

gal Haston's death before the Ogre Expedition, Nick Estcourt's death in an avalanche on K-2 and the disappearance of Peter Boardman and Joe Tasker on Everest's Northeast Ridge. You join the epic descent from the Ogre with Doug Scott after he has broken both legs in a pendulum fall on the summit block and survive three days and four nights with Bonington, Boardman, Tasker and Al Rouse in coffin-like snow caves, waiting out a storm just below the summit block on Kongur. You enjoy climbing with such diverse personalities as Scott, Dick Bass, Sherpa Pertemba, and Norwegian millionaire Arne Naess [who married singer Diana Ross]. Most importantly, you share the sense of fulfillment that Bonington achieved on April 21, 1985.

MEDICINE FOR MOUNTAINEERING, Third ed. Edited by: James A. Wilkerson, M.D. *The Mountaineers*, 1985. 440 pages, 5.25" x 7.75", 16 oz, \$10.95.

Reviewed by Daniel T. Blumstein

Climbers, hikers, mountaineers, or anyone else that ventures into the wilderness should have some training in first aid — accidents can happen to anyone at anytime. Several years ago, I stumbled upon the second edition of James Wilkerson's book, *Medicine for Mountaineering*. In addition to first aid training, Wilkerson proposed that some basic knowledge in medicine was also needed. He said then and now that:

Members of any mountaineering outing, regardless of its location or duration, should be capable of:

1. Caring for soft tissue injuries;
2. Anticipating and treating shock;
3. Recognizing and caring for fractures;
4. Diagnosing and treating head injuries;
5. Caring for and evacuating an unconscious individual;
6. Diagnosing and treating thoracic and abdominal injuries;
7. Recognizing and treating heat or cold injuries;
8. Carrying out cardiopulmonary resuscitation.

In addition, members of extended expeditions should develop:

1. The ability to take a simple medical history and perform a physical examination;
2. A familiarity with the techniques of patient care, including the administration of medications;
3. A knowledge of the diseases likely to be encountered on that particular expedition.

The book provided information which accomplished these goals. I used the second edition during trip planning, as a sourcebook while on longer expeditions, as a reference during non-mountaineering oriented advanced first aid classes, and as an interesting book to read and re-read while at home. I learned a lot about everyday problems and some, hopefully, obscure diseases. The book's focus was toward high-altitude mountaineering, but the information could be used anywhere problems develop. When the third edition came out in 1985, I figured that it couldn't be much better than the phenomenal second edition, so why buy it. I was wrong.

In the 1960s, *The Mountaineers* decided to develop a book they could give to expeditions that were unable to recruit a medical doctor. They would have been pleased if one life was saved by the information contained in the book. Few sales were expected. Dr. Wilkerson was asked to edit the book which was to be written by doctors who also climbed. Since then, *Medicine for Mountaineering* has been surpassed in popularity only by the *Mountaineers'* highly successful *Mountaineering: The Freedom of the Hills*.

There has been a new approach when

writing the third edition — one of the psychological problems associated with the victims and the rescuers of accidents. An entire chapter has been added on the "Psychological Responses to Accidents." After a discussion about grief, Wilkerson et al. break down an accident into five phases: 1) Preimpact — the threat of an accident, 2) Warning — the time immediately prior to an accident when the victim(s) should have been warned, 3) Impact — the actual accident, 4) Re-coil — occurring hours or days after the accident when an understanding of the incident begins, and 5) Post-impact — which, if abnormally handled, is often called the "delayed stress syndrome." Identification and treatment of these phases are carefully discussed. How rescuers respond to the stresses of dealing with major traumatic injury and death, and ways to minimize or prevent adverse stress reactions are suggested.

A detailed discussion on iodine types, concentrations, and dosages for effective water purification has been added. Did you know that adding artificial flavorings which contain vitamin C to water being treated with iodine before enough time has elapsed to purify the water may impair the iodine's antimicrobial activity? Therefore, add your Tang or Kool-Aid after the water is clean.



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Everyone climbing above 8,000 feet should know how to identify and treat high-altitude medical problems. Wilkerson, et. al., clearly discuss these after reviewing the physiological adaptations of the human body to high altitudes: decreased cardiac output, decreased oxygen saturation; increased work of breathing; decreased blood volume; sleep hypoxia. The physiology of acclimatization and methods to facilitate acclimatization are also reviewed. Acute mountain sickness, high-altitude pulmonary edema, high-altitude cerebral edema, high-altitude retinal hemorrhage, high-altitude systemic edema, and some persistent mountain sicknesses, in addition to nutrition and fluid balance at high altitudes are discussed in Chapter 12.

