

A NOTED MOUNTAIN CLIMBER.

For the past thirty years the world has been familiar with the exploits of Edward Whymper, the famous mountain climber. His first expedition was undertaken in 1861, when he was only twenty-one years of age. This was the ascent of Mont-Pelvoux, then considered the highest mountain in France. From it, however, he discovered another mountain 500 feet higher, Pointe des Ecrins. This he ascended three years afterwards. On July 14, 1865, he made the ever memorable ascent of the Matterhorn, on which occasion his companions, the Rev. Charles Hudson, Mr. Hadow, Lord Francis Douglas and one of the guides lost their lives.

In 1867 he explored the fossiliferous deposits of North West Greenland. Here he found cones of magnolia and fruits of other tropical trees, which go to show that Greenland was not always the land of ice and snow it is now. Some of the fossil plants collected then are now on exhibition in the British Museum.

In 1871 Mr. Whymper published an account of his Alpine journeys under the title of *Scrambles among the Alps in the Years 1860-69*, in recognition of which he received from the King of Italy the decoration of Chevalier of the Order of S. S. Maurice and Lazarus. In 1872 he again explored North Greenland.

In 1879-80 Mr. Whymper travelled in the Republic of Ecuador, exploring, ascending, and measuring the Great Andes on and near the Equator. On this journey he made the first ascent of Chimborazo, 20,517 feet high, Sincholagua, Antisana, Cayambe, Cotacachi.

Only this year have the results of those journeys been made known in the book entitled *"Travels amongst the Great Andes of the Equator,"* commended by a recent English critic as a thoroughly well considered and finished work, with all his observations checked and verified, and put forth with a care and deliberation which render them of the highest scientific value.

One question Mr. Whymper investigated in that expedition was whether men could live and accomplish useful work at very great heights above the sea level. His first idea was to explore the Himalayas, but a frontier war prevented him from venturing in 1874, and the quarrels between Chili and Peru rendered the highest ranges of the Andes equally unsafe. He, therefore, turned to Ecuador and the great mountain Chimborazo. He landed at Guayaquil on December 9th, 1879, and at once started on his travels. His companions were Jean Antoine Carrel and his cousin Louis, both Swiss guides, and Mr. Perring, an Englishman, who had passed many years in Ecuador. They had no experience of mountain sickness until they reached a height of 16,000 feet, at which altitude they pitched their second camp. They arrived in good condition, but in about an hour Mr. Whymper and the Carrels found themselves lying on their backs, incapable of moving.

"We were feverish, had intense headaches, and were unable to satisfy our desire for air, except by breathing with open mouths. This naturally parched the throat and produced a craving for drink, which we were unable to satisfy—partly from the difficulty in obtaining it, and partly from trouble in swallowing it. When we got enough we could only sip and not to save our lives could we have taken a quarter of a pint at a draught. Before a mouthful was down, we were obliged to breathe and gasp again, until our throats were as dry as ever. Besides having our normal rate of breathing largely accelerated, we found it impossible to sustain life without every now and then giving spasmodic gulps just like fishes when taken out of water. Of course there was no inclination to eat; but we wished to smoke, and found that our pipes almost refused to burn, for they, like ourselves, wanted more oxygen."

These symptoms lasted nearly three days and then they disappeared gradually, Mr. Whymper suffering more than the two guides. Mr. Perring, though a much weaker man, was not affected at all. When summing up his experience at the end of the volume, Mr. Whymper remarks, that there are strong grounds for believing that the sudden dizziness and headaches, the slight hemorrhages, the "mortal pangs," and "drunken sensation," of which so many have had experience either on land,

in balloon, or when sustaining artificial diminution in pressure, and the insensibility and fatal hemorrhages which have occurred in the most extreme cases, have all been caused by internal pressure; and that the degree of intensity of the effect and their earlier or later appearance depend upon the extent of the diminution in pressure, the rate at which it is reduced, and the length of time it is experienced. An unlimited number of combinations can be produced when to these are added the complications arising from the effect on respiration of rarefaction of the air, and differences in individual constitutions.

They finally reached the higher summit of Chimborazo, after having first climbed the lower one by mistake, and, as the author says, stood upright like men, instead of grovelling, as they had been doing for the previous five hours, in the soft and yielding snow. There they took their observations,

firm foothold. They passed twenty-six hours on the summit of Cotopaxi, from mid-day on February 18th, 1880, to 2 p.m. on the 19th, and Mr. Whymper obtained some excellent photographs, and made many most valuable observations. The description of the crater of the volcano is best given in his own words.

