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THE STORY OF ALPINE CLIMBING

FRANCIS GRIBBLE

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THE STORY OF ALPINE CLIMBING

BY FRANCIS GRIBBLE

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THE STORY OF ALPINE CLIMBING

Monument to De Saussure at Chamonix.

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THE STORY OF ALPINE CLIMBING.

CHAPTER I.

ALPINE climbing is distinctly a modern enterprise. As a sport it is usually dated from the ascent of the Wetterhorn by Mr Justice Wills, then Mr Alfred Wills of the junior bar, in 1854; and the English Alpine Club—which was the first of all the Alpine Clubs—was not formed until three years later. Explorers and men of science, however, had had adventures on the mountains before the sportsmen repaired to them for athletic exercise, so that the threads of the story of the pastime have to be picked up from somewhat further back.

First let us note that the attitude of our forefathers towards the mountains was very different from ours. The Hebrews, indeed, had a regard for them, speaking with reverence of "high places," and relating that the Table of the Law was delivered to Moses upon one mountain, and that the prophets of Baal were put to confusion by Elijah upon another. Sinai and Carmel, however, are quite minor eminences; and the Hebrew view was, in any case, exceptional. By

ordinary men of other races mountains were looked upon, at least until the end of the eighteenth century, as obnoxious excrescences and inconvenient barriers to commercial intercourse, equally devoid of interest and of beauty. Dr Johnson, when he returned from the Highlands of Scotland, reported that "this uniformity of barrenness can afford very little amusement to the traveller." John Evelyn, the diarist, who crossed the Simplon in 1646, perceived only "horrid and fearfull craggs and tracts." Bishop Berkeley, on the Mont Cenis Pass, was "put out of humour by the most horrible precipices." "Every object that here presents itself is excessively miserable," is Richardson's typical comment on Lans-le-bourg. Goldsmith complains of hills that they "interrupt every prospect"; while Bishop Burnet was quite sure that mountains "have neither form nor beauty," but "are the vast ruins of the first world which the Deluge broke into so many inequalities."

These petulant protests, however, are far surpassed by the violent outburst of Master John de Bremble, a monk of Canterbury, who crossed the Great Saint Bernard in 1188, and gave an account of his experiences in a letter to his sub-prior, quoted in Stubbs' "Lectures on Modern and Mediæval History." "I have been," he writes, "on the mount of Jove; on the one hand looking up to the heavens of the mountains, on the other shuddering at the hell of the valleys, feeling myself so much nearer heaven that I was sure that my prayer would be heard. 'Lord,' I said, 'restore me to my brethren, that I may

tell them that they come not to this place of torment.' Place of torment, indeed, where the marble pavement of the ground is ice alone, and you cannot set your foot safely; where, strange to say, although it is so slippery that you cannot stand, the death into which there is every facility for a fall is certain death."

So long as such opinions of mountains were prevalent, ascents were naturally few. No man, in those days, went out of his way to look for mountains in order that he might climb them; and only an exceptional man here and there, happening to find himself at the foot of a mountain, was impelled by bravado or curiosity to try to find a way to the top of it. The recorded achievements of the kind are few enough to be counted on the fingers.

1. Livy relates that Philip of Macedon made an ascent of Hæmus, in the Balkans. He took four days to climb it, and expected to obtain a simultaneous view of the Ægean and Adriatic seas from the summit, but did not succeed in doing so.

2. Spartianus, the chronicler, records that the Roman Emperor Hadrian ascended Etna to see the sunrise from the summit, but he gives no details of the ascent, which may be presumed to have been uneventful.

3. At some uncertain date in the Dark Ages there was an ascent of Roche Melon, then known as Mons Romuleus, inaccurately believed to be the highest mountain in Savoy. There was a legend that "a certain monstrous and avaricious King Romulus" had secreted treasure on the

mountain, and the climbers, as may be read in "The Chronicle of Novalesa," set out to look for it. A fog descended upon them, however, and they, "caught in the darkness of the mist, and fumbling about them with their hands, with difficulty made their escape through the gloom"; while "it seemed," they said, "that stones were being showered upon them from above." A second attempt was made by ecclesiastics, commissioned by a "very avaricious nobleman," but with no better success: "They started carrying a cross and holy water, and singing litanies and *Vexilla Regis*, but before they got to the top they were turned back ignominiously, just like their predecessors."

3. The Chronicle of Fra Salimbene of Parma speaks of an ascent of Pic Canigou in the Pyrenees, by Peter III. of Arragon, who lived from 1236 to 1285. The height of that mountain is only 9135 feet, though it was then believed to be the loftiest Pyrenean peak; but the climber had remarkable adventures. There was a thunderstorm, and the king's companions were alarmed: "They threw themselves upon the ground and lay there, as it were lifeless, in their fear and apprehension of the calamities that had overtaken them." King Peter, therefore, went on alone: "And when he was on the top of the mountain he found a lake there; and when he threw a stone into the lake, a horrible dragon of enormous size came out of it, and began to fly about in the air, and to darken the air with its breath." So Peter returned and told the story to his companions. "It appears to me," says Fra Salim-

bene, "that this achievement of Peter of Arragon may be compared with the achievements of Alexander."

5. Petrarch, when living in retirement at Vaucluse, in 1335, made an ascent of Mont Ventoux in Provence, 6430 feet high, the greatest mountain in the neighbourhood. He described the expedition in a letter to his confessor, Father Denis di Borgo San Sepucro. A peasant, he says, tried to dissuade him from his endeavour, "telling us that some fifty years before, he had been invited to go to the summit by the ardour of youth, that he had got nothing by it but discouragement and fatigue, and that his body as well as his cloak were torn by the rocks and brambles." The poet, however, persevered, and reached his goal. He admired the view, and found the ascent an allegory of human life. "I only wish," he wrote, "that I may accomplish that journey of the soul, for which I daily and nightly sigh, as well as I have done this day's journey of the feet, after having overcome so many difficulties. And I do not know whether that pilgrimage, which is performed by an active and immortal soul in the twinkling of an eye, without any local motion, be not easier than that which is carried on in a body worn out by the attacks of death and of decay, and laden with the weight of heavy members." And of his return, accomplished in silence, he wrote: "At every step I thought, if it cost so much sweat and toil to bring the body a little nearer to heaven, great indeed must be the cross, the dungeon, and the sting which should terrify

the soul as it draws nigh unto God, and crush the turgid height of insolence and the fate of man."

6. Leonardo da Vinci climbed, or to be accurate, made a partial ascent of, a mountain which he calls "Monboso," and which can be almost certainly identified with Monte Rosa. The passage in his literary works, translated by Mrs R. C. Bell, which bears upon the subject, runs as follows :—

"No mountain has its base at so great a height as this, which lifts itself above almost all the clouds; and snow seldom falls there, but only hail in the summer when the clouds are highest. And this hail lies (unmelted) there, so that if it were not for the absorption of the rising and falling clouds, which does not happen more than twice in an age, an enormous mass of ice would be piled up there by the layers of hail; and in the middle of July I found it very considerable, and I saw the sky above me quite dark, and the sun as it fell on the mountain was far brighter than here in the plains below, because a smaller extent of atmosphere lay between the summit of the mountain and the sun."

7. Charles VII. of France, passing through Dauphiné, was struck by the appearance of Mont Aiguille, then called Mont Inaccessible. It is a rock mountain of no great height, but very difficult, draped nowadays with ropes, like the Matterhorn. The king ordered his chamberlain, the Lord of Dompjulian and Beaupré, to go and climb it. The ascent was successfully accomplished, and an account of it is preserved in manuscript in the Grenoble Archives, and has

been printed in the *Annuaire de la Société des Touristes du Dauphiné.* "Subtle means and engines" were employed, and Dompjulian "had the mountain named in the name of the Father, the Son, and the Holy Ghost," and had mass said upon it, and caused three crosses to be set up. "You have," he says, "to ascend half a league by ladder, and a league by other ways," and "it is the most horrible and frightful passage that I or any of my company have ever seen." He remained two days upon the summit, and built a hut there. The Usher of the Grenoble Parliament, sent to see how he was getting on, came back reporting that "he was unwilling to expose himself by reason of the danger that there was of perishing there, and by reason of the impossibility of getting there, for fear lest he should seem to tempt the Lord, since at the mere sight of this mountain everyone was terrified." The mountain was not climbed a second time until a peasant got to the top in 1834.

8. An attempt to ascend the Pic du Midi in the Pyrenees in 1588 is also interesting. The hero of the adventure was François de Foix, Comte de Candale, and Bishop of Aire in Gascony, the translator of the works of Euclid into French. He made his excursion after taking the waters at Eaux Bonnes, and the story is to be found in the Chronicles of De Thou. The narrative is in the shape of a report of M. de Candale's table talk.

"M. de Candale told them," we read, "that he resolved to climb to the top of the highest mountain . . . that while he was making ready

everything that he judged necessary for the accomplishment of his design, several gentlemen and other young persons, wearing nothing over their vests so as to be less encumbered, offered to accompany him; that he warned them that the higher they got the colder they would feel—a statement which only roused their mirth; that for his own part he had his fur coat carried by peasants who knew the neighbourhood; that towards the middle of the month of May, at about four o'clock in the morning, they got high enough to see clouds under their feet; that the cold then gripped the young people who were in so great a hurry, so that they could go no further; that as for himself he put on his coat, and walked with precaution, accompanied by those who had the courage to follow him; that he ascended as far as a place where he found the lairs of wild goats . . . that up to that point they had found marks blazed on the rocks by people who had been up there before; but that then they saw no further path, and that, to reach the summit, they still had to go a distance equal to that which they had already covered; that the cold and rarefied air which surrounded them caused them sensations of giddiness which made them fall down in their weakness, so that they had to rest and take some food; that after having wrapped up his head he made his way by a fresh route . . .; that when the rocks resisted their endeavours, they made use of ladders, grapnels, and climbing irons; that, by this means, he got as far as a place where they no longer saw any trace of wild beast or bird,

though they saw birds flying about lower down; that, nevertheless, they were not yet at the top of the mountain; that in the end he got to it, or within a very little distance of it, with the aid of certain hooked sticks, which he had had made after an extraordinary pattern."

It may be added that M. de Candale proceeded to measure the mountain, and that, though his methods are incomprehensible, his results are not far removed from accuracy.

9. Finally, we may cross the Atlantic, and note an early ascent in Mexico. By far the most remarkable ascent of the period now under review was that of the volcano Popocatapetl (17,852 feet) bv certain of the soldiers of Cortez. Cortez himself is our authority, and an extract from his despatches may appropriately be given.

"In my former relation," he writes to the King of Spain, "I informed your Majesty that near the provinces of Tlascala and Guagocingo there is a conical mountain of great height, from which smoke issues almost continually, and mounts in a straight column like an arrow. As the Indians told us it was dangerous to ascend this mountain, and fatal to those who made the attempt, I caused several Spaniards to undertake it, and examine the character of the summit. At the time they went up so much smoke proceeded from it, accompanied by loud noises, that they were either unable or afraid to reach its mouth. Afterwards I sent up some other Spaniards, who made two attempts, and finally reached the aperture of the mountain whence the smoke issued, which was two bowshots wide, and about three-fourths of a league in

circumference; and they discovered some sulphur around it, which the smoke deposited. During one of their visits they heard a tremendous noise, followed by smoke, when they made haste to descend, but before they reached the middle of the mountain there fell around them a heavy shower of stones, from which they were in no little danger. The Indians considered it a very great undertaking to go where the Spaniards had been."

Other accounts show that the party suffered badly from mountain sickness, and the leader of the successful ascent, Don Francisco Montaño, was lowered in a basket into the crater to a depth of four hundred feet to collect sulphur which the army wanted for its gunpowder. He gathered sufficient for immediate needs, but a judicious report was sent home to the effect that it would on the whole be more convenient to import gunpowder ready made from Spain.

CHAPTER II.

So far our story has made no mention of the Swiss Alps. Climbing in Switzerland was, in fact, begun at about the time of the Reformation, chiefly by divines and savants of the German-speaking cantons. Its actual origin is lost in the mists of obscurity, but we may begin by noting an account of a picnic on the Stockhorn, near Thun, written in Latin hexametres in 1536 by one Johann Müller, a Berne professor. I printed both the Latin text and an English translation in

"The Early Mountaineers," and I may quote a few lines of my rendering here. The passage describing the banquet on the summit will serve as well as any :—

Thus to deceive the tedious hours we tried,
And then went up a ridge scarce three feet wide,
Thence over fields and pasture lands until,
Through rocks, and towering crags, we've climbed the hill,
And reach the Stockhorn's top. Whence, looking down,
Eastward we see lakes, marshes, and a town,
The torrents of the Simmenthal—to west
Mountains like billows on the sea's broad breast.
Our eyes are sated ; tis our stomach's turn.
Making a rock our table, we adjourn
To chamois' shoulder, wine, and bread and cheese—
Our rude forefathers lived on meats like these—
The elder Swiss, who craved nor foreign spice,
Nor foreign wars, but peace at any price.

The lines relating to the supper after the day's work was done may perhaps be given too :—

Again we reach the Erlenbachian mead,
And forthwith seek the shelter that we need,
And give our weary limbs a little rest,
When, lo, a banquet of the very best
Is spread, and we're invited to partake,
Though only one of us was wide awake—
To wit Pelorus—all the rest were "done"
By their exertions and the blazing sun.
'Twas nothing. Only we were grieved because
It forced a breach of hospitable laws,
And thanks could not be rendered to the toasts
Of welcome showered upon us by our hosts. . . .

Supper done
We rose and said good-bye to everyone,
Vowed that, so long as life stayed with us yet,
Their hospitality we'd ne'er forget.
Then once more started on the homeward track,
And some time the next day to Berne got back.

This is quite in the modern spirit, but it stands alone. We do not read of other picnics on the Stockhorn. The only mountain, in fact, which at this stage aroused a sustained interest, was Pilatus; and the interest in Pilatus was, in the first instance, if not in the last resort, an interest in a certain ancient legend.

Pontius Pilate, it was believed, was condemned to death by the Emperor Tiberius, but committed suicide while awaiting execution. His body, weighted with a stone, was cast into the Tiber, but was taken out again because the pollution of the river resulted in thunderstorms. Then it was cast into the Rhone at Vienne, and similar disturbances ensued. Finally it was carried to the little lake, now only a marsh, close to the top of Pilatus, and allowed to remain there. And the story ran that once a year Pilate was suffered to leave his watery prison, and to sit, clothed in scarlet, on a rock, and that anyone who happened to see him sitting there would die within the twelvemonth; and that if stones were at any time cast into the lake, Pilate would assert himself and stir up "diabolical machinations and ebullitions." The story frightened the superstitious, but allured the curious, who thought that the truth of it might as well be tested by experiment.

In the Dark Ages, and even after the dawn of civilisation, access to the mountain was, if not actually forbidden, at all events jealously restricted. No one was allowed to climb it without the leave of the Municipality, which was only accorded on condition that the climber should be

Pilatus. Panorama from Tomlishorn.

accompanied by a respectable burgher of Lucerne to see that he did nothing calculated to provoke the Evil Spirit. It is said that climbers were sometimes put to death for violation of this rule, and we have the text of the sentence of a Lucerne Court condemning six clergymen to imprisonment for transgressing it. As time passed, however, permission for the ascent came to be more easily accorded, and descriptions of several such ascents have been preserved. In 1518, for example, two parties reached the top. One of the climbers was Duke Ulrich of Wurtemberg, then living in exile, who, just like a modern tripper, cut his initials on a rock. Another was the scholar known as "Vadianus," though his real name was Joachim von Watt.

Vadianus, after occupying a professorial chair at Vienna, had set up as a doctor at Saint Gall. The investigation of the legend seems to have been the only object of the excursion. He describes as "arrant nonsense" the belief that, on the Wednesday next before Easter, Pilate comes out of the water to sit upon a rock; but he finds the other half of the story more credible.

"I cannot at present say," he writes, "whether things are or are not as the common talk of the inhabitants avers, for I was not allowed to make experiments. . . . None the less I am moved to accept the greater number of their stories in view of the marvels of nature which are established by the experience and authority of many observers, and have received confirmation in almost every quarter of the globe. Not to mention that the

character of the place seemed to me to correspond readily enough with the story that is told about it."

After Vadianus comes Conrad Gesner, the eminent naturalist of the University of Zurich. He, first among those who climbed mountains, had the temper of the mountaineer as well as of the scholar. We have a letter of his in which he announces his resolution "to climb mountains, or at all events to climb one mountain every year . . . partly for the sake of studying botany, and partly for the delight of the mind and the proper exercise of the body." He adds that, on the mountain top, "the mind is strangely excited by the amazing altitude, and carried away to the contemplation of the great Architect of the Universe." And he followed in the steps of Vadianus, and climbed Pilatus in the year 1555.

His pamphlet on his ascent is an eloquent eulogy on the pastime of climbing. Everything pleases him : the views, the fragrant scent of the flowers and grasses, the songs of the birds, the "agreeable confections of milk," the purity of the air "not infected with thick vapour as in the plains, or fœtid and laden with disease as in the cities," the exercise, and even the hardship and exposure. "You see," he writes, "there are no bedsteads, no mattresses, no pillows. Feeble and effeminate man. Hay shall serve you in place of all of these. It is soft and fragrant, a mixture of the most wholesome grasses and flowers, and will make your breathing in the night time more pleasant and restorative than heretofore."

Then follows the description of the climb, which was not quite so easy as it is nowadays :—"We climbed for a long distance up a very difficult hill, where there is no path, and in places crawled up it, clutching at the turf." And so the Lake of Pilate was reached, and as for the Pilate legend, Conrad Gesner does not believe a word of it. "For my own part," he says, "I am inclined to believe that Pilate has never been here at all, and that even if he had he would not have been accorded the power of either benefiting or injuring human kind. . . . If there is any sorcery in the lake it is not the work of Nature but of some evil spirit, whether you call that evil spirit Pilate or by some other name." But he is not, and he holds that no one should be, afraid of evil spirits. For "if a man confront them in a truly pious and believing frame of mind, relying upon nothing but divine favour and support, strong in his contempt for them, and firm in his persuasion that the things which they do are the work neither of God nor of Nature, that man will assuredly remain tranquil of soul, and unharmed in body and estate." Evil spectres and the like "are quite powerless to harm the pious who worship the one celestial light, and Christ the Sun of Justice."

It was a robust utterance which the spirit of the times sealed with its approval. The legend which Conrad Gesner thus discussed with dispassionate scepticism was, thirty years later, laughed out of existence. Pastor Johann Müller of Lucerne went up the mountain in 1585, accompanied by his flock, and threw stone after

stone into the lake, challenging Pilate to do his worst; and as Pilate did not pick up the gauntlet flung down to him in the presence of so many witnesses, the belief in his diabolical machinations had necessarily to be abandoned.

So much for Conrad Gesner. If he cannot be said to have founded a school of climbers, he may at least be said to have been the pioneer of Alpine writers. Several of his successors in the professorial chair at Zurich contributed important works to this branch of literature. The most notable names are those of Josias Simler and Johann Jacob Scheuchzer.

Simler was the first author of a formal treatise on snow-craft. His volume, "Concerning the Difficulties of Alpine Travel and the Means by which they may be Overcome," tells us a great deal that is not yet out of date about the use of alpenstocks and clampons and snow spectacles, and the best means of crossing crevassed glaciers and avoiding avalanches. Scheuchzer spent several summers in the high Alps between 1702 and 1711, and wrote a large book, dedicated to our own Royal Society, describing his observations and experiences. He is hardly to be spoken of as a mountaineer. He was a good deal less of a mountaineer than Conrad Gesner, seeing that he stopped short of the top of Pilatus, "partly because of bodily fatigue and partly because of the distance remaining to be traversed," and remarked that "the climbing of mountains takes one's breath away, though agreeable conversation may diminish the unpleasantness." He was, however, a conscientious observer and an original

thinker, the first man of science who put forward a theory as to the causes of the movement of glaciers, and the populariser of the belief that the high Alps are the haunt of dragons.

Scheuchzer, it seems, was shown a so-called "dragon-stone" in some collection of curiosities at Lucerne; a dragon-stone being a stone that you can cut out of the head of a dragon if you can catch the dragon asleep. It is a valuable medicament for a long list of complaints, ranging from bubonic plague to bleeding of the nose. From the existence of dragons, Scheuchzer maintains, the existence of dragons may logically be inferred. The next thing, therefore, was to find the dragons, or if that were impossible, to find people who had seen them; and the Professor devoted himself earnestly to this task. He did not, indeed, manage himself to meet a dragon, but he met plenty of people who told him dragon stories. Johann Tinner of Frumsen, for example, had seen a dragon:—

"Its length, he said, was at least seven feet; its girth approximately that of an apple tree; it had a head like a cat's, but no feet. He said that he smote and slew it with the assistance of his brother Thomas. He added that before it was killed, the people of the neighbourhood complained that the milk was withdrawn from their cows, and that they could never discover the author of the mischief, but that the mischief ceased after the dragon had been killed."

Then there was the dragon seen by Johann Bueler of Sennwald. It was "an enormous black beast," standing on four legs, and having a crest

six inches long on its head. Finally there was yet another kind of dragon seen by Christopher Schorer, Prefect of Lucerne, who reported as follows:—

"In the year 1649, I was admiring the beauty of the sky by night, when I saw a bright and shining dragon issue from a large cave in the mountain commonly called Pilatus, and fly about with rapidly flapping wings. It was very big; it had a long tail; its neck was outstretched; its head ended with a serpent's serrated jaw. It threw out sparks as it flew, like the red-hot horse-shoe when the blacksmith hammers it. At first I imagined that what I saw was a meteor, but after observing it carefully, I perceived that it was a dragon from the nature of its movements and the structure of its limbs."

Such are a few representative dragon stories. Anyone who can read Latin will find many other stories like them in Scheuchzer's "Itinera Alpina," where the narratives are supported by pictures of convincing ghastliness. It is hard to believe that they appeared only two hundred years ago, in the enlightened age of Anne. But that age was really a good deal less enlightened than it is sometimes supposed to have been, and the belief in dragons was not, after all, so irrational as the belief in witchcraft which intelligent men still held, and against which the credulous Professor Scheuchzer protested energetically.

CHAPTER III.

It was not until long after the minor ascents mentioned in the previous chapters that the climbing of the real snow-peaks began.

The first experience of snow-craft was acquired by the crossing of high passes in the way of business. Josias Simler, as we have seen, knew a great deal about it, though he does not tell us whether he himself ever ventured on a glacier or not; and there is plenty of evidence that the glacier passes were used long before Simler was born. Roman coins of the reigns of Nerva, Marcus Aurelius, Diocletian, Theodosius, and other Emperors have been picked up at the top of the Théodule, and it is not to be supposed that they have been dropped there by modern collectors. The top of the Breithorn being only an easy walk from the top of the Théodule, it is even credible that some ancient Roman may have turned aside to make that popular ascent, but we have no proof that any ancient Roman actually did so. So far, in fact, as snow peaks are concerned, the story of Alpine climbing begins with the ascent of the Titlis by a monk of Engelberg in 1739. Here again, however, we are speaking of an isolated feat of which we know no particulars, and which certainly gave no stimulus to mountaineering, since there was no second ascent of the Titlis until that of Dr Freygrabend, about fifty years afterwards. The continuous story of Alpine climbing only commences with the discovery of Chamonix in 1741.

To speak of the discovery of Chamonix as having been made in 1741 is, of course, to speak loosely. The place was known from a much earlier date to the tax-gatherers, the bishops, and even the geographers. Saint Francis de Sales is known to have been there; the name is printed in an atlas of 1595; a French writer, René Le Pays, dated a letter from "Chamony en Fossigny" in 1669. From Geneva, however, no one went there, the relations between Geneva and Savoy having long been strained, and the inns of Savoy being reputed dirty and uncomfortable. The place, consequently, was a *terra incognita*, and travellers were hardly even aware of the existence of Mont Blanc. Bishop Burnet, the first English traveller to mention it, only does so in the following vague sentence:—

"One hill not far from Geneva, called Maudit or Cursed, of which one-third is always covered with snow, is two miles of perpendicular height, according to the observation of that incomparable Mathematician and Philosopher, Nicolas Fatio Duilio, who at twenty-two years of age is already one of the greatest men of his age, and seems to be born to carry Learning some sizes beyond what it has yet attained."

In 1741, however, there happened to be at Geneva a considerable colony of young Englishmen, of which the most notable members were William Windham of Felbrigg Hall in Norfolkshire, and his tutor, Benjamin Stillingfleet, the grandson of the great bishop of that name. Windham was an active young athlete, known after his return to London as "boxing

Windham." His life at Geneva seems to have been rather lively, since the archives record that he was fined for assault, and trespassing, and other offences; but a more important result of his high spirits was that, when he heard vague rumours of marvellous sights to be seen at Chamonix, he made up his mind to organise a party and go there. His party consisted of himself and his tutor, Dr Pococke, the Oriental traveller, Lord Haddington and his brother, Mr Baillie, Mr Chetwynd, Mr Aldworth Neville, and Mr Price of Foxley, an amateur artist of some merit. He reached Chamonix without difficulty, and on his return, he wrote, or perhaps his tutor wrote for him, an account of the excursion which, being first published in French in the *Journal Helvétique* of Neuchatel, and then in English, in London, first drew the attention of the world to the remote mountain valley. We need not trouble about his adventures by the way, but some of the later portion of his narrative should certainly be quoted. It is printed at length in both "The Early Mountaineers" and "The Annals of Mont Blanc."

Let us begin with the arrival of the travellers at their destination:—

"We continued our Journey," we read, "on to Chanouny, where is a Village upon the North-side of the Arve, in a Valley, where there is a Priory belonging to the Chapter of Sallanches; here we encamped, and while our Dinner was preparing, we enquired of the People of the Place about the Glacieres. They showed us at first the Ends of them, which reach into the Valley, and

were to be seen from the Village; these appeared only like white Rocks, or rather like immense Icicles, made by Water running down the Mountain. This did not satisfy our Curiosity, and we thought we were coming too far to be contented with so small a Matter; we therefore strictly enquired of the Peasants whether we could not by going up the Mountain discover something more worthy our Notice. They told us we might, but the greatest part of them represented the Thing as very difficult and laborious."

Labour and Difficulty, however, did not deter the Party. They engaged Guides and Porters, and set out for the Montanvert, making the following rules for their comfort and safety:—

"That no one should go out of his Rank, that he who led the Way should go a slow and even Pace; that whoever found himself fatigued or out of Breath might call for a Halt; and lastly, that whenever we found a Spring we should drink some of our Wine, mixed with Water, and fill up the Bottles we had emptied with Water, to serve us at other Halts where we should find none."

Then follows the description of the ascent:—

"We were quickly at the Foot of the Mountain, and began to ascend through a very steep Path through a Wood of Firs and Larch Trees. . . . After we had passed the Wood, we came to a kind of Meadow, full of large Stones, and Pieces of Rocks, that were broken off, and had fallen down from the Mountain; the Ascent was so steep that we were obliged sometimes to cling to them with our Hands, and make use of Sticks

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with sharp Irons at the Ends, to support ourselves. Our Road lay slantwise, and we had several Places to cross where the Avalanches of Snow were fallen and had made terrible Havock; there was nothing to be seen but Trees torn up by the Roots, and large Stones, which seemed to lie without any Support; every Step we set the Ground gave way, the Snow which was mixed up with it made us slip, and had it not been for Staffs and our Hands, we must many times have gone down the Precipice. We had an interrupted view quite to the Bottom of the Mountain, which we had the Pleasure of beholding, and the Steepness of the Descent, joined to the height where we were, made a View terrible enough to make most People's Heads turn. In short, after climbing with great Labour for four Hours and three-quarters, we got to the Top of the Mountain, from whence we had the Pleasure of beholding Objects of an extraordinary Nature."

