# History

Julian Cooper, *Dent Blanche*, oil on canvas, 61 x 40cm, 2012

GEORGE RODWAY & JEREMY WINDSOR

# Raymond Greene

## Physician, Mountaineer & Raconteur

Portrait of Raymond Greene from the mid-1920s.
*(Courtesy of Greene family)*

C. Raymond Greene (1901-1982) was a brother of two well-known characters – Graham Greene, famous novelist, and Sir Hugh Greene, former Director General of the BBC. It was perhaps not surprising that Raymond was a man of many gifts. The eldest son of a distinguished family, he won a scholarship to Pembroke College (University of Oxford) and went on to obtain a degree in medicine. Upon graduating in 1927, he practiced family medicine for 10 years before moving into the emerging specialty of endocrinology where he went on to gain considerable recognition in the treatment of thyroid disorders.

To readers of the *Alpine Journal*, Greene will best be remembered for

his exploits in the Himalaya, especially as a member of expeditions which made the first ascent of Kamet in 1931 and the unsuccessful attempt on Everest in 1933.

His combined interests of medicine and mountaineering led to an extraordinary life that is explored in this article.

There is little doubt that Graham, well known for authoring many critically acclaimed novels, became the most widely celebrated of the renowned Greene brothers. However, Raymond, three years Graham's senior, was perhaps the most academically and athletically gifted of them all. In Norman Sherry's comprehensive biography of Graham Greene, Raymond is characterised as a man who possessed extraordinary talents.

In 1925 Graham commented:

> *I used to have an absurd competition complex with Raymond. Raymond used to write and publish in the School Magazine, and win school prizes for verse. So I had to write too. I never succeeded in winning any prizes for verse… [Raymond] stopped writing verse directly I began to get mine published, and his was much more promising. Then his new tack became adventure, and he became a first class mountaineer.*[1]

Nonetheless, perhaps it is not surprising to learn that the principal impression Raymond left with many people throughout his life was of an excellent storyteller with a wry – and sometimes notorious – sense of irony.

Alongside his working life, Greene developed a passionate interest for mountains. As a boy, Raymond climbed and walked in the English Lake District and when at Oxford, he became a member of the Oxford University Mountaineering Club. This association encouraged him to look for climbing challenges abroad and he made regular visits to the German and Austrian Alps throughout the 1920s. His first visit to the Himalaya, and introduction to the medical problems of high altitude, was as climbing team member and medical officer on Frank Smythe's successful 1931 expedition to Kamet (7756m), an impressive peak situated in the Zanskar range of the Indian Garhwal Himalaya. Their success was notable, for not only was it the ninth attempt on the mountain, but at the time it was the highest summit yet to be reached. Greene was among those who reached the summit and his performance on Kamet went some distance towards earning him a place on Hugh Ruttledge's 1933 Mount Everest expedition. His subsequent contribution as climber and physician on Everest was of tremendous value to such a lengthy and arduous Himalayan venture.

**Kamet 1931**

The first ascent of Kamet in 1931, via the eastern approach of Meade's Col route, was a notable episode in Himalayan mountaineering history. Smythe led a strong party consisting of six Europeans and 10 Sherpas, many of whom had already gathered considerable experience on Everest and Kangchenjunga. By 21 June 1931, a team including Smythe and Eric

The 1931 Kamet expedition team at Raniket before departure. Standing *(l to r)*: Raymond Greene, R. L. Holdsworth, Bentley Beauman, Eric Shipton, Eugene St John Birnie; seated: Nima Tendrup, Frank Smythe (leader), Achung (cook). *(Copyright Frank Smythe estate)*

Shipton set out for the summit from a camp situated on a large snowfield just below Meade's Col. At 7620m Nima Dorje, who had been entrusted to carry a rather cumbersome cine camera, became too exhausted to continue. Lewa took his load and the remaining four climbers reached the summit at 4:15pm. They descended without incident through snow softened by the afternoon sun. Two days later, Raymond Greene, Eugene St. J. Birnie, and the local porter Kesar Singh successfully repeated the climb to the summit.

The 1931 Kamet climb was not without a considerable amount of medical drama. During the march back to civilisation, Smythe developed an agonizing toothache. After several days of suffering, he asked Greene to extract the tooth. In Greene's autobiography, *Moments of Being,* (p.104)[2], he wrote:

> *I gave Frank a shot (of morphine) and left him to carve a dental prop out of a juniper root. When I returned I found him unduly cheerful: to give himself Dutch courage he had consumed more than half a bottle of rum. I extracted the tooth, and Frank, after one screamed expletive, passed into oblivion. We carried him to his tent at about six in the evening and he slept quietly until I retired to my tent at about nine o'clock. At about two in the morning I was awakened by a curious noise and, emerging in pyjamas only in a temperature well below*

*zero Fahrenheit I found that Frank's head was protruding from the flap of his tent, his neck supported by one of the ties…When I rescued him from this predicament he stopped breathing. I gave him artificial respiration but every time I rested for a moment he stopped again. After 2 h, spontaneous breathing returned. Luckily the hard exercise involved prevented me from freezing solid.*

Whilst it was well known that alcohol in combination with strong pain-killers could affect breathing at sea level, their greater effect at altitude was unknown.

