MARTIN BARRY, QUAKER MICROSCOPIST

By J. MONROE THORINGTON

Of the medical men who completed ascents of Mont Blanc before 1850, Martin Barry [1] was the fifth and most distinguished. He had been preceded by Paccard, village doctor of Chamonix, by the Americans, Howard and Van Rensselaer, and by Edmund Clark, an Englishman who died young.

Martin Barry (his initials those of the great white mountain) was born at Fratton, Hants, in March 1802. His father was living there in retirement, but had property in a mercantile concern in Nova Scotia, where a brother served as active partner, their vessels trading to neighbouring colonies and the United States. It was originally intended to qualify Martin, one of three children, for a similar career, for which he received a liberal education, after his father's death being placed for several years in the care of a relative in America. But he never engaged in business on his own account, a love of science attracting him to the medical profession.

During four college vacations (1830–33) young Barry visited the mountain and lake districts of Scotland for geology and botany, exploring the Grampians and twice ascending Ben MacDhui. He received his M.D. at Edinburgh in 1833 and became a member of the Royal College of Surgeons. In the torrid summer of 1834, following a course in embryology with Tiedemann at Heidelberg,[2] Martin and his brother, J. T. Barry, walked through Switzerland, gaining the Faulhorn, and, on September 15th, crossing the Col de Balme from Martigny to Chamonix.

On the 16th, Martin Barry and six guides, including Joseph-Marie Couttet, started for the Grands Mulets. No one had attempted this so late in the season, and ice at the base of the rock caused them much difficulty in reaching their quarters for the night, an adventure depicted by Barry's two sketches illustrating his narrative. The ascent was without further incident although soft snow delayed them.

> 'Our early course lay, for the most part,' he wrote, 'over vast fields of snow; but the early portion of it presented scenery of surpassing beauty, far more magnificent and dazzling than that of the day before. There were broad and bridgeless chasms, whose depths the eye, from their dizzy edges, vainly sought to ascertain—towering masses, in forms that, from their strangeness, seemed unreal—spires of brightness, grottos and palaces of frost—here recent, soft, of snowy whiteness—there older, hardened, passing into crystal azure—sprinkled with frozen dew, festooned with silver

[1] The sources of this paper are *D.N.B.*, Gurlt's *Biogr. Lexicon der hervorragenden Aertzte* (1884), and *Edinburgh Medical Journal*, I (1855), 81, which gives the best summary of Barry's scientific output.

[2] He also visited clinics at London, Paris, and Berlin, probably in this year.

fringe ; their inmost caverns dark—vast stalactites of ice, in line, guarding the portals.'

Barry recovered after a short rest on the summit and was not only able to enjoy the splendid view but also to collect specimens and repeat various experiments. Barry's brother, who meanwhile had gone up the Brévent, watched the party through a telescope and met them next day at Pierre à l'Echelle after their second night at the Grands Mulets.

Barry gave a supper to his guides that evening (18th), at which Jacques Balmat was present and told them of his experiences nearly fifty years earlier. An English traveller at the Hotel de l'Union wrote[3] that Barry was a very fine young man, looking uncommonly well, and appeared overpowered by delight and the wonders he had witnessed. Certainly he must have been in good condition, for on the following day he traversed the Mer de Glace to the Jardin and back. There was not a cloud in the sky during his stay in Chamonix ; a brilliant moon shone at night, and Barry, on his way to Basle, could still see the summit of Mont Blanc when several hours' ride beyond Neuchatel.

On returning to Scotland, Barry sent his geological specimens to his former teacher, Robert Jameson, Regius Professor of Natural History at the University of Edinburgh, to whom his narrative of the ascent is dedicated. Others assisted in identifying insects and flora. A brief account of the adventure appeared in the *Annual Register* for September 1834, which was expanded in the *Edinburgh New Philosophical Journal* of January 1835, the principal part being issued as a bound pamphlet,[4] illustrated by two uncoloured lithographs, and distributed to his friends, the title being *Ascent to the Summit of Mont Blanc, 16th–18th of 9th Month (September), 1834.*

In March 1836, by which time Barry was President of the Royal Medical Society[5] of Edinburgh and a member of the Wernerian Society of Natural History, he gave two lectures on the ascent of Mont Blanc in the Assembly Room, Edinburgh, for the benefit of the Royal Infirmary of that city, in which he had been a pupil. The observations on the effect of diminished atmospheric density on respiration and other functions were condensed from a paper he had but recently read before the Royal Society[6] of Edinburgh. His remarks were illustrated by a

[3] *A.J.* 47, 369.

[4] A number of these bearing Barry's presentation inscriptions are still in existence.

[5] This interesting Society is, after the Royal Society, London, the oldest Royal Society in this country, but it is, and has always been, a society of (and run by) Edinburgh medical *undergraduates*, and it is older than its records, which begin in 1735. It has a fine hall, some very good pictures, and an exciting library rich in old medical books. Charles Darwin, Oliver Goldsmith, Mark Akenside, and a host of other famous men were (student) members, and a new history of the Society has now been published. At its weekly meetings the 18th century rules of procedure are still used (rules against duelling, etc.). Each continuing member (Barry must have been one) has to write a ' dissertation,' and these have been preserved complete since 1751. [T. G. B.]

