Book Reviews

Medical Aspects of Harsh Environments, Vols 1–2

Dave E. Lounsbury and Ronald F. Bellamy, editors
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The Office of the Surgeon General of the United States Army has created a remarkable 2-volume set that comprehensively covers the essentials of medical care in extreme environments. Produced by the Borden Institute, the Army's medical publishing division, *Medical Aspects of Harsh Environments, Vols 1–2*, features contributions from noted authorities, clear photographs and figures, and a thorough list of references at the end of each chapter. Both volumes have been skillfully edited by US Army physicians Dave Ed Lounsbury and Ronald F. Bellamy, and detailed scientific information is presented in a highly readable format. Although the volumes are part of the Textbooks of Military Medicine series, they would make a welcome addition to any medical library.

Volume 1 is divided into two sections: Hot Environments and Cold Environments. Hot Environments includes chapters on the physiology of exercise in hot climates, the pathophysiology of heatstroke, and the prevention of heat illness. The chapter on clinical diagnosis, management, and surveillance of exertional heat illness is particularly informative and includes an excellent review of the controversies related to the treatment of heatstroke. Cold Environments includes chapters on physiological responses to cold stress and hypothermia, prevention of cold injuries, cold water immersion, and the treatment of accidental hypothermia. Readers with an interest in research will appreciate the discussions of hypothermia studies from the military literature, many of which are not mentioned in other texts.

Volume 2 begins with a section on mountain medicine, including acute mountain sickness and high-altitude cerebral edema, high-altitude pulmonary edema, and human adaptation to altitude. The chapter on high-altitude pulmonary edema is particularly well written, although the effects of beta-agonists such as salmeterol are not mentioned. The authors, however, cannot be faulted for this omission because major studies of beta-agonists and high-altitude pulmonary edema were almost certainly published after the chapter had already gone to press. This volume also re-

views topics that are not typically found in most texts of emergency or wilderness medicine. For example, in addition to chapters on diving medicine, the reader will find chapters on shipboard medicine, motion sickness, acceleration effects on fighter pilots, biological and chemical warfare, medical support of special forces, and military spaceflight.

A unique feature of the text is the integration of cases from prior military engagements, including those dating to ancient times. The historical perspective provided for mountain medicine, hypothermia related to shipwrecks, freezing cold injury, and other topics makes for fascinating reading and in no way detracts from the scientific merits of the work. On the contrary, these historical cases are used as effective teaching tools and add interest to the material presented.

The work is timely, given recent military and political events. At the time of this writing, US and other forces have been deployed to Iraq and continue to be present in Afghanistan. Both of these countries are known for harsh environments with temperature extremes, and Afghanistan has difficult, mountainous terrain. With patient populations in such diverse climates and conditions, these volumes should be a valuable resource for military medical personnel.

This work will also appeal to an audience much broader than the military medical community, and the reader will not find an excess of military jargon. Although some sections may be extraneous, civilian medical personnel who care for patients in extreme conditions will find these volumes to be of great clinical value. Furthermore, the merits of this work are not confined to clinical utility. Anyone with an interest in the physiological effects of extreme environments and patient care in the outdoors could enjoy and learn from this text.

In summary, this is an outstanding work that contributes greatly to the medical literature. The foreword, written by the Surgeon General of the Army, James B. Peake, promises a third volume with a focus on prevention and further historical perspective. One wonders whether experiences from recent military action in the Middle East will provide additional insight for this coming volume—an insight that could contribute to the further advancement of patient care in harsh environments.

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