LESSONS FROM HISTORY

Pioneer of the High Realm: Michael Ward's Life of Medicine, Mountaineering, and Exploration

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Michael Phelps Ward (1925–2005) (Figures 1 and 2) is perhaps best known to the public for his role as a team member of the 1951 Mount Everest Reconnaissance and participation in the successful 1953 first ascent of Everest. However, he was the holder of an enviable record of wider climbing and mountain exploration and an important pioneer in high-altitude/wilderness medicine as well. His busy professional life as a surgeon lasted until retirement from the UK's National Health Service in 1993, after which he continued to work on high-altitude medical problems and, additionally, devote a great deal of time to researching the history of Central Asian exploration. Of the numerous articles and books Ward wrote, his 2003 book, *Everest: A Thousand Years of Exploration*,¹ is perhaps his most distinctive work. This, his last book, stands as testimony to one man's exceptional, multifaceted talents. This most unique work brings together the historical chronicle of Mount Everest's mountaineering, geographical, and medical aspects into a definitive, coherent story.

Ward was the son of an expatriate family; his father was a member of the Malayan Civil Service. Educated in England, Ward spent long periods separated from his parents because these were the days before routine transoceanic flights. In fact, his parents were in Singapore when the Japanese Imperial Army swept through this region in the early days of World War II. His mother just managed to get a place in one of the last boats leaving Singapore for Ceylon and eventually Great Britain, but his father was captured and interned by the Japanese for the duration of the war.

His love affair with the mountains can be traced to a guided ascent of the Wetterhorn, in Switzerland, when he was 14 years old. From preparatory school, Ward went to Marlborough, where he spent the war years.

There he was introduced to rock climbing in Great Britain by a housemaster, Edwin Kempson. Kempson had been on Everest in 1935 and 1936 and had formed a small mountaineering club at the school before the war. With Kempson's help, Ward felt, "The seed planted by the Wetterhorn climb . . . was beginning to germinate."²

He began university medical studies at Cambridge in 1943. Climbing was never far from his mind, and it did not take him long to become involved with the Cambridge Mountaineering Club. He began to realize that "although rock climbing alone provided . . . physical delights, emotionally it was mountain country that exercised the stronger hold over me."² After 2 years at Cambridge and upon taking a Natural Science Tripos (shortened during the war years), Ward started clinical medical training at the London Hospital. His first real alpine season was in 1946, and in the summer of 1947 he was again in the Alps, this time with top British climbers Bill Murray and John Barford. While descending the Col du Coste Rouge on the way to a route on a peak named Les Ecrins in the Dauphine group near Grenoble, France, Barford was hit by stone fall. Barford fell onto Ward, who was immediately swept off the slope as well. No one seems to recall whether falling stones or the weight of Barford and Ward tore Murray off the slope, but regardless, all 3 fell in a tangled mass for almost 200 m. Barford and Murray shot straight across a large crevasse at high speed, but Ward fell in, stopping the trio. Barford was dead and Murray only partially conscious. It was learned later that Ward had suffered a fractured skull, but luckily neither Ward nor Murray had any broken limbs. Murray was able to help Ward out of the crevasse, and the battered pair staggered unaided down the valley. Not surprisingly, when he woke in a hospital bed the next day, the concussed Ward was not able to recall the accident or the 24 hours preceding it.

After the accident, Ward concentrated on obtaining his medical qualification but still managed to climb with enthusiasm in Britain and on the Continent during short

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Figure 1. M. P. Ward in the Khumbu region of Nepal during the 1951 Everest Reconnaissance. Photograph courtesy of James Milledge.

holidays. In his words, “I was considerably more cautious. But the desire to do long and hard routes was as compelling as ever and before long I was ready to extend my reach.”² Qualifying in 1949, he started work as a House Surgeon at the London Hospital and then Ilford. During National Service in the Royal Army Medical

Figure 2. M. P. Ward in China during the 1981 Mount Kongur expedition. Photograph courtesy of James Milledge.

Corps in 1950 and 1951, Ward had the time to pursue extracurricular activities. His growing interest in remote mountain country and Mount Everest climbing history led him to pay particular attention to the recently “opened” (to Westerners) country of Nepal. The 1950 probe of the southern approaches to Everest by the distinguished mountaineers Bill Tilman and Charles Houston was of particular interest, as were their reports, which were skeptical about the practicality of a south side route. However, Tilman and Houston had not come to grips with the Khumbu Icefall, nor did they go far enough up the Khumbu Glacier to look into the Western Cwm. In addition, they failed to actually visualize the slopes leading from the Cwm to the South Col. Ward spent untold hours at the Royal Geographical Society, where he “discovered” uncataloged photos and an unpublished map (ca. 1937), which in turn encouraged enough optimism to lead him to initiate a full-on reconnaissance of the southern “route” in 1951.