As a description of an ascent of the Montanvert the passage may perhaps seem over sensational, but it is just to remember that the path of those days was not like the path of the present time, and that Windham was making the excursion rather early in the season. He goes on to describe the descent of the hill on to the glacier:—

"As far as our Eyesight could reach, we saw Nothing but this Valley; the Height of the Rocks which surrounded it made it impossible for the Eye to judge exactly how wide it was; but I imagine it must be near three-quarters of a

League. Our Curiosity did not stop here, we were resolved to go down upon the Ice; we had about four hundred Yards to go down, the Descent was excessively steep, and all of a dry crumbling Earth, mixt with Gravel, and little loose Stones which afforded us no firm Footing; so that we went down partly falling, and partly sliding on our Hands and Knees. At length we got upon the Ice, where our Difficulty ceased, for that was extremely rough, and afforded us good Footing; we found in it an infinite Number of Cracks, some we could step over, others were several Feet wide. These Cracks were so deep that we could not even see the Bottom; those who go in search of Crystal are often lost in them, but their Bodies are generally found again after some Days, perfectly well preserved. All our Guides assured us that these Cracks change continually, and that the whole Glaciere has a Kind of Motion. In going up the Mountain we often heard something like a Clap of Thunder, which, as we were informed by our Guides, was caused by fresh Cracks then making; but as there were none made while we were upon the Ice, we could not determine whether it was that, or Avalanches of Snow, or perhaps Rocks falling; though since Travellers observe that in Greenland the Ice cracks with a Noise that resembles Thunder, it might very well be what our Guides told us. As in all Countries of Ignorance, People are extremely superstitious; they told us many strange Stories of Witches, etc., who came to play their Pranks upon the Glacieres, and dance to the Sound of Instruments. . . .

"There is Water continually issuing out of the Glacieres, which the People look on as so very wholesome that they say it may be drank of in any Quantities without Danger, even when one is hot with Exercise.

"The Sun shone very hot, and the Reverberation of the Ice, and circumjacent Rocks, caused a great deal of thaw'd Water to lie in all the Cavities of the Ice; but I fancy it freezes there constantly as soon as Night comes on. . . . We found on the Edge of the Glaciere several pieces of Ice, which we at first took for Rocks, being as big as a House; these were Pieces quite separate from the Glaciere. It is difficult to conceive how they came to be formed there.

"Having remained about half an Hour upon the Glaciere, and having drank there in Ceremony Admiral Vernon's Health, and Success to the British Arms, we climbed to the Summit, from whence we came with incredible Difficulty, the Earth giving way at every Step we set. From thence, after having rested ourselves a few Minutes, we began to descend, and arrived at Chamouny just about Sun-set, to the great Astonishment of all the People of the Place, and even of our Guides, who owned to us they thought we should not have gone through with our Undertaking."

Such is the earliest description, in English at all events, of the Mer de Glace. Having visited it, Windham went home, climbing the Môle (6130 feet) upon his way. "We fancied," he says, "that after the Glacieres, every Mountain would be easy to us, however, it took us more

than five Hours' hard Labour getting up, the Ascent being extremely steep." The rest of his paper is principally taken up with practical hints to travellers who might care to follow in his steps. He not only advises them to take thermometers, barometers, a quadrant, and a tent, but adds: "Although we met with Nothing that had the appearance of Danger, nevertheless I would recommend going well armed; 'tis an easy Precaution, and on certain Occasions very useful; one is never the worse for it, and oftentimes it helps a Man out of a Scrape."

The first person who made use of the hints was one Pierre Martel, an engineer of Geneva, who afterwards came to London to teach mathematics, but, not obtaining as many pupils as he would have liked, ultimately emigrated to Jamaica, where he died in 1761. His trip to Chamonix took place in 1741, with four companions: "a Goldsmith very well skilled in Minerals, an Apothecary who was a very good Chemist and Botanist," a Cutler, and a Grocer reputed "to be very curious, which made us," he considers, "a Company pretty well qualified for this Undertaking, especially as each of them, according to his particular Turn, contributed to discover Something."

Martel was well equipped with scientific instruments, and took a number of observations which we will not dwell upon. Like Windham, he went up the Montanvert, and descended thence on to the ice. He also made a map of the glaciers, and noticed many things of which there is no mention

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in Windham's narrative. Of the movement of the glaciers, for example, he writes :—

"It is to be observed that the Glaciere is not level, and all the Ice has a Motion from the higher Parts towards the lower; that is to say, that it Slides continually towards the Outlets into the Valley, which has been remarked by many Circumstances. First, By great Stones which have been carried quite into the Valley of Chamouny; they showed us one of a very large Size, which several old People assured us that they had seen upon the Ice."

He has something to say, too, about the Aiguilles, and is the first writer who mentions Mont Blanc by name :—

"I observed that the Mountains or Points which we saw from the Mountain which we went up are very high, and there are many of them. . . . That which is towards, and which we first discovered before us, is called L'Eguille du Dru; this Point looks very like an Obelisk, the Top of which is lost in the Clouds, making a very acute Angle at the Summit, and not much unlike a great Gothic Tower, built of white and brown Stone, the Parts of which are very rough. For we must observe that the Pieces which fall off break in a Perpendicular Direction, having here and there little Parts by themselves, which make the Mountain look as if it was composed of an infinite Number of little Towers. . . . This Mountain is too steep to have any Ice upon it, or indeed much Snow. The two Points on the West Side are L'Eguille du Montmallet, and Mont Blanc, which is the farthest to the West. 'Tis this

Point of Mont Blanc which is supposed to be the highest in all the Glacieres, and perhaps of all the Alps. Many Persons of the Country who have travelled assured me that they had seen it from Dijon, and others from Langres, which is 135 Miles distance. . . . This Mountain is entirely covered with Ice, quite from the Top down to the Bottom. . . . Upon this Mountain (Montanvert) there rise four Points something like the L'Eguille de Dru, which are called the Points of Charmaux. All these Points are absolutely inaccessible, some by reason of the Ice, which covers their Surface almost entirely, and others on account of their Steepness."

Martel's narrative, together with his map, was printed in the same volume with Windham's; and the joint publication in 1744 may be said to have paved the way for the opening up of Chamonix as a tourist centre. A visit to Chamonix gradually came to be recognised as a proper mode of demonstrating curiosity and enterprise. Dr John Moore, who made the Grand Tour with the Duke of Hamilton tells us that "One could hardly mention anything curious or singular without being told by some of those travellers with an air of cool contempt—'Dear sir, that is pretty well; but, take my word for it, it is nothing to the Glaciers of Savoy!'" The Duc de la Rochefoucauld thought it necessary to go to the glaciers in order to prove that the French were not less courageous than the English. Of his ascent of the Montanvert he tells us that "To avoid tripping, which the stones along the path would have made dangerous, I was obliged

to hang on to the tail of my frock coat, which one of the peasants carried slung over his shoulder." But the visitor whose visit marked the beginning of a new epoch was Horace Benedict de Saussure.

De Saussure was a descendant of an old French family which had emigrated at a time when true religion was held to consist mainly in the persecution of the Protestants. His father was known as a writer on agricultural subjects, and he was connected with the best families of Geneva. His mother brought him up robustly. "She accustomed him from his earliest years," says his biographer, Senebier, "to the privations which belong to the history of the human species; she hardened him to bear the ills resulting from physical fatigue and the inclemency of the seasons; she taught him to bear inconveniences without complaining, and to sacrifice pleasure to duty with a light heart."

It was inevitable that a Genevan so brought up would go to see the glaciers at an early age. De Saussure went there in 1760, at the age of twenty, and his first thought on arriving there was that Mont Blanc ought to be climbed. He understood, however, that one could not set out to climb Mont Blanc with as little preparation as required for the climbing of the Montanvert. The way had first to be found. He therefore offered a reward to any person who would find it, and he also promised to compensate for the loss of his day's work any peasant who seriously but unsuccessfully tried to find it. We shall see how, after many fruitless attempts, the prize was ultimately won by the famous Jacques Balmat.

CHAPTER IV.

MORE than half a century was to pass before De Saussure's reward for the discovery of a practicable route to the summit of Mont Blanc was to be claimed, but climbers were by no means idle in the meantime. De Saussure himself, who had been appointed to a professorship at the Geneva University, and devoted his life to the study of geology, travelled widely, and never missed an opportunity of mountaineering. He ascended Etna, for example, with Sir William Hamilton, and visited the Jura, the Vosges, and the mountain of Dauphiné, besides crossing eight Alpine passes, and making sixteen other excursions to Alpine centres. His letter in reply to his wife's remonstrances against this habit is worth quoting from :—

"In this valley, which I had not previously visited," he writes, "I have made observations of the greatest importance, surpassing my highest hopes; but that is not what you care about. You would sooner—God forgive me for saying so—see me growing fat like a friar, and snoring every day in the chimney corner, after a big dinner, than that I should achieve immortal fame by the most sublime discoveries, at the cost of reducing my weight by a few ounces and spending a few weeks away from you. *If*, then, I continue to take these journeys in spite of the annoyance they cause you, the reason is that I feel myself pledged in honour to go on with them, and that I think it necessary to extend my

knowledge on this subject, and make my works as nearly perfect as possible. I say to myself: 'Just as an officer goes out to assault the fortress when the order is given, and just as a merchant goes to market on market-day, so must I go to the mountains when there are observations to be made.'"

Nor was De Saussure alone in his interest in the peaks and glaciers. From 1760 onwards quite a group of earnest climbers existed at Geneva. To name them all would be to fill the page with a list of names, mostly unfamiliar to the reader. Two of them, however—Marc-Théodore Bourrit, and Jean-André de Luc—have a special claim to honourable mention.

Bourrit was originally a miniature painter; but he began a new life from the day when some friends took him for a picnic to the Voirons whence he saw the snow peaks in all their majesty. He went to Chamonix, was delighted, and determined to devote as much of his life as possible to the exploration of the Alps. An appointment which he obtained as Precentor of the Geneva Cathedral left him with abundant leisure for the purpose. He lived to be eighty, and continued climbing until old age overtook him. It was his great grief that his liability to mountain-sickness prevented him from climbing Mont Blanc after the way up had been found; and he does seem, on the whole, to have been more of an enthusiast than of an athlete. From the strict mountaineering point of view his one notable achievement was the discovery of the passage over the Col du Géant; but his great

merit is that he popularised the Alps. He was the first systematic writer of Alpine books—a branch of literature which earned him the title, of which he was very proud, of the Historian of the Alps. Above all, he insisted, even more eloquently than Conrad Gesner, that a sojourn among the mountains had an elevating influence upon the human mind, and impressed men with the littleness of their every-day pursuits. At Chamonix he had seen persons who habitually quarrelled over politics at Geneva "treating one another with courtesy, and even walking about together"; and he concludes that:—

"It is, in fact, the mountains that many men have to thank for their reconciliation with their fellows, and with the human race; and it is there that the rulers of the world, the heads of the nations, ought to hold their meetings. Raised thus above the arena of passions and petty interests, and placed more immediately under the influence of Divine inspiration, one would see them descend from these mountains, each like a new Moses, bringing with them codes of law based upon equity and justice."

In another passage he tells us how he assembled the guides on the Montanvert, and addressed them as to their duties and responsibilities, and how all his listeners shared in his own intense emotions.

"That," he adds, "is intelligible enough. Can one imagine a more impressive temple, or one in which more greatness is displayed? Is it not there that man feels himself closest to his Creator? Raised, so to say, above the head of

nature, he feels sensations which are perfectly new to him; his soul is purified, and all his thoughts are ennobled."

It should be added that Bourrit had no scientific interest in the mountains. He cared little what rocks they were made of, or what plants grew on their slopes, or by what mechanism the glaciers moved. His rôle was merely to climb, to admire, and to enjoy—a fact which must win him the sympathy of many modern climbers. He was, too, one of the least envious of men. Many of his contemporaries, though less persevering, had better records to show, but he was never jealous of them, and related their feats as enthusiastically as his own. Even Roman Catholic climbers were his brothers. Prior Murith of the Great Saint Bernard was his good friend, and he persuaded a Roman Catholic Archbishop to dispense mountaineers from the obligation of feasting in Lent.

Jean-André de Luc was a man of a very different type. The son of a watchmaker, born at Geneva in 1727, he became a diplomatist, a courtier, and a man of science, the inventor of the hygrometer, a member of the Royal Societies of London, Dublin, and Göttingen, and reader to George III.'s Queen, Charlotte, who gave him apartments at Windsor, where he died at the age of ninety, in 1817. His objects in climbing were almost exclusively scientific, his principal curiosity being to ascertain at what temperature water would boil at various altitudes. But he also made the first ascent of the Buet; and that is the first ascent of a permanent snow peak of

which any proper record has been preserved. The pamphlet in which it is related, "Relation de différents voyages dans les Alpes du Faucigny," is one of the rarest and also one of the most interesting of Alpine books.

The Buet must be known by sight to all visitors to Chamonix. It is not very high (10,201 feet), and it is not very difficult. Ball's "Alpine Guide," in fact, speaks of it as "very easy," and says that a single guide suffices for a large party. Still, it is a conspicuous mountain, and it is a snow mountain, with glaciers, affording a magnificent panorama from its summit. Consequently it attracted the attention of the early travellers; and De Luc's account of his ascent is brightly written, with a pretty vein of sentiment.

His first attempt was made as early as 1765; but having incompetent guides, he lost his way, and smashed his thermometer, without arriving anywhere near the top. On August 24, 1770, he tried again, and with no better success. The guide was a man of whom the party knew nothing, except that they had found him in a chalet making cheese, and they soon had proof that he "was not the expert we required." He first led them the wrong way, and then when De Luc slipped, sat down on De Luc's feet, and sprained his ankle, and then went off to milk his cows, leaving De Luc and his friends to find their way back as best they could. The result was that they were benighted on the hillside, and obliged to sleep in the open, with nothing to protect them from the cold except

the cloth in which their provisions had been carried. They woke up feeling very stiff, and had great difficulty in getting back to Sixt.

They were not discouraged, however, but resolved to try again; and when they had, not without much difficulty, convinced the inhabitants of the valley that they really wanted to climb the mountain, and not to prospect for gold mines, competent guides at last presented themselves, and they set out for the second time on September 20th. After they had spent a night in a chalet at Les Fonds, bad weather drove them back to Sixt. It cleared, however, and they retraced their steps, passed another night in the chalet, and commenced the ascent at a reasonably early hour. The following are the most interesting passages in De Luc's narrative:—

"So far we had ascended by the south face of the mountain on a steep grass slope . . . but when we turned to the west our view of the Alps was interrupted, and we were too busily occupied with climbing to care to look behind us.

"Then we came to the snow, and presently to the ice. It was the foot of the Glacier of the Buet, which covers the entire summit of the mountain. There was snow on it. The previous winter's snow was not entirely melted, and some fresh snow was also lying. The surface of it was very hard because there had been a frost during the night, and the sun was not yet shining on it. This we had foreseen, and we were provided with woollen socks, with which, and with iron-tipped staves, we expected to be easily able to walk.

"For some time we were quite pleased with our device, and ascended a fairly steep slope without slipping. Then suddenly it became so steep that, had it not been for my alpenstock which held me up when I drove it into the hard crust of snow, I might have slided all the way back to Les Fonds. . . . As, however, the slope became gradually less steep towards its lower extremity, there was really nothing to fear if one only retained a little presence of mind.

"But for our guide's help we should never have got to the top, as we were not shod for such an adventure. He had, however, boots with very thick soles, studded with nails, and he kicked the snow hard, ascending slantwise, thus making steps in the crust, which supported him, and in which we followed him, holding ourselves up with our sticks. This method, though all right for ascending, would not have served for the descent; and we should not have faced the risk if we had not felt sure that the sun, when it got round to the west, would soften the surface of the snow. Reassured by the reflection that our retreat was secured, we felt our minds relieved, and abandoned ourselves to our impressions."

And the writer's impressions of the mountain top are thus rendered :—

"It is hard to make oneself understood when one's words do not recall sensations which one's readers have experienced ; I do not flatter myself, therefore, that I shall be able to make my readers feel what we felt. The deepest silence reigned

around us. We felt that the place was not meant for living creatures to frequent. It was, in fact, as unfamiliar to our guide as to ourselves. The chamois never go there, and consequently no chamois-hunter had ever been there either. Yet it was not absolutely without organic life. We saw several flies there, and some bees too, though these were all dead. . . .

"This feeling of solitude was one of the sentiments which we most easily distinguished; but it does not explain our state of mind. We found ourselves on an immense expanse of snow of unvarying whiteness. The rays of the sun, which was beginning to rise, reflected from the surface of the snow, showed how polished it was. We saw absolutely nothing but the snow and the sky, the former ending at the horizon in gently rounded hillocks, resembling the beautiful silvery clouds which sometimes float majestically in a pure atmosphere. And that idea precisely describes our own sensations. We actually seemed to be afloat in the air, supported upon such a cloud. And what an atmosphere it was. Never had we seen the sky of such a colour, bright blue and dark blue at the same time, producing an indescribable impression of immensity.

"It was nearly mid-day when at last we reached the summit, and suddenly lifting our heads to overlook the curtain which had so long veiled our horizon to the East, we had a view of the great chain of the Alps, stretching for a distance of more than fifty leagues. To the West it was only limited by the density of the air; to the South-West it extended to the Mont

Cenis; to the North-East probably to the Saint Gothard. Only a few of the peaks overlooked us.

"The details, no less than the general effect, would have stirred the most indifferent of men to admiration. A single look at the vast quantities of ice and snow that cover the Alps suffices to set one's mind at ease as to the permanence of the Rhone, the Rhine, the Po, and the Danube. There, one feels, is their reservoir, and it would hold out against several seasons of drought. Their sources seemed to us but tiny threads of water in comparison with the valleys packed with ice from which they issued. Mont Blanc, towering above the valleys, seemed capable of supplying a river for ages to come, so loaded was it with snow from base to summit."

Such were the philosopher's reflections. They were interrupted by the shock of the discovery that the whole party was standing on a cornice.

A cornice, it should perhaps be explained, is an unsupported crest of snow, projecting from a cliff, and overhanging a precipice. It is apt, when climbers tread upon it, to break away and let them down. We shall have to speak presently of fatal accidents due to this cause. But Jean-André de Luc, having no experience of cornices, was not alarmed. "Our first movement," he says, "was a precipitate retreat, but having gathered by reflection that the addition of our own weight to this prodigious mass, which had thus supported itself for ages, counted for absolutely nothing, and could not possibly

break it loose, we laid aside our fears, and went back to the terrible terrace." He adds that they took it in turns to advance to the very edge of the cornice and look over it, the man whose turn it was to look being held up by the coat-tails by his friends. As it happened, the conditions were favourable, and the cornice bore their weight, but it was, of course, the merest chance that this famous ascent was not made still more famous by an accident as awful as that which, at a later date, befell Mr Whymper's party on the Matterhorn.

Two years later, De Luc made a second ascent of the same mountain by a different route. The book in which he describes it is called "Lettres physiques et morales sur la Montagne et sur la nature de la Terre et de l'Homme." It is dedicated to Queen Charlotte, the philosopher being engaged at the time when he wrote it in acting as travelling companion to some ladies in whom Her Majesty was interested. No accident happened, except to the philosopher's thermometer, which he knocked over and broke in the chalet in which he spent the night before the climb; but the narrative is pervaded with a delightful Arcadian sentiment, not to be found in any modern Alpine book. The only trouble was on the way down, when first darkness and then a thunderstorm overtook the travellers. After nearly sliding down a grass slope, which terminated in a precipice, they had made up their minds to spend the night upon the mountain, when they bethought themselves of calling for help to the people in the chalet below. A

light was shown in answer to their cries. It disappeared, and reappeared, seeming brighter than at first. A search-party was on its way: "Angels in the guise of mountaineers were making their way to us through the darkness, in spite of the rain, hail, and wind." A bonfire was kindled to direct the lost travellers, and torches were lighted at it. A peasant girl, carrying one of them, "braved every danger in order to come to our rescue."

The girl led the philosophers down, and the chalet gave them shelter for a second night; and the rest must be told in De Luc's own language:—

"In the morning we proposed to pay our hostesses. Ah, how I feel ashamed of myself. . . . They flatly refused to accept anything. However—I must confess it—having noticed that one of them seemed to be less in the position of an independent mistress than the other, I approached her, withdrawing my hand from my pocket. I do not tell this story to her disgrace. Your Majesty will understand if I explain what I read clearly in her face. It was from motives of humanity, and no others, that she had served us. . . . The good deed had been its own reward. . . . She had had no thought of money. Still a whole crown. The sight of it brought out a smile upon her face. . . . Yet the idea of taking payment for such a service. . . . She looked down. . . . Then she put out her hand and took the coin, and grasping my hand shook it in that friendly manner which is the mountaineer's only manner of expressing his esteem. Not otherwise would they shake hands with a queen.

And yet my pleasure at the sight of this woman's gratification was not without alloy; for thus is human nature corrupted. At times I reproach myself; and I should reproach myself perpetually if I thought there were any likelihood that Anterne would become a popular resort of travellers. Nor is this merely a passing reflection. It is a reflection which I have made again and again when I have observed that this is how one alters the character of the reward which good people expect."

Thus Jean-André de Luc. Two other climbs remain to be referred to before we pass on to the great assault upon Mont Blanc. One of our climbers is M. Clément, Curé of Champery. He made, in 1784, the first ascent of the Dent du Midi, but of that ascent we have no particulars. The other climber is M. Murith, Prior of the Great Saint Bernard.

M. Murith was born at Saint Branchier (Valais) in 1752, and died at Martigny in 1818. He was a botanist of some mark, the author of a Botanical Handbook to the Valais, published at Lausanne in 1810; and he regarded the mountains very differently from that earlier ecclesiastic, Master John de Bremble, who spoke of them as a place of torment. The first ascent of the Vélan, in 1779, stands to his credit.

The Vélan is higher than the Buet, its exact altitude being 12,353 feet, and it appears that some unsuccessful attempts to climb it had been made before M. Murith came upon the scene, though no record has been preserved of them. He took with him "two hardy hunters" to carry

provisions and scientific instruments. The hardy hunters were frightened, but M. Murith exhorted them to courage. "Fear nothing," he said, "wherever there is danger, I will go in front." One of them followed him, while the other went off to look for an easier path, lost his way, and wandered about helplessly until M. Murith found him again on his return. Their principal difficulty was a steep slope of ice which the remaining hunter vowed could not be ascended, but M. Murith was equal to his task. "He arms himself," says Bourrit, "with a pointed hammer, knocks holes in the ice wall to thrust his feet into and to clutch hold of with his hands, and so ascends slowly and with difficulty, and at last gets to the top of it." The rest was comparatively easy, though "the effect of the rarefied air had dazed them, and their heads ached."

"Soon," the narrative continues, "there remained nothing for them to do except to climb the rock which forms the peak of the Vélan. It is steep and tolerably high, but hand hold and foothold are given by its cracks and inequalities, and it was not an obstacle that could stop them for a moment after they had surmounted the others. They scale it, and to their surprise, find themselves on a level with the flat surface which forms the top of the mountain. . . . A spectacle not less astounding than magnificent presented itself to the eyes. . . . An impressive stillness, a solemn silence, produced an indescribable effect upon their minds. The sound of the avalanches, repeated by the echoes, alone seemed to mark the march of time. . . . They saw the mountains

Mont Blanc from Le Jardin, Chamonix.

split asunder, and send the fragments rolling to their feet, and the rivers taking their sources beneath them in places where inert nature appeared on the point of death."

And so forth; for we need not give the whole of the eloquent word painting. The mountain, it may be remarked, was not climbed again until 1820, when, as we learn from a quaint anonymous work entitled "A Tour to Great Saint Bernard's and round Mont Blanc," the ascent was repeated by an Englishman.

And now the ground is clear, and we are free to speak of the conquest of Mont Blanc.

CHAPTER V.

EVERYONE who wants to know everything about the early ascents of Mont Blanc must buy or borrow "The Annals of Mont Blanc," by Mr C. E. Mathews. Having discovered and obtained possession of a manuscript diary kept by Dr Paccard of Chamonix, medical practitioner and mountaineer, the associate of Jacques Balmat in the first ascent, Mr Mathews has been able materially to supplement the information given by previous historians of the mountain, and this chapter must necessarily be much indebted to his pages.

We have seen that De Saussure, in 1760, offered a prize to any peasant who would find a practicable route to the top of the great mountain. He repeated the offer in 1762, and in that year one Pierre Simond tried to win the reward.

He made two attempts, one by the Glacier du Géant and the other by the Glacier des Bossons, but did not get very far, and concluded that the complete ascent was impossible. His opinion was generally accepted, and no one tried again for thirteen years. In 1773, in fact, even the enthusiast Bourrit wrote that "it is the greatest mistake to suppose that it would not be impossible to ascend Mont Blanc." In 1775, however, four Chamonix men, Michel and François Paccard, Victor Tissay, and a youth whom Bourrit describes as "the son of the respectable Couteran," renewed the attack. They gained a point which Mr Mathews believes to have been "about midway between the Grands Mulets and the Grand Plateau," when a fog came on and drove them back.

Another interval, this time of eight years, followed. Then a third attempt was made by Jean-Marie Couttet, Lombard Meunier, and Joseph Carrier. One of the party broke down before they had got very far, wanted to be allowed to lie down in the snow and go to sleep, and consequently had to be taken home. Next, in the course of the same year, our friend Bourrit tried, but bad weather compelled him to return. In his own narrative he pictures himself "surrounded by horrible crevasses and great frozen cliffs," but Dr Paccard, who was of the party, declares that "M. Bourrit did not dare to go on the ice." Whichever version of the story be the correct one, Bourrit was not deterred from making another effort in 1784. Unhappily, he was overtaken by moun-

tain-sickness at a height of about 10,000 feet, and found that the guides carrying the wine had gone on ahead, and were out of earshot. He was obliged, therefore, to abandon the enterprise, though his companions went on and attained an altitude of 14,300 feet. Bourrit, as innocent of jealousy as usual, wrote an enthusiastic letter to De Saussure, who came to Chamonix to try the ascent himself in September 1785. Bourrit and his son set out with him. They took with them not only food and scientific instruments, but fifty pounds' weight of fuel, sheets, blankets, and pillows, and a new roof for an old hut. Bourrit, who seems always to have suffered from something, suffered on this occasion from a violent indigestion. He persevered, however, until deep, freshly-fallen snow made further progress impossible. Dr Paccard's diary throws graphic light upon the manner in which the travellers of those days depended upon their guides:—

"M. de Saussure was tied like a prisoner in coming down, with a rope under the arms, to which François Folliguet was attached in front and Pierre Balmat behind. Couttet was in front to mark the steps. M. Bourrit was held by the collar of his coat by Tournier, and was leaning on the shoulder of Gervais. In the difficult places a barrier was made by a bâton, on which M. de Saussure was able to lean, both going up and descending. Young M. Bourrit, almost ill, ascended by holding to Cuidet's coat."

It would seem, however, that the emoluments of the guides were not, according to our modern notions, in proportion to their services. "Each

guide," we read, "had six francs a day, and M. de Saussure, who paid everything, spent 15 louis (25 francs each)." He had come incognito from Geneva, pretending that he was going to the little Saint Bernard.