The next time Greene was called upon to perform dental extractions in the field was during the march across Tibet on the 1933 British Mount Everest expedition. In these cases Greene used only a 'sup of whiskey' for the local porters and villagers.[3] Fortunately, Ruttledge reported that these hardy Tibetans were 'sublimely indifferent to the absence of an anaesthetic'(p. 64).[3] It is not known whether Greene's previous experience on Kamet had influenced his parsimonious approach to pain control on subsequent occasions at altitude!

Greene wrote a chapter on the 'Medical Aspects of High Climbing' in Smythe's 1932 expedition book, *Kamet Conquered* [4], and also contributed a short article to the eminent scientific journal *Nature* entitled 'Oxygen and Everest' [5]. These allowed Greene to discuss a number of medical and physiological issues that he observed. In particular, he touched upon a matter much discussed but little understood at the time, namely the balance between high altitude acclimatisation and altitude-related deterioration. While there was virtually no data available at the time to strongly support any opinion on this issue, Greene was a keen observer and had a reasonable amount of anecdotal evidence to draw upon. He rightly recognised that there is a balance between acclimatisation and deterioration, and optimal climbing performance was only to be had by achieving a balance through shrewd timing of movements high on the mountain. Greene concluded:

*It is probable that many…factors may enter into the problem. I hope that by stimulating controversy I may be instrumental in bringing some to light. The importance of the subject to climbers is great. I have pointed out elsewhere that the question of the climbing of Everest depends upon the opposing factors of acclimatization and deterioration.*[5]

**Everest 1933**

Shortly after the Kamet team returned to Britain in 1931 preparations were afoot for another expedition to Everest in 1933 and Raymond was chosen to participate as climber and chief medical officer. Although Raymond was working long hours as a general practitioner in Oxford, he was able to find time to do physiological work, albeit with considerable risks, in preparation for the expedition.

He consulted leading physiologists, Haldane, Douglas, and Priestley, and spent many hours in a low-pressure chamber at Oxford, suffering



agonizing earache and some days of deafness when a careless technician 'crashed' him from a simulated 20,000 feet [~6100m] to earth [sea level] in a few seconds (p.445)[6] [Greene describes this incident as well on pp. 148-149 in *Moments of Being*].

Despite this difficulty, he was able to conclude that a climber's ascent should average 1,000 ft (~300 m) per day (p.149),[2] with acclimatisation 'stops' at various camps as one ascends. This thinking, or versions of it, has been the basis of recommendations for conservative ascent profiles in the mountaineering world ever since – particularly as a means of avoiding altitude-related illness.

Greene also found time to improve the design and function of supplementary oxygen kit for climbing at extreme altitudes on Everest. The original oxygen kit first used in 1922 had weighed approximately 33lbs. The engineering skill of George Mallory's climbing partner on Everest, Andrew 'Sandy' Irvine, had reduced this to about 22lbs. However by 1932, it had been decided that the oxygen kit needed to be lighter still and should weigh no more than 15lbs. Building on Irvine's earlier work, Greene carried out further alterations. By removing the carrying frame and limiting each apparatus to just one bottle of oxygen (each bottle holding 500L of compressed gas and weighing 4.9kg when full), the device now weighed just 12.75lb (5.8kg).

However, the combination of poor weather and the expedition's bias against supplementary oxygen meant that opportunities to use the device were limited. In fact, the apparatus never received a proper trial on the mountain. Somewhat surprisingly, it had been decided prior to the expedition that oxygen should be used only if attempts to reach the summit without it had failed. At the end of the 'unoxygenated' attempts the weather deteriorated and snow conditions had become dangerous. The party retreated to basecamp to await improvements and left most of the oxygen apparatus at Camp IV. Unfortunately, the better conditions never came.[7]

As scientist, climber and senior medical officer Greene was also involved in a number of important events during the expedition. During the approach march across the Tibetan plateau a Tibetan porter, Lobsang Tsering, suffered a fractured clavicle after falling off his pony. Hugh Ruttledge related that:

*It was decided to give Lobsang an anaesthetic and set the bone at once. Greene is an expert anaesthetist, and no difficulty was expected. But anaesthetics, it seems, can play queer tricks at over 14,000 ft. [~4260 m] (p. 78).*[3]

Greene no doubt recalled his prior experience with Frank Smythe two years before and therefore gave Lobsang a very small dose of inhaled anesthetic vapour. He later recorded:

*In Camp I gave [Lobsang] a mere breath of chloroform while Willy reduced the fracture. Suddenly heart and lungs stopped acting simultaneously. I filled*

*a syringe with Coramine [a stimulant no longer in use], struck for the heart and began external cardiac massage while Willy applied artificial respiration. Lobsang's heart began to beat again and respiration returned (p.105).*[2]

This sudden cardiopulmonary arrest may well have been induced by chloroform, especially as Greene had no way of precisely assessing the inspired concentration of the anaesthetic.