Interesting information about altitude is contained everywhere. Did you know that "part of the beneficial effect of [the drug] acetazolamide for acute mountain sickness probably results from amelioration of sleep hypoxia" (p. 177)? Sleep hypoxia is the result of a decreased respiration rate and depth during sleep in an environment which contains little oxygen — causing many individuals to have disturbed sleep, headaches in the morning, and other unpleasant effects. Also, "sleep hypoxia probably decreases physical working capacity during the day, which provides a physiologic explanation for the wisdom behind the mountaineer's dictum 'sleep low and climb high'" (p. 177). Did you know that taking sleeping pills above 10,000 feet may "lead to unnecessarily low blood-oxygenation during sleep, which may aggravate symptoms of altitude sickness" (p. 29)? Or that, "some investigators have suggested that the depression, impaired judgment, and other psychological and intellectual changes that commonly occur at high altitudes and for which hypoxia has been blamed, may actually be the result of dehydration" (p. 32)? Proper fluid balance, and the prevention of dehydration are common themes repeated throughout the book. The importance of drinking fluids until your urine is clear is constantly stressed.

The discussion on cold injuries (hypothermia, frostbite, and immersion foot) is good. The emphasis is on prevention and then treatment. These topics are also clearly, interestingly, and comprehensively discussed in *Hypothermia, Frostbite, and other Cold Injuries*, a book also edited by Wilkerson.

Problems with the sun and sun-screen selection are reviewed. Did you know that celery may increase one's sensitivity to sunlight?

Sanitation and health problems asso-

ciated with travel to underdeveloped countries are discussed. My only major criticism with the book stems from Wilkerson's very condescending view of the inhabitants of most of the world. Statements such as "modern concepts of sanitation are totally alien to many natives of mountainous countries. They must be monitored to ensure that they wash their hands after using the toilet and before preparing food" (p. 299) are offensive to me. However, I suppose it is better to err on the offensive/safe side than to expose oneself to diseases such as chronic hepatitis, which "can last for the rest of the victim's life, which typically is significantly shortened" (p. 85).

While the entire gastrointestinal disease chapter has been updated, the diagnostic diarrhea chart, on page 231 of the second edition, has been deleted. I'm going to photocopy it and attach it to the third edition. My favorite illustration, "digital removal of a fecal impaction", has been saved.

The appendix on medications has been updated. Did you know that at one time acetaminophen (Tylenol) was the medication most commonly used for committing suicide in Great Britain (p. 378)? By the way, chloroquine (the most common drug used for malarial prophylaxis) is repeatedly spelled incorrectly in the appendix.

An informative appendix on legal considerations has been added. Personal liability, establishing death, disposal of the body, and estate and life insurance are briefly mentioned.

Overall, the book is phenomenal. It is securely bound and should endure considerable field use. There are several blank pages in the back of the book for additional notes. The text is clean and well-written, and, although 23% heavier than the second edition, should be carried along on all outings.

HYPOTHERMIA, FROSTBITE AND OTHER COLD INJURIES. Edited by: James A. Wilkerson, MD, *The Mountaineers*, 1986. 114 pp., \$9.95.

Reviewed by Daniel T. Blumstein

Wilkerson has done it again! With the help of Cameron C. Bangs, M.D. and John S. Hayward, Ph.D., James A. Wilkerson, M.D., the editor of *Medicine for Mountaineering*, has developed the definitive easy-to-read monograph on cold injuries. The emphases are on prevention, then recognition and prehospital treatment.

The book begins with the chilling account of the Four Inns walk tragedy. In 1964, this 45-mile competitive hike over

the English moors claimed the lives of three hikers. Little was known about hypothermia then. The tragedy illustrates that even if one is expending a lot of energy while exercising, certain environmental (cold and wet) and physiological (dehydration and reduced caloric intake) conditions can lead to hypothermia. It is far easier to prevent hypothermia than to treat it.

How the body regulates temperature and adapts to cold are discussed in the first chapter.

Prevention of hypothermia is the focus of the second chapter. Lucid descriptions of fairly complex topics abound. For instance, "convection is the way soup is cooled by blowing on it. The air just above its surface is warmed by the soup. Blowing moves this warm air away and replaces it with cool air which extracts more heat as it is warmed. Fans have been used since ancient times to take advantage of the cooling effect of moving air." (p. 13). I only wish that Wilkerson could have been one of my physics professors in college!

An informative discussion on clothing selection for outdoor use is filled with interesting bits of information such as "the scratchiness of wool can be avoided by adding a small amount of oil (such as olive oil) to the rinse water to replace the natural oils removed by soap and detergents." (p. 26).

The safety of plastic mountaineering boots for use in cold climates is questioned. "A recent compilation of the incidents of frostbite on Mount McKinley has disclosed that wearers of plastic boots developed frostbite more commonly than wearers of leather boots, regardless of climbing experience or the difficulty of the routes" (p. 30). Essentially, the felt inner boots expand when you sweat and the outer boots don't. Also, the boots are not flexible. This leads to constriction of circulation and perhaps frostbite. My own experience with using vapor barriers to prevent this problem is that after about a week or two out, the inner boots still get wet either from inside or from snow somehow drifting in. Continual adjustment of the boots can help prevent the circulation from being cut off.

The body's response to cooling is discussed. Recognizing hypothermia, the situations that promote it and evaluating the victim follow.

The chapter on treating hypothermia begins with the ominous statement "no previously healthy person should die of hypothermia after he has been rescued and treatment has been started" (p. 54). For victims of profound hypothermia, this means preventing ventricular fibrilla-