Book review

Mountain medicine

High Altitude Medicine and Physiology. Michael P Ward, James S Milledge, John B West (pp 515; £50.00). London: Chapman and Hall Medical, 1989. ISBN 0412290103.

This sizeable book presents a comprehensive and up to date account of high altitude medicine and physiology by authors who over the past 25 years have been members of several scientific and mountaineering expeditions to extreme altitudes, mainly in the Himalaya. Thus they have learned about the uncomfortable and often dangerous practicalities of life on the mountainside the hard way. At the same time they have been able to apply scientific techniques rigorously to the study of the disturbed physiology and acute illnesses of exposure to high altitude. As a result each has made distinguished contributions and this experience over a lifetime is made available in this volume.

In the preface the authors record that they worked together for several months at an altitude of 5800 m (19 000 ft) during the 1960–1961 Himalayan Scientific and Mountaineering Expedition in the Everest region. This indicates the main thrust of the book, which is the detailed physiological and clinical study of lowlanders “striving to reach the loftiest summits of the earth” in the words of Whymper. The early chapters on the physiological adjustments to exposure to this inhospitable environment characterised by hypobaric hypoxia and cold are excellent. Some of the most interesting sections derive from investigations carried out at extreme altitude during the 1981 American Medical Research Expedition to Everest, particularly those concerned with sleep and periodic breathing at these great altitudes and the residual impairment of the central nervous system after descent. The chapter on the endocrine system at high altitude is most interesting, particularly the sections on the renin-angiotensin-aldosterone system. Growing points such as the role of atrial natriuretic peptide in life at high altitude are considered.

The clinically orientated chapters in the second half of the book deal with acute mountain sickness and its malignant complications (pulmonary and cerebral oedema), fitness for altitude, mountain performance, hypothermia, frostbite, and accidents and emergencies. These titles indicate the emphasis of the book on the adjustment of the high altitude climber to very high altitudes.

Less attention is paid to the features and diseases of the native highlander in his mountain environment, who undertakes not a brief foray into high altitude but is born into and spends his entire life at 3000 to 4500 m. Though this range is lower than that experienced by high altitude climbers, it is the permanent domicile of millions throughout the world. As a result one senses that chapters on such subjects as Monge's disease do not carry the authority that comes from personal experience and this is probably a reflection of the fact that the authors' work has been predominantly in the Himalaya rather than in the Andes. The chapter on Monge's disease is illustrated by only one line diagram without any halftones so that it is impossible to form a clear picture of the features of chronic mountain sickness. The volume as a whole could be improved by more halftone illustrations. Because the book places less emphasis on the features and diseases of the native highlander it follows that the pathology of high altitude is not considered in much detail. This has led to some important omissions such as the lack of any description of the condition of the recently reported subacute infantile mountain sickness found in infants of Han origin ascending to higher altitudes in Tibet. This is unfortunate because this disease is of considerable theoretical interest as it seems to be the human counterpart of brisket disease in cattle.

The book is marred by a considerable number of typographical errors, including an insensitivity to Spanish, which is unfortunate because many of the authorities who have made important contributions to this subject are Peruvian, like Peñaloza and Saldaña who have both lost their tilde. DONALD HEATH