As Greene was along on the 1933 expedition as a climber as well as a physician, it comes as no surprise that climbing adventures also presented themselves during the course of this attempt on Everest. In mid-May as the expedition was starting to make progress on the upper part of the mountain, a lengthy storm struck. In advanced basecamp (Camp III) on the East Rongbuk glacier some of the climbers considered themselves in a protected position from the onslaught of the weather. Unfortunately, they were mistaken. In Greene's tongue-in-cheek style, he wrote:

*We lay in the comfortable arctic tent like pips in a gigantic cantaloupe. In the evening the hurricane returned…At two o'clock there was a resounding crash and the side of the tent fell in. Longland, who had very virtuously insisted on sleeping in his own leaky Meade tent to leave more room for the rest of us, slept on undisturbed. The remaining four of us sat up and looked at one another with a wild surmise. We knew that if we could not erect the tent again it was the end of us. In such cold and in such a gale survival would have been impossible. With no word spoken, Wager and I climbed out into the night. …The wind was so strong that we could hardly stand. Knee-high for me, shoulder-high for the shorter Wager, a thick layer of driven snow raced horizontally, so that only his head was visible, apparently decapitated. All the guys of the tent had given way, but after an hour they were replaced and the tent was secure though lop-sided (pp. 156-157).*[2]

As the 1933 team pushed the route higher further problems arose. After Camp V was established at 25,700 ft. (~7830 m) on the north ridge, Greene, Harris, Boustead, and Birnie had planned to continue on the following day to set up Camp VI. Unfortunately Greene had climbed to altitude considerably faster than the others and suffered from the effects of his rapid ascent. Forced to descend with a group of porters to the North Col (Camp IV), the ailing Greene was unable to keep up and was soon left behind. Many years later he vividly related an account of the descent, hinting at the dangers of exhaustion at extreme altitude and just how easy it can be to sit and rest at high altitude only never to get up again:

*The going was easy to a trained mountaineer, scrambling over rocks about as easy as the Crib Goch ridge on Snowdon, interspersed with patches of snow. But I was a sick man. In every patch of snow I fell over and rested a while. At last in a very comfortable spot, sheltered from the howling wind, I decided that I had had enough. I was warm and comfortable and the view was superb. If I stayed where I was I would fall comfortably asleep. I had no wife or children for whom I could feel responsible: my parents had five other children and, though I knew they would mourn, they would lose only a small proportion of their offspring. I decided to stay…[and then although] I do not recall any [conscious] effort, suddenly I was struggling downwards again, falling again in every patch of snow, but rising at once when breath returned. Then below me were the tents of Camp IV bright green against the snow (p. 160).*[2]



**Later medical career and other pursuits**

In 1937 Greene moved from family medicine to the emerging specialty of endocrinology and became a clinical assistant at the Westminster Hospital. After the Second World War he joined the staff of several other London-area hospitals, but his name became primarily associated with the New End Hospital, Hampstead, where, with Sir Geoffrey Keynes, he developed a thyroid clinic that achieved world renown.

In later life, Greene's attentions returned to the medical issues that faced the mountaineer at high altitude. During the early years of the Second World War, it became obvious there was a great need for scientifically-based investigations in the area of environmental physiology and medicine. Stimulated by the practical problems he had faced with cold injury in the Himalaya, Greene's investigations produced an article in a 1943 issue of the *Journal of Pathology and Bacteriology* entitled 'The immediate vascular changes in true frostbite'.[8] In addition, Greene also had significant contact with the British military, in particular the mountain troops and the Special Operations Executive (SOE). A significant post-war honour that came his way as a result of his association with the SOE was Chevalier of the Legion of Honour presented by French leader Charles de Gaulle.

**Summary:** An exploration of the medical and mountaineering life of Raymond Greene. By combining his mountaineering experience, medical knowledge and natural inquisitiveness, Greene was able to make a real difference throughout his life – not only to his patients and mountaineering colleagues, but also to those serving with the allies during the Second World War.

**Note:** This is an abridged version of an article which first appeared in 2011 in the journal *Wilderness & Environmental Medicine* 22(3): 270-276.

**References**

1. Greene G. Letter to Vivien Greene, 11 December 1925.
2. Greene R. *Moments of Being: The random recollections of Raymond Greene*, William Heinemann Ltd, London 1974.
3. Ruttledge H. *Everest 1933*, Hodder & Stoughton Ltd, London 1934.
4. Smythe FS. *Kamet Conquered*, Victor Gollancz, London 1932.
5. Greene R. 'Oxygen and Everest', *Nature* 1931; 128: 893-4.
6. Sherry N. *The life of Graham Greene*, vol. 1 1904-1939; Viking, New York 1989.
7. Greene R. 'The Everest oxygen apparatus, 1933'. *Lancet* 1934; 2: 1122-4.
8. Greene R. 'The immediate vascular changes in true frostbite', *J Pathol Bacteriol* 1943; 55: 259-68.