



Adventures on the
Roof of the World

by

Mrs. Aubrey Le Blond

ADVENTURES ON THE ROOF OF THE WORLD

BY
MRS AUBREY LE BLOND
(Mrs MAIN)

AUTHOR OF
“MY HOME IN THE ALPS,” “TRUE TALES OF MOUNTAIN ADVENTURE,” ETC.

ILLUSTRATED



LONDON
T. FISHER UNWIN
PATERNOSTER SQUARE
1904

(All rights reserved.)

TO

JOSEPH IMBODEN

MY GUIDE AND FRIEND FOR TWENTY YEARS,

I DEDICATE

THESE RECORDS OF A PASTIME IN WHICH I OWE

MY SHARE TO HIS SKILL, COURAGE, AND

HELPFUL COMPANIONSHIP.

CHAPTER XVII

LANDSLIPS IN THE MOUNTAINS

“SIR W. MARTIN CONWAY has been good enough to allow me to extract from *The Alps from End to End* the following account of the destruction of Elm. Mountain falls have a special interest for all who travel in Switzerland, where the remains of so many are visible.

“The Himalayas are, from a geological point of view, a young set of mountain ranges; they still tumble about on an embarrassingly large scale. The fall, which recently made such a stir, began on 6th September 1893. That day the Maithana Hill (11,000 feet), a spur of a large mountain mass, pitched bodily rather than slid, into the valley.

“Little could be seen of the terrible occurrence, for clouds of dust instantly arose, which darkened the neighbourhood and fell for miles around, whitening the ground and the trees until all seemed to be snow covered. The foot of the hill had been undermined by springs until there was no longer an adequate base, and in the twinkling of an eye a large part of the mountain slid down, pushed forward, and shot across the valley, presenting to the little river a lofty and impervious wall, against which its waters afterwards gathered. Masses of rocks were hurled a mile away, and knocked down trees on the slopes across the valley. Many blocks of dolomitic limestone, weighing from 30 to 50 tons, were sent like cannon-shots through the air. The noise was terrific, and the frightened natives heard the din repeated at intervals for several days, for the first catastrophe was succeeded by a number of smaller slides. Even five months after the mountain gave way, every rainy day was succeeded by falls of rocks. A careful computation gives the weight of the enormous pile of rubbish at 800,000,000 tons.’

“The Himalayas are indeed passing through their dramatic geological period, when they give rise to such landslips as this at relatively frequent intervals. Plenty of landslips quite as big have been recorded in the last half-century, and, amongst the remote and uninhabited regions of the great ranges, numbers more of which no record is made constantly happen. The catastrophic period has ended for the Alps. Landslips on a great scale seldom occur there now; when they do occur, the cause of them is oftener the activity of man than of natural forces. But of a great landslide in the Alps details are sure to be observed, and we are enabled to form a picture of the occurrence. When the Alps tremble the nations quake; the Himalayas may shudder in their solitudes, but the busy occidental world pays scant attention, unless gathering waters threaten to spread ruin afar. Of the Gohna Lake we have been told much, but little of the fall that caused it. Eye-witnesses appear not to have been articulate. We can, however, form some idea of what it was like from the minute and accurate account we possess of a great and famous Alpine landslide. I refer to that which buried part of the village of Elm, in Canton Glarus, on 11th September 1881. [\[13\]](#)

“Elm is the highest village in the Sernf Valley. Its position is fixed by the proximity of a meadow-flat of considerable extent. Above this three minor valleys radiate, two of which are separated from one another by a mountain mass, whose last buttress was the Plattenbergkopf, a hill with a precipitous side and a flat and wooded summit, which used to face the traveller coming up the main valley. It was this hill that fell.

“The cause of the fall was simple, and reflects little credit on Swiss communal government. About half-way up the hill there dips into it a bed of fine slate, excellent for school-slates. In the year 1868 concessions were given by the commune for working this slate for ten years without any stipulation as to the method to be employed. Immense masses of the rock were removed. A hole was made 180 mètres wide, and no supports were left for the roof. It was pushed into the mountain to a depth of 65 mètres! In 1878, when the concessions lapsed, the

commune, by a small majority, decided to work the quarry itself. Every burgher considered that he had a right to work in the quarry when the weather was unsuitable for farm labour. The place was therefore overcrowded on wet days, and burdened with unskilful hands. The quarry, of course, did not pay, and became a charge on the rates, but between eighty and one hundred men drew wages from it intermittently.