With Bill Murray, Tom Bourdillon, and a Canadian, Campbell Secord, Ward organized the reconnaissance of a southern route and obtained sponsorship from the Royal Geographical Society and Alpine Club. With the help

of Secord, Ward persuaded Himalayan veteran Eric Shipton to lead the undertaking. Shipton had spent the years of the war working for the British Foreign Office and continued to serve until 1951, when the Communist Red Army forced a retreat to England from his last posting in Kunming, China. In his book *The Mount Everest Reconnaissance*,³ Shipton wrote:

When I arrived home in the middle of June, I had no idea of what was afoot. Indeed nothing was further from my thoughts that taking part in a Himalayan Expedition. After I had been in England for about ten days, I went to London and happened to call on Secord. He said, "Oh you're back are you? What are you going to do now?" I told him that I had no plans, to which he replied, "Well you'd better lead this expedition." I said, "What expedition?", and he explained the position.

This important enterprise was carried out along classic Shipton lines, that is, small, modestly funded, and living primarily off the local food. Although Secord did not accompany the 1951 reconnaissance into the field, Shipton invited 2 other "colonials" (from New Zealand) to join in Nepal. One of these New Zealanders happened to be none other than Ed Hillary, the beekeeper who was vaulted to world stardom less than 2 years later after he and Sherpa Tenzing Norgay became the first to climb to the summit of Everest.

Approaching the mountain during the monsoon, they arrived at the base of Everest by the end of September. Their commendable exploratory efforts ended at an enormous, insurmountable crevasse at the top of the Khumbu Icefall, barring the way into the Western Cwm. Nonetheless, the team managed a good look at the Lhotse face and were afforded a tantalizing view of the upper reaches of the peak that suggested a probable route. Just as important for Ward, he had the opportunity on this expedition to explore the unknown area west of Everest with Shipton, not to mention finding the much publicized "Yeti footprints" in the process.⁴ Ward later remarked, "This was my first taste of mountain exploration and I was fascinated by the mystery of penetration into unknown country."² Before the expedition had left Britain, Murray paid Ward a tribute that placed his organizational efforts and vision into perspective:

It has suddenly sprung up out of nothing through what Plato would have called a divine madness coming over you. These are the sort of expeditions that are worth going on.²

Ward's interest in mountain medicine can be traced to this experience in 1951. He realized on this trip just how dependent the modern doctor is on laboratory and other diagnostic aids. After he returned to England, Ward co-authored a short paper for *The Lancet* on the medical

conditions he had encountered.⁵ The 1951 reconnaissance also provided Ward the occasion, through Tom Bourdillon's father, Dr R. B. Bourdillon (director of the Electro-Medical unit at Stoke-Mandeville), to meet Griffith Pugh of the Department of Human Physiology at the Medical Research Council Laboratories in Hampstead for the first time. The meeting occurred shortly before Ward left for Asia, so these scientists were unable to play any part in the reconnaissance. However, this gathering proved to be a very auspicious moment for the 1953 Mount Everest expedition.

Once back in England, the plans to put together a full-on British expedition to Everest in 1952 came to naught when it was discovered that the Swiss had already obtained permission from Nepal for that year. The Swiss had actually applied for permission months before the 1951 reconnaissance had even gotten under way. The first reaction was one of great disappointment for Ward and his companions, but in the end the year was not wasted. The Swiss failed to summit in 1952, making attempts both in the spring and fall that year. They were frustrated primarily by significant difficulties with the weather and by the supplementary oxygen apparatus they were using. The British, at the behest of the Himalayan Committee, sent a team to another unclimbed mountain not far from Everest, Cho Oyu (8201 m). Ward elected not to go out with the Cho Oyu expedition, jeopardizing his chances of participating in any future Everest attempt. He instead spent the year working on the Primary examination of the Royal College of Surgeons.

