Portraits of Dr. Paccard and Jacques Balmat from contemporary prints in the collection of R. W. Lloyd, illustrating the paper by E. H. Stevens on Dr. Paccard's "Lost Narrative."

For this reason I think that it is often possible to detect a wind-slab when on ski. Apart from appearances, there is a curious feeling (on ski) in a wind-slab—a sort of smooth velvety [5] texture impossible to describe and which can be learnt only by experience.

[See also 'A.J.' **23**, 379–86, in which all kinds of avalanches are discussed.]

DR. PACCARD'S 'LOST NARRATIVE.'

An Attempted Reconstruction.

By E. H. STEVENS.

INTRODUCTION.

THE first ascent of Mont Blanc, by Dr. Michel Gabriel Paccard and Jacques Balmat, on August 8, 1786, was from many points of view the most important event in the history of mountaineering. It is a very unfortunate fact that no complete account of their exploit by either of the climbers ever appeared. Dr. **Paccard** undoubtedly intended to publish such an account, and if he had done so, it would have been read, as de Saussure said, from one end of Europe to the other (see note 146). It is actually mentioned by certain bibliographers of the early nineteenth century (see note 125), but it is now generally agreed that it was never published. **Balmat,** however, told his version of the story to Bourrit a few days after the ascent, and **Bourrit** embodied or embroidered it in a pamphlet[1] (Sept. 20, 1786), which went far and wide in France, Switzerland, Germany, and England.[2] In this pamphlet nearly all the credit, both for the discovery of the route which proved the key to the ascent, and for the actual execution of the climb, was attributed to Balmat, while Paccard's part in the enterprise was represented as quite subordinate. To later issues of his pamphlet Bourrit was induced by de Saussure to add a postscript making a sort of apology to Paccard which, however, left his insinuations practically unchanged (see note 146). Paccard, as we shall see, took vigorous steps, in communications to the *Journal*

[5] This is the exact descriptive adjective.—E. L. S.

[1] Printed in full by Dübi, pp. 58–62. An indifferent English translation (which is probably the earliest account of the ascent in English) appeared in *The Scots Magazine* for November 1786, and is reprinted by Montagnier in *A.J.* **25**, 609–12. This translation omits Bourrit's more subjective passages, and does not contain the postscript added, on the prompting of de Saussure, to later editions of the pamphlet (see note 146).

[2] See Montagnier, *A.J.* **25**, 608. Dübi, pp. 63–74.

Mont Blanc and the Glacier du Tacul from the Couvercle, from an early print in the collection of R. W. Lloyd, illustrating the paper by E. H. Stevens on Dr. Paccard's "Lost Narrative."

de Lausanne (1787), to controvert Bourrit's misrepresentations, but he did not succeed in destroying their effect, echoes of which are found in most of the early accounts. Bourrit was, indeed, 'the villain of the piece' (see notes 56 and 146, and 'Postscript'). Many years later (1823 and 1825) Paccard reiterated his claims to the discovery of the route in two singularly interesting letters to the *Journal de Savoie*.[3] Use is made below of both these series of letters.

Paccard died on May 21, 1827, and some five years afterwards Balmat, then in his anecdotage—he was 70—told his story again to **Alexandre Dumas,** forty-six years after the ascent (1832). The tale had grown in the meanwhile, and Balmat with it.[4] He had now

[3] Montagnier, *A.J.* **25,** 621, 623. Dübi, p. 167.