And now the time had come to introduce Jacques Balmat, the ultimate conqueror of the great white mountain.

Jacques Balmat, the younger of two brothers of the name, was a peasant of the village of Les Pélérins. Born in January 1762, he was now twenty-four years of age, a vigorous youth, with, as he afterwards told Alexandre Dumas, "the Devil's own calves and Hell's own stomach." From his childhood he had looked forward to climbing the "white molehill," as he called it. He tells how, when he lost his way on the Buet, with nothing to eat, he munched a little snow and looked across at Mont Blanc, saying: "Say what you like, my beauty, and do what you like, some day I shall climb you." He had tried the ascent with Jean-Marie Couttet, and got as far as the Col du Géant, and even a little further. After taking a party across to Courmayeur in 1784, he had made an attempt from that side. At last he found the right way.

He had just spent two nights and a day in the mountains, and was on his way home, when he met three guides starting for the Montagne de la Côte. "Where are you going?" he asked them. "To look for crystals," was the reply. "Nonsense," he said. "You are not equipped like that to look for crystals. I shall come with you." They did not want him, and they would not wait

for him. He went home, however, breakfasted, dried his clothes, rested a little, changed his socks, filled a bag with his favourite food—some barley dumplings fried in linseed oil—set out after the others, and overtook them. They were jealous, and would hardly speak to him; he, on his part, was not anxious for them to share in any discovery which he might make. The end of it was, that they returned to Chamonix, leaving him to pass the night on the mountain.

He was somewhere on the vast snowfields beyond the Grand Plateau, and the way to the summit lay straight before him. On his left was a snow slope, and on his right was a precipice. He stamped his feet and clapped his hands to keep them warm, while a fall of fine powdery snow whipped and stung his face. His description of the scene, as reported by Dumas, is very graphic:—

"At every instant," he says, "I heard the falling avalanches making a noise like thunder. The glaciers split, and at every split I felt the mountain move. I was neither hungry nor thirsty, and I had an extraordinary headache, which took me at the crown of the skull, and worked its way down to the eyelids. All this time the mist never lifted. My breath had frozen on my handkerchief; the snow had made my clothes wet; I felt as if I were quite naked. Then I redoubled the rapidity of my movements, and began to sing in order to drive away the foolish thoughts that came into my head. My voice was lost in the snow; no echo answered me; I held my tongue and was afraid."

The night passed, however, as nights, however long and painful, will. The storm was over, and Balmat considered whether he could not go on and finish the ascent. He felt that he could not, but must content himself with having found the way. When M. de Saussure came again to Chamonix he would be able to guide him. Now he must go home to bed. So he went home to bed, very tired and nearly blind, and slept the clock round.

Waking, he resolved to keep his discovery secret. To him alone should belong the honour. No Couttet or Carrier should share it with him. But here a difficulty arose. It would not suffice to have climbed the mountain. He must also be able to prove that he had climbed it. He could not be sure that someone would be looking at the summit through a telescope just when he happened to be there. A witness, therefore, was required; and the witness must be a man able to climb. Balmat bethought himself of Dr Gabriel Michel Paccard, the author of the diary from which we have given a few quotations. Dr Paccard was willing, but proposed to make assurance doubly sure by taking four or five of the guides with them. "No, doctor," Balmat replied, "you will come along with me without saying a word to anyone, or you will not come at all." The doctor accepted the condition, and the two men set out together on the 7th of August 1786.

As to the details of the ascent and the relative merits of the two ascensionists, there has been a good deal of disputation, not entirely devoid of acrimony. Paccard's account of the climb has

been lost, and Balmat's account only reaches us through the medium of Alexandre Dumas, who notoriously held the doctrine that it is the duty of every man to leave a story better than he finds it. Paccard, however, himself told Lalande, the astronomer, that it was Balmat who decided what route should be taken, and that testimony seems conclusive. For the rest, it seems best to follow the Balmat version, always remembering, when we find that it makes Paccard look a fool, that it is the story of an egotist, transmuted in the crucible of the imagination of a great romantic writer. Dumas conceives Balmat as a garrulous demi-god, and he needs a foil to him. With this prefatory caution we will follow Balmat's version.

The climbers set out secretly at five o'clock in the morning, though not quite so secretly as Balmat had intended. The doctor stopped on the way to buy some syrup, and could not resist the temptation to tell the lady who sold it to him where he was going. They slept at the top of the Montagne de la Côte, and Balmat says that he "carried a rug and used it to muffle the doctor up like a baby." Then they got on to the Glacier de Taconnay. Balmat proceeds:—

"The doctor's first steps on this sea, in the midst of these immense crevasses, the depths of which the eye fails to measure, and on the bridges of ice which you feel cracking beneath you, and which, if they gave way, would carry you to destruction, were somewhat uncertain. Gradually, however, he was reassured by seeing how well I got on, and we got clear of the place,

safe and sound. Then we began the ascent to the Grands Mulets, which we soon left behind. I showed the doctor where I had passed my first night on the mountain. He made an expressive grimace, and was silent for ten minutes."

A storm of wind came. The doctor's hat was blown off, and they both had to lie down on their stomachs:—

"The doctor was dismayed, but I thought only of the woman whom we had told to look out for us on the Dôme du Gôuter. At the first respite I rose, but the doctor could only follow on all fours, until we came to a point from which we could see the village. . . . Self-respect now caused the doctor to stand up, and we saw that we were recognised. . . . They signalled to us by waving their hats."

The doctor, however, according to Balmat, was exhausted and could go no further. Balmat gave him a bottle of wine, and went on by himself.

"From that moment onwards the track presented no great difficulty, but as I rose higher and higher the air became more and more unfit to breathe. Every few steps I had to stop like a man in a consumption. I seemed to have no lungs left, and my chest felt hollow. I folded my handkerchief like a scarf, and tied it over my mouth, and gained a little relief by breathing through it. However, the cold laid hold of me more and more, and it took me an hour to go a quarter of a league. I walked with my head bent down; but finding myself at a point which I did not recognise, I raised my eyes and saw that I was at last on the summit of Mont Blanc."

Then, Balmat tells us, he went back to look for the doctor, found him half asleep, woke him up, and took him to the top, and remained there rather more than half an hour. He continues—or rather Alexandre Dumas makes him continue—thus:—

"It was seven in the evening; there would be only two and a half hours more of daylight, so we had to go. I took Paccard's arm, and once again waved my hat as a last signal to our friends in the village, and began the descent. There was no track to guide us; the wind was so cold that even the surface of the snow had not thawed, and we could only see on the ice the little holes made by the points of our alpenstocks. Paccard was like a child, without energy or will power. I had to guide him in the easy places and carry him in the hard ones. Night was already overtaking us when we crossed the crevasse. At the foot of the Grand Plateau it was quite dark. Every moment Paccard stopped, vowing that he could go no further; every time he did so I obliged him to resume walking, not by persuasion, which he could not understand, but by force. At eleven we were clear of the ice, and set foot upon *terra firma*; the last of the Alpengluhe had disappeared an hour before. Then I let Paccard stop, and was preparing to wrap him up again in his blanket when I noticed that his hands were motionless. I drew his attention to this, and he replied that it was likely enough, as he had lost all sensation in them. I pulled his gloves off, and found his hands white, as if dead, while I myself felt a certain numbness

in the hand on which I had been wearing his little glove instead of my own large one. I told him we had three frost-bitten hands between us; but this seemed a matter of indifference to him; all that he wanted was to lie down and go to sleep. He told me, however, to rub the hands with snow, and that remedy was not far to seek. I began by rubbing his hands, and then rubbed my own. Soon the blood circulated again and warmth returned, but accompanied by sharp pain, as if every vein were being pricked with needles. I wrapped my baby up in his rug, and put him to bed under the shelter of a rock. We ate and drank a little, squeezed as close together as we could, and fell asleep.

"At six the next morning Paccard woke me.

"'It's curious, Balmat,' he said. 'I can hear the birds singing, but I don't see the daylight. I suppose I can't open my eyes.'

"But his eyes were wide open. I told him he must be under a delusion, and could see quite well. Then he asked me to give him a little snow, melted it in the hollow of his hands, and rubbed his eyes with it. Still he could see no better than before. Only his eyes were more painful.

"'Yes, it seems I am blind, Balmat,' he continued. 'How am I to get down?'

"'Hold on to the strap of my knapsack, and walk behind me. That's what you'll have to do?'"

In this way Balmat brought the doctor down, leaving him, as soon as they got into the village, to find his way home as best he could, feeling his

way with a stick, like a blind beggar. He went on to his own house, and looked in the mirror.

"Then," he says, "I saw for the first time what I looked like. I was unrecognisable. My eyes were red, my face was black, my lips were blue. Whenever I laughed or yawned the blood spouted from my lips and cheek, and I could only see in a dark room."

So runs the sparkling narrative. No doubt it is true enough in the main, though one is bound to be sceptical of some of the details. The way to the top had been not only found, but followed. Tairraz, the Chamonix innkeeper, at once sent off his son with a letter to communicate the great news to De Saussure, and the philosopher wrote back, to request that preparations to facilitate his own ascent should be made immediately. Tairraz was to "send off five or six men at once to level the route." Guides were to be engaged, with Balmat for chief guide. A "flat-sided" ladder was to be provided for crossing crevasses, and scaling rocks or cliffs of ice. Good wages and a good "trinkgeld" were to be promised. But De Saussure's name was not to be mentioned in the matter. The commission was to be announced as "on behalf of an Italian nobleman."

The weather broke, however, and the ascent could not be made that year. Balmat was instructed to watch and report. In July 1787 he reported that the conditions seemed favourable, and on the fifth day of that month the philosopher set out, accompanied by eighteen guides and a valet-de-chambre. We need not follow his course step by step. It suffices to

say that he panted but persevered, and that his mountain-sickness left him when he rested on the summit.

"My arrival there," he says, "did not at first give me as much pleasure as might have been expected. My most lively and most agreeable feeling was that I was at the end of my anxieties. The length of the struggle, the recollection, and the still acute sensation of the pains which my victory had cost me, caused me a kind of irritation. At the moment when I attained the highest point of the cap of snow which crowns the summit, I tramped it under foot with a sort of anger, rather than with any sentiment of pleasure."

Philosophic tranquillity, however, returned to him by degrees. His guides set up a tent for him, and he spent three and a half hours making scientific experiments upon the mountain top.

The achievement may be taken as the first great landmark in climbing history. Before passing to other branches of the subject we may pause briefly to trace the careers of the three men whose names are principally associated with it.

De Saussure was already forty-six, but he continued climbing for some years longer. Sometimes alone, and sometimes with the indefatigable Bourrit, he made various Alpine journeys, and even a few first ascents, including that of the Petit Mont Cervin in the Zermatt valley. He was, in fact, almost the first civilised visitor to Zermatt, where he reported that there was no inn, and that the Curé refused to sell him any provisions.

Another great feat was to camp out for rather more than a fortnight on the Col du Géant—an enterprise of which he wrote a record not less poetical than precise. Finally, however, he fell upon evil days. His health broke; his fortune was lost; he was on the losing side in the disturbances that followed upon the French Revolution. After several paralytic strokes, he died in 1799.

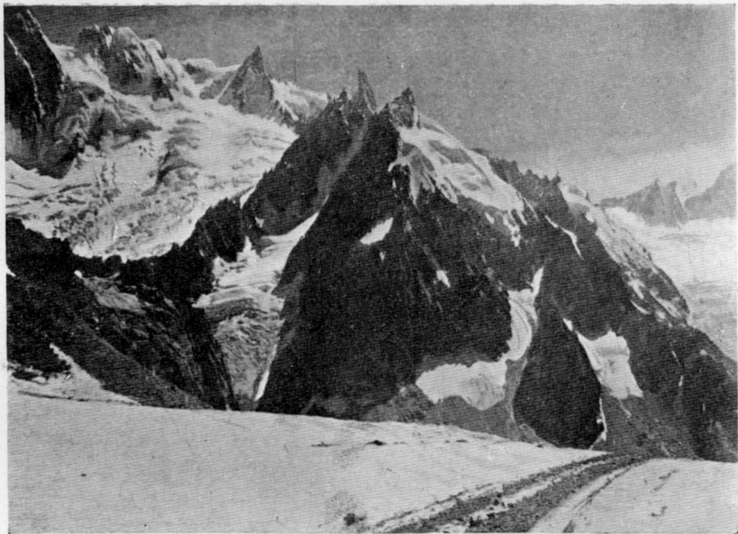
Dr Paccard continued to live, and presumably to practise, at Chamonix. It is said that he wrote a pamphlet, giving his own version of the ascent with Balmat; but no copy of it is known to exist in any collection, whether public or private, and none of the early Alpine writers quote from it. Probably, therefore, it is a figment of some bibliographer's imagination; the controversy with Balmat being in fact conducted in the correspondence columns of the *Journal de Lausanne*. A translation of the most interesting passages in the letters, including a sworn declaration of Balmat, who may or may not have understood what he was signing, to the effect that the doctor got to the top before him, will be found in Mr Whymper's excellent "Guide to Chamonix and Mont Blanc." For the rest we know from the doctor's diary that he held friendly converse with most of the early mountaineers who came to Chamonix, generally lending them his barometer, which they generally managed to break. He died just before Dumas came to Chamonix, with the result that it was Balmat's version of the story that was given to the world.

Balmat became a mountain guide by profes-

sion, made money, saved it, and then lost it. The story is that, when he was going to Geneva to invest his little nest egg, he met two strangers who told him that they were bankers, and that if he cared to entrust his money to them, they would pay him interest for it at the rate of five per cent. Balmat accepted the offer, and naturally never saw either the money or the bankers again. Then he turned his attention to a fresh enterprise, set out to prospect for a gold mine in the midst of the glaciers, and met a tragic death by falling into a crevasse. His biographer, Michel Carrier, tells of the search for the body.

"Auguste Balmat, one of the great-nephews of Balmat, well known among the guides for his bravery, desired to be let down by a rope, and began the descent by the side, slipping every moment on the rotten schist, which broke away under his feet. He had not gone far in this adventurous and daring enterprise, when he gave the signal agreed upon to be drawn up, and was received by his companions, and embraced by them, as they knelt on the last edge of the precipice, as one does by an open grave. It was in truth an eternal tomb, consecrated by the fatal accident."

Jacques Balmat had four sons. Two of them fell in the Napoleonic wars, one of them disappearing without leaving any trace behind. The others emigrated to the United States. His great-nephew, above-mentioned, was the favourite guide of Mr Justice Wills, with whom he made that ascent of the Wetterhorn referred to in the opening paragraph of this book.



Dent du Géant from Le Jardin, Chamonix.

CHAPTER VI.

To a certain extent the ascents of Balmat and —especially—of De Saussure set a fashion. The climbing of mountains in general was still far, indeed, from being a popular pastime; but the climbing of Mont Blanc in particular came to be recognised as a fairly reasonable piece of bravado. A list of the climbers who made the ascent in pre-Victorian times will be here in its proper place.

1787. Colonel Mark Beaufoy, of the Tower Hamlets Militia. This was the first English ascent, and took place about a week after that of De Saussure. See *Blackwood's Magazine* for April 1817.

1788. Mr Woodley. Bourrit and a Dutchman named Camper were with him, but only the Englishman got to the top. See Bourrit's "Déscription des Cols."

1802. M. Doorthesen and M. Forneret. The former gentleman was German, and the latter was Swiss. See Bourrit's "Déscription des Cols."

1809. Maria Paradis. The first ascent by a woman. Jacques Balmat took her. "Come with us," he said, "then visitors will come to see you and give you money." That decided her. She was practically hauled to the top like a sack of coals. But she said, "Thanks to the curiosity of the public, I have made a very nice profit out of it, and that was what I reckoned on." See M. Durier's "Le Mont Blanc."

1818. Count Matzewski. This was the first

Polish ascent. The Count also made the first ascent of the Aiguille du Midi. See *Blackwood's Magazine* for November 1818.

1819. Dr William Howard and Jeremiah van Rensselaer. The first American ascent. See Dr Howard's "Narrative of a Journey to the Summit of Mont Blanc." Baltimore, 1821.

1819. Captain J. Undrell, R.N. See "Annals of Philosophy." 1821.

1822. Frederick Clissold. He was the first climber who got up and down within 48 hours. See "An Ascent to the Summit of Mont Blanc," by Frederick Clissold. 1823.

1823. H. H. Jackson. He beat Clissold's record, getting up and down within 36 hours. See *New Monthly Magazine* for 1827.

1825. Dr Edmund Clark and Captain Markham Sherwill. Clark left on the top a glass tube containing some olive branches "together with the name of George IV. and his deservedly popular minister, subjoining the names of some of the most remarkable persons of the age." He also left behind him Dr Paccard's electrometer which he had borrowed. See *New Monthly Magazine* for 1826.

1826. William Hawes and Charles Fellows. Both climbers wrote pamphlets on their expedition which were privately printed, and are now very rare. It is noted that the excursion cost nearly fifty pounds.

1827. John Auldjo. His ascent gained him "the gold medal of civil merit from the late King of Prussia, an autograph letter of approval from the ex-King of Bavaria, and the gift of a valuable

diamond ring from the King of Sardinia." He was for some time British Consul at Geneva. See "Ascent to the Summit of Mont Blanc on the 8th and 9th of August 1827." London, 1828.

1830. The Honourable Edward Bootle Wilbraham. See *The Keepsake* for 1832.

1834. Dr Martin Barry. He was President of the Royal Medical Society of Edinburgh. See "Ascent to the Summit of Mont Blanc in 1834," by Martin Barry, M.D., Edinburgh. 1836.

1834. Comte Henri de Tilly. The first French ascent. See "Ascensions aux cimes de l'Etna et du Mont Blanc," par le Comte Henri de Tilly. Geneva, 1835.

That is as far as we need go for the present. Two points may be noted: that English climbers preponderated, and that several years often elapsed between two ascents. Mont Blanc, in fact, was not really popularised until Albert Smith not only ascended it, but lectured on it at the Egyptian Hall: a matter to which it will be necessary to return. Harking back, we may note that the Revolutionary and Napoleonic wars checked the progress of mountaineering, just when it seemed in a fair way to establish itself on a sound basis. The only Swiss climber of any consequence of De Saussure's time who accomplished anything elsewhere than at Chamonix was Father Placidus-a-Spescha.

Father Placidus, born in 1752, was brought up as a monk at Disentis. His interest in the mountains was derived partly from De Saussure's scientific writings, and partly from Haller's poems. He climbed in the Bundner Oberland, and a list

of his first ascents will be found in an appendix. His career, otherwise than as a climber, was not prosperous. He spent eighteen months in Tyrol as a prisoner of war, though he was allowed a reasonable liberty, which he devoted to climbing. On his return he was charged with heresy, deprived of his books and manuscripts, and forbidden to climb any more. He did climb, however, leaving the brotherhood to become a parish priest, and lived to the age of eighty-two, assailing the peaks of the Tödi almost to the last. He was still attempting them as late as 1824. His life has been written in a monograph on the Bundner Oberland by Dr Theobald of Chur, and is the subject of an article by Mr Douglas Freshfield in one of the early numbers of the *Alpine Journal.*

The exploration of the Pyrenees was also beginning at about the same time as the exploration of Mont Blanc.

Of the Pyrenean ascents by Peter of Arragon and M. de Candale, Bishop of Aire in Gascony, we have already spoken. The Bishop's mountain, the Pic du Midi, seems to have been repeatedly ascended for scientific purposes quite early in the eighteenth century. An astronomer of Montpellier, M. de Plantade, died suddenly upon that mountain, presumably of heart failure, in 1741. "Ah, how beautiful it all is!" are said to have been his last words. Pyrenean exploration was also the subject of the first lecture delivered in the French instead of the Latin language, before the Collège de France, in 1775. Probably in consequence of that discourse, various geologists,

mineralogists, and other scientific investigators visited the mountains in the years immediately succeeding; and two physicists, Reboul and Vidal, of the Toulouse Academy, built a hut at the top of the Pic du Midi, and spent some days in it. And then came Ramond de Carbonnière.

Ramond was of the University of Strasburg, and had been private secretary to Cardinal Rohan, whose name is notorious in connection with the diamond necklace story. His concern with the mountains dated from a walking tour in Switzerland, and the first expression of it was the translation of the Swiss travels of the Reverend William Coxe. His Pyrenean journeys began in 1787. The Revolution and the Reign of Terror interrupted them. He was imprisoned, and only escaped the guillotine because the Committee of Public Safety forgot all about him. After his release, at the time of the fall of Robespierre, he was for a while excluded from the mountains by the operations of the war with Spain; but he got back to them as soon as he could, and in the end managed to climb several of the most important Pyrenean peaks. He writes with an enthusiasm which we do not find in the works of any other early climber. The influence of Rousseau was upon him; and the mountains seemed to him to teach the new philosophies, and to breathe new hopes of a perfected humanity and a regenerated France. From his high eyrie he shouts his creed that "the prosperity of an empire depends upon the equity of the Social Compact, and upon the simplicity of the laws"; that "it was an error worthy of the barbarism of the Middle Ages that

established so many civil and fiscal barriers between man and man"; that "the interest of the individual, enlightened by experience and guided by competition, provides commerce with a better code of laws than any statesman could decree." And he speaks of the destiny of the Gauls. That destiny, he believes,—

"Victorious at last, is about to regenerate France. The fields and the flocks will be held in the same high honour as of old; the people will recognise their importance and their dignity; the great ones of the earth will need the support and the suffrages of the nation in order to be sure of their greatness. The Republic of the Gauls will be born again under the sheltering protection of a gentle authority which all accept; we shall have something better henceforward than a State and the subjects of the State—to wit, a Fatherland and its citizens. . . . May the destiny of the Gauls triumph. . . . May the most brilliant of the nations, learning also to be the wisest and the happiest, become the admiration of the world, of which it has hitherto been the envy."

That, of course, was before the Revolution. We see the ferment working in the climber's mind. The book from which the quotations are taken came out in the year of the fall of the Bastille, and naturally had but little sale. The climber's philosophy and sentiment were drowned in the blood-bath, but the passion for climbing remained with him. It was not until after the Revolution that he set foot on the summit of Mont Perdu, which is the most difficult, though not the highest, of the Pyrenean

peaks. He wrote a technical paper about his ascent, and soon afterwards gave up climbing to enter the public service, serving as a Prefect under Napoleon, and as a financier under the Bourbons.

Elsewhere it was only in Italy that mountain climbing was, for the moment, making any progress. The first ascent of the Gran' Sasso d' Italia, or Great Rock of Italy, the loftiest peak of the Apennines, was made by a certain Orazio Delfico in 1794. The climber speaks in very exaggerated language of "the horror of the dangers," and of "terrifying precipices," though, as anyone can see by referring to an account of an ascent by Mr Douglas Freshfield in the *Alpine Journal*, there is no difficulty about it worth speaking of, and absolutely no occasion for terror. And, in fact, much more notable work was accomplished at about the same date on the Italian side of Monte Rosa.

Monte Rosa, as we have noticed, was almost certainly the scene of the scrambles of Leonardo da Vinci. It can also be identified as the Mons Silvius of our friend Scheuchzer. Its actual climbing history, however, begins with the visit of De Saussure to Macugnaga in 1789. That philosopher, as has been mentioned, made a first ascent of the Pizzo Bianco (10,552 feet). He furthermore heard and reported the following strange story, which may as well be given in his own words :—

"There is an old tradition in the country of a valley, full of beautiful pasture lands, the access to which is said to have been closed by the forma-

tion of fresh glaciers. Seven young persons from Gressoney, encouraged by an aged priest, undertook, six years ago, to look for it. The first day they slept on the highest rocks, at the point where the snow begins, and on the second day, after six hours' walking on the snow, they reached the head of the gorge. There, beneath their feet, to the north, they saw a valley surrounded by glaciers and fearful precipices, partially covered with the débris of rocks, and traversed by a stream which watered superb pastures, with green woods in the depths of it, but without any sight of human habitation or of the presence of domestic animals. Convinced that this was the valley spoken of as lost, they returned, very proud of their discovery, talked a good deal about it, and even wrote about it to the Court of Turin. To establish the truth, however, they needed to effect an entrance to the valley, and they tried to do this two years later. Provided with climbing irons, ropes, and ladders, they returned to the edge of their precipice, but achieved no success, and came home declaring that the cliffs were so prodigiously high that no ladder could be of any help to them."

Trying to get at the rights of this story, De Saussure failed to obtain any exact information. Most of those whom he consulted declared it to be a fable. He inclined to believe, however, that it was based upon fact, and so it was. The story had even been written down, though De Saussure could not find it. A French translation of the manuscript, communicated to Signor P. L. Vesco by a descendant of the author, was published in 1884, in the *Bollettino del Club Alpino.*

The leading spirit of the excursion was one Jean-Joseph Beck, a domestic servant — the only domestic servant whom we find taking an honoured place among the early mountaineers. He heard about the lost valley at Alagna, and he also heard that some of the Alagna people meant to go and look for it. Being himself a Gressoney man, he determined that Gressoney should have the honour of the discovery. A party was organised and set out in August 1778, though the climbers started separately in couples, concealing their destination. Reaching their sleeping-place at Lavetz at seven o'clock, they started again at midnight. They roped themselves properly, being careful to keep the rope taut, and crossed the glacier. Mountain-sickness overtook them. "We encountered,' says the narrator, "an atmosphere so rare, that it gave us headaches, made us pant, and compelled us to rest and take stimulants every minute. Our stomachs, however, refused the food. Only bread and onions could have revived our strength. We fell into a melancholy condition, and felt crushed."

They kept on, however, until they reached a point from which they could look across from Italy into the Valais. The point which they had attained, called by them the Rock of the Discovery, still bears that name. It is on the Lys Joch, and is about 14,000 feet above sea-level. The valley which they saw from it was, in fact, the valley of Zermatt They suspected as much, but could not be sure, as they had never been to Zermatt.

Unfortunately they could not continue their investigations.

"We were strongly tempted," the narration concludes, "to go further with our exploration so as to be able to report more details about it. But it was now two o'clock, so we resolved to turn back that night might not overtake us on the glacier. Without loss of time, therefore, we began the descent, and got to Lavetz about ten in the evening, twenty-two hours after the start, done up with fatigue."

The climbers, there is no question, had really done a big thing. If their story had been published at the time, the popular interest might very possibly have transferred itself from Mont Blanc to Monte Rosa. As it is, the true pioneers of that mountain are obscure heroes who have never got their due meed of glory. We find no recognition of their merits in the story of Count Morozzo, who visited Monte Rosa a little later, and wrote an account of his journeys for the official publication of the Turin Academy.

The Count tried to ascend the mountain, but did not get very far. "I confess," he wrote, "that I did not expect the undertaking to be as difficult as I found it." And he adds that he abandoned the enterprise on the advice of his guides, who pronounced it to be impossible. Assuredly he has no fair claim to be included in the list of heroes of our story. His modest scramble on "the first glacier from which the Anza rises" is quite thrown into the shade by the achievement of Dr Pietro Giordani of Alagna in 1801.

From "the top of the Alps" the doctor wrote a relation of his ascent. It was known that his letter had been printed somewhere; but it attracted no particular attention, the Italians having other things besides mountains to occupy them in 1801; and when people began to be interested in the subject, no one knew where to look for it. Ultimately someone lighted upon it by accident in an old copy of a forgotten annual, published at Varallo by a notary of no importance. It has since been reprinted in the *Bollettino del Club Alpino.*

The doctor seems to have climbed alone—a thing without precedent at that date, and a further proof that the Monte Rosa men were more adventurous, though less famous, than the Mont Blanc men. The point which he reached still bears his name. It is the Punta Giordani (13,304 feet). It was there, with a rock for a table, and a square block of ice for a seat, that the climber penned his letter—quite a long letter for a man to write in such a place. Much of it is taken up with enthusiasm for the scenery; there are a few details about the flora; but the most interesting passage, from our point of view, sets forth the doctor's conviction that the ascent of the mountain, not actually accomplished until fifty-four years later, was feasible by the route which he had found.