“The roof by degrees became visibly rotten. Lumps of rock used to fall from it, and many fatal accidents occurred. The mass of the mountain above the quarry showed a tendency to grow unstable, yet blasting went forward merrily, and no precautions were taken. Cracks opened overhead in all directions; water and earth used to ooze down through them. Fifteen hundred feet higher up, above the top of the Plattenbergkopf, the ground began to be rifted. In 1876 a large crack split the rock across above the quarry roof, and four years later the mass thus outlined fell away. In 1879 serious signs were detected of coming ruin on a large scale. A great crack split the mountain across behind the top of the hill. The existence of this crack was well known to the villagers, who had a special name for it. It steadily lengthened and widened. By August 1881 it was over four mètres wide, and swallowed up all the surface drainage. Every one seems then to have agreed that the mountain would ultimately fall, but no one was anxious. The last part of August and the first days of September were very wet. On 7th September masses of rock began to fall from the hill; more fell on the 8th, and strange sounds were heard in the body of the rock; work was at last suspended in the quarry. On the 10th a commission of incompetent people investigated the hill, and pronounced that there was no immediate danger. They, however, ordered that work should cease in the quarry till the following spring, whereat the workmen murmured. All through the 10th and the morning of the 11th falls of rock occurred every quarter of an hour or so. Some were large. They kept coming from new places. The mountain groaned and rumbled incessantly, and there was no longer any doubt that it was rotten through and through.

“The 11th of September was a wet Sunday. Rocks and rock-masses kept falling from the Plattenberg. The boys of the village were all agog with excitement, and could hardly be prevented by their parents from going too near the hill. In the afternoon a number of men gathered at an inn in the upper village, just at the foot of the labouring rocks, to watch the falls. They called to Meinrad Rhyner, as he passed, carrying a cheese from an alp, to join them, but he refused, ‘not fearing for himself, but for the cheese.’ Another group of persons assembled in a relative’s house to celebrate a christening. A few houses immediately below the quarry were emptied, but the people from them did not move far. At four o’clock Schoolmaster Wyss was standing at his window, watch in hand, registering the falls and the time of their occurrence. Huntsman Elmer was on his doorstep looking at the quarry through a telescope. Every one was more or less on the *qui vive*, but none foresaw danger to himself.

“Many of the people in the lower village, called Müsli, which was the best part of a mile distant from the quarry, and separated from it by a large flat area, were quite uninterested. They were making coffee, milking cows, and doing the like small domestic business.

“Suddenly, at a quarter past five, a mass of the mountain broke away from the Plattenbergkopf. The ground bent and broke up, the trees upon it nodded, and folded together, and the rock engulfed them in its bosom as it crashed down over the quarry, shot across the streams, dashing their water in the air, and spread itself out upon the flat. A greyish-black cloud hovered for a while over the ruin, and slowly passed away. No one was killed by this fall, though the *débris* reached within a dozen yards of the inn where the sightseers were gathered. The inhabitants of the upper village now began to be a little frightened. They made preparations for moving the aged and sick persons, and some of their effects. People also came up from the lower villages to help, and to see the extent of the calamity. Others came together to talk, and the visitors who had quitted the inn returned to it. Some went into their houses to shut the windows and keep out the dust. No one was in any hurry.

“This first fall came from the east side of the Plattenbergkopf; seventeen minutes later a second and larger fall descended from the west side. The gashes made by the two united below the peak, and left its enormous mass isolated and without support. The second fall must have been of a startling character, for Schoolmaster Wyss forgot his watch after it. It overwhelmed the inn and four other houses, killed a score of persons, and drove terror into all beholders, so that they started running up the opposite hill. Oswald Kubli, one of the last to leave the inn, saw this fall from close at hand. He was standing outside the inn when he heard some one cry out: ‘My God, here comes the whole thing down!’ Every one fled, most making for the Düniberg. ‘I made four or five strides, and then a stone struck Geiger and he fell without a word. Pieces from the ruined inn flew over my head. My brother Jacob was knocked down by them.’ Again a dark cloud of dust enveloped the ruin. As it cleared off, Huntsman Elmer could see, through his glass, the people racing up the hill (the Düniberg) ‘like a herd of terrified chamois.’ When they had reached a certain height most of them stood still and looked back. Some halted to help their friends, others to take breath.