[4] For brevity's sake I omit from the text mention of a stage in this 'growth of the legend' which is marked by a MS. journal purporting to be by Balmat, which was published in the *Annuaire* of the 'C.A.F.,' 1903. The text is reproduced in Dübi, p. 179, and a translation and critical account by C. E. Mathews appeared in *A.J.* **21,** 408. The MS. describes (mostly in the first person) Balmat's explorations in June 1786, and gives a list (with many errors) of the ascents of Mont Blanc from June 1786 to 1830 (Wilbraham). It is badly written and full of gross mistakes in spelling and grammar. It looks uncommonly like a brief and hasty imitation of Paccard's diary. There is no reason to doubt that it was either dictated or, quite likely, written by Balmat himself, in or soon after 1830, perhaps in preparation for the interview with Dumas (1832), or for some similar purpose. I am very much inclined to think that Balmat had got to know of the existence and contents of the Doctor's journals, and prepared this MS. as his counterblast. (Much of what Paccard related must in any case have often been talked about in the village, and we may remember that he had married a Balmat, and had died in 1827.) In particular it seems likely that Balmat's tale of his four days' climbing and sleeping out—of which we hear not a word, even in Bourrit, till this MS. and the fuller story told to Dumas—was invented, when Paccard was dead, to 'trump' the latter's account of his two days' and nights' excursion round the Aiguille du Goûter (*cf.* Dübi, p. 183). The following points in the MS. may be noticed: (*a*) It opens with an assertion [not made anywhere else] that Balmat was *on the Dôme du Goûter* alone *on June* 28 [the date is almost certainly wrong], and states that on the descent he met the three guides near the foot of the mountain and that *they invited him to join them.* [This last statement flatly contradicts Balmat's own tale to Dumas and all other evidence.] (*b*) It claims that on the next day, while they were waiting for the other two guides from the Aiguille du Goûter, Balmat alone climbed the 'Arête Blanche' [*sc.* the Bosses ridge], and got quite near the summit, being only stopped by the mist. (*c*) It asserts that when deserted by his companions Balmat ascended again 'on the left side,' got quite near the summit [a second time, on the same day, in bad weather, on another and distant ridge !], and saw the valley of Aosta. The top being still covered by mist, he had to descend, was stopped by a big crevasse which he had crossed in the morning by a bad bridge, and spent his fourth night out on an ice ridge [!] on the Grand Plateau at a height of 1455 toises above Chamonix and 1786 toises above the sea. [This is the exact height of de Saussure's bivouac in 1787, which Balmat therefore obviously 'conveyed,' with the ridiculous blunder of 1786 toises for de Saussure's correct figure of 1995 toises above the sea! This alone is enough to explode the whole concoction.] (*d*) It declares that a few days [really five weeks] later Dr. Paccard invited him to attempt the ascent; it states the times of their climb correctly, and asserts that Balmat ascended to the top twice on that day [this is the only hint in the MS. of what Balmat elaborated afterwards about Paccard's alleged incompetence], and next year made his third ascent with two companions on July 9 and his fourth with de Saussure on August 3. As Mathews says, 'Balmat

become, at least in his own mind, a superman—able in his heroic youth to spend four consecutive days and nights climbing and sleeping out amongst the glaciers, and even to carry his helpless companion over difficult glacier passages—while, as a foil to the hero, Paccard was reduced to a figure of fun, similar to the incompetent amateurs who by this time had become familiar objects of contempt to the guides who dragged them to, or towards, the top. This travesty of the truth, skilfully worked up by Dumas's accomplished pen into an inimitably sparkling story, became the accepted version of the climb for more than two-thirds of a century.[5] In Mr. Arnold Lunn's picturesque phrase 'the combination of Dumas and Balmat was too much for what Clough calls "the mere it was,"' and the resulting narrative, as Mr. Montagnier says, 'is now known to be little more than a series of grotesque exaggerations and imaginary incidents.' Balmat died, in mysterious circumstances, some two years after the famous interview.[6]

In 1854 **M. Carrier** (a Chamonix guide, son of one of the pioneers of 1783, *cf.* § 2) brought out a revised edition of the tale—in which Paccard was much more respectfully treated, both as a man and a mountaineer—with the important addition of an account, said to have been taken from Balmat's own lips, of his asserted discovery of the 'Ancien Passage,'[7] which, though vital to the story, had been barely alluded to by Dumas. Carrier's pamphlet has recently been reprinted, and is being freely sold in Chamonix, where it is still supposed to give the authentic history of the climb. In 1877 **Ch. Durier** in his classic work 'Le Mont Blanc'—deservedly crowned by the French Academy, if only for the charm of its finished and very individual style—whole-heartedly adopted the Dumas-Carrier version, and made of Balmat an ideal figure, combining the virtues of the best of guides and of the finest type of Savoyard peasant. The account given in the 1898 edition of Ball's 'Alpine Guide' (which is only in part revised, no doubt by Coolidge, from

in this MS. was clearly beginning to assume the rôle he afterwards maintained, that he and he only made the first ascent.' We may go further and maintain that comparison of the MS. with the narratives of Bourrit, de Saussure, Dumas, and Carrier shows that the tale was continually worked up, and is utterly untrustworthy in any or all of its perpetually varied forms.

[5] The reader not already familiar with it should peruse the chapter of Dumas's delightful *Impressions de Voyage* (*Suisse*) (3rd series, 1833; 2nd edition, with illustrations, 1853–54) which relates Balmat's story. It is translated in full by Mathews (*Annals of Mont Blanc*, chapter iv.), but his rendering is defaced by many elementary blunders, and often misrepresents the original—worst of all in the passage in which Balmat refers to the 'grande crevasse.' More accurate and spirited versions of selected passages will be found in Whymper (pp. 18–23) and Gribble (pp. 164–173). A little volume edited (with short notes) for school use by C. H. Parry (Longmans, 1890) contains a capital selection of eighteen of the most interesting chapters from the *Impressions*, including nearly the whole of the Balmat chapter.

[6] Dr. M. Barry, on his descent from Mont Blanc, September 18, 1834, met Balmat, who was then 72½ (*cf.* note 115), and heard of his death shortly afterwards.

[7] See notes 115, 156, and Dübi, pp. 208–212.

that which appeared in 1877) is substantially based on Durier. It repeats most of Dumas's errors, except the 'dragging to the top.'