"When night fairly set in we went up to view the interior of the crater. The atmosphere was cool and tranquil. We could hear the deadened roar of the steam-blasts as they escaped from time to time. Our long rope had been fixed both to guide in the darkness and to lessen the chance of disturbing the equilibrium of the slope of ashes. Grasping it, I made my way upwards, prepared for something dramatic, for a strong glow on the under side of the steam clouds showed that there was fire below. Crawling and grovelling as the lip was approached I bent eagerly forward to peer

of the diameter of the crater, the pipe of the volcano, its channel of communication with lower regions, filled with incandescent, if not molten, lava, glowing and burning; with flames travelling to and fro over its surface, and scintillations scattering as from a wood-fire; lighted by tongues of flickering flame, which issued from cracks in the surrounding slopes."

Mr. Whymper brought away with him samples of the jagged crest and debris of the terminal slope, but the natives, who were determined that he was hunting for treasure among the mountains, would not be persuaded that the lumps of rock wrapped in paper were not gold.

But there were still more worlds to conquer, and Mr. Whymper ascended Sincholagua, Antisana, Cayambe, and several other mountains, besides climbing Chimborazo for the second time. But Mr. Whymper did not confine himself to mountain work, he also visited some of the towns, and examined the Pyramids of Quito. The history of these monuments is very interesting. They were erected to mark the base-line which was measured, in 1836, by La Condamine and his associates, when, in consequence of the discussions which had arisen as to the figure of the earth, they were sent out by the French Academy of Science, at the beginning of the last century. They commenced their work on a plain to the north-east of Quito by measuring a very long base line, and from its end carried a chain of triangles over more than three degrees of latitude. Towards the end of their work they measured a base of verification near Cuenca, and found its length by direct measurement differed from the calculated length by less than two feet. The *toise* which the French Academicians took out as their unit of measure was a bar of iron, and it has ever since been known as "the *toise* of Peru." As it was desired that the length of the baseline should be preserved La Condamine determined to mark the ends with permanent monuments. With this intent he built the Pyramids; but, unfortunately, orders were given that they should be erased in 1747. They were afterwards re-erected, but the then President of Ecuador so little appreciated the purpose for which they were designed that he moved one of them some hundreds of feet to one side in order that it might be better seen. Thus, though the labors of the Academicians are after a fashion, commemorated, the base line of the Condamine is lost forever. Mr. Whymper pays a well-deserved tribute to his right hand man and trusted assistant, J. A. Carrel, who died in 1890.

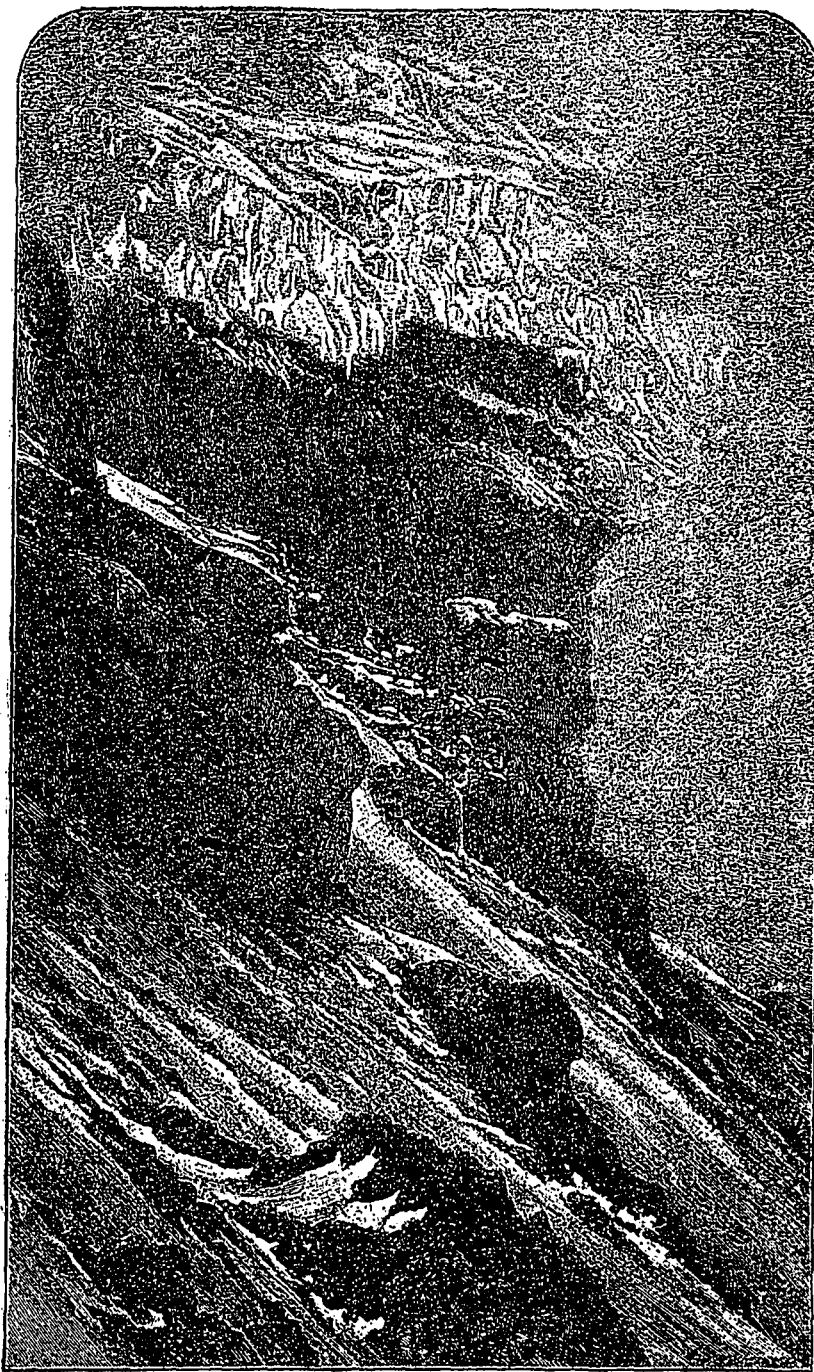
In addition to studying the mountain sickness and making many barometrical observations, Mr. Whymper collected botanical and entomological specimens with the greatest enthusiasm. The result of his entomological researches is contained in a supplementary volume, most fully and admirably illustrated with engravings of the Coleoptera and other specimens described. It is not often that a book of such solid value is so entertaining and readable, and as most of the scientific matter is placed in the appendices or in the supplementary volume, the accounts of the mountain ascents may be thoroughly enjoyed by those who care more for travel than for scientific investigation.