"I saw," he writes, "no insurmountable obstacle to hinder me from making the ascent of the peak of Monte Rosa that was nearest to me. Nothing but the lateness of the hour obliged me to return, and my only trouble was in the

thought of the distance that, at such an hour of the day, separated me from the nearest habitation of man. . . . I am more than recompensed for my fatigue, both by the sights which I have seen, and by the comforting reflection that I have found out a way of climbing the great Colossus, Monte Rosa, so that the physicist will for the future be enabled to observe and study it without difficulty, and to elicit the secrets of frozen nature—particularly from the point of view of the science of meteorology. . . . My respiration is much troubled by the rarity of the air, and my pulse is 110 to the minute.

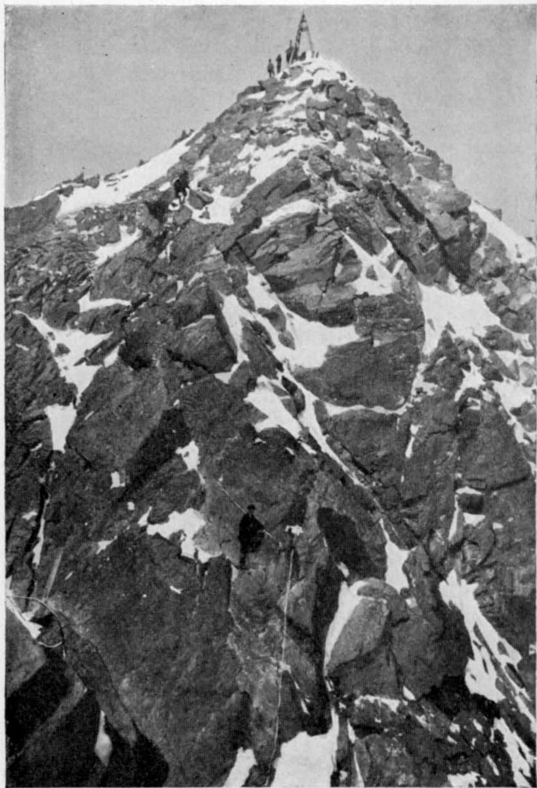
"I finish, therefore, in order that I may see about my retreat from these lonely regions."

And there we may leave Monte Rosa for the present. Our next centre of interest is Tyrol.

CHAPTER VII.

CLIMBING in Tyrol, where the leading "honourable peaks," as the Japanese call them, are the Gross Glockner and the Ortler Spitz, began a little more than a hundred years ago. The summer of 1900 saw, in fact, a local celebration of the centenary of the first ascent of the former mountain. Among the claims of the achievement on our attention is the fact that it is the only first ascent of any consequence that was ever accomplished by a bishop. Franz Altgraf von Salm-Reifferscheid-Krantheim, Bishop of Gurk, was the full style and title of this epis-

Monte Rosa.



THE GROSSGLOCKNER.

copal mountaineer. It is usual, and will obviously be convenient, to speak of him as Salm.

The mountain itself, strange as it may seem, was absolutely unknown to the geographers until long after the Middle Ages. An atlas of 1580 boldly plants a forest on its site. The map-makers of the seventeenth century mark it or omit it, as the fancy takes them. An important Austrian manual of geography, published as late as 1789, does not include it in the list of Austrian mountains, though it is, as a matter of fact, the highest of them. The Austrians, in short, only realised the existence of their highest mountain by degrees, and it is impossible to fix the precise date at which they became aware of it. The first writer who mentions it makes no claim to have discovered it.

This pioneer was Balthazar Hacquet, a Frenchman by birth, and an Austrian by adoption, who served as an army surgeon in the Seven Years' War, and afterwards became a Professor of Anatomy, and a botanist. At the cost of the Emperor Joseph II., who encouraged botany, he travelled on foot over almost the whole of the Austrian Empire. Among other places he came to the Gross Glockner, and expressed the opinion that it could probably be climbed by any energetic man who cared to take the trouble, but that he himself was too old to try. That was in 1781. Some ten years later, two other botanists—Sigismund von Hohenwart, afterwards Bishop of Linz, and Court-Chaplain Reiner—came the same way, and formed precisely the opposite opinion. The ice precipices, they reported, were "so terrible that

the illustrious De Saussure himself would be frightened by them." Yet Hohenwart, at any rate, was destined to stand upon the summit before another decade had elapsed.

It was Bishop Salm, already mentioned, who first made up his mind that the mountain not only could but should be climbed. He was the recognised leader of the "intellectuals" at Klagenfurt, where he resided, though he was younger than a good many of them; he seems to have been both scholar and sportsman, whereas they were merely scholars. Unlike De Saussure, he was not devoured by scientific curiosity; but, very much as Dickens' character exclaimed, "Here's a church—let's have a wedding," so did Bishop Salm exclaim, "Here's a mountain—let's have a climb." If he was an unworthy disciple of De Saussure and De Luc, he was a worthy anticipator of Mr Justice Wills and Mr Whymper.

The Bishop, however, did not propose to climb alone. Mountaineering, as he figured it, was not a desperate adventure, but a jovial picnic of cultivated men. The episcopal set were invited to accompany him, and they accepted the invitation almost to a man. There was grey-haired Wulfen, formerly a Jesuit, and now a Professor; there was our friend Hohenwart, who had expressed such alarm at the precipices; and Court-Chaplain Reiner; and Mining-Director Dillinger; and Baron von Moll; and ever so many more—eleven amateurs, in fact, with nineteen guides and porters.

The joyous prelate did his best to make things

KLEINGLOCKNER AND SCHARTE.

comfortable for his friends. Among other things he had a hut built for their accommodation—a hut that was spacious, and as the estate agents say, "well appointed." Measuring twenty-four feet by eighteen, it was divided into three apartments in which the company slept; while a small outhouse served as a kitchen, of which the chef from the episcopal palace at Klagenfurt took charge. It might still be standing if it had not been built on a moraine, which, in the course of years, moved and upset it.

Hardly had the company settled down in the hut than the weather broke, and for three days they were weather-bound. The chef did his best for them. Weeping over the miserable situation, he served dinners of many courses, quite comparable, says one of the enthusiasts who partook of them, to the banquets provided for them when they dined with the Bishop at home. Finding their beds rather hard and un comfortable, they sat up every night, drinking, chatting, telling stories, and singing songs, as long as ever they could keep their eyes open. It was not, perhaps, the ideal manner of preparing for a stiff climb when the weather mended; but the company were hardy as well as jovial, and their late hours and prolonged potations do not seem to have "cut their legs," as the Swiss guides say, to any extent worth speaking of.

The route which they took is the route which is still usually taken. We need not go into technical or topographical details, but, with the help of the narrative of Baron von Moll, may try

to picture the party of thirty adventurers on their way.

Fresh snow, it seems, lay thickly on the ice, covering up most of the crevasses, so that it was necessary to move with caution; but the precautions taken differed from those which we take nowadays. The climbers did not apparently understand the use of the rope, but they sent two peasants on ahead with poles to sound the snow and test the bridges; then came the various porters—men carrying a ladder, men carrying ropes, men carrying provisions, a man carrying a telescope, a man carrying a barometer, and a man carrying an iron cross which the Bishop had determined to plant upon the mountain top. The unencumbered amateurs brought up the rear.

The first attempt was unsuccessful. Starting too late in the day, they had to turn back for fear of being benighted. Von Hohenwart fell into a crevasse, though he was, happily, more frightened than hurt. A storm of wind whirled the powdery snow into their faces and nearly blinded them. Their hands were numbed so that they could not use their fingers. But they tried again, and striking a fine day, August 25th, 1799, succeeded. The snow on the summit was promptly scraped away, and the cross was erected there on a foundation of solid rock. It bore the inscription:—

Eia, nunc, rara moles, exple finem,
Crucem exalta, cultum promove. Posuit
Franciscus antistes Gurcensis, 25 August, 1799.

Then the observers in the valley, who were

watching through a telescope, fired a salute. The climbers themselves opened the wine bottles, proposed toasts, and drank them. The Professors toasted the Bishop, and the Bishop toasted the Professors; the amateurs toasted the guides, and the guides toasted the amateurs, "after the convivial fashion of the Austrians."

As it happened, however, this toasting was a little premature. The Gross Glockner has two summits, separated by a ridge, and the climbers discovered, when it was too late, that they had ascended, and set up their cross upon, the lower peak. The setting right of this error, however, formed the excuse for another lively picnic party in the following year, and then a poet celebrated the achievement in verse:—

> The Glockner's top is now attained.
> Who would hav , thought it could be gained,
> Save by the birds and lightning?

And so forth. There is no room for more. Only one may pause to note that Bishop Salm retained his interest in the Gross Glockner until his dying day, visiting it, and sometimes climbing it, now with Hohenwart, now with Hoppe the botanist, and now with other savants from Klagenfurt, in 1802, in 1806, in 1818, and probably in other years as well.

Nor was he the only man of note who tried to popularise the mountain. In 1804 came Dr J. A. Schultes, travelling tutor to the Count of Apponyi, and later a Professor at Cracow and Innsbruck. He climbed the mountain for the avowed purpose of writing a book about it—a

purpose for which, as far as one knows, no mountain had ever been climbed before. His desire was to draw the attention of his countrymen to the beauties of their native land—to make the Glockner a second Mont Blanc, and the village of Heiligenblut a second Chamonix; and he succeeded ultimately, though not immediately. When the Napoleonic wars were over the tide of visitors began to flow. Between 1818 and 1860 it is computed that between five and six thousand tourists came to Heiligenblut, and that about seventy of them climbed the Glockner. Most of them were Germans or English, but Americans began to come in 1830, and there are records of the visits of an Egyptian in 1849, and of a Hindoo in 1853. Emperor Francis Joseph even brought his Empress to look at the mountain, and climbed the mountain to a certain extent, though he stopped a good way short of the top.

And now we may leave the Gross Glockner, and turn to the Ortler Spitz.

The latter mountain was not touched by the climbers who were so enthusiastic about the former; the reason doubtless being that it lies at the other end of the Austrian Alps, and that Austrian roads were even worse in those days than they are now. It was first brought into notice by Archduke John.

Archduke John, seventh son of Emperor Leopold II., was a general who, like many other Austrian generals, lost more battles than he won. Moreau defeated him at Hohenlinden, and he was mixed up in the peasant revolt of Andreas

THE ORTLER

Hofer. Among other posts he held that of Director-General of Fortifications, and it was in order to organise frontier defences that he first traversed the Austrian highlands. The Ortler thus attracted his attention. He looked it out in an atlas, and found it was marked "the highest mountain in all Tyrol," and he decided that it must be climbed. He had no time to climb it himself, so he commissioned Dr Gebhard —a mining manager, not otherwise known to fame—to climb it for him. Dr Gebhard was instructed to report on the mineralogy and botany of the neighbourhood, and on the habits and industries of the inhabitants, and to draw a map of the mountain; but above all he was to climb it.

Dr Gebhard accepted the assignment, and did his best. With two guides, he arrived at Sulden on August 28th, 1804, and between that date and September 22nd made six unsuccessful attempts to get to the top. Then on September 26th, Joseph Pichler, chamois-hunter of Passeyr, introduced himself. If Dr Gebhard's two guides might come with him he thought he could find a way. At all events he would like to try—always supposing that there would be a reward for him if he succeeded. The offer was accepted; the amount of the reward was agreed; and Pichler duly earned it, making the ascent from Trafoi on September 28th. He had a cold, uncomfortable time of it, on the mountain, as we gather from Dr Gebhard's report to Archduke John.

"It was impossible for the gallant climbers to remain more than four minutes at the

summit. Even in that brief period Pichler got his toes frost-bitten, and one of my people came back with a finger numbed and swollen with the cold. All three of them looked like snow men. They were completely caked with snow, and deprived of the power of speech, as a strong wind came on, whirling about the loose snow. On the top, while they were taking their measurements, they had to hold each other up alternately, for fear lest the wind should blow them over. The trusty fellows really and seriously risked their lives."

Dr Gebhard adds that he is sure Pichler's story is true, as he "is known throughout the neighbourhood as a very respectable man." He did not consider, however, that Pichler's achievement discharged his own obligations, and he returned to the attack in the following summer. There was the more need for him to do so, as people who did not know Pichler were saying that Pichler was a liar. On August 30th, 1805, however, Gebhard and Pichler, with various guides and a Roman Catholic priest, drank the Archduke's health on the top of the Ortler, and built a pyramid, thirty feet high, as a proof of their presence there, which should be visible from the valley. They had better weather than Pichler, and were able to remain a couple of hours.

Their admirable achievement, however, did not make the Ortler popular like the Gross Glockner—partly because they wrote no books, but only told their story in learned periodicals. At all events, twenty-one years elapsed before

Monument to Joseph Pichler, who made the first ascent of the Ortler.

the next ascent of the mountain in 1826 by Herr Schebelka, an Austrian officer, who found Dr Gebhard's pillar fallen. Subsequently there were ascents in 1834 and 1857.

CHAPTER VIII.

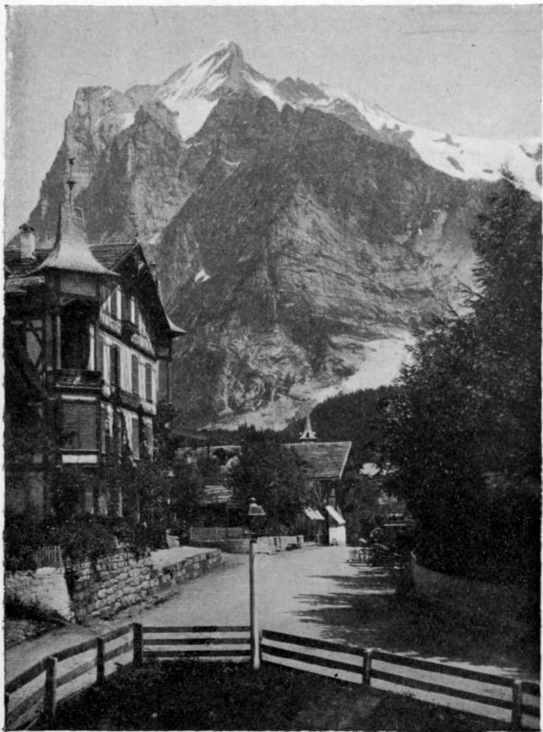
TYROL handed on the torch to the Bernese Oberland. The conquest of the Ortler suggested the assault upon the Jungfrau; and the village of Grindelwald achieved the destiny which Dr Schultes had anticipated for the village of Heiligenblut. Our next task, therefore, may be to trace the growth of Grindelwald.

In a sense the history of the valley goes well back into the Middle Ages. The subject can be "worked up," as Mr Coolidge has observed, from that learned publication, "Fontes Rerum Bernensium." But the information to be extracted therefrom does not amount to much. Certain feudal lords gave the valley its first inhabitants by settling their serfs there, and then sold their rights over their serfs to a monastic house at Interlaken. The monastery was suppressed at the Reformation, and its jurisdiction was taken over by the Canton of Berne. But these political changes meant very little to the individual villagers. Under all the rulers alike each one had his little bit of property—a chalet, and perhaps a field or two—and a right of grazing beasts and cutting wood upon the common lands. The villagers had no history of the sort that gets into the history books,

and no visitors except, perhaps, priests and tax-collectors, until the days when learned men —mainly professors from the Universities of Zurich and Berne, began to take an interest in the glaciers.

It was, in fact, in the Oberland—at Grindelwald and on the Grimsel—that glaciers were first intelligently observed. Whereas Chamonix was not "discovered" until the middle of the eighteenth century, most of the Swiss professors of the seventeenth century went to Grindelwald. Matthew Merian published a view of the place—and a very quaint view, too—in 1642. Letters about its glaciers appeared in the "Philosophical Transactions of the Royal Society" in 1669, 1674, and 1708. Scheuchzer also went there; and the various learned visitors formed and expressed truly remarkable opinions as to the nature and origin of the vast fields of ice which they observed. Some of them declared that glacier ice was the same thing as crystal; others that it was the same thing as ordinary ice "with the water squeezed out of it"; while one philosopher went so far as to give out that if the glacier ice were powdered and mixed with wine a valuable astringent medicine resulted. They also formed theories as to the causes of glacier motion; but of this branch of the subject we will speak later.

After the professors who were curious about glaciers came the professors who were interested in topography. J. G. Altmann and Gottlieb Sigmund Gruner of Berne were the most notable of them. They both wrote books about the



GRINDELWALD AND THE WETTERHORN.

Oberland, and the latter's "Die Eisgebirge des Schweizerlandes," published in 1760, is a rich storehouse of information and legend from which we learn what little there is to be learnt about the early use of the glacier passes by the peasants. We read, for example, of a shepherd who was guided over the Lötsch-sattel by a ghost; and we find this thrilling story:—

"During the civil war in 1712, three inhabitants of Grindelwald were taken to the Valais as hostages; their only way of escape was over the glaciers, and their necessity taught them to scorn the dangers of this unheard-of journey. On the Valais side they got to the top of the mountain without much difficulty; but on the Grindelwald side they encountered nothing but mountains of ice. Every step they took they had to cut in the ice, and they were obliged to labour day and night that they might not die of cold. After infinite difficulty and danger they arrived half-dead at Grindelwald, and were presented by their compatriots to the magistrates as men risen from the dead."

The story has the air of truth, though exaggerated and distorted. Gruner, however, was not moved by it to any high topographical expectations. He sums up the glacier region, in fact, as "a chain of valleys of ice which is at present unknown and probably will ever be so." Nor was the opinion unreasonable at a time when, of all the snow peaks of the Alps, only the Titlis had been ascended. Nearly half a century was to pass before it was dissipated.

Oberland climbing was, in fact, suggested by

the ascents in Tyrol described in the last chapter. Things were quieting down after the disturbances engendered by the French Revolution, and there sprang up a group of enthusiasts for the mountains, whose combined activity almost anticipates that of our own Alpine Club. The moving spirits were Count Ulysses von Salis, and a certain Steinmüller, pedagogue and pastor of Saint Gall. At Winterthur they launched what must be recognised as the earliest Alpine journal—*Alpina*—and appealed for volunteers. "The Glockner and the Ortler," wrote the editor, "may serve as striking examples of our ignorance until a few years since of the highest peaks in the Alpine regions. Excluding the Gotthard and Mont Blanc and the surrounding summits, there still remain more than a few marvellous and colossal peaks which are not less worthy of being made better known."

Most of the stories of Oberland ascents told in *Alpina* lack the stamp of veracity. The story of "determined hunters," who reached the top of the Silberhorn, found another hunter's knife there, and brought it down with them as evidence of their prowess, lacks it; and so does the story of the unnamed Englishman who went up the Eiger, and "had persisted in attempting to reach the highest point, had actually gained it, and had lighted upon the summit, either as a sign of his triumph or as a signal of distress, a beacon fire, and had never been seen again by human eyes." There is no wood on the top of the Eiger, and a solitary climber would hardly be likely to carry enough of it on his back to

The Eiger and Mönch.

make a bonfire. We may pass these stories by, therefore, and proceed to the authentic ascents by the brothers Meyer.

No less than three generations of the Meyers had a notable connection with the Oberland mountains. Johann Rudolf Meyer the First drew maps of them, though the practical researches on which his topography depended were mostly done for him by a German, Herr Weiss of Strasburg, who made the first passage of the Oberaarjoch in 1795. "He and his companions," it seems, "were compelled to let themselves down into the deep crevasses of the ice, and then to find or make a way out again. They had to pass the night in the hollows and clefts of the eternal ice, and to use every combustible article they had with them as firewood in order to hold out against the benumbing cold." Then came the first Meyer's sons, Johann Rudolf, and Hieronymus.

By profession the brothers were the managers of a ribbon factory at Aarau; but they desired, as they said, "to learn the relations between the various vast basins of eternal snow," and "to ascertain whether the peaks which rise out of them could be ascended." The desire particularised itself as a desire to ascend the Jungfrau, and on 3rd August 1811, they accomplished that desire, though with great difficulty, taking four hours to ascend six hundred feet. When they returned and told their story, their friends refused to believe it. To silence the voice of scepticism, they made a second ascent in the following year, taking Johann Rudolf, son of

Gottlieb, with them; and then they went on and accomplished a first ascent of the Finsteraarhorn. Two somewhat doctored accounts of the climbs were written up from their notes by a certain Herr Zschokke, and the technical particulars are lucidly summarised in a contribution to the *Alpine Journal* by the late Mr Longman.

It was not the climbers, however, but the tourists who were to make Grindelwald famous, and Alpine history, in the strict sense, may fairly be interrupted for a glance at these less adventurous pioneers.

Early English tourists, like Bishop Burnet and Ludlow the Regicide, seldom got nearer to Grindelwald than the terrace at Berne. Addison, looking across thence at the Oberland peaks, imagined that he was admiring "the country of the Grisons." Gibbon tells us that the practice of "reviewing the glaciers" grew up during the period of his residence in Switzerland. The first Guide to Grindelwald, written by a pastor, appeared in 1777. Bourrit went there with De Saussure, and complained of the churlish disposition of the innkeepers, and the comparative inefficiency of the guides. Other visitors were Bonstetten the Swiss philosopher, and Frederika Brun the Danish artist, and Ramond de Carbonnière, and Professor Martyn the Cambridge botanist, and the venerable Archdeacon Coxe, and Ebel the guide-book man, and Escher the engineer, who built the Linth canal. And there were two other tourists of note, whose conflicting estimates of the attractions of the place merit quotation. One of them was General Guibert,

INTERLAKEN AND JUNGFRAU.

the first lover of Madame de Stael; the other was Byron. Guibert's diary gives the extreme Philistine point of view:—

"I have seen," he notes, "all the glaciers I ever want to see. I will not tell you, as most travellers do, that I ascended the glaciers with difficulty and danger, that I repented a hundred times of my rashness, that I had crevasses fifteen hundred feet deep in front of me, and that I heard subterranean noises like the rumbling of a volcano. That is what you read in almost all the books of travel, but you will not read it in mine. All that I saw was the glacier quietly melting, and the water trickling away drop by drop. And I saw it quite at my ease, sitting on a block of ice, as safe as if I had been in bed. As for the aiguilles, the pyramids, the prisms, the crevasses, the dazzling variety of the tints, you can see all these phenomena on a small scale in the first big snow drift that you come upon in a heavy winter."

Byron's jottings are of a very different character:—

"Arrived at Grindelwald," we read. "Dined, mounted again, and rode to the higher glacier—like a frozen hurricane. Starlight, beautiful, but a devil of a path. Never mind, got safe in; a little lightning, but the whole of the day as fine in point of weather as the day on which Paradise was made. Passed whole woods of withered pines, all withered; trunks stripped and barkless, branches lifeless; done by a single winter—their appearance reminded me of me and my family."

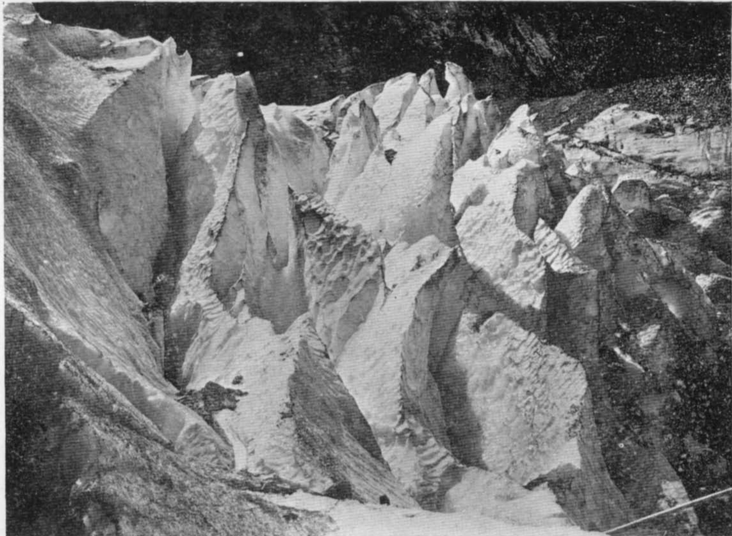
And so forth, most of the metaphors turning

up again in "Manfred"—a drama to which the rapid rise of Grindelwald in popularity may no doubt to some extent be traced. To follow its history further would merely be to recite an almost interminable list of well-known names.

CHAPTER IX.

EVEN after the ascents described in the last chapter, climbing continued to be an unusual, and to be regarded as an eccentric, pursuit. On that point the early guide-books supply conclusive evidence. Ebel's Guide warns the tourist that a visit to the glaciers of Grindelwald "requires undaunted intrepidity," and should on no account be undertaken without "several guides, provided with ropes, poles, and ladders." The first edition of Murray, published at the beginning of the reign of Queen Victoria, strikes the same note. "The passion for climbing mountains, so ardent in a young traveller," we there read, "soon cools, and they who have surmounted the Rigi and the Faulhorn and the Dôle may fairly consider any further ascents a waste of time and labour." Concerning the ascent of Mont Blanc, the editor expresses himself still more strongly :—

"When Saussure," he says, "ascended to make experiments at that height, the motive was a worthy one ; but those who are impelled by curiosity alone are not justified in risking the lives of their guides. The pay tempts these poor fellows to encounter the danger; but their safety, devoted as they are



Grindelwald—Oberer Gletscher.

to their employers, is risked for a poor consideration. It is no excuse that the employer thinks his own life worthless; here he ought to think of the safety of others." And then follows the absolutely baseless statement that the majority of those who have accomplished the ascent have been of unsound mind.

Climbing, however, proceeded, though British tourists did not yet bear a hand in it, and the climbers may be roughly divided into two groups. One group attacked Monte Rosa, while the other explored the Oberland. The last Monte Rosa man whom we mentioned was Dr Giordani. The other important dates in the history of the mountain are as follows:—

1817. Dr Parrot, of the Russian University of Dorpat, who also made the first ascent of Ararat, ascended the Parrot Spitze (14,643 feet).

1819. J. N. Vincent, son of the Vincent concerned in the quest for the lost valley in 1776, ascended the Vincent Pyramide (13,829 feet).

1820. The same Vincent, with Herren Zumstein and Molinatti, ascended the Zumstein Spitze (15,004 feet).

1822. Ludwig, Baron von Welden, ascended the Ludwigshöhe (14,259 feet).

1842. Signor Gnifetti, Curé of Alagna, ascended the Punta Gnifetti, also called the Signal Kuppe (14,965 feet).

1847. MM. Puiseux and Ordinaire ascended the Silber Sattel (14,285 feet).

1848. Professor Melchior Ulrich's guides ascended the Grenzgipfel (15,194 feet).

1855. Messrs G. and C. Smyth, Hudson,

Birkbeck, and Stephenson ascended the Hochste Spitze (15,217 feet).