The first effective steps in the return to the truth were taken by **Edward Whymper.** While prosecuting with characteristic thoroughness the preparations for his admirable 'Guide to Chamonix' (1896), he made an exhaustive search in the Chamonix valley and in all likely libraries for a copy of Dr. Paccard's narrative.[8] The hunt was fruitless, but he was more fortunate in another direction. A laborious search through the contemporary newspapers of Geneva and Lausanne brought to light, in the pages of the *Journal de Lausanne* of February to May 1787, an acrimonious correspondence between Paccard and Bourrit. It was opened by an anonymous communication, emanating from Paccard, but, it would seem, badly sub-edited,[9] in which a vigorous protest was made against Bourrit's misrepresentations, and it was declared that the Doctor had in his possession certificates which proved their falsity. Bourrit retorted in an angry letter in which he challenged the production of these certificates. Thereupon Paccard printed two certificates, signed by Balmat and duly witnessed. In the second of these (which is dated March 25, 1787, and the original of which was sent by Paccard to von Gersdorf, *among whose papers it still exists*[10]) Balmat testified to his receipt of moneys from Paccard—a fact which Bourrit had denied. In the earlier certificate, dated October 18, 1786, Balmat gave an account of the ascent, with numerous details, which involved a complete refutation of Bourrit's misrepresentations, and *a fortiori* of the later and still grosser falsifications in Dumas's story. Whymper printed a translation of these certificates[11] in his 'Guide to Chamonix' (1896), pp. 26, 27, but even he could not quite shake off the influence of tradition, and he closed his discussion of the matter with this ambiguously ironical passage: 'Posterity has not estimated Paccard as highly as he might have wished. A monument has been raised in Chamonix to Balmat, and another to de Saussure. Whilst their names are remembered with gratitude, that of the village doctor is well nigh forgotten; and if one were to make inquiries about him, it is more than likely that the answer would be "Who is this Doctor Paccard?"' A chief object of the present paper is to help in rescuing from oblivion the Doctor's name and fame as one of the most enterprising and accomplished pioneers of mountaineering.

The search for Dr. Paccard's 'lost narrative' was taken up with zeal but no success by **C. E. Mathews.**[12] He was, however, lucky enough to discover and obtain possession of a most valuable MS. diary in which Paccard had recorded at length (*a*) the chief attempts to climb the great mountain, (*b*) his own explorations, and (*c*) the ascents made during his lifetime. (To his own ascent the diary

[8] See Montagnier, *A.J.* **26**, 39.
[9] Dübi, p. 76.
[10] See Dübi, pp. 81, 82, with facsimile.
[11] Originals in Dübi, pp. 80, 81.
[12] See Montagnier, *A.J.* **26**, 39.

gives only three lines, stating the date and times, but throwing no light on other points; no doubt he intended to draw up his full narrative separately.) Mathews quoted various passages from the diary in his 'Annals of Mont Blanc' (1898), in which he also mentioned Balmat's certificate, without, however, making any further use of it. But in his chapter entitled 'Paccard *versus* Balmat' he showed, by an acute analysis of the early accounts, that Dumas's story of the helpless amateur, dragged to the top by his heroic guide, was incredible. He still, however, failed to see that *if this part of the story was false, it was likely that the rest was equally unreliable*, and Balmat's claim to have discovered the route might be worth no more than his overweening boasts of his prowess on the mountain.

D. W. Freshfield, in 1899, followed up Mathews' discussion by an article ('A.J.' **19,** 342) containing a remarkably prescient treatment of the subject. With his usual masterly handling of evidence and keen geographical and psychological insight, he arrived at conclusions as to the respective shares of Paccard, Balmat, and Bourrit in the great climb and the subsequent controversies, which are substantially confirmed by the later discoveries now to be mentioned.

Some years before his death in 1911, Whymper had handed on the torch of research to **H. F. Montagnier,** whose untiring labours and sleuth-like ingenuity were rewarded by the discovery,[13] *inter alia*, of a unique copy of the prospectus which Dr. Paccard had issued, inviting subscriptions to his forthcoming narrative. This copy, slightly mutilated at the edges by mice, was found among the papers of H. A. Gosse, a Geneva contemporary of the climbers, who at one time had contemplated writing a life of Balmat. As the final result of his inquiries, Montagnier was reluctantly driven to the conclusion, already suggested by F. Gribble,[14] that the projected narrative was probably never published.[15]

Meanwhile the distinguished Swiss climber and authority on mountaineering history, Dr. H. Dübi of Berne, was collecting materials for a study of the Paccard-Balmat controversy. It is surely one of the romances of bibliography that Montagnier and Dübi, personally unknown to one another, but hearing something of what was on foot, should have written by the same post, from Geneva and Berne respectively, each asking for information from the other. This led to a friendly co-operation between the two investigators, encouraged by their mutual friend Whymper, and to the discovery of much fresh material bearing on the question. Perhaps the most valuable—as it was the most unexpected—find was the MS. diary of Baron **A. T. von Gersdorf,** a German gentleman

[13] See Montagnier's most interesting account of his successful hunt in *A.J.* **26,** 36–52, with facsimile of the prospectus (given also in Dübi, pp. 242–244).

