extreme selectivity when lending a rope to anyone. A nylon rope may initially be more costly but the resistance it has to unfavorable conditions, as well as its other more important characteristics, makes it the cheapest form of insurance—one day of hospitalization and medical care buys one or more nylon ropes. *A climbing rope should be used only for climbing.*

New Hampshire, Presidential Range—Mt. Madison—On June 2, Thomas H. Flint (21) apparently fell, struck his head and died of exposure on a descent of Mt. Madison. Flint, the most experienced, had been accompanied by Bert Perlmutter (21) and Edwin Snow (21). The weather was rainy with wind and fog and poor visibility. It is difficult to reconstruct the whole incident. (See Appalachia for more details). The three climbed up the Daniel Webster Scout Trail. Perlmutter was unable to keep up and lagged behind. At the Osgood junction Flint noted Snow was shivering and cold and he suggested Snow go on to the Madison Huts which Snow did over the summit of Madison. The trail was wet and slippery. When Snow arrived he had no matches so undressed and wrapped himself in blankets he found in the cabin. He then experienced a chill and cramps. A short time later Perlmutter arrived without Flint. Apparently he and Flint had missed connections since he came around the Parapet Trail avoiding the summit trail. The next morning they ascended the summit trail and found Flint's body. They then went to Pinkham Notch and reported the accident.

Source: Newspaper clipping; Appalachia *31:* 559-567, 1957

Analysis: This accident points up the problem of separating a climbing group, although under the circumstances it would have been difficult to do otherwise. Perhaps more fundamental is the lack of physical condition of the two survivors and the general inadequate equipment of the group for this climb. Clothing was obviously light and poor protection from rain. Flint was reported wearing oxford type shoes. The type of sole is not recorded. Flint deserves credit as the most experienced member for his ill-fated attempt to support his companions.

Georgia, Cliff in vicinity of Camp Wahsega near Dahlonega—On 23 November, Robert D. Bridger (21), a Ranger student participating in scheduled training fell to his death. He was riding down on a suspension traverse constructed of a one inch manila, three strand rope. The rope was suspended with a total span of approximately 220 feet between two trees, one 18 inches in diameter on top of the cliff, the other 14 inches in diameter at the bottom. At the top it was secured with a round turn and two half hitches, and at the bottom with a "transport tightening knot". The cliff was 60 feet high. The carrier for personnel riding the traverse consisted of two snaplinks on the static line, a carrier rope of 7/16 inch nylon passed through these snaplinks and down through the Swiss seat tied on the person. A belay rope of 7/16 inch nylon was tied to the center loop of the carrier rope by means of a "round turn and bowline". The practice had been to allow the person riding the traverse to "run" down the static line to within approximately twenty feet of the pulley at the lower end of the traverse before the belayer arrested his descent.

The manila static line was very wet from a heavy rain storm the night before. The installation had been inspected by the Principal Instructor prior to its

initial use and periodically during the morning which students were riding it. Twenty-two students had preceded Bridger down the traverse within two hours preceding the accident. The Principal Instructor reported that he had checked the rope not over a minute before it broke. At that time there was no evidence of fraying, bulging or excessive wear.

The fall resulting in death occurred when the one inch manila rope (static line) broke at a point approximately sixteen feet from the lower anchor and approximately ten feet from the "butterfly knot" used for the pulley in the "transport tightening knot." It is estimated that the rope broke between one and two seconds after the man's weight was placed on the static line. He had descended a vertical distance of approximately ten feet before the rope broke, allowing him to fall roughly fifty feet. The actual parting of the rope was witnessed by a man standing just below the breaking point and about two feet to the side. He reported that the rope just seemed to explode, fraying out in all directions immediately rather than just one strand breaking and unravelling followed by the other strands.

The exact age of the rope was not known but was estimated at about 6 months. It had been used for a variety of climbing operations during this period. When not in use it was cleaned and then stored loosely coiled in a dry building which was heated during the winter months.

Source: Newspaper clipping from F. Chamberlain. Report from U.S. Army Infantry School.

Analysis: This accident points up the inherent dangers of manila rope. It would appear that nylon rope is safer than manila not only because of its elastic characteristics but also due to its resistance to mould and mildew.

Colorado, Capitol Peak—On July 25, 1957, John W. Heckert, a student at M.I.T., Eileen Ginter and Richard A. Slusser left the Colorado Mountain Club's camp at Snowmass Lake to explore a possible route to Pierre Basin and Capitol Peak. They left at 4:40 A.M.; all carried ice axes, and they had one 120-foot rope. They reached the pass into Pierre Basin by 7:30, and since they were making good time, they decided to attempt the peak. The weather was overcast but not stormy.

They approached the east ridge of Capitol Peak from the south. Three gullies were seen to lead to this ridge, the most easterly looking the easiest; they climbed this gully and followed the ridge to the summit. The ridge was very narrow, rough, and wet from light sleet which had begun to fall, and it took an hour and a half to traverse the ridge, a distance of well under a mile. They reached the summit soon after 1:00 p.m.

Returning, they soon came to the westernmost of the three gullies they had seen from below. Rather than retrace their steps over the wet knife-edge ridge, they decided to explore this gully as an alternative route. Slusser went ahead down the first 300 feet, which was a narrow couloir with rock walls and no snow. Below this, the gully broadened out and a snow slope began which seemed to provide a glissade route down to the basin. Slusser called to the others to join him, which they did, belaying as they came. At the bottom of the narrow section they removed the rope.

Heckert immediately prepared to glissade the snow without waiting for the others. Ginter was coiling the rope and did not see him start; Slusser was kick-