Two of the climbers engaged in these enterprises merit a word of further mention. Von Welden was an Austrian officer who devoted some years of his life to the study of Monte Rosa. We have to thank him for an excellent map and monograph of the mountain. Zumstein, sometimes called by the equivalent French name of Delapierre, was an inspector of forests. He stuck to the mountain more strenuously than any of the others, making no fewer than five serious attempts to climb it, and on one occasion actually spending the night in a crevasse at a height of nearly 14,000 feet. He lived to be old, and to become almost a public institution. A visit to Gressoney was incomplete unless it included a visit to Zumstein, of whom and of whose home we have many graphic pictures in the works of Alpine travel of the forties and the fifties. The Reverend Samuel King, author of "Italian Valleys of the Pennine Alps," not only called upon him, but may almost be said to have interviewed him in the modern sense:—

"We found the savant at home in his snug little chalet, and just returned from marmot shooting in the mountains. He welcomed us heartily, and kept us there great part of the afternoon, which we spent most pleasantly, hearing narratives of his ascents of Monte Rosa. . . . On a bookshelf—which with guns, geological hammer, instruments, and coloured engravings of De Saussure's ascent of Mont Blanc ,decorated the wall—among a few choice volumes was a German

edition of Forbes. . . . The many little remembrances he possessed of the visits of such travellers as Forbes, the Schlagintweits, then in the Himalayas under the auspices of Humboldt, Von Welden, Brockedon, and many other well-known names, were doubly interesting in this remote valley, secluded, as it seemed, from the world, and more than twenty miles from the nearest char road."

Meanwhile, on the Swiss side, some savants, better entitled to the name than Zumstein, were also mountaineering with some diligence. Schoolmaster Steinmüller extended his activities into this period, reviving *Alpina* as *Neue Alpina* in 1819. He also wrote "Beschreibung des schweizerischen Alpen." Only a little his junior was Johann Hegetschweiler (1789-1839), an army surgeon, also in general practice. He wrote a book relating his travels in the Glarus Alps, but died prematurely of a wound received in a riot. Caspar Rohrdorf, Preparator at the Berne Museum, made an ascent of the Jungfrau in 1828. François Joseph Hugi, at one time a teacher in the commercial school at Soleure—a post which he lost through his abjuration of Roman Catholicism—and the founder of the Botanical Gardens of that town, got within 200 feet of the top of the Finsteraarhorn in 1829, and has a further title to fame as the pioneer of winter climbing. He spent twelve days in the Stieregg Chalet, above the Grindelwald Eissmeer, and during that time he reached the Strahleegg Pass, and tried the Mönch-joch; while on his return to Grindelwald, he spent three days in

the hut on the summit of the Faulhorn. "Ueber das Wesen der Gletscher" is the book that tells the story. Other interesting names belonging to the period are those of Professor Melchior Ulrich, who made the first ascent of Ulrichshorn, and Professor Oswald Heer.

Heer was a great naturalist and palæontologist. One of his works on the primæval world in Switzerland has even been translated into English, and published in a popular form with startling pictures of antediluvian beasts. The material for it had been gathered in the mountains, where the Professor made several first ascents, notably those of the Piz Palu, and the Piz Linard, in the Engadine; and he was an ardent enthusiast as well as a stalwart climber. His biographer tells us that he was once asked to which of the results of his Alpine journeys he attached the greatest value. The answer was that, much as he valued his dried plants and his fossils, and his palæontological discoveries, he was still more grateful for the silences and the solitudes, and their inspiring and exalting effect upon the human mind.

Such are the chief names of this period. Other names might easily be added. But they are not well-known names, and the reader may be left to pick them up from the Table of First Ascents in the Appendix. Here it will suffice to dwell upon the doings of the interesting group of students and explorers which centred round that eminent naturalist, Agassiz.

Louis Agassiz came from Orbe—a picturesque walled town of some two thousand inhabitants,

lying at the foot of the Jura, with a view down a broad valley to Yverdon at the extremity of the Lake of Neuchatel. His father was a pastor there, and afterwards at Môtiers—the Jura town with which the name of Rousseau is indissolubly linked. He was intended for a doctor, and to that end was sent first to Zurich, and afterwards to Heidelberg and Munich. But he had other aims. He did not mind taking his medical degree, but the trivial round of the general practitioner revolted him. "I wish it may be said of Louis Agassiz," he wrote to his father, "that he was the first naturalist of his time," and with this thought in his head he decided to seek a professorship instead of a practice. He had already done some valuable work in ichthyology, and so won the interest and regard of Cuvier and Humboldt. The latter philosopher lent him money which he never repaid. "I was pleased to remain a debtor to Humboldt," we read in one of the letters of his later life. His family also helped him "at first," says his biographer, "with pleasure, but afterwards with some reluctance."

He got his professorship, however, in 1832, at the Lyceum of Neuchatel—a town which at that date was a dependency of Prussia. The stipend was ludicrously small—only eighty louis a year to begin with—but he married on it. His mother, in fact, advised him to do so. "Catch your blue butterfly," she wrote, "and metamorphose her into a loving housewife," believing apparently that matrimony would drive the student to settle down somewhere as a medical

man. No such consequence ensued, however, and the union does not seem to have been a very happy one. "The main difficulty that Mrs Agassiz had to contend with," says the American biographer, "was to obtain a regular supply of money for daily household expenses." Indirectly, however, the discontent of Mrs Agassiz was instrumental in diverting her husband's attention from ichthyology to glaciers.

Mrs Agassiz was a German lady, and could not endure the Swiss ladies. Another eminent naturalist, M. Charpentier, director of the salt mines at Bex, was also married to a German wife. It occurred to Agassiz that the two German ladies might like to cheer each other up, and he therefore arranged to spend a summer vacation at Bex; and while the German ladies talked about whatever German ladies do talk about, the men of science talked about glaciers. Their conversations, in fact, resulted in nothing less than the discovery of the Glacial Epoch. It came about in this way.

There are to be found, scattered about Switzerland, certain huge boulders, technically known as "erratic blocks." Seeing that they could not have grown there, and were of different geological formation from the circumjacent rocks, it naturally occurred to the curious to wonder whence they had come, and how they had been conveyed. The original theory was that they were the residuum of the universal deluge. But people were beginning to have their doubts about that deluge, and a fresh theory was required. A chamois-hunter named Perrandier

then, though innocent of any scientific knowledge, invented a new theory out of his own head. The blocks, he said, had been carried down into the valleys on the backs of glaciers. It was pointed out to him that the blocks were often found in places from which glaciers were many miles removed. He replied that, in that case, glaciers must once have covered the whole country, since the blocks could not have been conveyed by any other means.

That was the rude beginning of the glacial theory. The chamois-hunter unfolded it to M. Venetz, an eminent civil engineer of the Valais. Venetz was much impressed by the hypothesis. It was confirmed by the condition of certain rocks, which were found to be polished just as one would have expected them to be if glaciers had rubbed up against them. In the end he accepted the theory, and converted Charpentier, who in his turn converted Agassiz. Anticipating Charpentier, who afterwards accused him of stealing his ideas, he read a paper on the subject, in 1837, before the Helvetic Society, announcing his conviction that a great ice-period, due to a temporary oscillation of the temperature of the globe, had covered the surface of the earth with a sheet of ice, extending at least from the North Pole to Central Europe and Asia. "Siberian winter," he said, "established itself for a while over the world previously covered with a rich vegetation, and peopled with large mammalia, similar to those now inhabiting the warm regions of India and Africa. Death enveloped all nature in a shroud, and the cold having reached its

highest degree, gave to this mass of ice, at the maximum of tension, the greatest possible hardness." The distribution of the erratic boulders was "one of the accidents accompanying the vast change occasioned by the fall of the temperature of our globe before the commencement of our epoch."

Naturally the audacious allegation was not allowed to go unchallenged by the champions of the old school; and the contradiction encountered stimulated Agassiz to further and more systematic observations. He made various Alpine journeys, and finally established himself, with his friends and supporters, in permanent summer quarters on the medial moraine of the lower Aar glacier, near the Grimsel Hospice.

It will be noticed that in the considerable literature relating to the adventures and experiments amongst the glaciers, the talk is never of Agassiz alone, but always of "Agassiz and his companions"; and the philosopher's relations with his companions do, in truth, furnish one of the most curiously interesting chapters of his life. He needed companions for two reasons: first, because he was of a genial and expansive disposition; secondly, because he always had more projects in hand than he could attend to without assistance. His enterprises, however, far from being remunerative, involved heavy expenditure, only occasionally recouped by grants in aid from scientific societies and wealthy patrons, so that he had no superfluous funds to disburse in salaries. He could not, therefore, pick and choose his assistants, but had to take what assistants he could

AIGUILLE DU DRU AND MER DE GLACE.

get. The first to come, and also the most famous, was Edouard Desor.

Desor was a law student of Heidelberg, and a political refugee, living from hand to mouth as a tutor and a translator, and absolutely ignorant of natural science. He came, not as a scientific assistant, but as a secretary, the arrangement being that Agassiz should pay for his board and lodging, and that when he wanted money he should ask for it, and that Agassiz would give him some if he happened to have any at the time. He was, however, a young man of ability who rose to the occasion, getting up scientific questions as a lawyer gets up his brief, and plunging into scientific controversies with as much ardour as though he had been trying to upset a government. Most of Agassiz' extravagances and disputes were due to his excess of zeal. He had, moreover, a very keen eye for *réclame*, and a bright and vigorous prose style. "Agassiz and his companions" figure in his narratives as a firm, or one might almost say a Chartered Company, for the exploitation of all kinds of scientific knowledge, with Desor for managing director. He took care that the managing director got his full share of the credit for the work accomplished.

Another of the "companions" was Karl Vogt, who afterwards got a professorship at Geneva. It is said that one of the grievances of Mrs Agassiz, second only to her difficulty in obtaining a regular supply of money for the household expenses, related to the character of the stories which Vogt and Desor used to tell at the philosopher's dinner-table. A third "companion,"

Gressly, was distinguished for the fact that, though he never had any money, he never wanted any. During the winter he lived with Agassiz, performing secretarial functions. The rest of the year he spent tramping about the Jura studying geology. He travelled, however, not as a tourist, but as a tramp. Instead of making hotel expenses, he used to walk up to a farmhouse and boldly ask for a night's lodging: a favour which was almost invariably accorded him, because he was an entertaining companion, and particularly clever at making cocked hats and boats out of old newspapers to amuse the children. One day he set out on his usual journey and did not return. After long inquiry it was discovered that he had gone mad in the middle of a walking tour, and been locked up in an asylum.

Such were the principal members of the company in the "Hotel des Neuchâtelois," as they called it. The original hotel was made by using the shelter of a big boulder, and screening the entrance with a blanket. Afterwards a rough frame cabin, covered with canvas, was substituted for it. There was a sleeping-place for guides and workmen, a bedroom for the investigators, and another apartment serving as dining-room and laboratory. "This outer apartment," says Mrs Agassiz, "boasted a table and one or two benches; even a couple of chairs were kept as seats of honour for occasional guests. A shelf against the wall accommodated books, instruments, coats, etc., and a plank floor on which to spread their blankets at night was a good exchange for the frozen surface of the glacier."

Here Agassiz and his companions resided for several summers, receiving the visits of distinguished strangers from all parts of the world, climbing and making every experiment with the glacier that their ingenuity could devise. They drove lines of stakes across it to test the rate of glacier motion; they bored holes in the ice to examine its internal structure; and Agassiz himself was lowered into a glacier well. The experience seems to have been painful:—

"Wholly engrossed in watching the blue bands, still visible in the glittering walls of ice, he was only aroused to the presence of approaching danger by the sudden plunge of his feet into water. His first shout of distress was misunderstood, and his friends lowered him into the ice cold gulf instead of raising him. The second cry was effectual, and he was drawn up, though not without great difficulty, from a depth of one hundred and twenty-five feet."

We need not go into the scientific results of the various experiments conducted. The experiments came to an end when Agassiz departed to America, where a glacier is most appropriately called after him. He got a professorship at Harvard, and, his first wife having died, married an American lady, who relieved the pressure of his pecuniary embarrassments and obtained the necessary regular supply of money for the daily household expenses by opening an academy for young ladies. Agassiz lectured to the young ladies, but his interest in glaciers continued. He observed traces of glacial action in Brazil, under the patronage of the Emperor, and went to see

the Andes, though he did not climb them; but the study of the Swiss glaciers was passed on to others—not, indeed, to Desor, who, inheriting a fortune, gave up science for politics, but to Professor Tyndall and M. Dollfus-Ausset.

Tyndall really belongs to the modern period. He was Mr Whymper's principal competitor for the honour of making the first ascent of the Matterhorn, and he accomplished the first ascent of the Weisshorn. But his first interest in the Alps was scientific, and it was he who first worked out the mechanics of glacier movement. Between his work, however, and that of Agassiz, there was an interval of some years. The link between the two observers is supplied by the career of Dollfus-Ausset.

Dollfus-Ausset was an Alsatian of Mülhausen, born in 1797. He divided his time, and even his literary activity, between glaciers and stamped velvets. The two books which stand to his credit in the library catalogues are entitled respectively "Materials for the Study of the Glaciers," and "Materials for the Dyeing of Stuffs." The former is a large work in twelve volumes with forty plates, and is the record of prolonged personal investigation. M. Dollfus built himself observatories on the Aar Glacier, the Saint Bernard, the Théodule, and elsewhere. He made with Desor a first ascent of the Galenstock, and of one of the peaks of the Wetterhorn, and he was popularly known by the affectionate sobriquet of "Papa Gletscher Dollfus."

CHAPTER X.

THE time has come to speak more particularly of the exploits of the English climbers who decided that mountaineering should take rank with the athletic sports.

We have dealt at length with Windham's trip to Chamonix, and have mentioned Dr John Moore. The latter gentleman's account of the attempt of his pupils to climb the Aiguille du Dru is too entertaining not to be quoted.

"While we remained," he writes, "in contemplation of this scene, some of the company observed that from the top of one of the Needles the prospect would be still more magnificent, as the eye would stretch over Breven, beyond Geneva, all the way to Mount Jura, and comprehend the Pays de Vallais and many other mountains and vallies.

"This excited the ambition of the D—— of H——. He sprung up and made towards the Aiguille du Dru, which is the highest of the four Needles. Though he bounded over the ice with the elasticity of a young chamois, it was a considerable time before he could arrive at the foot of the Needle—for people are greatly deceived as to distances in those snowy regions.

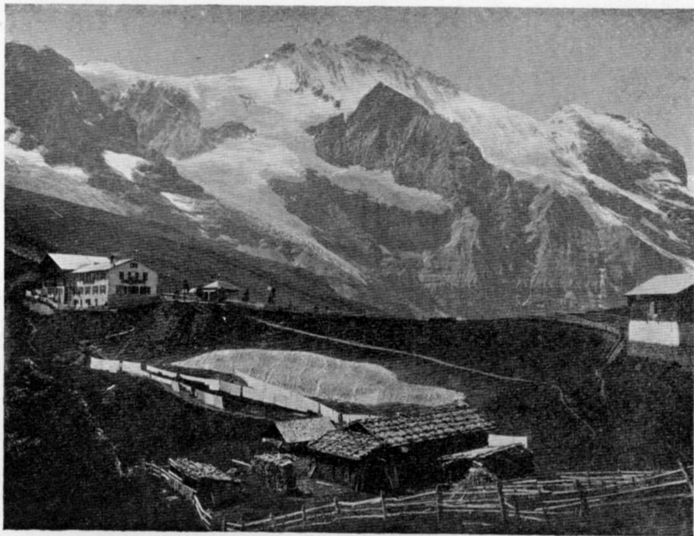
"'Should he get near the top,' said Mr G——, looking after him with eagerness, 'he will swear we have seen nothing. But I will try to mount as high as he can; I am not fond of seeing people above me.' So saying, he sprung after him.

"In a short time we saw them both scramb

ling up the rock: the D—— had gained a considerable height, when he was suddenly stopped by a part of the rock which was perfectly impracticable (for his impetuosity had prevented him from choosing the easiest way), so Mr G—— overtook him.

"Here they had time to breathe and cool a little. The one being determined not to be surpassed, the other thought the exploit not worth his while, since the honour must be divided. So, like two rival powers who have exhausted their strength by a useless contest, they returned, fatigued and disappointed, to the place from which they had set out."

Our Table of the first ascents of Mont Blanc also contains the names of some early English climbers, though most of them only climbed that one mountain. One might add the names of Messrs Yeats Brown and Fred Slade, who made a serious, though unsuccessful, attempt to climb the Jungfrau in 1828; and a few of the early visitors to Zermatt are also worthy of mention. The first of them was Mr George Cade of York, who arrived there by way of the Théodule in 1800, and said that no one had crossed that glacier pass since De Saussure. He says that the people "addressed us in High Dutch, too high, indeed, for our weak understandings." Afterwards came, among others, the Earl of Minto and Sir John Herschel, who both made early ascents of the Breithorn, and Brockedon, who helped Murray with the early editions of his Handbook. But the real pioneer among British climbers was J. D. Forbes.



WENGERN, SCHEIDECK, AND JUNGFRAU.

Forbes was a Scotsman, and a glacier investigator, contemporary with, but independent of, Agassiz. His relations with Agassiz would figure in any history of the quarrels of scientific men, though we need not here trouble ourselves about the rights and wrongs of the dispute. It arose out of Forbes' visit to Agassiz at the Hotel des Neuchâtelois. Walking about on the glacier of the Aar, the two observers tried to pump each other, and the austere Gael was more successful in the battle of wits than the expansive Switzer, extracting more information than he imparted. The row began when Forbes published the results of his observations, and it was worked up to a white heat by the combative Desor, until, in the end, Agassiz refused to meet Forbes at dinner at the house of a mutual friend at Paris. Before that *contretemps*, however, Forbes and Mr Heath of Cambridge had made with Agassiz and Desor an interesting ascent of the Jungfrau.

Nor was this Forbes' only interesting ascent. He also travelled among the glaciers of Norway and the Alps of Dauphiné, and made an important journey through the less known valleys of the Pennines. In particular he came over the Col de Collon into the Evolena Valley, meeting a gruesome sight upon the way—the dead body of a peasant who had been lost upon the Pass: "From the appearance of the body as it lay, it might have been presumed to be recent; but when it was raised the head and face were found to be in a state of frightful decay, and covered with blood, evidently arising from an incipient thaw, after having remained for perhaps a twelve-

month perfectly congealed. . . . A very little further on we found traces of another victim, probably of an earlier date—some shreds of clothes and fragments of a knapsack; but the body had disappeared. Still lower the remains of the bones and skin of two chamois, and near them the complete bones of a man."

From Evolena, Forbes made the first passage (by an amateur) of the Col d'Hérens to Zermatt, where he made an ascent of the familiar Riffelhorn. It was supposed that the first ascent had been made in 1841 by a party of English students, but fresh light was thrown on the subject by a letter sent to the *Alpine Journal* by the late Mr Crawfurd Grove in 1874.

"The simple but exciting pastime," says Mr Grove, "of rolling big stones from the top of the Riffelhorn on to the glacier below was the means last autumn of bringing a curious relic to light. Two American travellers who were enjoying this exhilarating sport last August determined to signalise their visit by sending down a bolt of unusual magnitude. Having fixed upon a stone of such size that it was as much as two men could do to move it, they prized it with great difficulty from its bed, when to their surprise they found in the site thus laid bare a javelin or spear head, which must have been lying under the stone for time indefinite."

It follows that the Riffelhorn is the only mountain of which the first ascent can be attributed, on impeachable evidence, to primitive man; but there is also another story of an ascent prior to that by the English students

which has been told in the "Echo des Alpes." It is the story of a shepherd who was driven mad by the oppression of a solitary life. He fled from human society, and whenever he saw anyone coming withdrew to the top of the Riffelhorn, which he reached by a perilous path known to him alone, and threw stones down at his fellow-creatures. Ultimately he became such a nuisance that a chamois-hunter stalked and shot him.

Next to Forbes in point of time comes John Ball, the compiler of the well-known "Alpine Guide." He was Colonial Under-Secretary in Lord Palmerston's Administration, and made the first passage of the Schwarzthor in 1845. Charles Hudson, Fred Walker, Thomas Woodbine Hinchliff, and the brothers Smyth, are some of the more notable of those who immediately succeeded him; and Mr Justice Wills must on no account be overlooked. But it will, on the whole, be more convenient to consider the popularising of the Alps in connection with two outstanding events: the ascent of Mont Blanc by Albert Smith, and the formation of the Alpine Club.

Albert Smith was a medical student who abandoned medicine for literature. One knows him chiefly as a humorist, but about Mont Blanc he was serious. He read a little book, written for the nursery, entitled "The Peasants of Chamonix," and ever afterwards the mountain fascinated him. He first went to Chamonix at the age of twenty-two, in 1838, and was so anxious to make the ascent, that he was willing

to act as porter if anyone would engage his services in that capacity. The opportunity did not occur, however, and as he had set out from home with only twelve pounds in his pocket, he could not afford to climb at his own expense. He repeated the visit again and again, however, and, later, when he had established a reputation as a lecturer, it occurred to him that the ascent of Mont Blanc would form an excellent subject for a popular entertainment. He started once more, therefore, for Chamonix, in 1851, accompanied by William Beverley, the artist. There he joined forces with some Oxford undergraduates, who were delighted to climb with him when they heard that this "Mr Smith of London" was no other than "Mr Smith the well-known comic author."

The members of the party, including guides and porters, numbered twenty; and the list of the provisions that they took with them almost suggests that they thought of opening a hotel upon the mountain top. In addition to beef, mutton, veal, and general groceries, they conveyed forty-six fowls, twenty loaves, ten cheeses, and not less than ninety-five bottles of wine. One of the party suffered from mountain-sickness, and was seen "lying on the snow, vomiting frightfully with considerable hæmorrhage from the nose"; while Albert Smith expressed the opinion that "every step we took was gained from the chance of a horrible death." He was particularly appalled when crossing a snow slope of the Montagne de la Côte—a passage which Mr Matthews

describes as "perfectly easy." "It is," Smith writes, "an all but perpendicular iceberg. You begin to ascend it obliquely; there is nothing below but a chasm in the ice, more frightful than anything yet passed. Should the foot slip or the bâton give way there is no chance for life. You would glide like lightning from one frozen crag to another, and finally be dashed to pieces, hundreds and hundreds of feet below, in the horrible depths of the glacier." It is much the same sort of language that Master John de Bremble used on the Great Saint Bernard, and the provocation for it was not perceptibly greater. But it is almost the last expression of such exaggerated terror, and the rest of the narrative shows that it was hardly called for. The party not only got safely up and safely down again, but remained sufficiently robust to eat all their provisions and drink all their wine before descending.

The ascent made a good deal of noise, and was the subject of a satirical article in the *Daily News*. Albert Smith was therein compared unfavourably with De Saussure. "Saussure's observations and his reflections on Mont Blanc," it was written, "live in his poetical philosophy; those of Mr Albert Smith will be most appropriately recorded in a tissue of indifferent puns and stale fast witticisms, with an incessant straining after smartness. The aimless scramble of the four pedestrians to the top of Mont Blanc, with the accompaniment of Sir Robert Peel's orgies at the bottom, will not go far to redeem the somewhat equivocal reputation of the herd

of English tourists in Switzerland, for a mindless and rather vulgar redundance of animal spirits."

A controversy followed, which naturally turned the attention of enterprising men to Alpine climbing; and interest in the pastime was kept alive by the lecture which Albert Smith gave at the Egyptian Hall in Piccadilly. He had already acquired a reputation by his lecture on the "Overland Mail." The lecture on Mont Blanc, illustrated from pictures drawn by Beverley, was infinitely more popular. It went on almost without interruption for six years, was patronised by Queen Victoria and the Prince Consort, and put thirty thousand pounds into Albert Smith's pocket.

And while Albert Smith was lecturing, Hinchliff and E. S. Kennedy, and Charles Hudson and Mr Justice Wills, and others, were climbing. Hudson, in particular, distinguished himself by making an ascent of Mont Blanc by a new route, and without guides, while Mr Justice Wills made that ascent of the Wetterhorn which was mentioned in the first paragraph of this book. The various climbers, after making one another's acquaintance in Switzerland, naturally liked to meet again in England to renew the acquaintance, and talk "shop." The desire naturally resulted in the foundation of the Alpine Club.

The idea was first mooted in a letter written by Mr William Mathews, who had lately left Saint John's College, Cambridge, and had ascended the Vélan, and the Petit Combin, to the Rev. J. A. Hort, subsequently Professor of Divinity at Cambridge, in February 1854.

"I want you," he wrote, "to consider whether it would not be possible to establish an Alpine Club, the members of which might dine together once a year, say, in London, and give each other what information they could. Each member at the close of any Alpine tour in Switzerland or elsewhere should be required to furnish to the President a short account of all the undescribed excursions he had made, with a view to the publication of an annual or biennial volume. We should thus get a great deal of useful information in a form available to the members."

The project was further discussed in Switzerland, in the course of the same summer, and crystallised at a dinner-party given at the house of Mr William Mathews, senior, the Leasowes, in Worcestershire. The list of original members included the names of E. T. Coleman, the Rev. J. Llewellyn Davies, the Rev. J. F. Hardy, F. Vaughan Hawkins, T. W. Hinchliff, the Rev. F. J. A. Hort, E. S. Kennedy, William Longman, William Mathews, B. St John Mathews, Albert Smith, and Alfred Wills. John Ball and Sir Leslie Stephen were among those elected shortly afterwards. Kennedy was the first President, and John Ball the second. The Club originally met in Hinchliff's chambers, but soon acquired premises of its own. The members first collaborated, under Ball's editorship, in the production of that classical collection of narratives of Alpine exploration, "Peaks, Passes, and Glaciers." Subsequently it produced the *Alpine Journal*, of which Mr Coolidge and Mr Douglas Freshfield are ex-editors, and which is at present edited by

Mr Yeld, well known for his study of the Graian Alps.

The Club and its publications naturally gave a great stimulus to climbing. A reference to the Appendix will show that most of the important first ascents were made between 1854 and 1865, and that the majority of them were made by Englishmen. Our list, in fact, which, though necessarily not exhaustive, was compiled without prejudice, shows twenty-nine English to eleven foreign first ascents, while in one case the nationality of the company was mixed. The mountains conquered in the period include Monte Rosa, the Mönch, the Eiger, the Schreckhorn, the Weisshorn, the Dent Blanche, the Zinal Rothhorn, and the Ecrins. The climax is reached with the conquest of the Matterhorn; but the Matterhorn merits a separate chapter.

CHAPTER XI.

ZERMATT was not absolutely the last of the great climbing centres to be popularised; but, being remote and difficult of access, it attracted attention a good deal later than Chamonix, Grindelwald, or Heiligenblut.

The early history of the valley has nothing to do with mountaineering, unless one so classes the legend that the Prince of Darkness carried a cathedral bell over the Théodule on his broad shoulders, in fulfilment of a compact with the Bishop of Sion. The early documents that have been published chiefly relate to the ownership or

overlordship of land. Theoretically, the feudal lords ruled the serfs, the Bishop of Sion ruled the feudal lords, and the Counts of Savoy ruled the Bishop. Later, the Valais was for a while a Republic. Napoleon incorporated it with his Empire as the Department of the Simplon, and in 1814 it joined the Swiss Confederation.

We have already mentioned such early visitors to Zermatt as De Saussure and Mr George Cade of York. A certain, though probably not a great, quantity of trade seems to have passed at this period over the Théodule Glacier. According to Cade, nine mules made the passage in a single year, and iron was by this route exchanged for Italian wines. The inaccuracies in Ebel's Guide make it clear that he at least never went there; but Murray, in 1838, speaks of "an influx of strangers," and says that "many mineralogists, botanists, and entomologists come here to collect rich harvests in the neighbourhood." Among the visitors whom we know of are Brockedon the artist, Elie de Beaumont the geologist, Engelhardt, Desor, Studer, Agassiz, Charpentier, Töppfer, J. D. Forbes, John Ball, and Ruskin.