[14] Gribble, pp. 174–176.

[15] As late as May 31, 1787, in a letter to von Gersdorf (Dübi, p. 118), Paccard explained that he had been prevented from getting out his narrative, largely through the annoying controversy with Bourrit.

interested in science and in mountains, who, with his friend C. A. von Meyer, was in Chamonix at the time of the first ascent, and watched its later stages through the telescope (see 'Postscript' and note 17). His name stood first on the preliminary list of subscribers given in Paccard's prospectus, and a certificate testifying to the fact of the ascent, which he had given to Paccard's father, had been found in Chamonix and published in 1905. His seat was near Görlitz, the Scientific Institute of which, according to the 'Encyclopaedia Britannica,' possessed a fine library.[16] On application to the librarian, it turned out that von Gersdorf had been one of the founders of the Institute, to which he had bequeathed most of his papers. Amongst these was actually found the diary of his Swiss tour, containing full notes, with illustrative sketches, of the observations of the ascent which he had made on August 8 and 9, 1786.[17] These notes, made at the very time of the events by a singularly competent and impartial observer, and brought to light in so romantic a fashion more than a century afterwards, finally disposed of most of Bourrit's insinuations, and completely shattered the Dumas legend as to the incompetence of Paccard.

In 1913 **Dr. Dübi** published his monograph 'Paccard wider Balmat, oder die Entwicklung einer Legende,'[18] in which he brought together the whole of the relevant documents, both printed and MS., including a large amount of the new material referred to above, together with a masterly criticism of all the evidence. A cautious reader might perhaps feel that here and there Dübi is the advocate rather than the judge, but his main conclusions[19]—that Paccard alone devised the route and that he took at least an equal share in its execution—appear to me to be irrefragable. Dr. Dübi's book is indispensable to all students of the subject, but is now, most unfortunately, out of print, a fact which may excuse the extensive use I have made of it throughout this article. Amongst the many valuable documents printed by Dübi for the first time, perhaps the

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[16] Montagnier, *A.J.* **26**, 45–46.

[17] These notes are reprinted in Dübi, pp. 47–55. They include (*a*) von Gersdorf's record of his observations on August 8 and 9; (*b*) an account of the ascent based on these observations and on what he heard from Paccard himself; (*c*) another account, written from Geneva three days later and signed by von Gersdorf and von Meyer. (This was sent to the *Leipziger Zeitungen*, in which it was published on August 23, being thus the first printed account of the ascent.) In all this there is necessarily much overlapping and a great deal of repetition. In order to avoid this, and thus gain in brevity and convenience, I have welded the three passages into one narrative, in which everything, save a few unimportant words, is closely translated from von Gersdorf's German text. The English reader thus has for the first time the opportunity of realizing the full import of this impartial and absolutely contemporary account. See pp. 147–150.

[18] The titles recall Mathews' chapter 'Paccard *versus* Balmat,' referred to above, and Freshfield's phrase, 'the origin and growth of a legend,' *A.J.* **19**, 348.

[19] A critical summary of these conclusions by D. W. Freshfield appeared in *A.J.* **27** (May 1913), 202.

most valuable are the complete texts of Paccard's diary [20] and of the relevant passages from von Gersdorf's diary.

Last, but by no means least, must be mentioned the 'Life of de Saussure' by **D. W. Freshfield,** which appeared in 1920, and immediately took its place as being, alike in subject and treatment, one of the most instructive and fascinating of Alpine classics. In it are given to the world, for the first time, de Saussure's careful memoranda of Paccard's account of his ascent, which he heard from the Doctor's own lips fourteen days after its achievement, and which so impressed him that he—one of the most accurate of men—sat up late in order to put it down in writing the same evening.[21] De Saussure was naturally most interested in the details which bore on his own projected ascent, and these bulk rather largely in his notes, and disturb the orderly arrangement of the story. This, however, is easily restored, and thus we have, at long last, a good part at least of what Paccard would have related in his narrative had it been published. These notes are indeed 'the only authentic narrative of this memorable ascent; authentic because related by the more educated of the two climbers, scarcely a fortnight after the event, to a man who was thoroughly acquainted with the subject and could not be imposed upon; authentic, also, because it breathes the profoundest sincerity.' This is the deliberate judgment recently

[20] The diary is now in the library of the Alpine Club. Since drafting this paper I have examined and collated the MS., which is written in a 12mo volume, bound in vellum, containing some 180 pages of rather rough, soft paper.