[6] ' On Dyspnœa and other Sensations experienced on the summit of Mont Blanc,' *Proc. Roy. Soc. Ed.* (1832–44), 129.

model of Mont Blanc covering forty-eight square feet, prepared by a Scottish sculptor, Slater, and then presented to the Royal Museum of Natural History.[7] The lectures when issued in book form were illustrated by the two lithographs (now in colour) of the Grands Mulets, to which was added a large lithographic panorama, with the same title as the earlier publication.

In concluding, he said : ' Those scenes are now unutterably interesting, to look back upon—life-long sources of most grateful contemplation. And whether I behold the fairy structures on the glacier—alps, far below me, glowing in the rosy, crimson, purple light of sunset—the mighty prospect from the summit—or, more than them all, that moonlight, midnight hour and half of solitude upon the rock—it is a picture of sublimest beauty, vivid and indestructible by time.'

The ascent of Mont Blanc gained Barry the acquaintance of many distinguished persons,[8] among them Baron v. Humboldt, who personally requested him to translate from the German his ' Two Attempts to Ascend Chimborazo.'[9]

About 1835 Barry revisited Germany, engaging in histological investigations with Professors Theodor Schwann and Rudolph Wagner at Erlangen. During the winter of 1838–39 two papers on embryology (including his observation of segmentation of the yoke in the mammiferous ovum) in the *Philosophical Transactions* brought him the Royal Society's medal in the latter year. He became an F.R.S. (L. and E.) in 1840. In 1843 he made the important discovery of the presence of spermatozoa within the ovum,[10] at a time when he was also lecturing on physiology at St. Thomas's Hospital. As house surgeon of the Royal Maternity Hospital in 1844, he distinguished himself in midwifery and gained the respect and love of the poor among whom he practised, but illness put a stop to this activity.

[7] This was destroyed with other models of the Alps about 1919 because of their exaggerated vertical scale and poor condition.

Professor T. Graham Brown has kindly permitted quotation of his own recollections. ' When I was a boy in Edinburgh, Barry's model of Mont Blanc attracted me, and I remember it well. Only the Chamonix side was shown, and as the Italian side was represented by a vertical board, I got the impression that the ascent on that side must be a gradual slope not worth showing in the model. Lying in the Chamonix valley was a stone (brought down by Barry from near the top of Mont Blanc ; from the Derniers Rochers I suppose), and this was said to represent the height of Arthur's Seat on the same scale. It made Mont Blanc look impressively huge, and this was, as far as I remember, my first acquaintance with the mountain.

' In the middle of late " twenties " I revisited the museum to see this model again, and I found that it had disappeared. I made inquiries and was told that it had been broken up. A *very* old attendant told me that he remembered Principal J. D. Forbes coming to examine the model and praising it. My memory is that it looked very much like the panorama published in Barry's pamphlet—either might have been the original of the other, or so my memory is. The model was a very big one in a great glass case.'

[8] His quaint letter (Aug. 12, 1836) to Markham Sherwill is in the latter's collection of autographs, presented to the *Bibliothèque Royale* in 1840. *A.J.* 50, 260.

[9] *Edinburgh New Philosophical Journal*, 1837.

[10] *Phil. Trans.*, 1842–43.

Dr. Barry belonged to the Society of Friends, and by them was valued for gentleness of heart, extensive information and high religious principles ; but distaste for convivial company, however intellectual, prevented him from mixing in general society. He was a good classical scholar, conversant with the literature of his own country as well as that of France and Germany, and was a skilled artist. His honesty of purpose sometimes caused him to be thought dogmatic, and as he grew older his sensitiveness and temperament became ever more evident, his speculative view gaining ground over the inductive method. He never married and no portrait of him exists.

Continuous use of the microscope during the period 1837–43 seriously impaired his eyesight and brought on recurrent attacks of ill health, which continued through 1846. In 1848, the chair of the Institutes of Medicine, Edinburgh University, becoming vacant, he withdrew his candidature at the last moment because of religious scruples against the tests then in force.

During 1849–52 Barry was again on the Continent, visiting Prague, Giessen and Breslau, where he worked with Purkinje, who translated his paper on ' Fibre.'[11] At Giessen he was an enthusiastic observer in Liebig's Chemical Laboratory. But he suffered continually with a severe neuralgic affection, and on his return to Britain retired to Arran. Even there, however, his driving spark could not be extinguished. He vaccinated most of the children on the island against smallpox, having found this was neglected, and also began an egg collection, until eventually he had at least one egg of every British bird. By the summer of 1853, greatly emaciated and so suffering from neuralgic pain that he could not long maintain the same posture, and often deprived of sleep, he removed to Beccles, Suffolk, in the latter part of the year, taking up residence near his brother-in-law, Dr. Dashwood, who had married Dr. Barry's only sister.

As a meritorious and successful inquirer Dr. Barry should be held in grateful remembrance. The most notable anatomical and physiological observations made by the microscope in Great Britain during the first half of the nineteenth century were those communicated by him to the Royal Society. His outstanding discoveries were the segmentation of the yoke in the mammiferous ovum, and the penetration of spermatozoa within the zona pellucida. With keenest interest in his studies this indefatigable worker pursued his microscopical research to within a week of his death, which occurred on April 27, 1855. Almost his last words were : ' All is peace.'

[11] *Müller's Archiv.*, 1850.