As yet, however, there was no inn at Zermatt. The first was started by the village doctor, wisely, since he found that he was expected to entertain the strangers whether he kept an inn or not. In 1854 he sold it to Alexander Seiler, who was not long in making a name as one of the greatest hotel-keepers in the world. When he found that one hotel was not enough he built more. Before he died he had built half a dozen. Tourists flocked to him, and first ascents succeeded one

another with rapidity. Mr Whymper prints a table of fifteen, beginning with the Strahlhorn in 1854, and ending with the Matterhorn in 1865. For the moment we will speak only of the Matterhorn.

Few mountains look more absolutely inaccessible than the Matterhorn. It stands up at the head of the Zermatt valley like a prodigious obelisk. The first impression is that one could no more hope to climb it than to climb Cleopatra's Needle. The early visitors accepted their first impressions and did not try. The first attempt that is known of was made by the Carrels, the Abbé Gorret, and Gabriel Maquignaz in 1858. They only got to a height of about 12,650 feet. The Messrs Parker of Liverpool, who tried in the same year, did not get so far. Mr Vaughan Hawkins and Professor Tyndall also tried in the same year, and got a little further. A second attempt by the Parkers in 1861 was again unsuccessful. Then Mr Whymper comes upon the scene.

Mr Whymper, accompanied by an Oberland guide, arrived at Breuil, on the Italian side of the Matterhorn, in August 1861. Seeking a local guide, he was introduced to Jean-Antoine Carrel; but he and Carrel could not come to terms. It was a pity, for Carrel was the only man who really believed from the first that the ascent was feasible, and was also the best rock climber of the day. Mr Whymper, however, set out without him, and pitched a tent on the Col du Lion, a ridge of perilous aspect, with a steep snow slope on one side of it, and a precipice on the other.

The next morning he proceeded to climb up the rocks; but the guide got frightened, and insisted upon turning back. In the meantime the guide Bennen had reported to Professor Tyndall that the ascent was not to be thought of.

"Herr," he said, "I have examined the mountain carefully, and find it more difficult and dangerous than I had imagined. There is no place upon it where we could well pass the night. We might do so upon yonder Col in the snow, but there we should be almost frozen to death, and totally unfit for the work of the next day. On the rocks there is no ledge or cranny which could give us proper harbourage; and, starting from Breuil, it is certainly impossible to reach the summit in a single day."

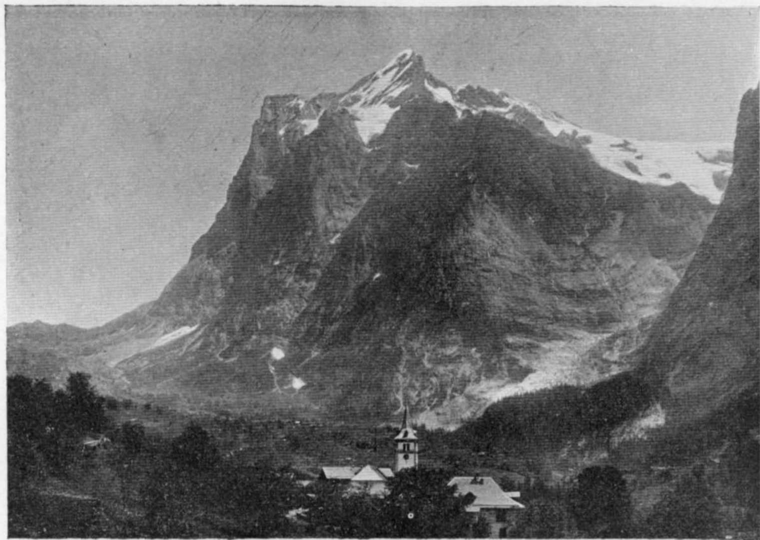
Mr Whymper, however, was not deterred by this report, but returned to the charge in 1862, in which year he made no fewer than five attempts. The first was defeated by a hurricane. "We dared not attempt to stand upright, and remained stationary, on all fours, glued, as it were, to the rocks." In the second attempt one of the guides was taken ill, and the other refused to go on without him. The third attempt was made without guides, and ended in an accident. Mr Whymper was chipping his way along a snow slope at the base of a cliff, when he slipped and fell. His narrative is very graphic.

"The knapsack brought my head down first, and I pitched into some rocks about a dozen feet below; they caught something, and tumbled me off the edge, head over heels, into the gully. The bâton was dashed from my hands, and I whirled

downwards in a series of bounds, each longer than the last, now over rocks, now into ice, striking my head four or five times, each time with increased force. The last bound sent me spinning through the air, in a leap of fifty or sixty feet, from one side of the gully to the other, and I struck the rock, luckily with the whole of my left side. They caught my clothes for a moment, and I fell back into the snow with motion arrested. My head, fortunately, came the right side up, and a few frantic clutches brought me to a halt, in the neck of the gully, and on the verge of the precipice. . . . I fell nearly 200 feet in seven or eight bounds. Ten feet more would have taken me in one gigantic leap of 800 feet on to the glacier below."

That would have sufficed for most men. It did not suffice for Mr Whymper. Only a few days later he was on the mountain again, first with Carrel, who insisted on turning back for some reason not very clear, and then without Carrel, when the mountain proved to be in an unfavourable condition for climbing. Bad weather baffled the only attempt made in 1863, and there was no attempt in 1864. By 1865 Mr Whymper had decided that the route from Zermatt was to be preferred to that from Breuil.

Christian Almer, who was with him, did not want to try the mountain. "Anything but Matterhorn, dear sir," was his refrain. Mr Whymper, therefore, went to Breuil to pick up Carrel; but Carrel could not come. He had, in fact, engaged himself to make the attempt from Breuil with Signor Sella. Then Lord



The Wetterhorn from Grindelwald.

Francis Douglas happened to walk into the place with young Peter Taugwalder. He also was thinking of climbing the Matterhorn from Zermatt, and Peter's father had reported that he thought it could be done. As Lord Francis was a brilliant climber, who had just distinguished himself by a first ascent of the Ober-Gabelhorn, the two parties agreed to join, and crossed the Théodule to Zermatt together. At Zermatt they picked up old Peter, and meeting Michel Croz, who had often climbed with Mr Whymper, engaged him to come also. At dinner they met the Rev. Charles Hudson, already mentioned as having climbed Mont Blanc without guides. Hudson was invited to join. He accepted, and introduced his friend, Mr Hadow, as "a sufficiently good man to go with us." Mr Hadow was admitted, and Peter Taugwalder's second son was engaged as a supplementary porter.

The party set off from Zermatt at half-past five in the morning of July 13th, and pitched their tent at a height of about 11,000 feet. They slept well after supper and songs, and started afresh as soon as it was light enough to see. At first it was easy going. Then came the difficult shoulder—the part that is nowadays draped with ropes—and then, after the turning of an awkward corner, an easy snow patch led to the top. The victory was won, and the joy of it was enhanced by the discovery that the Italian party from Breuil had tried and failed. They could look down and see them—"mere dots on the ridge, at a great distance below. . . ." They hurled stones to draw their attention, and

the Italians turned and fled. Arriving at Breuil they confirmed the truth of an old legend: "We saw them ourselves—they hurled stones at us. The old traditions are true—there are spirits on the top of the Matterhorn."

And now we come to the appalling story of the catastrophe.

The stay on the summit had lasted an hour. Mr Whymper, suddenly remembering that he had forgotten to put cards bearing the names of the party in a bottle, remained a little longer. They were all roped together, Croz leading, Hadow second, Hudson third, Lord Francis Douglas fourth, followed by old Peter, young Peter, and Mr Whymper himself. All went well until the steep part of the rock was reached. This is Mr Whymper's graphic account of what then happened:—

"Michel Croz had laid aside his axe, and, in order to give Mr Hadow greater security, was absolutely taking hold of his legs, and putting his feet, one by one, into their proper positions. So far as I know, no one was actually descending. I cannot speak with certainty, because the two leading men were partially hidden from my sight by an intervening mass of rock, but it is my belief, from the movements of their shoulders, that Croz, having done as I have said, was in the act of turning round, to go down a step or two himself; at this moment Mr Hadow slipped, fell against him, and knocked him over. I heard one startled exclamation from Croz, then saw him and Mr Hadow flying downwards; in another moment Hudson was dragged from his

The Matterhorn.

steps, and Lord F. Douglas immediately after him. All this was the work of a moment. Immediately we heard Croz's exclamation, old Peter and I planted ourselves as firmly as the rocks would permit: the rope was taut between us, and the jerk came on us both as one man. We held; but the rope broke midway between Taugwalder and Lord Francis Douglas. For a few seconds we saw our unfortunate companions sliding downwards on their backs, and spreading out their hands, endeavouring to save themselves. They passed from our sight uninjured,. disappeared one by one, and then fell from precipice to precipice on to the Matterhorngletscher below, a distance of nearly 4000 feet in height."

The Taugwalders were unnerved. Mr Whymper had all the difficulty in the world to bring them down. "Several times," he says, "old Peter turned with ashy face and faltering limbs, and said, with terrible emphasis, 'I cannot.'" At half-past nine they were not yet off the mountain, and had to spend the night on a narrow slab of rock. At daybreak they ran down to Zermatt, and set out to search for the bodies of their comrades.

"By 8.30, we had got to the plateau at the top of the glacier, and within sight of the corner in which we knew my companions must be. As we saw one weather-beaten man after another raise the telescope, turn deadly pale, and pass it on without a word to the next, we knew that all hope was gone. We approached. They had fallen below as they had fallen above—Croz a little in advance, Hadow near him, and Hudson

some distance behind; but of Lord Francis Douglas we could see nothing. We left them where they fell: buried in snow at the base of the grandest cliff of the most majestic mountain of the Alps."

Such was the first of the Matterhorn accidents. It was not by any means the last. In 1879 two deaths occurred on the mountain in the course of the same twenty-four hours. A guide named Joseph Brantschen, being taken ill, was left behind in the hut while his companions went to seek help, and when they got back to him they found him dead. Dr Moseley of Boston, being unroped, and carelessly vaulting over a rock, slipped and fell 2000 feet. In 1886 Mr Borckhardt perished in circumstances similar to those in which Brantschen was lost; except that it was not in the hut, but on the exposed face of the mountain that he was abandoned. In 1890 a whole party was lost under circumstances never quite understood. But the saddest case of all was the death of J. A. Carrel.

Carrel, as has been said, was Mr Whymper's rival for the honour of making the first ascent of the Matterhorn. He had also been Mr Whymper's companion in the Andes, and Mr Whymper has recorded that he considered him the best rock climber whom he had ever known. He had begun his scrambles on the Matterhorn as a man of thirty. It was still his profession to climb the Matterhorn as a man of sixty. He had saved no money and so could not afford to retire; and the sad day of his last climb came. He and Gorret took Signor Sinigaglia up, and they

were snow-bound in the higher hut. The storm lasted; provisions began to fail; storm or no storm it was necessary to descend. Carrel was obviously weak and worn out, but, says Signor Sinigaglia, "he continued to direct the descent with a coolness, energy and ability above all praise. But for his guidance the party would never have got down at all. He staggered a little, but protested that nothing was the matter, and went on, holding out until the dangerous zone was passed, before he called out: 'Come up and fetch me. I have no strength left.' They carried him a little way, and gave him all the brandy that remained, but all in vain.

"We tried to lift him," says Signor Sinigaglia, "but it was impossible—he was getting stiff. We stooped down and asked in his ear if he wished to commend his soul to God. With a last effort he answered, 'Yes,' and then fell upon his back, dead, upon the snow." He had fallen like a soldier at the post of duty, as truly as if he had met his death in his fighting days on the field of Solferino.

CHAPTER XII.

We have come late to the accidents, for the simple reason that accidents hardly ever happened in the early days when people were thoroughly afraid of the mountains. They did not, indeed, take all the precautions that modern experience enjoins. The rope was not at all regularly used by them on crevassed glaciers; they knew little

about the hours at which avalanches were specially liable to fall; and we have seen De Luc deliberately walking on to a cornice in order to enjoy the view. Somehow or other, however, the chapter of chances was in their favour.

The first Alpine accident properly so called happened in 1800 on the glacier of the Buet. A Dane named Eschen, walking ahead of his companions, "suddenly disappeared from view." He had fallen into a crevasse, two hundred feet deep, from which his body was subsequently recovered. A monument was erected to his memory "under the magistracy of Bonaparte, Cambacères, Le Brun, Consuls of the French Republic." "Travellers," ran the inscription on one of its three faces, "A Guide, prudent and robust, is necessary to you. Do not leave him. Obey the counsels of experience. It is with mingled sentiments of fear and respect that you should visit the spots which Nature has marked with the seal of her majesty and power."

Another accident happened, not long afterwards, to Herr Escher, Secretary of the Grand Council of Zurich, who fell over a precipice while scrambling near the Col de Balme. The incident is chiefly remarkable for the comment of Pictet, in the "Bibliothèque Universelle." "How little merit or glory there is," Pictet wrote, "in risking one's life in feats of prowess in which the most ordinary rope dancer will always excel the traveller who thinks to give evidence of his clearness of head or of his agility in these hazardous *tours de force*."

The most sensational of the early accidents

was that which happened, in 1820, on Mont Blanc. It was the famous Hamel accident that first caused the perils of the pastime of climbing to be realised by those who lived at home at ease.

Dr Hamel was a Russian savant, employed by the Tsar to make certain scientific observations. At Geneva he picked up M. Selligue, who wished to make some experiments on the mountain with a new barometer of his own construction. They were joined by two young Brazenose men, named Durnford and Henderson, engaged twelve guides, and set out. At the Grands Mulets bad weather detained them. M. Selligue passed a bad night, "during which," says Durnford, "he had made it out completely to his own satisfaction, that a married man had a sacred and imperious call to prudence and caution where his own life seemed at all at stake: thus he had done enough for glory in passing two nights in succession perched on a crag, like an eagle, and that it now became him, like a sensible man, to return to Geneva, while return was yet possible." M. Selligue had therefore to be left, and two of the guides were left with him. The others went on, and got quite near the top. Hamel, in fact, wrote two notes to announce his arrival on the summit, leaving a blank merely to insert the hour. They were obliqnely crossing a long snow slope, in single file, but not roped together. The rest is best told in Durnford's words.

"The snow suddenly gave way beneath our feet, beginning at the head of the line, and carried us all down the slope to our left. I was

thrown instantly off my feet, but was still on my knees and endeavouring to regain my footing when, in a few seconds, the snow on our right, which was of course above us, rushed into the gap thus suddenly made, and completed the catastrophe by burying us all at once in its mass and hurrying us downwards towards two crevasses about a furlong below us, and nearly parallel to the line of march. The accumulation of snow instantly threw me backwards, and I was carried down in spite of all my struggles. In less than a minute I emerged, partly from my own exertions, and partly because the velocity of the falling mass had subsided from its own friction. . . . At the moment of my emerging I was so far from being alive to the danger of our situation, that on seeing my two companions at some distance below me, up to the waist in snow, and sitting motionless and silent, a jest was rising to my lips, till a second glance showed me that, with the exception of Mathieu Balmat, they were the only remnants of the party visible. Two more, however, having quickly reappeared, I was still inclined to treat the affair as a perplexing though ludicrous delay, when Mathieu Balmat cried out that some of the party were lost, and pointed to the crevasses, which had hitherto escaped our notice, into which, he said, they had fallen."

This should be clear, but readers not used to mountains may need a word of further explanation. They must picture the party traversing the side of a steep hill, covered with deep snow. The snow is lying on the top of ice. The ice,

being on the incline, is not smooth, but slit, at intervals, with crevasses, which are like ditches or dongas, sometimes shallow, more often of immense depth. The snow has started sliding down hill, carrying the climbers with it. The momentum has carried some of them across the crevasse — but not all of them. By degrees Dornford realised exactly what had happened.

"The three front guides, Pierre Carrier, Pierre Balmat, and Auguste Tairraz, being where the slope was somewhat steeper, had been carried down with greater rapidity, and to a greater distance, and had thus been hurried into the crevasse, with an immense mass of snow upon them, which rose nearly to the brink. Mathieu Balmat, who was fourth in the line, being a man of great muscular strength, as well as presence of mind, had suddenly thrust his pole into the firm snow beneath, when he felt himself going, which certainly checked, in some measure, the force of his fall. Our two hindermost guides were also missing, but we were soon gladdened by seeing them make their appearance, and cheered them with loud and repeated hurrahs. One of them, Julien Devouassoud, had been carried into the crevasse, where it was very narrow, and had been thrown with some violence against the opposite brink. He contrived to scramble out without assistance, at the expense of a trifling cut on the chin. The other, Joseph-Marie Couttet, had been dragged out by his companions, quite senseless, and nearly black from the weight of the snow which had been upon him."

The leaders, however, had disappeared. The party descended on to the snow that had rolled into the crevasses in which they had been lost.

"Here we continued, above a quarter of an hour, to make every exertion in our power for the recovery of our poor comrades. After thrusting the poles in to their full length, we knelt down, and applied our mouth to the end, in the fond hope that they might still be alive, sheltered by some projection of the icy walls of the crevasse; but, alas, all was silent as the grave, and we had too much reason to fear that they were long since insensible, and probably at a vast depth beneath the snow on which we were standing. We could see no bottom to the gulf on each side of the pile of snow on which we stood; the sides of the crevasse were here, as in other places, solid ice of a cerulean colour, and very beautiful to the eye. Two of the guides, our two leaders, had followed us mechanically to the spot, but could not be prevailed upon to make any attempts to search for the bodies."

The ascent was then naturally abandoned, An official enquiry opened at Chamonix reported that no one was to blame, though Couttet said that the disaster was due to the obstinacy of Dr Hamel, who insisted on making the ascent in unsuitable weather. Knowledge of snowcraft, however, being in those days in its infancy, he could hardly be censured. The accident, however, had a curious sequel. J. D. Forbes, knowing the rate at which the glacier moved, predicted that the remains of the lost men would be found

again in forty years, and the prediction was fulfilled with singular exactness. On August 15th, 1861, Ambroise Simond of Chamonix discovered portions of clothing and some human remains near the lower extremity of the Glacier des Bossons. In June 1863, a fragment of a human body was seen protruding from the ice in the same place; and further relics, including a skull, a crumpled book, a lantern frame, shoes, gloves, ropes, and a hat, came to light in 1865. Some of them are still preserved in the Annecy Museum.

Curiously enough the accident was repeated, in almost all its details, in the case of the Arkwright accident in 1866. An avalanche fell upon the party. "Couttet," says the *Alpine Journal*, "saw what was coming, and, with the servant, managed to get out of the way. Captain Arkwright and his guides either remained immovable or tried to escape in the wrong direction: they were overwhelmed by the avalanche, and no trace of them was discernible by the survivors." And on this occasion too the remains were yielded up by the glacier at a later date. "A pocket handkerchief," says the *Alpine Journal*, "was intact, the coloured border scarcely faded, and the marking in ink quite perfect. The shirt had been torn to pieces, but two of the studs and the collar stud were found intact in the button-holes. There was a gold pencil-case which would still open and shut, with lead which would still mark. Most remarkable of all was the watch-chain, made of solid gold links, perfectly plain; not a scratch was visible,

and the gold was as clean as if it had just been rubbed up for wear."

Many more calamities have happened on the same mountain. Mont Blanc has the longest death-roll of all the Alpine summits. The others, however, or such of them as need be mentioned, will be more appropriately treated in a chapter in which the attempt will be made to enlighten those who do not understand what are the various ways in which Alpine accidents are liable to occur.

CHAPTER XIII.

A ROUGH classification of Alpine accidents is not difficult to make. There are the accidents which happen when the climber falls; the accidents which happen when something falls and hits the climber; and the accidents, not properly so-called, which are due to exposure and exhaustion. The last class, about which there is least to be said, may here be taken first.

One may, of course, be weather-bound and perish on a snow mountain just as people are weather-bound and perish in the Arctic regions, or even on the Yorkshire moors. As has already been told, Jean-Antoine Carrel perished thus upon the Matterhorn. Storms spring up with great suddenness on that mountain, and when they coat the steep rocks with ice, movement may often be impossible until the weather mends. Disasters of the kind are, however, more frequent on Mont Blanc than anywhere

else in the Alps. It is an easy mountain and not dangerous when ascended by the right route, with proper precautions, and under normal conditions. But the snowfields are of vast extent. Blizzards, or "tourmentes," as they are technically termed, may catch the traveller who does not keep a watchful eye on the barometer. He may, indeed, be able still to keep moving while they blow; but he may also lose his bearings, and so wander round and round in a circle, like the travellers lost in the Australian bush, until he can move no more. Competent guides, indeed, may be trusted either to foresee the coming of the blizzard, or to find a way through it to one of the refuge huts, there to wait until the weather clears. The danger is when the guides are incompetent, and the travellers are weak.

The worst and most famous calamity of the kind happened in 1870. Three Americans, Mr Randall, Mr J. Bean, and the Rev. J. McCorkindale, met in the August of that year at Chamonix. None of the three had had any experience of mountaineering, and the weather had been bad. Two Englishmen, who had made the ascent, had had a narrow escape of their lives in consequence. The Americans, however, were not discouraged by what they heard, but engaged three guides and five porters, and set out to make the climb. They slept at the Grands Mulets, and were never again seen alive. The weather became so violent that a search party sent after them on September 7th could not even reach the Grands Mulets. Not until the 15th

did the weather begin to improve. Then the telescope revealed five black dots near the Petits Mulets. On the following day a second search party of twenty-three men started. First they found the bodies of Mr McCorkindale and two of the porters lying about 750 feet below the summit, and then they came upon the bodies of Mr Bean and another porter, in a sitting posture, the head of the former leaning on one hand, his elbow resting on a knapsack. A notebook was found in Mr Bean's pocket. The pathetic entries tell us all that we know about the fatality:—

"Tuesday, September 6. Temperature 34 deg. F., at 2 A.M. I have made the ascent of Mont Blanc with ten persons—eight guides, Mr McCorkindale and Mr Randall. We arrived on the summit at half-past two. Immediately after leaving it I was enveloped in clouds of snow. We passed the night in a grotto excavated out of the snow, affording very uncomfortable shelter, and I was ill all night.

"Mont Blanc, September 7. If anyone finds this note-book, I beg that it may be sent to Mrs H. M. Bean, Jonesborough, Tennessee, United States of America.

"My dear Hessie,—We have been on Mont Blanc for two days in a terrible snow-storm. We have lost our way and are in a hole scooped out of the snow, at a height of 15,000 feet. I have no hope of descending. Perhaps this book may be found and forwarded. . . . We have no food; my feet are already frozen, and I am exhausted; I have only strength to write a few words. I die in the faith of Jesus Christ, with

affectionate thoughts of my family; my remembrances to all. My effects are in part at the Hotel Mont Blanc, and partly with me in two portmanteaux. Send them to the Hotel Schweizerhof at Geneva; pay my bills at the hotel, and Heaven will reward your kindness."

Lower down, in handwriting almost illegible:—

"Morning. Intense cold; much snow, which falls uninterruptedly; guides restless."

That is all we know. There is only one explanation of the tragedy—the incompetence of the guides. A strong man like Melchoir Anderegg would have stood out, and forbidden the ascent until the weather lifted.

Very similar is the story of the death of Richard Lewis Nettleship, Fellow and Tutor of Balliol College, Oxford, in 1892. His guides were Alfred Comte and Gaspard Simond. The storm descended; they lost their way, and after wandering about for several hours, stopped, dug a hole in the snow, and stayed in it all night. The guides said that Nettleship was in good spirits, and even sang to pass the hours. The rest of the story is thus told:—

"The storm continued the whole of the night. On the morning of the 15th it was still snowing hard, and all tracks were obliterated. The guides advised Mr Nettleship to remain where he was, on the chance of a change of weather, but Mr Nettleship urged that it was idle to remain there and die like cowards, and that they must make an effort to get away. He therefore started, the guides following him. They proceeded some little distance, when Mr Nettleship

stumbled, and became unsteady. The guides offered him wine and brandy, which he refused. He then cried out, and fell forward, uttering some words in English, after which he took each guide by the hand, bade them good-bye, closed his eyes, and expired.

"The guides remained with him for a short time, and then placing his ice-axe upright in the snow to mark the place where he lay, they left him. After a short time the weather cleared a little, the guides caught sight of the Vallot hut, made for it, and stayed there all the night of Tuesday the 25th.

"Friday the 26th was fine, and the guides returned to the Dôme, where the body lay. They then descended to the Grands Mulets, whence Alfred Comte brought the news to Chamonix, Simond remaining at the Grands Mulets."

Hardly different is the story of the death of Professor Fedchenko by the side of the Glacier du Tacul in 1873, when caught in a storm with Joseph Payot: "They were soon wet to the skin, and half frozen by the cold wind. Mr Fedchenko was already tired, and the cold and wet told heavily upon him. . . . About 9 P.M. they reached the few scattered rocks which compose the moraine known as La Noire — a moraine totally insufficient in size to afford any protection against the weather. . . . They remained in this dreadful position, exposed, without any shelter, to wind, rain and snow, from 9 P.M. to 2 A.M. . . . There was no moon, and the night was dark with clouds and bad weather. Prosper Payot, who was the strongest of the party, re-

mained upon his feet all the time, moving about, and as long as he could he kept the traveller and his brother upon their feet; but at length exhaustion became supreme. The traveller sank upon the rock, and despite every effort Prosper could make, fell into that fatal sleep of frozen exhaustion from which there is no waking. He had long been in this condition, though still breathing, and Prosper had already had to strike, kick, and shake his brother to prevent him from falling asleep, when the younger brother came to the conclusion that the only chance of saving any life besides his own—perhaps his own also—was to attempt to walk on. He got his brother into motion with infinite difficulty. . . . They both reached the Montanvert in a very exhausted and pitiable condition."

The lesson of the two latter stories is clear. The amateurs, in each case, were not in good enough health and training to stand any exceptional exposure. Where weather is changeable and distances are long, no one should venture who is not very sure of his physical power of resistance.

Now we will turn to the accidents caused by avalanches, first explaining, to those who do not know, exactly what an avalanche is.

Perhaps the best way to realise an avalanche is to picture a quantity of snow lying on the sloping roof of a house. It is obvious that if the roof be sufficiently steep, the snow will be in unstable equilibrium. A trifling disturbance may detach it from its position, and it will be bad for anyone who happens to be passing below

when it falls into the street. Imagine, in the second place, that, while the snow lies on the roof of the house, a number of men start to walk across it. It is obvious that the disturbance caused by their movements may suffice to set it sliding. It is also obvious that, if the snow be deep enough, it will sweep them with it. They will fall into the street, and be buried there by the snow that comes down after them. But snow on the side of a hill may start sliding in the same way, and for the same reasons as snow on the roof of a house. It is particularly liable to slide if it is lying, not on a rock, but on a slope of ice. If the slope of ice terminates, as it often does, in a crevassed glacier, the climbers may be swept into a crevasse and buried there. Even if it terminates, as it sometimes does, in a soft bed of snow, the danger of being buried and smothered still remains, while there is always the additional danger of being knocked against something hard on the way down.

The mountaineer skilled in snowcraft is supposed to know two things. He should know where avalanches are apt to fall, and should avoid getting in their way. He should also know, by looking at a snow slope, whether the passage across it is likely to set the snow avalanching. The accidents happen either because mistakes are made, or because people deliberately take risks in preference to turning back. A mistake of the kind accounted for a remarkable accident that befell Professor Tyndall.