The MS. occupies about 73 pages of the book. Of the remainder about 75 pages in all are blank, and scattered amongst them are disjointed jottings of domestic accounts and of the family history of Jean Michael Balmat, who had married the daughter of Dr. Paccard's son, Ambroise. It was from a son of this marriage (Ambroise-Adolphe Balmat) that C. E. Mathews obtained the diary. The accounts which it gives—often in considerable detail—of the later ascents of Mont Blanc go down to that of Clark and Sherwill in 1825. There are, however, also brief notes of the ascents of Fellows and Hawes in July 1827, and of Auldjo in August 1827, which are written in a different (and more cultured) handwriting. As Dr. Paccard died in May 1827, this change of handwriting might suggest that the earlier entries were written by Paccard himself. On the whole, however, I agree with Dübi that the MS. is probably a copy by some member of the Doctor's family (most likely his son Ambroise) of the original journals. The early entries are strangely out of order. On p. 1 (numbered 3) is the central portion of § 3 below; p. 2 is full of botanical notes; pp. 3–12 (all numbered 1) contain § 4; pp. 12–17 (all numbered 2) contain § 5; on the rest of p. 17 are §§ 1, 2; on p. 18 are the beginning and end of § 3, with a reference for the middle portion to p. 1. From p. 19 onwards the passages follow in chronological succession (§ 6 has the pages numbered 4; the account of the winter trip, omitted here, has the pages numbered 5; the rest are not numbered, doubtless because they follow in proper order). These facts, together with the general uniformity of the writing, certainly suggest a copy, perhaps begun hastily, but continued systematically, and intended to preserve in a permanent and handy form what were probably scattered papers. The somewhat careless punctuation and arrangement seem to show that the copy is not revised or altered in any way, and is therefore all the more trustworthy. The only serious blemish is the often unintelligible misspelling of botanical names—presumably due to the ignorance of the copyist. Dübi, p. 9.

[21] Freshfield, pp. 214–216.

pronounced by two high authorities—Mr. Montagnier and Commandant E. Gaillard [22]—and is surely the simple truth.

But it struck me that after all we have what is really another account by Paccard—very compressed, it is true, but full of detail—in the certificate which he obtained from Balmat and probably had more or less dictated to him,[23] and of which it seems to me no adequate use has yet been made. It turns out that the two accounts supplement one another remarkably well, with very little overlapping. In the following pages, therefore, I offer to the reader a restoration of Dr. Paccard's so-called 'lost narrative,' based mainly upon a conflation of these two sources, of course changed into the first person, and written as if composed in the spring of 1787.

I have inserted a number of details from various other (specified) sources, particularly from von Gersdorf's memoranda, with some touches also from Dumas's account where these seem likely to be based on Balmat's genuine recollections. I have added a certain amount of 'padding'—such as we may suppose would have been used to round the narrative off, or to fill it up in regard to points that had not happened to receive separate mention in the story told to de Saussure, or in the Balmat certificate—and such comments as seemed necessary or useful. Moreover, as in his prospectus Dr. Paccard promised to include an account of the chief attempts made before his successful climb, and as his MS. diary records these at length, and as, further, the matter of these diaries has not previously appeared in English (except some extracts, badly translated, in Mathews' 'Annals of Mont Blanc') and is inaccessible save in Dübi's book,[24] I have prefixed a careful translation of them (occasionally slightly condensed and rearranged for clearness' sake) to the narrative of the first ascent itself.[25] Of especial interest will be found the account of Paccard's own previous explorations in the Tacul basin and round the Aiguille du Goûter. These two passages have needed, and I hope repay, a good deal of explanatory and illustrative comment.

In the following pages *the matter in italics is definitely derived from Paccard himself*, the exact source being shown by marginal references. Each reference holds good for the italicised matter until the next reference letter. Where necessary a thin vertical

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[22] G.M. (1), p. ix.

[23] Even if it were the case, as Balmat seems to have tried, nine months afterwards, to suggest (see *Conclusion*, p. 144) that Paccard obtained his signature by unfair means, it would still be certain that the certificate gives Paccard's version of the points included in it, and is therefore properly available in an endeavour to reconstruct what his narrative would have contained.

[24] And now, as regards his accounts of the attempts of Bourrit, de Saussure and the guides, in G. M. (2), pp. 69, 73, 74, 76, 82.

[25] The only omissions of any importance are (1) some botanical and geological observations *passim*; (2) the notes of a winter trip to La Tour and Trélechamp; (3) most of the rather lengthy details concerning the ascent of the Buet; (4) the accounts of ascents subsequent to 1786. These latter are quoted in Mr. Montagnier's article in *A.J.* 25, 608.

line is used to show where the last reference stops. A * in the margin denotes matter not derived from the sources listed below. In such cases the source is stated in the notes. *All additional matter is in ordinary type.* Square brackets are used (*a*) in the italics, to give modern names or, now and then, obvious corrections; (*b*) in the ordinary type, to distinguish additions which involve disputable interpretations or inferences from those which are at any rate uncontroversial, whether they are thought strictly relevant or not. The reader has thus the opportunity of seeing *all that we know Paccard to have said or written on the subject,* and can neglect the rest at his pleasure.