“‘Of those who were before me,’ relates Meinrad Rhyner, ‘some were for turning back to the valley to render help, but I called to them to fly. Heinrich Elmer was carrying boxes, and was only twenty paces behind me when he was killed. There were also an old man and woman, who were helping along their brother, eighty years old; they might have been saved if they had left him. I ran by them, and urged them to hasten.’

“Of all who took refuge on the Düniberg, only six escaped destruction by the third fall, and they held on their way, and went empty-handed. Ruin overtook the kind and the covetous together.

“At this time, before the third fall, fear came also upon the cattle. A cow, grazing far down the valley, bellowed aloud and started running for the hillside with tail out-straightened. She reached a place of safety before her meadow was overwhelmed. Cats and chickens likewise saved themselves, and two goats sought and found salvation on the steps of the parsonage.

“During the four minutes that followed the second fall every one seems to have been running about, with a tendency, as the moments passed, to conclude that the worst was over. Then those who were watching the mountain from a distance beheld the whole upper portion of the Plattenbergkopf, 10,000,000 cubic mètres of rock, suddenly shoot from the hillside. The forest upon it bent ‘like a field of corn in the wind,’ before being swallowed up. ‘The trees became mingled together like a flock of sheep.’ The hillside was all in movement, and ‘all its parts were playing together.’ The mass slid, or rather shot down, with extraordinary velocity, till its foot reached the quarry. Then the upper part pitched forward horizontally, straight across the valley and on to the Düniberg. People in suitable positions could at this moment clearly see through beneath it to the hillside beyond. They also saw the people in the upper village, and on the Düniberg, racing about wildly. No individual masses of rock could be seen in the avalanche, except from near at hand; it was a dense cloud of stone, sharply outlined below, rounded above. The falling mass looked so vast that Schoolmaster Wyss thought it was going to fill up the whole valley. A cloud of dust accompanied it, and a great wind was flung before it. This wind swept across the valley and overthrew the houses in its path ‘like haycocks.’ The roofs were lifted first, and carried far, then the wooden portions of the houses were borne bodily through the air, ‘just as an autumn storm first drives off the leaves and then the dead branches themselves from the trees.’ In many cases wooden ruins were dropped from the air on to the top of the stone *débris* when the fall was at an end. Eye-witnesses say that trees were blown about ‘like matches,’ that houses were ‘lifted through the air like feathers,’ and ‘thrown like cards against the hillside,’ ‘that they bent, trembled, and then broke up like little toys’ before the avalanche came to them. Hay, furniture, and the bodies of men were mixed with the house-ruins in the air. Some persons were cast down by the blast and raised again. Others were carried through the air and deposited in safe positions; others, again, were hurled upward to destruction

and dropped in a shattered state as much as a hundred mètres away. Huntsman Elmer relates as follows:

“My son Peter was in Müsli (nearly a mile from the quarry) with his wife and child. He sought to escape with them by running. On coming to a wall, he took the child from his wife and leaped over. Turning round, he saw the woman reach out her hand to another child. At that moment the wind lifted him, and he was borne up the hillside. My married daughter, also in Müsli, fled with two children. She held the younger in her arms and led the other. This one was snatched away from her, but she found herself, not knowing how, some distance up the hillside, lying on the ground face downwards, with the baby beneath her, both uninjured.’

“The avalanche, as has been said, shot with incredible swiftness horizontally across the valley. It pitched on to the Düniberg, struck it obliquely, and was thus deflected down the level and fertile valley-floor, which it covered in a few seconds, to the distance of nearly a mile and over its whole width, with a mass of rock *débris* more than 30 feet thick. Most of the people on the hillside were instantly killed, the avalanche falling on to them and crushing them flat, ‘as an insect is crushed into a red streak under a man’s foot.’ Only six persons here escaped. Two of them were almost reached by the rocks, the others were whirled aloft through the air and deposited in different directions. One survivor describes how the dust-cloud overtook him, ‘and came between him and his breath!’ He sank face downwards on the ground, feeling powerless to go further. Looking back, he saw ‘stones flying above the dust-cloud. In a moment all seemed to be over. I stood up and climbed a few yards to a spring of water to wash out the dust, which filled my mouth and nose’ (all survivors on the Düniberg had the same experience). ‘All round was dark and buried in dust.’