The place was the Piz Morteratsch in the Engadine, and the time was July 1864. With

The Grindelwald Glacier.

the Professor were Messrs Hutchinson and Lee Warner, and the guides Jenni and Walter. Jenni was the leading light of Pontresina, and it seems that he wanted to "show off." The trouble occurred on the way down, when Jenni insisted upon descending a gully of ice with snow resting upon it. He led off, therefore, followed by Tyndall, Hutchinson and Lee Warner, with Walter coming last, ready to check on the instant any false step that Mr Lee Warner, the only inexperienced member of the party, might make. They were all roped together, so that if anyone fell, the others might hold him up.

After a few steps, Jenni began to see that the slope was less safe than he had supposed. He stopped, and turned round to speak a word of warning to the three men above him.

"Keep carefully in the steps, gentlemen," he said. "A false step here might start an avalanche."

As he spoke the false step was made. There was the sound of a fall and a rush, and Professor Tyndall saw his friends and their guide, all apparently entangled, whirled past him. He planted himself to resist the shock, but it was irresistible; he too was torn from his foothold, and Jenni followed him, and all five found themselves riding downwards, with uncontrollable speed, on the back of an avalanche, which a single slip had started.

The counsel given in such circumstances is to turn on your face, and grind the point of your axe or alpenstock through the moving snow into the ice beneath. It is the only way of

putting on the brake. But it seldom avails much, and in this case it seemed to avail nothing.

"No time," writes Professor Tyndall, "was allowed for the brake's action; for I had held it firmly thus for a few seconds only, when I came into collision with some obstacle and was rudely tossed through the air, Jenni at the same time being shot down upon me. Both of us here lost our batons. We had been carried over a crevasse, had hit its lower edge, and, instead of dropping into it, were pitched by our great velocity beyond it. I was quite bewildered for a moment, but immediately righted myself, and could see the men in front of me half buried in the snow, and jolted from side to side by the ruts among which we were passing."

Presently a second crevasse was reached. Jenni knew that it was there, and did a brave thing. He deliberately threw himself into the chasm, thinking that the strain thus put upon the rope would stop the motion. But though he was over a hundred and eighty pounds in weight, he was violently jerked out of the fissure, and almost squeezed to death by the pressure of the rope.

And so they continued to slide on. Below them was a long slope, leading directly downwards to a brow where the glacier fell precipitately; and at the base of the declivity the ice was cut by a series of profound chasms, where they must fall, and where the tail of the avalanche must cover them up for ever.

The three foremost men rode upon the fore-

head of the avalanche, and were at times almost hidden by the snow; but behind, the sliding layer was not so thick, and Jenni strove with desperate energy to arrest his progress.

"Halt, Herr Jesus, halt," he shouted, as again and again he drove his heels into the firmer surface beneath.

For the rest we must quote Professor Tyndall's actual words:—

"Looking in advance I noticed that the slope for a short distance became less steep, and then fell as before. Now or never we must be brought to rest. The speed visibly slackened, and I thought we were saved. But the momentum had been too great; the avalanche crossed the brow, and in part regained its motion. Here Hutchinson threw his arm round his friend, all hope being extinguished, while I grasped my belt, and struggled to free myself. Finding this difficult from the tossing, I suddenly resumed the strain upon the rope. Destiny had so related the downward impetus to Jenni's pull as to give the latter a slight advantage, and the whole question was whether the opposing force would have time to act. This was also arranged in our favour, for we came to rest so near the brow that two or three seconds of our average motion of descent must have carried us over. Had this occurred, we should have fallen into the chasm and been covered up by the tail of the avalanche. Hutchinson emerged from the snow with his forehead bleeding, but the wound was superficial; Jenni had a bit of flesh removed from his hand by collision against a stone; the pressure of the

rope had left black welts on my arm, and we all experienced a tingling sensation over the hands, like that produced by incipient frost-bite, which continued for several days. I found a portion of my watch-chain hanging round my neck, another portion in my pocket; the watch was gone."

Here the great danger was from the crevasses at the bottom of the slope. In the case of an avalanche accident hardly less famous on the Haut de Cry, the danger was rather from the weight and volume of the snow. In this accident Tyndall's favourite guide, Bennen, perished.

Once more it was a case of crossing a gully full of snow, 150 feet broad at the top, and 400 or 500 at the bottom. The snow, however, was more than waist deep, and Bennen was nervous, though he was obliged to defer to the view of the local guides that the snow was safe. The story was told by Mr Gossett in the *Alpine Journal.*

"Bennen advanced; he had made but a few steps when we heard a deep cutting sound. The snowfield split in two about fourteen or fifteen feet above us. The cleft was at first quite narrow, not more than an inch broad. An awful silence ensued; it lasted but a few seconds, and then it was broken by Bennen's voice, 'Wir sind alle verloren.' His words were slow and solemn, and those who knew him felt what they really meant when spoken by such a man as Bennen. They were his last words. I drove my alpenstock into the snow, and brought the weight of my body to bear on it. I then waited. It was

an awful moment of suspense. I turned my head towards Bennen to see whether he had done the same thing. To my astonishment I saw him turn round, face the valley, and stretch out both arms. The ground on which we stood began to move slowly, and I felt the utter helplessness of my alpenstock. I soon sank up to my shoulders, and began descending backwards. . . . Before long I was covered up with snow, and in utter darkness. I was suffocating, when with a jerk I suddenly came to the surface again. To prevent myself sinking again I made use of my arms much in the same way as when swimming in a standing position. At last I noticed that I was moving slower; then I saw the pieces of snow in front of me stop at some yards' distance; then the snow straight before me stopped."

But the snow behind pressed on and buried Mr Gossett. So intense was the pressure that he could not move, and he began to fear that it would be impossible to extricate himself. Then, while vainly trying to move his arms, he suddenly became aware that his hands, as far as the wrist, had the faculty of motion. The cheering conclusion was that they must be above the snow. So Mr Gossett struggled on. At last he saw a faint glimmer of light. The crust above his head was getting thinner, and let a little air pass; but he could no longer reach it with his hands. The idea struck him that he might pierce it with his breath. He tried, and after several efforts he succeeded. Then he shouted for help, and one of his guides, who had escaped uninjured, came and extricated him. The snow had to be cut

with the axe down to his feet before he could be pulled out. Then he found that his travelling companion, M. Boissonet, was dead, and that no trace of Bennen was to be found. Afterwards, however, the body was recovered.

"The Curé of Ardon," Mr Gossett wrote to Professor Tyndall, "informed me that poor Bennen was found eight feet under the snow, in a horizontal position, the head facing the valley of the Luzerne."

So much for the avalanches started by the climbers themselves. We have next to consider the case of avalanches falling when climbers are in their way.

Sometimes climbers get in the way of avalanches through ignorance. Mr Girdlestone relates how he did this when he climbed without guides. An avalanche surprised him while he was having lunch in a gully somewhere above Macugnaga, but happily he saw it coming, and was able to get out of the way in time. Sometimes, again, the only way to the top of a mountain lies in the known track of avalanches. This is notably the case with the routes up Monte Rosa from Macugnaga, and up the Dom from Saas. In such cases the only thing to do if one makes the ascent at all, is to take the risk, and minimise it by starting early, before the heat of the sun has deranged the equilibrium of the snow. The danger, however, is always grave, and the risk by no means to be recommended. Many fatal accidents have happened to those who have incurred it, though in the case of the most thrilling of all avalanche stories there was no casualty.

The hero of the adventure referred to was Mr F. F. Tuckett, who was climbing on the Eiger in the Oberland. He was on the Eiger with Messrs Whitwell and J. H. Fox, and the guides Christian and Ulrich Lauener. Their position needs to be explained with some care.

The lower part of the glacier, it must be observed, is a slope of only moderate inclination; the upper part is what is technically termed an ice-fall. An ice-fall, of course, is to a glacier what a water-fall is to a river. The glacier, pushing its way down a steep incline, is not merely crevassed, but is broken up into disorderly blocks of very unstable equilibrium. Mr Tuckett and his party were ascending the glacier towards the ice-fall, but were still at some distance below it. The weather had been bad, and there had recently been a heavy snow-fall. Even the lower portion of the glacier was completely covered with snow. Above the ice-fall the snow was far deeper. Its weight pressed against the ice-fall, from which huge blocks of snow and ice are apt to break away, and come careering down the glacier at any time. As a rule, however, they only career down the middle of it, so that Mr Tuckett, keeping fairly near one of the edges. supposed himself to be secure. The rope, for whatever reason, was not being used.

All of a sudden, a crack was heard high up above the climbers' heads, and every eye was turned upon the ice-cliff from which it came. A large mass of serac was seen to break away, mingled with a still larger contingent of snow from the slopes above; and the whole mass slid

down like a cataract, filling the couloir to its brim, and dashing in clouds of frozen spray over the rocky ridges in its path, towards the party.

For a moment they did not realise that they were in its track. But then the knowledge flashed upon them all, and they shouted to each other, "Run for your lives," and struggled desperately through the deep soft snow to reach the rocks of the Rothstock, yet with their faces turned to watch the swift oncoming of the foe.

Let Mr Tuckett himself describe that thrilling race for life.

"I remember," he writes, "being struck with the idea that it seemed as though, sure of its prey, it wished to play with us for a while, at one moment letting us imagine that we had gained upon it, and were getting beyond the line of its fire; and the next, with mere wantonness of vindictive power, suddenly rolling out on its right a vast volume of grinding blocks and whirling snow, as though to show that it could outflank us at any moment if it chose.

"Nearer and nearer it came, its front like a mighty wave about to break. Now it has traversed the whole width of the glacier above us, taking a somewhat diagonal direction; and now—run, oh, run, if ever you did, for here it comes straight at us, swift, deadly, and implacable. The next instant we saw no more; a wild confusion of whirling snow and fragments of ice—a frozen cloud—swept over us, entirely concealing us from one another, and still we were untouched—at least I knew that I was—and still we ran. Another half second and the mist

had passed, and there lay the body of the monster, whose head was still careering at lightning speed far below us, motionless, rigid, and harmless."

The danger was over, and the party examined the avalanche at their leisure. It had a length of 3300 feet, and an average depth of five feet. That is to say, its bulk was 611,000 cubic yards, and its weight, on a moderate computation, about 450,000 tons.

Avalanches of this character are rare. As a rule the ice-fall breaks away in bits. Sometimes there falls a block like a Saratoga trunk; sometimes a pyramid of blocks as large as a house collapses. One sees the Rhone glacier thus disintegrating as one walks up the road beside it; at Arolla one can see an ice-fall ending on the edge of a cliff over which the blocks of ice tumble. In such cases there is no danger for the spectator. The danger occurs when the climber has to traverse a slope directly in their track. The classical story of the kind is in Mr Whymper's "Scrambles in the Alps." He and the late A. W. Moore, with Croz and Christian Almer, were making the first passage of the Moming Pass from Zinal to Zermatt, and had to cut their way over an ice slope thus threatened. Early in the morning the place is reasonably safe; but they reached it after the sun had struck the seracs, and they could see that the buttresses were liable to descend upon them at any moment. The slope took twenty minutes to cross.

"I am not ashamed to confess," wrote Moore in his journal, "that during the whole time we

were crossing the slope my heart was in my mouth." And Mr Whymper says :—

"It was not necessary to admonish Croz to be quick. He was fully as alive to the risk as any of the others. He told me afterwards that the place was not only the most dangerous he had ever crossed, but that no consideration whatever would induce him to cross it again. Manfully did he exert himself to escape from the impending destruction. His head bent down to his work, never turned to the right or to the left. One, two, three went his axe, and then he stepped on to the spot where he had been cutting. How painfully insecure should we have considered those steps at any other time. But now we thought of nothing but the rocks in front, and of the hideous seracs, lurching over above us, apparently in the very act of falling."

The rocks were reached, and the party sat down to rest. Then :—

"Without a preliminary warning sound one of the largest—as high as the Monument at London Bridge—fell upon the slope below. The stately mass heeled over as if upon a hinge (holding together until it bent thirty degrees forward), then it crushed out its base, and, rent into a thousand fragments, plunged vertically down upon the slope that we had crossed. Every atom of our track that was in its course was obliterated; all the new snow was swept away, and a broad sheet of smooth, glassy ice showed the resistless force with which it had fallen."

Finally, before leaving the subject of avalanches, we may recall the story of the avalanche that

swept away two Austrian climbers, Herren Lammer and Lorria, published in the *Saint Moritz Post*, in January 1888.

Without guides, they were attempting an ascent of the Matterhorn by a difficult and unusual route. Presently they found themselves in such a position that they were absolutely obliged to cross a gully of ice down which they could see small avalanches sweeping at intervals much in the same way in which soot will sweep down a dirty chimney, They simply had to take their chance of dodging these avalanches, and the chances were against them. The snow knocked them off their feet, and dashed them down on to the Tiefenmatten Glacier, nearly 800 feet below. Herr Lorria was unconscious, and did not recover consciousness for three weeks. Herr Lammer, by a miracle, had escaped with bruises, and a badly sprained ankle. He pulled his friend out of the way of danger, placed his own coat over him, and set out to seek help.

He could not stand, but had to creep all the way upon his hands and knees. He got to the Stockje hut, but found no one there, so had to crawl on to the Staffel Alp. It was a little after five in the afternoon when he started, and it was three o'clock in the morning when he arrived. The people at the Staffel Alp refused to venture on the glacier, but sent a message to Zermatt, whence a search party set out at about five. Herr Lammer had lost consciousness before they came; but when he felt the faintness coming on, his last act was to write on a piece of paper the precise indication

of his friend's position. The clue was followed, and Herr Lorria was found. For twenty days he hovered between life and death, and though he recovered, it is said that he never ceased to feel the effects of his terrible fall.

CHAPTER XIV.

It remains to speak of the accidents that happen when the climber falls without being first hit by anything in the way of an avalanche or a falling boulder. On a glacier he may fall into a crevasse; on an arête he may fall through a cornice; on rocks he may fall because he is unable to hold on.

It has been explained that a glacier flows down a valley, under the same conditions, *mutatis mutandis*, as a river. Where the bed is very steep, the river makes a water-fall, and the glacier makes an ice-fall. Where the bed is moderately steep or uneven, the surface of the glacier cracks, and the cracks are what are called crevasses. Some crevasses are shallow; others are very deep. Some of them are so narrow that you can step over them; others are several yards across. More particularly on the upper parts of glaciers, recently fallen snow is apt to conceal the mouths of crevasses. The glacier is then said to be masked. Sometimes the snow bridge is strong enough to bear a man's weight. Sometimes it breaks under his feet and lets him through.

In the old days, those who had to cross glaciers used merely to sound the snow in front of them

with poles or alpenstocks. In this way they sought to discover the hidden crevasses before they came to them. The device was empirical and did not always answer. The modern scientific plan is to use the rope. At least three people are roped together, and they proceed in single file, keeping the rope taut between them. Then, if one man falls into a crevasse, he cannot fall far, but can be hauled out again by the others. Of course, if the direction of the crevasses is mistaken, and the party proceeds to walk along them instead of crossing them, they will be unable to help each other, but will all fall in together. This has been known to happen, but it does not happen often. Competent guides are acquainted with the general lie of the crevasses, or can infer it from the appearance of the snow. The real danger is for those who are so rash as to cross crevassed glaciers by themselves. Smugglers often do this, and they often do it with impunity, but accidents happen from time to time. A typical story is told of a porter who, when his engagement was concluded, set out to go home alone over the Lötschen Pass. A snow bridge broke and he fell into a crevasse, where only his knapsack saved him from breaking his neck. He lay on his back, wedged in the ice in such a way that he could not move, and it was by the merest chance that he was discovered in time, and rescued by a party journeying in the same direction.

A word has already been said about cornices, but it may be better to repeat the explanation. They are great overhanging eaves of snow, which

project on one side or the other of a ridge, and are due to the action of the wind. Occasionally the cornice is strong enough to bear the weight of several men, as happened when Jean-André De Luc settled down on a cornice to admire the view. At other times it gives way. The rule is, therefore, not to tread on cornices, but, of course, it is not always easy from above to know exactly where the mountain ends and the cornice begins. More than once climbers have walked on cornices by mistake, with fatal results.

The mountain which is most famous for its cornices is the Lyskamn. It is very heavily corniced, and the way to the top lies along the snow ridge from which the cornice is blown out. Three terrible accidents, resembling each other in almost every essential detail, occurred there in 1869, in 1877, and in 1896. The *Alpine Journal* reference to the 1877 accident may be quoted as an example of all accidents of the kind.

"Messrs William Arnold Lewis, and Noel H. Patterson, with Niklaus, Johann, and Peter Joseph Knubel, left the Riffelhaus at 2 A.M. to make the ascent of the Lyskamn. As they did not return that night, Mr J. A. Carfrae, accompanied by Peter Knubel, Joseph Imboden, and J. J. Truffer, started the following morning at 6.30 in search. They followed the tracks of Mr Lewis' party to the foot of the arête leading down from the summit of the mountain towards the Lysjoch, and there found two knapsacks which had been left by them at this spot on the preceding day before they began the final climb. This circumstance caused them at once to fear

that a fatal accident had occurred, and after skirting the lower slopes on the Italian side for nearly an hour, they reached a point from which they saw the whole of the party lying upon the snow at some distance beneath them. Being unable to reach the bodies from this point they retraced their steps, and after making a slight détour arrived at the spot. The cause of the accident was at once apparent: a snow cornice on the arête about 500 feet below the summit of the mountain had given way under the weight of the party, and they had fallen some 1200 feet on to the glacier beneath. The whole of the party had received such injuries that death must have been instantaneous in every case. . . .

"The cornice had broken away in two places, leaving some ten feet in the middle still adhering to the mountain. The length of the parts which broke away was perhaps forty feet on each side of the remaining portion. . . . The bodies, from the nature of the injuries they had received, had evidently fallen upon their heads on the rocks, and then, in one great bound, had reached almost the spot where they were found."

Occasionally, however, parties have been saved in spite of the breaking of cornices. The great story of the kind is one of which Ulrich Almer, son of Christian Almer, is the hero. Ulrich was not on the cornice when it broke, but he was securely roped to those who were — three in number, the guide Brantschen, and two amateurs. He had only a fraction of a second in which to make up his mind how to act to save himself and

the others. As quick as lightning he leapt back, planted his axe in the snow, and held the weight of the entire party, until they could get to work with their axes and climb up again on to the ridge. It was a marvellous feat of strength, as well as a marvellous example of presence of mind and quick resource. It is recorded that the climbers testified their gratitude and admiration by presenting Ulrich with a cow.

A similar incident occurred, in 1879, on the Piz Palu, in the Engadine. The story may be quoted from Dr Ludwig's "Pontresina and its Neighbourhood."

"Mr W. and his sister-in-law, Mrs W., with the two veteran guides, Hans and Christian Grass, had ascended the highest summit, and were on their return; Christian Grass leading, then Mr W., Mrs W., and last, Hans Grass. There was a thick fog. The first three of the party stepped on to the cornice; it gave way suddenly, and all four would have been dashed down the face of the ice wall, which there falls sheer some 2000 feet, had not Hans Grass had the presence of mind, and the bodily activity and strength, to spring at once to the opposite side of the ridge and plant his feet firmly in the snow. Fortunately Mr W. had not lost his axe; he gave it to Christian Grass, who in this awful situation untied himself from the rope, and cut his way on to the ridge, where his brother and he, joining forces, were able to bring Mr and Mrs W. to safety."

As regards the accidents that result from falls on rock mountain, there is little to be said that is

not obvious. One can fall in the Dolomites for just the same reasons for which one might fall when trying to climb up the cliff at Dover. The main difference is that in the Alps the distances are longer, and that climbers may consequently come to difficulties requiring all their strength and energy at times when they are worn out with fatigue. A muscle refuses to obey the call upon it, and a fall is the result. Otherwise such falls are the outcome of foolhardiness or of carelessness. One uses a foothold or handhold without first testing it, and it gives way. Or one gets into difficulties, and cannot find a way out of them. The stories are numerous. In the Austrian Alps, where there is a good deal of guideless climbing by amateurs, one hears a fresh story of the kind at least once a week throughout the season. The Whymper accident on the Matterhorn was an accident of the sort. So was the accident in which Owen Jones perished on the Dent Blanche.

There is one passage on the Dent Blanche, now generally avoided, which long had a very evil repute. It is called Lochmatter's corner, because the guide, Lochmatter, with his son and a Mr Gabbett, fell there. Nothing is really known about the accident, as the entire party was lost; but as the elder Lochmatter was a seventeen stone man, the presumption is that he fell, dragging the others, to whom he was roped, down with him. A description of the Mauvais Pas, taken from "La Suisse Inconnue," may be made useful as showing what manner of difficulties rock climbers undertake to cope with.

"Here," says the author, "we must get round past a perpendicular ledge by creeping out on an overhanging rock, and then turning sharp round, with heads and arm on one side of the rock, while the legs are still on the other; then we must at once cling to a hardly visible fissure, and draw round the rest of the body, gently and cautiously, little by little, and hang there by the points of our fingers until our toes find their way to a second fissure lower down. I made this passage," he adds, "like a bale of goods at the end of a rope, without being conscious of the danger, and I really do not know how I escaped in safety."

From such precarious places someone must inevitably fall from time to time. There are many sad stories of such falls, more particularly in the Dolomites. The fall of Norman Neruda was one very tragic case. The stories, however, necessarily present but little diversity of incident, and this branch of the subject may therefore be left.

CHAPTER XV.

We have spoken of Alpine climbing as a means of scientific study and as a sport. It remains to speak of Alpine climbing as a profession. For the sport has its "professionals," just as have cricket, and football, and golf. The amateur may live to climb, but the guide must climb to live; and it is not open to any man who likes to call himself a guide, any more than it is open to any man who likes to set up as a doctor, or a

dental surgeon. The calling, just like the professions called "learned," has its guilds, its rules, its examinations, and its diplomas.

Guides of a sort have, as we have seen, existed from the earliest days of mountaineering. That is to say, the local men who knew the mountain paths could always be hired to place their knowledge and experience at the disposition of the traveller. But these men were by no means guides in the modern sense of the word. They always had some other trade. They were goatherds, or crystal seekers, or chamois hunters, or even smugglers, glad to earn a little additional money by guiding the rare travellers who came among them. By degrees the best men among them learnt from the travellers to take an interest in mountaineering, and began to explore the mountains on their own account. It was a great step forward when De Saussure offered his money prize to the first man who should climb Mont Blanc, and promised to pay the wages of any who tried but failed. The offer, as has been shown, brought out Jacques Balmat, who may be reckoned the first of the professional guides. He began by climbing the mountain in response to the challenge of the great geologist, and he ended by climbing it as the professional attendant of tourists. Many of his contemporaries did the same—such men as the Couttets, for example. So far as Chamonix is concerned, their careers mark the beginning of the new profession. Some of them were taken far afield by De Saussure—*to* Grindelwald, to Zermatt, to Macugnaga.

With the great influx of tourists that began

after the Napoleonic wars, the demand for the services of guides naturally increased. First at Chamonix, and afterwards elsewhere, men found that there was a very good living to be made out of the business of Alpine guide; and they also began to see the advantage of forming themselves into a close corporation from which unqualified men could be excluded, and in which codes of rules could be enforced, under State direction, for the advancement of the honour of the calling. The Chamonix guides led the way, their first code dating from 1821, though other codes were substituted in 1851 and 1856. The Bernese Oberland guides formed their organisation in 1856, and the Pontresina guides in 1861. Each of the three organisations imposes tests of competence and rules of conduct, so that the young man who wants to be a guide must go through a course of study, no less than the young man who aspires to be a solicitor or a physician. Let us trace the career of such a one.

He is probably the son of a guide, for the profession, not unnaturally, runs in families. As a lad of ten or less, he begins to seek practice as porter. He runs after you when he sees you tramping up the valley, and proposes to carry your knapsack or your camera. He will carry it quite a long way for half a franc. He walks with rather an awkward lumbering gait, but can go on for ever so long without getting tired. Enter into conversation with him and you will hear that his father or his elder brother has already taken him up some of the minor mountains, and that he has fully made up his

mind to become a guide like them when he is old enough. And so no doubt he will. But he must first learn much and prove his fitness.

During the next few years he will naturally get all the practice in climbing that he can. If he can get paid for carrying luggage, so much the better; but he will often carry it for very little, or even for nothing, for the sake of the experience to be got by taking part in first class expeditions under first class direction. At eighteen he will make formal application for a porter's licence, which he will duly get if there is nothing against his character, and if he is able easily to carry the prescribed load of fifty pounds. His pay will be from seven to nine francs per day of eight hours, with his food.

The position of a porter is very much like that of an apprentice bound to a trade. He is under the orders of a guide, takes no responsibilities, and has to do what he is told. If a climber chooses to employ him as a guide—as may sometimes happen in the case of the simpler excursions—he does so at his own risk, and with his eyes open. The porter's licence, which he is bound to present for inspection, shows that he is a porter, and nothing more. Before a porter may apply for a licence as guide he must wait until he is twenty; and must then pass an examination in snow-craft, ice-craft, the general topography of the Alps, and the particular topography of his own neighbourhood. There are schools in which he can study these matters in the winter, and special boards of examiners are appointed in all the most important climbing

centres. A delightful account of the examination was given by Mrs Aubrey Le Blond in "My Home in the Alps." One may take the liberty of borrowing some examples of the questions and the answers. These show that candidates for the office of guide do not always, any more than the candidates for other offices, know quite everything that they ought to know.

EXAMINER. How do you know where the North is?

CANDIDATE. By the sun being there.

EXAMINER. What is Switzerland?

CANDIDATE. A kingdom.

EXAMINER. How would you cross the crevasse often found between a glacier and a moraine?

CANDIDATE. By stepping over.

EXAMINER. But if it is very wide?

CANDIDATE. Build a bridge across.

EXAMINER. Nonsense.

CANDIDATE. Go home again.

EXAMINER. Never. Cut steps, of course. Now tell me what you would do if a traveller who was with you was very cold and tired, and wanted to go to sleep on a glacier.

CANDIDATE. I would tell him not to.

EXAMINER. But if he insisted?

CANDIDATE. Then I would beat him.

These, we may take it, were the answers of an unsuccessful candidate. He seems to have been quite exceptionally dense. Our business, however, is not with him, but with the candidate who satisfies the examiners, and gets his licence.

Such a one immediately becomes a member of the close corporation, bound by its rules, and

entitled to its privileges. The rules are all set forth in a little book that is presented to him—a book which also contains a certain number of blank pages on which his employers may, from time to time, write their opinion, whether favourable or unfavourable, of his conduct or abilities. He may be fined, and in extreme cases may lose his licence, as a punishment for drunkenness or serious misbehaviour of any kind.

Such cases, however, are happily rare, though some climbers have found it expedient to guard against the remote danger of drunkenness by leaving the brandy bottle at home, and only taking a small quantity of spirits in their own flask for use in case of emergencies. A friend of the present writer who omitted the precaution once found himself with a guide who first got scared and then got drunk on the top of the Dent Blanche. But that was a very exceptional occurrence. On the whole, the Alpine guides are an admirable body of men—admirable for their temperance, their courage, their readiness of resource, and their great physical strength.

Some stories of the courage and resource of guides have been told in the chapter on accidents. Mrs Aubrey Le Blond has preserved another that must not be forgotten.