It remains to acknowledge my special obligations to the works of Dübi and Freshfield—without which this paper could not have been written—and to add a list of the chief sources referred to.

D.	Dr. Paccard's MS. diary (text as given in Dübi, pp. 258–273).
v. G.	Baron A. T. von Gersdorf's diary (August 1786); Dübi, pp. 46–55. See note 17 above.
S.	Paccard's story as told to, and recorded by, de Saussure (Freshfield, pp. 214–216).
B.	The certificate obtained by Paccard from Balmat in October 1786. See Dübi, p. 80; Whymper (translation), pp. 26, 27.
Lα.	Paccard's letters to the 'Journal de Lausanne,' 1787. See Dübi, pp. 76, 80, 85; Whymper (translated and summarized), pp. 24, 26.
*L*β.	Paccard's letters to the 'Journal de Savoie,' 1823, 1825 (Montagnier, 'A.J.' **25,** 621, 623, 624; Dübi, pp. 167, 168).
Dumas.	Alexandre Dumas, 'Impressions de Voyage (Suisse),' 1833.
Forbes.	J. D. Forbes, 'Travels through the Alps,' 1st edition, 1843; 2nd edition, 1845, reprinted and annotated by Coolidge, 1900.
Carrier.	M. Carrier, 'Notice biographique sur Jacques Balmat dit Mont-Blanc,' 1854.
Durier.	Ch. Durier, 'Le Mont Blanc,' 1st edition, 1877; 5th edition, 1897.[26]
Whymper.	Ed. Whymper, 'Guide to Chamonix,' 1896, and many subsequent editions.
Mathews.	C. E. Mathews, 'Annals of Mont Blanc,' 1898.

[26] In the preface to his fifth edition Durier says: 'I have altered nothing in what has been called the "legend" of Jacques Balmat. In spite of the discussions about it and the documents that can be brought forward, I hold that the spirit of it is true.' One is tempted to add 'like the story of Alfred and the cakes.' But although this was written just after Whymper had published the Balmat certificates, it was before von Gersdorf's diary or de Saussure's account of Paccard's story were known.

Gribble.	F. Gribble, 'The Early Mountaineers,' 1899.
Montagnier.	H. F. Montagnier, 'Bibliography of the (early) Ascents of Mont Blanc,' 'A.J.' **25**, 608–640 (1911); 'Dr. Paccard's Lost Narrative' 'A.J.' **26**, 36–52 (1912).
Dübi.	Dr. H. Dübi, 'Paccard wider Balmat,' 1913.
Freshfield.	Dr. D. W. Freshfield, 'Life of H. B. de Saussure,' 1920.
G. M. (1).	H. B. de Saussure, 'Journal d'un Voyage . . . à la Cime du Mont-Blanc,' edited with notes by E. Gaillard and H. F. Montagnier, 1926.
G. M. (2).	H. B. de Saussure, 'Le Mont-Blanc et le Col du Géant,' edited with notes by E. Gaillard and H. F. Montagnier, 1927.

DR. PACCARD'S NARRATIVE.

(*An Attempted Reconstruction.*)

§ 1. My Early Interest in Mont Blanc. The Guides' First Attempt (1775).

As I was born[27] and brought up in the valley of Chamonix, I have been familiar with its glaciers and peaks from my childhood. My father had long resided there, and was the Notary Public of the village. He gave my brothers and myself the advantages of a good education—one of my brothers went into the Church, another into the Law,[28] and as I was fond of science, especially of botany, I took up Medicine. After finishing my medical studies at Turin and Paris, and obtaining my degree of Doctor of Medicine,[29] I returned home to take up the practice of my profession. I soon became more than ever *interested in the study of Nature, alike in her grander phenomena and in her most intimate secrets, and I was often glad to shut my books and leave my room in order to read the book of Nature herself.*[30] I formed botanical and mineralogical collections, made many geological observations, and took barometrical readings for the determination of heights. In 1781 I contributed an article to the Paris 'Journal de Physique' on the

[27] In February 1757.

[28] Freshfield, p. 200.

[29] Doubtless at the University of Turin. Chamonix was part of the Kingdom of Sardinia (except during the years 1792–1814), of which Turin was the capital.

[30] From the introduction to Paccard's paper in the *Journal de Physique* mentioned a few lines further on. See Dübi, p. 273.

causes of the varied arrangements of rock strata, and in 1785 I had the honour of being elected a corresponding member of the Royal Academy of Sciences of Turin.[31]

Meanwhile I had turned my attention to the problem of ascending Mont Blanc.[32] From my boyhood I was of course aware that M. de Saussure of Geneva, after his first visits as a young man to Chamonix in 1760 and 1761, had offered a reward to any one who should discover a way by which to reach the summit. Nothing much came of this till 1775, when my cousins François and Michel Paccard, with Tissay and Couteran, made a serious effort to achieve the ascent.