Anticipating an attempt at Everest in 1953 should the Swiss fail, the Himalayan Committee sent the Cho Oyu expedition into the field with Eric Shipton once again at the helm. The Committee outlined 4 primary aims for Cho Oyu: 1) to choose a group of climbers who were able to perform effectively at great heights, 2) to carry out a physiological research program, 3) to test oxygen equipment, and 4) to test clothing and other equipment intended for use in the intense cold and wind found at extreme altitude.⁶ The climb of Cho Oyu itself was not successful, but Ward felt that the results of 3 weeks of physiological work that Pugh did on some of the climbers on the nearby Menlung La (~18000 ft [5486 m]) was:

of unprecedented value, for the first time the problems posed by high altitude were defined in the field. This was the decisive advantage that we in 1953 were to have over all who had gone before us.²

On the other hand, Ward admitted that, by 1953, mountaineers in general had still not acknowledged that Everest "was as much a problem in applied physiology as in mountaineering."² After the return from Cho Oyu

during the run-up to the 1953 Everest expedition, Eric Shipton was replaced as leader in favor of John Hunt in a somewhat sordid fashion by the Himalayan Committee. This change in leadership occurred ostensibly because it was thought that Shipton did not possess the interest or ability to lead a large expedition laid out like a military campaign. This was likely the last chance the British would have to make the first ascent of Everest, and the Himalayan Committee reckoned a military officer like Hunt was their best leadership candidate. However, Ward was adamant in his opinion of this matter:

If Pugh had not done his work in 1951 at the Medical Research Council, and in 1952 on the Menlung La, we would not have climbed Everest in 1953. Pugh was the only indispensable person in that party. We'd still have got up Everest, even with Eric Shipton, because the physiology was right.⁶

In fact, Steele relates that Pugh was not thrilled with Shipton's lack of interest in his program of applied physiological research during the 1952 Cho Oyu expedition that was, after all, specifically intended to put climbers on the summit of Everest. As well, Pugh was critical of the Cho Oyu expedition's careless approach to sanitation practices, to which he attributed the high rate of intestinal upsets and chest infections. Once back in England, Pugh let the Himalayan Committee know his thoughts on Shipton's leadership style. How much effect this may have had on the committee's decision to replace Shipton with Hunt is not known, but it is doubtful the critique did anything to help Shipton's cause.

Regardless of his nonparticipation with the 1952 Cho Oyu expedition, Mike Ward was an obvious choice for the 1953 Everest team. In addition to being included as a climber, he was also appointed medical officer. The months leading up to the journey were busy, as he continued work on his Primary examination in addition to preparing for the expedition. During this period he had the opportunity to spend considerable time with Griff Pugh at the Medical Research Council Department of Human Physiology laboratory in Hampstead.

The work Pugh instigated in his laboratory in 1951 and on the Menlung La in 1952 was to be continued on Everest; he was becoming firmly convinced that the most efficient way to study man at altitude was in the field rather than in a lab setting. Pugh's thinking regarding such matters was eventually realized in a full-scale way 7 years hence, as will be discussed later. As far as Ward was concerned, the main medical problem of a large Himalayan field party such as the 1953 Everest team was preventing sickness. This focus is nicely illustrated in a humorous story related in an obituary of Ward that appeared in the *Alpine Journal*.⁷

He [Ward] was giving a health talk to the team before setting out for Nepal. He impressed upon them the importance of visiting their dentist well in advance of the expedition and getting any required dental work done. "Because," he said, "I can pull teeth – but I'm not very good at it!"

His primary contribution to the mountaineering endeavor itself in 1953 was the work he did on the Lhotse Face with George Lowe. John Hunt denied Ward the opportunity of climbing to the South Col, because it was felt his medical expertise may have been needed in an emergency. In the end, Ward's medical duties primarily consisted of tending to various minor ailments of the expedition members and Sherpas, as well as serving as Griff Pugh's research assistant. He also fortunately obtained a rather unique and detailed clinical account from everyone who had been up to the South Col and beyond. This record was finally published in its entirety in 2003.⁸

By asking questions about fluid intake and output, oxygen consumption and climbing rate I hoped to get as complete a picture as possible of their physical condition and the degree of high altitude deterioration. Accounts of general medical conditions at high altitude were extremely scanty and I wanted to obtain a unique record. These observations were complementary to Griff's more technical investigations.²

The 1953 climb was a watershed event in Ward's life; it consolidated his interest in man's relationship with the mountain environment and set the stage for continued endeavors (of both a mountaineering and a scientific nature) in the Himalayas.