Mr Horace Walker, sometime President of the Alpine Club, was with Peter Anderegg, somewhere in the Engadine. Roped together, they were cutting steps up an ice slope, Peter leading. They came to a point where a huge boulder was embedded in the ice. Imagining it to be firmly fixed, Peter trod on it. To his consternation it

began to move. It came straight for Mr Walker, who, standing in the steps cut for him, could not possibly get out of the way. He thought nothing could possibly save him. But Peter met the emergency by a wonderful feat of strength. In an instant he shifted himself back into the ice step he had just quitted. Then, with a mighty effort, he jerked Mr Walker out of his foothold, and sustaining his weight by the rope that linked them, swung him out of the way of the rock. The rock thundered down in the very place in which Mr Walker had been standing, and Mr Walker swung back again, and resumed his foothold safely. In the history of climbing there has seldom been a narrower escape.

Another quality of the best guides is their wonderful faculty of finding or remembering the way through unfamiliar country. A story illustrating this gift, though the scene is not in the Alps, may be given in the words of another ex-President of the Alpine Club, Mr C. E. Mathews. The hero of it is the great Melchior Anderegg, now on the retired list and in the woodcarving business, but still famous.

"He came," says Mr Mathews, "to England on a winter visit to some of his old friends. He arrived at the London Bridge station in the middle of a genuine London fog. He was met by Mr Leslie Stephen and Mr Hinchliff, who accompanied him on foot to the rooms of the latter gentleman in Lincoln's Inn Fields. A day or two later the same party found themselves at the same station on their return from Woolwich. 'Now, Melchior,' said Mr Hinchliff, 'you will

lead us back home.' Instantly the skilful guide, who had never seen a larger town than Berne, accepted the situation, and found his way straight back without difficulty, pausing for consideration only once, as to examine the landmarks at the foot of Chancery Lane."

Melchior is perhaps the most justly famous of the older generation of guides. He is essentially a safe man—no less celebrated for his caution than for his courtesy. "I have never known him," said Mr Mathews to the present writer, "to be unequal to any emergency, and I have never heard him speak a word that could not be repeated in the presence of a lady." To the same generation belong Bennen, whose death on the Haut de Cry has been described, and whom Tyndall called "the Napoleon of guides," and J. A. Carrel, and Christian Almer, who was with Mr Justice Wills in his first ascent of the Wetterhorn in 1854, and who lived to celebrate his golden wedding by taking his wife to the top of the same mountain. Most of them belong or belonged to the Oberland—the part of Switzerland which has produced more good guides than any other.

The guides of the present generation are not inferior to their fathers, and they have a wider range. They are not only climbers but travellers. There are some of them to be met every season in the Canadian Rockies and the Selkirks. They have been to Alaska, to the Andes, to the Himalayas, to New Zealand. The Duke of the Abruzzi even took guides with him on his expedition to the Arctic regions. In the early

days they got home-sick when they went so far afield; but now they are getting over that. Among the great names are those of Alexander Burgener, who was with Mummery in the Caucasus; Joseph Imboden, who was in the Himalayas with Mr Graham, who holds the record for high altitudes; Antoine Maquignaz, who climbed Mount Saint Elias with the Duke of the Abruzzi, and Illimani with Sir Martin Conway. But the greatest name of all is that of Mathias Zurbriggen.

Zurbriggen was the son of a shoemaker of Saas, and himself began life as a stable boy at Sierre. Then he worked in a copper mine; then he made his living by driving a cart between Sierre and Brieg; then he worked on the Rhone embankment; then he went to Italy and became a tassel maker; then he became a postillion on a diligence; then he became a servant to a Swiss gentleman who was going shooting in Tunis; then he worked as a mason in Algeria; then he opened a shop at Macugnaga, where he began to climb in 1886. After a few seasons in Switzerland, he was engaged to accompany Sir Martin Conway to the Himalayas in 1892. Since then he has been to the Himalayas again with Mr and Mrs Bullock-Workman, and to the New Zealand Alps and the Andes with Mr E. A. Fitzgerald. He is one of the few guides who, even at extreme altitudes, can defy mountain sickness, and he has been heard to express the confident belief that he will climb Mount Everest before he dies. He is a good traveller in the sense that he is perennially interested in the strange things that

he sees. The number of notebooks that he took with him, and the diligence with which he filled them, were the constant admiration of the party with which he climbed Pioneer Peak. The reason for all his note-taking became apparent when Mr Fisher Unwin, who is both climber and publisher, issued a book from his pen.

Not every guide, of course, can hope to rise to Zurbriggen's eminence and prosperity; but for the competent man it is a calling with fair pay and prospects. The tariff for a big climb is sometimes as much as £5 or £6. The guide who is engaged for the season draws a daily wage which will not be less than ten francs, and may even, in exceptional cases, be as much as twenty-five francs, a day. Their ambition, as a rule, is to save enough money to start a hotel, or to set themselves up in some kind of business, and it is an ambition in which they often succeed. Melchior, as has been said, is in the woodcarving business. Retired guides are the proprietors of a good many mountain hotels, and in some cases continue to act as guides as well as landlords to their clients.

APPENDIX A.

A TABLE OF FIRST ASCENTS.

Date.	Mountain.	Climber.
1335	Ventoux, 6430 ft.	Petrarch
1358	Rochemelon, 11,605 ft.	Bonifacio d'Asti
1492	Mont Aiguille (Dauphiné), 7000 ft.	Dompjulian
1518	Pilatus, 6995 ft.	Duke Ulrich of Wurtemberg
1521	Popocatepetl, 17,852 ft.	Francisco Montaño
1536	Stockhorn (Oberland), 7195 ft.	Prof. Johann Müller
1779	Vélan, 12,169 ft.	Prior Murith
1786	Mont Blanc, 15,781 ft.	Jacques Balmat and Dr Paccard
1788	Stockgrön, 11,411 ft.	Father Placidus à Spescha
1789	Pizzo Bianco, 10,551 ft.	De Saussure
1789	Rheinwaldhorn, 11,148 ft.	Father Placidus à Spescha
1792	Little Matterhorn, 12,750 ft.	De Saussure
1793	Piz Urlaun, 11,063 ft.	Father Placidus à Spescha
1796	Gran Sasso d'Italia (Apennines), 9577 ft.	Orazio Delfico
1799	Oberalpstock, 10,926 ft.	Father Placidus à Spescha
1800	Gross Glockner, 12,460 ft.	Bishop of Gurk
1801	Monte Rosa (Punta Giordani), 13,304 ft.	Dr Pietro Giordani
1802	Mont Perdu (Pyrenees), 10,994 ft.	Ramond de Carbonnière
1804	Ortler Spitz, 12,800 ft.	Joseph Pichler

Date	Mountain.	Climber.
1811	Jungfrau, 13,671 ft.	Hieronymus and Rudolf Meyer
1812	Finsteraarhorn, 14,026 ft.	Hieronymus, Rudolf and Gottlieb Meyer
1813	Breithorn, 13,619 ft.	Henri Maynard with M. J. Couttet
1819	Monte Rosa (Vincent Pyramide) 13,829 ft.	Johann Niklaus Vincent
1820	Monte Rosa (Zumstein Spitze), 15,004 ft.	Zumstein, Molinatti, and the Vincents
1822	Monte Rosa (Ludwigshöhe), 14,253 ft.	Ludwig von Welden
1823	Bristenstock, 10,086 ft.	Dr Lusser of Altdorf
1832	Hausstock, 10,342 ft.	Dr Oswald Heer
1834	Monte Rosa (Signal Kuppe), 14,965 ft.	Giovanni Gnifetti
1834	Mittaghorn, 10,328 ft.	A Bavarian Princess
1834	Altels, 11,930 ft.	A party from Frutigen
1835	Piz Linard, 11,208 ft.	Dr Oswald Heer
1835	Piz Palu, 12,835 ft.	Dr Oswald Heer
1839	Aiguille d'Arve, 11,513 ft.	Three hunters
1842	Dussistock, 10,703 ft.	Escher von der Linth
1842	Scheerhorn, 10,814 ft.	Hoffmann
1842	Riffelhorn, 9,616 ft.	Some Englishmen
1842	Stockhorn (Pennines), 11,795 ft.	J. D. Forbes
1842	Lauteraarhorn.	Desor
1844	Wasenhorn, 10,680 ft.	J. D. Forbes
1844	Wetterhorn (Hasli Jungfrau), 12,149 ft.	Desor and guides
1844	Wetterhorn (Rosenhorn), 12,110 ft.	Dessor and Dollfuss
1845	Wetterhorn (Mittelhorn), 12,166 ft.	Spier
1845	Galenstock, 11,802 ft.	Desor and Dollfuss
1848	Ulrichshorn, 12,891 ft.	Professor Melchior Ulrich and Pastor Imseng
1850	Grand Tournalin, 11,086 ft.	Abbé Gorret
1850	Piz Bernina, 13,295 ft.	J. Coaz
1853	Glärner Tödi, 11,815 ft.	Gottlieb Studer and Siegfried

Date.	Mountain.	Climber.
1854	Wetterhorn (Hasli Jungfrau), 12,149 ft.	Mr Justice Wills
1854	Mont Blanc de Seilon, 12,701 ft.	MM. Thury, Vanner and Martin
1855	Monte Rosa (Hochste Spitze), 15,217 ft.	Messrs G. and C. Smith, Hudson, etc.
1855	Weissmies, 13,225 ft.	Dr Haüsser
1855	Mont Emilius, 11,677 ft.	Canon Carrel
1856	Aiguille du Midi, 12,609 ft.	Two Chamonix guides
1857	Mönch, 13,465 ft.	Herr Porges of Vienna
1858	Dom, 14,942 ft.	Rev. J. Llewellyn Davies
1858	Nadelhorn, 14,219 ft.	Herren Zimmermann, Supersaxo and others
1858	Piz Morteratsch, 12,315 ft.	Dr Brugger
1858	Eiger, 13,042 ft.	Harrington
1859	Aletschhorn, 13,721 ft.	H. H. Tuckett
1859	Bietschorn, 12,970 ft.	Sir Leslie Stephen
1859	Rimpfischorn, 13,790 ft.	Sir Leslie Stephen
1859	Monte Leone, 11,684 ft.	Officers of Federal Army
1859	Grivola, 13,022 ft.	J. Ormsby and R. Bruce
1860	Blumlisalphorn, 12,038 ft.	Sir Leslie Stephen
1860	Allalinhorn, 13,235 ft.	Sir Leslie Stephen
1860	Grand Paradis, 13,324 ft.	J. J. Cowell and W. Dundas
1860	Grand Combin, 14,163 ft.	M. Deville
1861	Schreckhorn, 13,386 ft.	Sir Leslie Stephen
1861	Monte Rosa (Nordend Spitze), 15,132 ft.	Sir T. F. and Mr E. N. Buxton and Mr J. J. Cowell
1861	Weisshorn, 14,804 ft.	Professor Tyndall
1861	Monte Viso, 12,609 ft.	W. Matthews and J. W. Jacomb
1862	Doldenhorn, 11,966 ft.	Dr Roth and Mr R. de Fellenberg
1862	Täschhorn, 14,758 ft.	Rev. J. Llewellyn Davies
1862	Dent Blanche, 14,318 ft.	T. S. Kennedy and W. Wigram
1862	Pelvoux, 12,973 ft.	F. F. Tuckett
1862	Dent Blanche, 14,318 ft.	T. S. Kennedy and W. Wigram
1863	Monte Rosa (Parrot Spitze), 14,643 ft.	Macdonald, Grove and Woodman

Date	Mountain.	.Climber,
1863	Balfrin, 12,500 ft.	Mr and Mrs Watson and Curé Imseng
1863	Piz Roseg, 12,935 ft.	George and A. W. Moore
1864	Balmhorn, 12,176 ft.	Frank, Horace and Lucy Walker
1864	Basodino, 10,680 ft.	Signori Brioschi and Baumann
1864	Ecrins, 13,462 ft.	A. W. Moore, Horace Walker and Edward Whymper
1864	Zinal Rothhorn, 13,855 ft.	F. C. Grove and Sir Leslie Stephen
1865	Matterhorn, 14,705 ft.	Edward Whymper
1865	Grandes Jorasses (W. Summit), 13,767 ft.	Edward Whymper
1865	Aiguille de Bionassay, 13,324 ft.	E. N. Buxton, F. C. Grove, etc.
1865	Grand Cornier, 13,022 ft.	Edward Whymper
1865	Ober Gabelhorn, 13,364 ft.	A. W. Moore and Horace Walker
1865	Wellenkuppe, 12,828 ft.	Lord Francis Douglas
1865	Monte Cristallo, 10,495 ft.	Grohmann
1867	Mont Collon, 11,957 ft.	G. E. Forster
1868	Grandes Jorasses (E. Summit), 13,800 ft.	Horace Walker
1870	Meije, 13,026 ft.	W. A. B. Coolidge and Miss Brevoort
1871	Aiguille du Plan, 12,051 ft.	J. Eccles
1873	Grande Ruine, 12,317 ft.	W. A. B. Coolidge and Miss Brevoort
1878	Aiguille du Dru, 12,517 ft.	C. T. Dent and J. W. Hartley
1880	Aiguille des Charmoz, 11,293 ft.	A. F. Mummery
1882	Aiguilles Rouges d'Arolla, 11,975 ft.	Hughes and Stable
1882	Aiguille du Géant, 13,157 ft.	Signor Sella
1884	Croda da Lago, 8887 ft.	Baron Roland Edvos of Buda-Pesth

APPENDIX B.

ALPINE BOOKS.

No complete bibliography of Climbing exists. The most useful works of the kind are :—

UEBER EIS UND SCHNEE. By Gottlieb Studer. 1869-1871.

SWISS TRAVEL AND SWISS GUIDE BOOKS. By the Rev. W. A. B. Coolidge. 1889.

LANDES-UND-REISEBESCHREIBUNGEN. By A. Waber. 1899.

It should be noted, however, that the two last named volumes enumerate general books of travel as well as climbing books, and that all three of them deal only with the Alps of Switzerland. For other Alpine regions the handiest work of reference would be the new catalogue of the Alpine Club Library.

The early history of the subject is dealt with in the work by Mr Coolidge, already mentioned, and also in :—

GESCHICHTE DES REISENS IN DER SCHWEIZ. By G. Peyer. 1885.

THE EARLY MOUNTAINEERS. By Francis Gribble. 1899.

LA MONTAGNE À TRAVERS LES AGES. By Jean Grand-Carteret. 1903.

The last named book is only appearing as I write, and I have not had the opportunity of referring to it.

The histories of certain mountains have also been written in great detail, but it may be sufficient here to mention the three principal monographs on Mont Blanc. They are :—

THE STORY OF MONT BLANC. By Albert Smith. 1853.

LE MONT BLANC. By Charles Durier. 1877.

THE ANNALS OF MONT BLANC. By C. E. Mathews. 1898.

The first named of these may be read for entertainment, but for instruction the others are to be preferred. Both of them are excellent. Far be it from me to say that either of them is better than the other.

In reviewing the older books, and the narratives of personal adventure, my aim is to confine myself, so far as possible, to books written in the English language. That possibility, however, is limited by the fact that the books in the English language do not cover all the ground. A batch of books in Latin must first be polished off:—

STOCKHORNIAS. By Johann Müller. 1536.

DESCRIPTIO MONTIS FRACTI JUXTA LUCERNAM. By Conrad Gesner. 1555.

DE ALPIBUS COMMENTARIUS. By Josias Simler. 1574.

ITINERA PER HELVETIAE ALPINAS REGIONES FACTA. By Johann Jacob Scheuchzer. 1723.

The first of these books relates in verse an ascent of the Stockhorn near Thun; the second describes an ascent of Pilatus; the third gives a general account of the dangers of Alpine travel; while the fourth recounts the happenings of various Alpine journeys, and proves the presence of dragons in the Alps.

Serious climbing, as has been pointed out, began in the Chamonix neighbourhood. The first classic relating to this branch of the subject is:—

AN ACCOUNT OF THE GLACIERES OR ICE ALPS IN SAVOY. By William Windham and Peter Martel. 1744.

The first accounts of actual ascents of snow peaks, however, are contained in:—

RELATIONS DE DIFFERENTS VOYAGES DANS LES ALPES DU FAUCIGNY. By MM. D. and D. 1776.

LETTRES PHYSIQUES ET MORALES SUR LA MONTAGNE. By Jean-André de Luc. 1778.

The other interesting books of this period are the VOYAGES DANS LES ALPES of Horace Benedict de Saussure—of which the "partie pittoresque," describing the climbing, can be obtained separately—and the many Alpine writings of Marc-Theodore Bourrit. One of these can be got in an English translation. It is:—

A RELATION OF A JOURNEY TO THE GLACIERS IN THE DUCHY OF SAVOY. By M. T. Bourrit. 1776.

For the early affairs of the Oberland mountains we have to turn to four German books :—

Versuch einer historischen und physischen Beschreibung der helvetischen Eisbergen. By J. G. Altmann. 1751.

Die Eisgebirge des Schweizerlandes. By G. S. Gruner. 1760.

Reise auf die Jungfrau-Gletscher und Ersteigung seines Gipfels. By Herr Zschokke. 1812.

Reise auf die Eisgebirge des Cantons Bern und Ersteigung ihrer hochsten Gipfel. By Herr Zschokke. 1813.

The last two books describe the first ascents of the Jungfrau and Finsteraarhorn. There is, it may be remarked, a French translation of Gruner.

The Alpine literature of the next thirty years consists largely of pamphlets recording ascents of Mont Blanc. For a full list of these, whether buried in periodicals or separately published, the reader must be referred to the bibliography in Mr Matthews' monograph. The more serious Alpine writings of the period are from the pens of savants writing in either French or German. Note especially :—

Naturhistorische alpen Reise. By F. J. Hugi. 1830.

Ueber das Wesen der Gletscher und Winterreise in das Eismeer. By F. J. Hugi. 1842.

Wanderungen in der Gletscherwelt. By Georg Hoffmann. 1843.

Reise in die weniger bekannten Thaeler auf die Nordseite der penninischen Alpen. By Julius Froebel. 1840.

Excursions et Sejours dans les Glaciers et les Hautes Regions des Alpes de M. Agassiz et de ses Compagnons de Voyage. By E. Desor. 1844 and 1845.

Die Seitenthaeler des Wallis. By Melchior Ulrich. 1850.

Hugi's second work, be it remarked, describes the beginnings of winter climbing. Desor's work should be read for the account of the "Hotel des Neuchâtelois." Ulrich gives his name to the Ulrichshorn, near Saas, of which he made the first ascent.

The earliest climbing books, other than Mont Blanc monographs, are those of J. D. Forbes. All Forbes' scattered Alpine writings were lately published in a single volume, with an introduction and notes by the Rev. W. A. B. Coolidge. He wrote of Dauphiné and of the Pennines, being one of the earliest visitors to Evolena and Arolla. His first work, TRAVELS IN THE ALPS OF SAVOY, appeared in 1843; and the great output of Alpine books by English climbers did not begin until several years later. The most interesting of them, from many points of view, is PEAKS, PASSES AND GLACIERS, of which the first series, published in 1859, was edited by John Ball, and the second, published in 1862, appeared under the editorship of T. S. Kennedy. The papers contained in it, written by various climbers, relate in great detail many important early ascents. Other books valued by collectors are :—

OUTLINE SKETCHES IN THE HIGH ALPS OF DAUPHINÉ. By T. G. Bonney. 1865.

THE ALPINE REGIONS OF SWITZERLAND AND THE NEIGHBOURING COUNTRIES. By T. G. Bonney. 1868.

A LADY'S TOUR ROUND MONTE ROSA. By Mrs Cole. 1859.

THE ALPS FROM END TO END. By Sir Martin Conway. 1895.

ABOVE THE SNOW LINE. By T. Clinton Dent. 1885.

ACROSS COUNTRY FROM THONON TO TRENT. By Douglas Freshfield. 1865.

THE OBERLAND AND ITS GLACIERS. By H. B. George. 1866.

THE HIGH ALPS WITHOUT GUIDES. By A. G. Girdlestone. 1870.

SUMMER MONTHS AMONG THE ALPS. By T. W. Hinchliff. 1857.

WHERE THERE'S A WILL THERE'S A WAY: AN ASCENT

of Mont Blanc by a New Route and without Guides. By C. Hudson and E. S. Kennedy.

The Italian Valleys of the Pennine Alps. By S. W. King. 1858.

The High Alps in Winter. By Mrs Aubrey Le Blond. 1883.

The Alps in 1864. By A. W. Moore. 1867.

My Climbs in the Alps and Caucasus. By A. F. Mummery. 1895.

The Playground of Europe. By Sir Leslie Stephen. 1871.

The Glaciers of the Alps. By John Tyndall. 1860.

Hours of Exercise in the Alps. By John Tyndall. 1871.

Scrambles amongst the Alps. By Edward Whymper. 1871.

Wanderings among the High Alps. By Sir Alfred Wills. 1858.

The Eagle's Nest in the Valley of Sixt. By Sir Alfred Wills. 1860.

Among books dealing specially with the Dolomites note also :—

Untrodden Peaks and Unfrequented Valleys. By Miss Amelia B. Edwards. 1873.

The Dolomite Mountains. By Josiah Gilbert and G. C. Churchill. 1865.

Climbing Reminiscences of the Dolomites. By Leone Sinigaglia. 1896.

Dolomite Strongholds. By J. Sanger Davies. 1896.

The best book on the Pyrenees is Through the High Pyrenees, by Harold Spender and H. Llewellyn Smith, 1898—a relation of a journey, including an exhaustive bibliography of the subject. The lives of the most notable of the Alpine guides are written in The Pioneers of the Alps, by C. D. Cunningham and W. de W. Abney, 1887; while no one need desire a better treatment of the general art of mountaineering than is to be found in Mountaineering, by C. T. Dent, in the Badminton Library.

APPENDIX C.

ALPINE JOURNALS.

The story of Alpine climbing can be traced in greatest detail in the periodical publications of the various Alpine Clubs. The chief of these are :—

ALPINE JOURNAL (London).
ANNUAIRE DU CLUB ALPIN FRANÇAIS (Paris).
REVUE ALPINE (Lyon).
ANNUAIRE DE LA SOCIÉTÉ DES TOURISTES DU DAUPHINÉ (Grenoble).
BOLLETTINO DEL CLUB ALPINO (Turin).
ECHO DES ALPES (Geneva).
JAHRBUCH DES SCHWEIZER ALPENCLUB (Berne).
MITTHEILUNGEN DES DEUTSCHEN UND OESTERREICHISCHER ALPENVEREINS (Vienna).
ANNUARIO DELLA SOCIETA ALPINA DEL TRENTINO (Trent).

APPENDIX D.

GUIDE BOOKS.

The first Swiss Guide Book published in English was an adaptation of the German work of J. G. Ebel by a certain Daniel Wall. The first edition appeared in 1818. Murray's "Handbook" made its first appearance in 1838, and Karl Baedeker came into the field somewhat later. Ebel presently dropped out, but Murray and Baedeker are still with us. None of these early works are of much interest to the climber, though Ebel did go to that enterprising climber, Father Placidus à Spescha, for information. The current editions of Murray and Baedeker, however, deal with the subject as amply as space permits. For practical information as to the price which guides charge for particular ascents, Baedeker is to be preferred; but the history of the mountains is better treated in Murray, the recent editions having been produced with the invaluable assistance of the Rev. W. A.

B. Coolidge. Both books, however, are intended, not for mountaineers, but for the general public.

Climbers were first specially catered for in John Ball's "Alpine Guide," of which the first edition was published in 1863. This book having got out of print, and also to some extent out of date, the Alpine Club decided, in 1890, to revise and re-issue the work. The editorship was offered to and accepted by Mr Coolidge, who brought out a first volume, dealing with the Western Alps, in 1898. Subsequently, however, Mr Coolidge resigned both the editorship of the Guide and his membership of the Alpine Club, and the reconstruction of the remainder of the work is now in other hands.

Meanwhile a Climber's Guide of a new sort, entitled "The Zermatt Pocket-Book," had been produced by Sir Martin Conway in 1881. This work, dealing only with a small, though a profoundly interesting district, gave detailed directions for a great number of ascents. Its utility was attested by the fact that it passed out of print, and it subsequently served as the model for a considerable series of Climber's Guides, edited jointly by Sir Martin Conway and Mr Coolidge. These volumes give a careful bibliography of each peak and pass, together with precise directions, in severe technical language, for climbing or crossing. There are volumes dealing with "The Central Pennine Alps," "The Eastern Pennine Alps," "The Central Alps of the Dauphiny," "The Chain of Mont Blanc," The Mountains of Cogne," "The Tödi," "The Adula Alps," "The Leopontine Alps," etc., etc., etc.; and the series is still, I believe, "in progress."

Two other Guide Books to be mentioned as of particular interest to climbers and students of the history of climbing are Mr Whymper's "Guide to Zermatt and the Matterhorn," and "Guide to Chamonix and the Range of Mont Blanc." These are necessarily less minute in their practical directions to climbers than the Conway-Coolidge series; but they are sufficiently complete to be very useful even from this point of view, and they relate the history of the exploration of the districts dealt with in a very bright and entertaining manner. It is sincerely to be hoped that Mr Whymper

may some day write Guide Books on similar lines to Grindelwald and Pontresina.

It may be interesting, before leaving the subject, to mention that the first Joanne Guide was a Guide to Switzerland, and appeared in 1841. Adolf Joanne conceived the idea of writing it at the foot of the Diablerets, where a peasant woman, observing his enthusiasm, said: "Since you find it so beautiful you should bring your countrymen to see it."

APPENDIX E.

GLOSSARY.

ALP : A pasture land in the mountains, used in summer.

ARETE : A ridge. It may be of rock, or snow, or ice ; but the term is usually applied to ridges of some degree of sharpness.

AVALANCHE : A mass of snow or ice which slides down hill. One also speaks of rock avalanches and mud avalanches, though these are perhaps more properly to be classed with landslips.

BERGSCHRUND : The large crevasses generally to be found where the snowfield and the face of the mountain meet.

CHALET : A hut on the pastures which may or may not be used as a dwelling place.

CHIMNEY : A steep rock gully.

COL : A pass.

CORNICE : An unsupported crest of snow overhanging a precipice.

COULOIR : Much the same as CHIMNEY, but often filled with ice or snow, and sometimes raked by falling stones.

FIRN : An accumulation of hard snow in the course of transformation into a glacier.

FOHN : The warm wind from the south which, striking the snow mountains, brings bad weather.

GENDARME : A big block or tower, blocking the way on a ridge.

GLISSADE : The act of sliding down a snow slope.
GRAT : The same as ARETE.
ICE-FALL : The steep portion of a glacier in which the ice is very much crevassed.
JOCH : A pass.
MORAINE : The huge accumulations of débris, formed in the vicinity of glaciers. The lateral moraines are at the sides of the glaciers, the terminal moraines are at their lower ends. When two glaciers meet, their lateral moraines meet also, and form what is called a medial moraine.
PAS : Sometimes used for a pass, and sometimes for a difficult bit of climbing, as in the expression "mauvais pas."
RUCKSACK : A more convenient kind of knapsack.
SCHRUND : An abbreviation of BERGSCHRUND.
SERACS : The towers of ice formed in an ice-fall.
SNOUT : The lower end of a glacier.
SNOW-LINE : The point at which the summer suns never completely melt the winter snows. The altitude of the snow-line naturally varies with the aspect as well as the latitude of the mountain.
SCREES : Heaps of small loose stones, sometimes found on slopes, or piled up against the bases of mountains.
TOURMENTE : A blizzard.
TRAVERSE : The act of crossing a steep slope or the face of a precipice. Also used of the place to be crossed.
VERGLAS : A thin film or layer of ice coating the surface of rocks.

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