

NASA on its operation.

Lyman began climbing on trips to the Alps and the Tetons. Then, around 1964, through association with colleagues, his climbing entered a more technical phase with weekends in the Shawangunks, trips to the White Sands Missile Range in New Mexico, and in winter on Huntington Ravine on Mt. Washington. In 1965 he participated in an Alpine Club of Canada expedition to Baffin Island. There he climbed Mt. Asgard and made the first ascent of Mt. Thor by the north ridge with Don Morton. Afterward, Lyman walked alone some 32 miles down the Weasel Valley and along the fjord to the town of Pangnirtung in order to return home ahead of the rest of the expedition. In 1967, he joined George Wallerstein and other astronomical colleagues in the Canadian Rocky Mountains east of Prince George, B.C. There he made first ascents of Mt. Walrus, Mt. Petrie, and Mt. Plaskett, the latter two named by the climbers after two prominent Canadian astronomers. Lyman returned to Canada with three Princeton colleagues in 1970 to climb Mt. Waddington from the Tiedemann Glacier.

His later climbing took him to the Dolomites and many places in the United States, including the Flat Irons, Eldorado Canyon, Lumpy Ridge and the Jackson-Johnson route on Hallet's Peak in Colorado, Seneca Rocks in West Virginia, the Needles in South Dakota, White Horse in New Hampshire, and Joshua Tree in California, as well as many routes in the Shawangunks. In 1976, Princeton University authorities were unsettled to find him climbing Cleveland Tower, the high point of the campus. He also climbed extensively with his wife, Doreen, and his four children and their children; to commemorate this bond, his family wore climbing slings at his memorial service. He was a member of the American Alpine Club and the Alpine Club. Lyman will be missed by his numerous colleagues, both astronomers and climbers.

DONALD C. MORTON

HERBERT N. HULTGREN, M.D.

1917 - 1997

**H**erb Hultgren arguably made more important contributions to our understanding and management of mountain sickness than anyone in our lifetime. He was my friend and mentor for more than 30 years, and we did some interesting projects together. Herb had a delicious sense of humor not often revealed (though always appropriate). We argued often but usually agreed—and I learned far more than he did from me!

Herb was a giant in the field of mountain medicine and physiology. He knew mountains from his climbs and treks in the Himalayas, Andes, Alps, Rockies and Alaska. He was active in the American Alpine Club for 34 years and a past chairman of its medical committee. He was a dedicated researcher in the basic physiology and the clinical management of mountain sickness. His name is forever linked to High Altitude Pulmonary Edema (HAPE), a very serious problem that has killed many climbers, trekkers and others who went above a moderate altitude—and he knew more about this than anyone living.

He was widely known and respected as a practicing cardiologist and professor: He was Chief of Cardiology at Stanford for 12 years, and for 16 years at the Palo Alto Veterans Affairs Medical Center. In 1990, he was given the Albion W. Hewlett Award at Stanford for “the physician of care and skill who is committed to discovering and using biologic knowledge and wisdom and compassion to return patients to productive lives.”

Herb wrote more than 300 medical articles and book chapters, and spoke at many medical meetings throughout the world. During his last five years, he collected all he knew about altitude in a textbook for doctors. Happily he saw the published book *High Altitude Medicine*

before he died, at age 80, in October after struggling for a year with acute myelogenous leukemia. His book will be the ultimate authority on the subject.

Herb left many friends and family—and a large gap in medicine.

CHARLES S. HOUSTON, M.D.

ARNOLD WEXLER  
1918-1997

**A**rnold Wexler died in his sleep Sunday evening, November 16, of brain cancer. He was 79.

Arnold lived in a rarefied atmosphere—that of the research engineer at the National Institute of Standards and Technology and of the mountain climber. He is largely responsible for the Mountaineering Section as we know it. He co-invented the idea of dynamic belaying. He made nearly 50 first ascents of Canadian mountains, many of them requiring horrendous bushwhacking.

Arnold was born January 3, 1918, in Manhattan in New York City, but spent his early childhood in the Catskills until his family returned to New York City. He received a Bachelor's degree in chemical engineering from the City College of New York in 1940. In 1941, he joined the then-National Bureau of Standards to work in structural materials research and testing, eventually focusing on instrumentation and standards for measurement, primarily for determining the moisture content of gases. During World War II, he tested climbing ropes and equipment so the military could undertake mountain operations. As an aside, his work on oxygen regulators for military pilots helped some climbing friends (inspired by Jacques Cousteau) to make their own underwater breathing apparatus to explore submerged passages in West Virginia caves.

He was one of a group of rock climbers that pioneered climbing in the Washington, D.C. area in the 1940s. When this group became the Mountaineering Section of the Potomac Appalachian Trail Club, Arnold served as its Chairman for five or six years, quietly leading it through its formative stage. Through his testing of ropes and climbing equipment at the National Bureau of Standards during WW II, Arnold met a west coast climber, (then Major) Richard Leonard. Together they made the first mathematical analysis of the forces on a falling climber, his anchors, the rope, and the belayer. They created the idea of dynamic belaying—a progressive snubbing of the rope around the belayer's body to mitigate the shock on the system. At Carderock, a local climbing area, Arnold encouraged the practice of dynamic belaying by using "Oscar," a 150-pound dummy, who could be dropped to simulate a falling climber. The ability to do a dynamic belay undermined the prevailing ethic that the leader should never fall because of the usual fatal consequences. Now the system need not fail. This was the first step toward today's new climbing ethic.

Even with dynamic belaying, Arnold was a cautious and competent climber. He believed in being able to climb down from a crux. Nevertheless, Arnold pioneered routes at Seneca Rocks in West Virginia such as *Simple J Malarkey* (5.7), *Ye Gods* and *Little Fishes* (5.8) in sneakers and driving pitons on sight—strong routes for 1953-54.

My strongest memories of Arnold are when we shared a little house at Seneca Rocks (now used by a guide service). It was furnished with local yard-sale furniture and a new wood stove. It was then that Arnold and I put up Prune (5.7). At a taxing moment on the first pitch, I clipped into a very old Army ring piton. As Arnold followed, he lifted it out with one finger.