Post-Everest, Ward found it necessary to resist the temptation of well-compensated worldwide lecture tours in order to concentrate on completing his surgical training. There was one (uncompensated) lecture, however, that proved irresistible. En route home to England from Nepal, Ward was asked to lecture at the Indian Institute of Nuclear Physics by a member of the 1922 British Everest Expedition, George Ingle Finch. Finch had retired from his professor's post at Imperial College (London) the year before to become Director of the Indian National Chemical Laboratory. There happened to be at least 2 Fellows of the Royal Society in the lecture audience (1 of them being Finch), and Ward faced a great many perceptive questions of a scientific nature. He later reflected how very different this atmosphere was compared to:

the frenetic and supercharged [public] atmosphere to which we were being exposed. . . . [T]he cool questioning of the scientists in Delhi remained for me the real world rather than the adulatory cheers of audiences.²

Even though a number of years of intense surgical

training followed Everest, Ward kept in touch with Griff Pugh. By 1960, Ward was a senior surgical registrar in London and hatching plans with Pugh for a major scientific expedition to Nepal. These plans came to fruition in the form of the World Book Encyclopedia-funded Himalayan Scientific and Mountaineering (“Silver Hut”) Expedition of 1960–61, which was led by Sir Edmund Hillary, with Pugh serving as the scientific leader. The aim of the program of medical science was to study the physiological effects that extended high-altitude living (5800 m) had on sojourners. This was coupled with a sister program of Yeti-hunting, building a school for the Sherpas, and attempting to climb Makalu (8462 m) without supplementary oxygen.

There were several reasons for the insistence of spending months on end during the winter of 1960–61 at such a high altitude. The expedition was primarily concerned with studying the physiological effects of native lowlanders spending an extended period of time at nearly 6000 m. Mountaineers had obviously visited higher altitudes for many decades, and permanent high-altitude residents at elevations greater than 4500 m had been studied. However, it was of considerable scientific interest to study sojourners residing for many months at the aforementioned altitude in order to better understand not only the acclimatization process but also high-altitude deterioration.

The attempt on Makalu, which took place in the spring of 1961 (after a winter’s stay at 5800 m for the Silver Hut residents), did in fact provide an object lesson in altitude-induced physical deterioration, the sort of lesson that didn’t require interpretation of analyzed data to fully appreciate! During the winter at the Silver Hut, it had been hoped that the residents would become so fit and acclimatized that when spring came, they could reasonably climb Makalu without supplementary oxygen. This was a very sensible hypothesis given the state of knowledge at the time, but in the event, the expedition members were disappointed on this score. Although the scientific program at the Silver Hut, which was erected on the Mingbo Glacier in the Khumbu region close to Mount Everest, proved a tremendous success and a “wonderful, unique experience” in the words of one of the participants,⁷ the attempt on Makalu was unsuccessful. Nevertheless, a very significant first ascent of Ama Dablam (6812 m) had been brilliantly accomplished by Barry Bishop, Mike Gill, Wally Romanes, and Mike Ward in February/March of 1961. This bold, technical climb was carried out in an era before the emergence of modern ice climbing equipment and, as such, was years ahead of its time and very likely the highlight of Ward’s climbing career. Of course, the phrase “years ahead of its time” is often quite overused, but in this case does

seem accurate; Ama Dablam did not see another successful ascent for nearly 20 years.

Even though the Makalu expedition had mountaineering as its primary aim, science was not neglected. Physiological testing was carried out at advanced base camp (6300 m), and Ward and John West were able to conduct measurements of VO_2 max on Makalu Col at 7400 m using a stationary bicycle. This was an altitude record for such a feat, and as of this writing, VO_2 max at a higher altitude has yet to be measured. The mountaineering itself got off to an inauspicious start when expedition leader Ed Hillary suffered a stroke at a camp near 5800 m. Hillary recovered enough within a day’s time to be walked, with the assistance of Dr Jim Milledge, to lower altitudes in Solo-Khumbu. He recovered quickly and then supervised the building of the school at Kumbung. This was, incidentally, the first of Hillary’s schools that was constructed in the area.

Although the climb on Makalu continued, within 10 days another serious vascular event occurred, this time high on the mountain at an altitude of 8300 m. The victim was Peter Mulgrew, a Kiwi who had been with the expedition in the autumn and then had rejoined the team just prior to the Makalu attempt. The pathology in this instance was a pulmonary embolism. Mulgrew was incapable of descending on his own and spent 4 days above 8000 m, suffering severe frostbite. He was successfully evacuated but later required bilateral amputations below the knee.

