to the best length of axe. The ice axe has grown steadily shorter; the modern axe comes up to the hip bone. A longer axe is unwieldy; a shorter is only useful in cramped quarters.

It is taken for granted that the novice will not attempt a snow slope in shorts and canvas shoes. The boot makers advertise their boots and they do not claim too much for them. As for clothes, mountain weather is capricious; it can be intensely cold; take more than you think is enough. Helmet, gloves, and "pull-overs" are easily carried in reserve.

Finally, although the average snow climb is not very difficult, there are many traps for the unwary, and the novice must learn early to appreciate difficulty and danger in relation to his own ability. Danger is not always apparent; but even the open snow slope may be dangerous. And, although the limits of space imposed have already been exceeded, the following parallel is worth consideration: " 'I will have no man in my boat,' said Starbuck, 'who is not afraid of a whale.' By this he seemed to mean that the most useful and reliable courage is that which arises from a fair estimation of the encountered peril."—W.A.E.