HELP BETTER THAN SYMPATHY.

A little help is worth a lot of sympathy, and a little self-denial is worth a lot of talk. A veteran in the Temperance cause "twenty-three years ago put the boys in one side of the balance of affection, and his pipe (of which he was very fond) in the other, and made it a matter of prayer as to which he ought to love best. Of course, the boys' side went down, as they would say, flop, and the pipe and its belongings perished by fire, and the modest sixpence per week that his tobacco used to cost him he devoted to the circulation of Temperance literature."—*English Paper*.

NEVER GIVE UP.

Never give up! it is wiser and better Always to hope than once to despair; Fling off the load of doubt's cumbering fetter And break the dark spell of tyrannical care; Never give up or the burden may sink you, Providence kindly has mingled the cup; And in all trials and troubles bethink you The watchword of life must be,—never give up. —*Tupper*.



ICE-CLIFFS UNDER THE SUMMIT OF CHIMBORAZO.
From Mr. Whymper's "Travels Amongst the Great Andes."

the mercury falling to 14.100 inches, with a temperature of 21 deg., Fahr., and returned to camp after nightfall, having been on foot for nearly sixteen hours. The engraving of the ice-cliff under the summit of Chimborazo is from a photograph taken by Mr. Whymper at an altitude of 18,500 feet, and is supposed by him to be the spot at which Humboldt and Boussingault stopped. The view from this position is one of the most striking upon the mountain.

Owing to his carelessness the ascent of Chimborazo resulted in severe frost-bites for Louis Carrel and necessitated a return to the lowlands in search of a doctor. In consequence, Mr. Whymper gave up any further attacks on Chimborazo for the time, and, after some minor explorations, started for the ascent of the great volcano Cotopaxi. The journey was rendered difficult by the volcanic ash which afforded no

into the unknown, with Carrel behind gripping my legs. The vapors no longer concealed any part of the vast crater, though they were there, drifting about, as before. We saw an amphitheatre, 2,300 feet in diameter from north to south, and 1,650 feet across from east to west, with a rugged and irregular crest, notched and cracked; surrounded by cliffs, by perpendicular and even over-hanging precipices, mixed with steep slopes, some bearing snow, and others apparently encrusted with sulphur. Cavernous recesses belched forth smoke; the sides of cracks and chasms no more than half-way down shone with ruddy light; and so it continued on all sides, right down to the bottom, precipice alternating with slope, and the fiery fissures becoming more numerous as the bottom was approached. At the bottom, probably twelve hundred feet below us, and towards the centre, there was a rudely circular spot, about one-tenth