D I was away from home at the time,[33] but *a full account, based on Couteran's information, will be found in M. Bourrit's book.*[34] The party slept low down on the Montagne de la Côte, and next day they followed a path to the top of this ridge and crossed the glacier above it towards the [Grands Mulets] rocks. After visiting these rocks, they went further up the glacier, and got high enough to see over the Brévent to the Buet, and to sight the Lake of Geneva. They stopped where the ice slopes steepened,[35] being overcome by lassitude due to the heat in this snow valley, and owing to this and the approach of bad weather they were obliged to return.

§ 2. The Guides' Second Attempt (1783).

D Some time after I returned home *another attempt by the same route was made by Marie Couttet, Joseph Carrier and 'le grand Jorasse'* (J. B. Lombard) *on July 12th, 1783. They slept on* top of *the Montagne de la Côte, and had a good crossing of the Glacier des Bossons, but found the rocks* [of the Grands Mulets] *rotten and difficult. They got as far as where the snow arches over the first rocks at the foot of the little or second Mont Blanc* [sc. *the Dôme du Goûter*].[36] *Here Marie Couttet was taken ill . . . and they turned back, suffering greatly from the*

[31] Dübi, p. 24.

[32] See note 156.

[33] Being about 18½, Paccard was doubtless engaged in his medical studies.

[34] *Nouvelle Descriptions des Glacières et Glaciers de Savoye* (Genève, 1785) iii. 159, from which the following details are summarized.

[35] Probably below the Petit Plateau.

[36] This is an accurate description of a place which is easily identified, *e.g.* on Whymper's view from the Brévent (*Guide to Chamonix*, p. 104), or on E. T. Compton's beautiful drawing—evidently based on Whymper's view—in Mathews' *Annals of Mont Blanc* (frontispiece), reproduced also in Freshfield, p. 197. The place (about A on marked photograph) is some distance below the Petit Plateau, and not far above the point at which the direct route to the Dôme du Goûter (used by the guides on June 8, 1786; see § 9) strikes up the slopes to the right. (D on photograph.)

sun—which blistered their skins—and from the softened snow towards mid-day. They glissaded part of the way down *on their backs, and slept for a while on the Montagne de la Côte.* In Vol. II of his 'Voyages,' published last year (1786),[37] M. de Saussure adds that they lost all appetite, and that le Grand Jorasse seriously told him that if he were to try again by the same route, he would take with him nothing but a parasol and a bottle of scent. M. de Saussure concluded that an ascent by this route was hopeless.

§ 3. My First Attempt (with M. Bourrit) (1783).

In September of the same year (1783) *M. Bourrit* of Geneva D —already well known for his travels in the Alps, his books about them, and his mountain drawings—*came to Chamonix.* M. Bourrit had already paid many visits to our village. He knew my father well, and learned from him many things about the valley and its history.[38] *During a visit he paid to* * *Paris while I was* studying *there,*[39] *we met and spent some pleasant days together, and he had recently sent me a portrait of himself.*[40] He was passionately eager to ascend Mont Blanc,[41] and he invited me to accompany him in an attempt on the mountain, and to bring instruments with me with which to make scientific observations.[42] He had engaged as *guides le* D *grand Jorasse, Marie Couttet and J. C. Couttet. We started on Sept. 15th (1783)* at 3 P.M., *slept in a hut at la Tournelle on the Montagne de la Côte—where my barometer had fallen three inches*

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[37] That Paccard was a careful student of de Saussure's writings appears from a letter he wrote to de Saussure on September 25, 1785, in which he says: 'Les nouvelles que vous découvrez sont mes gazettes les plus précieuses. Je ne désire rien tant que de voir votre nouvel ouvrage (*sc.* vol. ii. of the *Voyages*, published in 1786) qui m'en fournira un magasin' (Dübi, p. 39; *cf.* § 12).

[38] See Bourrit's *Description des Cols ou Passages des Alpes* (1803), pp. 77 *et seq.*; Dübi, p. 146.

[39] Bourrit was in Paris in 1780 (when Paccard was 23).

[40] There is a letter of Paccard's to Bourrit (1782), in which Paccard refers to days they had spent together in Paris, and expresses his thanks for a portrait of Bourrit by himself (Dübi, p. 24).

[41] Goethe, after reading Bourrit's *Description des Glacières* . . ., called him 'ein passionirter Kletterer,' and de Saussure declared that 'M. Bourrit takes even more interest than I do in the conquest of Mont Blanc.'

[42] We now know that de Saussure was unable to lend Bourrit his 'portable barometer,' and had declined to accompany him on this expedition, but had urged upon him the importance of taking a barometer in order that at least the height gained might be determined. Bourrit had then hoped that H. A. Gosse would join him, but, being again disappointed, he was glad enough to get Dr. Paccard to come and bring the desired barometer (Dübi, pp. 24, 25; G. M. (2), p. 70).

and my thermometer from 15° R. *to* 7° *R.*[43]—and next day mounted to the top of the ridge. *M. Bourrit did not venture to set foot on the ice,* but stayed on the ridge, making three drawings,[44] while *the guides and I made our way up to the broken part of the glacier,* using an axe to cut steps up and down the ice ridges among the crevasses.[44] The thermometer fell to 3° R. Unfortunately *clouds came up and covered Mont Blanc,* and we had to return.