“It was only when the avalanche had struck the Düniberg and began to turn aside from it—the work of a second or two—that the people in the lower village, far down along the level plain, had any suspicion that they were in danger. Twenty seconds later all was over. Some of them who were on a bridge had just time to run aside, not a hundred yards, and were saved, but most were killed where they stood. The avalanche swept away half the village. Its sharply defined edge cut one house in two. All within the edge were destroyed, all without were saved. Almost the only persons wounded were those in the bisected house. Huntsman Elmer with his telescope, and Schoolmaster Wyss with his watch, whose houses were just beyond the area of ruin, beheld the dust-cloud come rolling along, ‘like smoke from a cannon’s mouth, but black,’ filling the whole width of the flat valley to about twice the height of a house. The din seemed to them not very great, and the wind, which, in front of the cloud, carried the houses away like matchwood, did not reach them. Others describe the crash and thunder of the fall as terrific; it affected people differently. All agree that it swallowed up every other sound, so that shrieks of persons near at hand were inaudible. The mass seemed to slide or shoot along the ground rather than to roll. One or two men had a race for life and won it, but most failed to escape who were not already in a place of safety. Fridolin Rhyner, an eleven-year-old boy, kept his head better than any one else in the village, and succeeded in eluding the fall. He saw, too, ‘how Kaspar Zentner reached the bridge as the fall took place, and how he started running as fast as he could, but was caught by the flood of rocks near Rhyner’s house; he jumped aside, however, into a field, limped across it, got over the wall into the road, and so just escaped.’

“The last phase of the catastrophe is the hardest to imagine, and was the most difficult to foresee. The actual facts are these. Ten million cubic mètres of rock fell down a depth (on an average) of about 450 mètres, shot across the valley and up the opposite (Düniberg) slope to a height of 100 mètres, where they were bent 25° out of their first direction, and poured, almost like a liquid, over a horizontal plane, covering it, uniformly, throughout a distance of 1500 mètres and over an area of about 900,000 square mètres to a depth of from 10 to 20 mètres. The internal friction of the mass and the friction between it and the ground were insignificant forces compared with the tremendous momentum that was generated by the fall. The stuff flowed like a liquid. No wonder the parson, seeing the dust-cloud rolling down the valley, thought it was

only dust that went so far. His horror, when the cloud cleared off and he beheld the solid grey carpet, beneath which one hundred and fifteen of his flock were buried with their houses and their fields, may be imagined. He turned his eyes to the hills, and lo! the familiar Plattenbergkopf had vanished and a hole was in its place.

“The roar of the fall ceased suddenly. Silence and stillness supervened. Survivors stood stunned where they were. Nothing moved. Then a great cry and wailing arose in the part of the village that was left. People began to run wildly about, some down the valley, some up. As the dust-cloud grew thinner the wall-like side of the ruin appeared. It was quite dry. All the grass and trees in the neighbourhood were white with dust. Those who beheld the catastrophe from a distance hurried down to look for their friends. Amongst them was Burkhard Rhyner, whose house was untouched at the edge of the *débris*. He ran to it and found, he said, ‘the doors open, a fire burning in the kitchen, the table laid, and coffee hot in the coffee-pot, but no living soul was left.’ All had run forth to help or see, and been overwhelmed—wife, daughter, son, son’s wife, and two grandchildren. ‘I am the sole survivor of my family.’ Few were the wounded requiring succour; few the dead whose bodies could be recovered. Here and there lay a limb or a trunk. On the top of one of the highest *débrismounds* was a head severed from its body, but otherwise uninjured. Every dead face that was not destroyed wore a look of utmost terror. The crushed remains of a youth still guarded with fragmentary arms the body of a little child. There were horrors enough for the survivors to endure. The memory of them is fresh in their minds to the present day.

“Such was the great catastrophe of Elm. The hollow in the hills, whence the avalanche fell, can still be seen, and the pile of ruin against and below the Düniberg; but almost all the rest of the *débris*-covered area has been reclaimed and now carries fields, which were ripening to harvest when I saw them. The fallen rocks, some big as houses, have been blasted level; soil has been carried from afar and spread over the ruin. A channel, 40 feet deep or more, has been cut through it for the river, so that the structure of the rock-blanket can still be seen. The roots of young trees now grasp stones that took part in that appalling flight from their old bed of thousands of years to their present place of repose. The valley has its harvests again, and the villagers go about their work as their forefathers did, but they remember the day of their visitation, and to the stranger coming amongst them they tell the tragic tale with tears in their eyes and white horror upon their faces.”

[13] All details connected with this avalanche were collected on the spot, and shortly afterwards published in a volume, *Der Bergsturz von Elm*, by E. Buss and A. Heim. Zürich, 1881.