In 1963, the Mount Everest Foundation planned to put an expedition in the field to scale the last unclimbed 8000 m peak, Shisha Pangma. Ward was given the opportunity to lead the undertaking. Unfortunately, bureaucratic difficulties made obtaining official permission from the Chinese a drawn-out process. It is not known whether this delay was intentional, but while Ward and his colleagues waited for word on the permit, they learned that the Chinese themselves had made the first ascent. This news scuttled the plans for Shisha Pangma, but a new opportunity quickly presented itself. In 1964, Fred Jackson, a UK-based cardiologist, invited Ward along on a journey to little-known Bhutan, ostensibly to provide medical advice to that country’s King. The 1964 venture was a success, and the pair returned the following year to study medical aspects of isolated Bhutanese natives with the support of the International Biological Programme. During this time they also managed to ascend several small, yet highly rewarding peaks. This was but one element of the general exploration Jackson and Ward accomplished in a region rarely visited by Westerners.

After the mid-1960s, Ward’s mountain activities were restricted for many years to the UK and continental Eu-

rope, largely because of a very busy surgical practice in the hospitals of London's East End. Nonetheless, his interest in the physiological and clinical problems of cold and high altitude continued to thrive. In addition to participating in medical field studies in the 1970s,^{9,10} Ward published the clinically oriented *Mountain Medicine*, the world's first textbook of its type.¹¹ Later editions coauthored with James Milledge and John West under the title *High Altitude Medicine and Physiology* appeared in 1989,¹² 1995,¹³ and 2000,¹⁴ becoming the standard textbook on the subject. The fourth edition was published in 2007 and includes the addition of Robert Schoene to the author team.

After nearly 15 years away from Himalayan climbing and exploration, Ward organized a reconnaissance to Mount Kongur, in China's west Kun-lun region, in 1980. He had started his search for a "passport" into the uplands of Central Asia in 1972, when China was essentially still a closed book to Westerners.¹⁵ In 1978–80 Ward was chairman of the Mount Everest Foundation, and bringing the Kongur venture to fruition was one of the main tasks of the foundation during this period of his leadership. Ward and Chris Bonington traveled to Peking in February 1980 to conduct the necessary negotiations with the Chinese authorities for what resulted in a successful exploration/reconnaissance that year. This paved the way for a triumphant summit attempt of Kongur in 1981. The 1981 expedition combined mountaineering and a productive program of high-altitude scientific research, with Ward once again the overall expedition leader.

A further opportunity for Central Asian exploration presented itself to Ward in 1985, when he joined the Royal Society/Academica Sinica Tibet Geo-Traversal and served in the capacity of official expedition medical officer. China had recently established the High Altitude Medical Research Institute in Xining, and aside from being invited to lecture at this institution, Ward was able to come up to speed on the work of Chinese scientists pursuing investigations in this discipline.

Aside from his ongoing involvement in the Mount Everest Foundation, Ward was appointed Commander of the British Empire for services to mountaineering and medical research and awarded the Founder's Medal of the Royal Geographical Society in 1983. Toward the end of his surgical career, he became very active in London's Worshipful Society of Apothecaries, and upon retirement from the UK National Health Service in 1993, became Master of the Society. This ancient organization touched upon many aspects of medicine, including facets of particular interest to Ward, such as management of disasters, an area of concentration in which he helped to develop courses and examinations for medical practition-

ers. His "retirement," as such, was really just a shifting of focus, and he remained busy with continued research into high-altitude problems and the history of Central Asian exploration.

A dreadful automobile accident a few years before his death had necessitated a series of major operations and a long convalescence at home in the capable hands of his wife, Jane. Unfortunately, before this recovery was complete, Ward succumbed to a ruptured aortic aneurysm and died suddenly in October 2005.

Longtime friend Jim Milledge captured the spirit of the everlasting hills so important to Ward when he evoked the memory and writings of famous British mountaineer-poet Geoffrey Winthrop Young in an obituary that appeared in the 2006 UK *Alpine Journal*.⁷ Although Ward had actually included several of Winthrop Young's poems in his first book, an anthology titled *The Mountaineer's Companion*,¹⁶ Milledge felt that one verse in particular served as a rather fitting epitaph for Ward:

*I have not lost the magic of long days;
I live them, dream them still.
Still I am master of the starry ways,
And freeman of the hill.
Shattered my glass, ere half the sands had run –
I hold the heights, I hold the heights I won*

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