§ 4. My Reconnaissance by the Tacul Basin (1784).

D Next year, *on June 4th, 1784, with Pierre des Balmats des Barats I made a two days' journey* of exploration *to* the N.E. side of *Mont Blanc.* We went *by the Montanvert* (*where the*

[43] The various barometrical readings which Paccard records are not accompanied by simultaneous readings made elsewhere, except in the case of the readings noted on top of Mont Blanc (§ 14). Indeed, in his correspondence with de Saussure about the use of the barometer, arising out of the letter referred to in notes 37 and 76, he says (Dübi, p. 40): 'As I have ascertained that the barometer sometimes falls at Chambéry whilst it is rising at Chamonix, I have not thought it necessary so far to make use of a comparison barometer, especially one in a distant place.' (The unreliability of comparison readings made at a distance had been noted by Shuckburgh, whose results were known to Paccard.) Paccard's readings consequently cannot serve for *accurate* determinations of the heights reached. I have thought it worth while, however, to calculate these heights by *assuming probable values* for the reading of the barometer and thermometer at Chamonix. Paccard himself speaks of 25 inches as the normal barometric height at Chamonix, and one can usually make a reasonable guess at the temperature there. I have used the standard (approximate) formula (see, *e.g.*, Kohlrausch, *Leitfaden der praktischen Physik,* § 21):

$$h_1 - h_0 = 18{,}450\,(\log b_0 - \log b_1)(1 + \cdot 0045\theta)$$

where b_0, b_1 are the barometric readings at the lower and higher stations, reduced in the usual way to a common temperature,

$$\theta = \frac{t_0 + t_1}{2} = \text{mean of the temperatures (in °C.) at} \left.\right\} \text{the two}$$

and h_0, h_1 are the heights *in metres* of . . . . . stations.

It will be seen that Paccard's readings give heights that are pretty near the now accepted values, and are variously over and under these. They may therefore be used to give tolerably reliable heights in cases not otherwise measured, *e.g.* on the Aiguille du Goûter (§ 5). Note that all the readings are in Paris inches, each of which is divided into 12 lines, and each line into 10 tenths. It is of course needless to reduce the readings to other units, since the formula really involves only the *ratio* of the readings. In the present case this gives a height of about 1070 m. above Chamonix, or 2111 m. (= 6910 ft.) above sea level. The top of the Montagne de la Côte is 8495 ft., and they took 2 hrs. to reach this next morning (Bourrit's letter to de Saussure; see next note).

[44] See Bourrit's expansive letter to de Saussure (September 20, 1783), published by Mr. Montagnier in *A.J.* **24**, 420–423 (Dübi, p. 274). The axe is not the ice-axe of modern times, but a short-handled hatchet, which the Chamoniards (especially the crystal hunters) sometimes carried in their belts in addition to their long bâtons. See the portrait of Balmat in G. M. (1), p. xviii. It is probable, as Freshfield suggests, that the ice-axe resulted from a combination of the hatchet with the bâton (*A.J.* **24**, 611).

barometer was at 22½ inches,[45] *and the thermometer 15° R.*) and some way up the Glacier du Tacul, and *slept*[46] *in a hut on the moraine of the Tacul, below the* [*Aiguille*] *Noire, at a place where two glacier valleys meet.*[47] *Here the thermometer stood at two lines below 15° R. and the barometer 3¾ inches (less one line) below the 25 inches at which it normally stands at the Priory.*[48] *That means about 60 toises higher than our sleeping place of last year on the Montagne de la Côte. We made a round on the mountain slopes, and there, and on the moraines, I collected many plants. . . . Next morning . . . we went on some distance* until we got on to the plain of the Tacul, *nearly as far as the* [*Aiguille*] *Noire, crossing en route a large number of covered crevasses. The snow began to soften, and we only advanced about a couple of gun-shots' distance in two hours,*[49] *so we decided to go down again to avoid the dangers arising from the melting of the snow bridges over the crevasses.*

The approach to Mont Blanc on this side is difficult. It seems D *that one must keep close alongside the* [*Aiguille*] *Noire, and even*

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[45] Dübi's text (p. 259) is: 'Le baromètre est au montant et à la marque 22 pouces et demi.' The true reading must surely be 'est au Montanvert à la marque . . . [I have since consulted Paccard's MS., which *has* 'au Montanvert']. The reading of the barometer would give a height of about 920 m. above Chamonix, or about 1961 m. (= *ca.* 6430 ft.) above the sea. The accepted height is 6300 ft.

[46] 'Nous avons couché' erased, and 'nous couchons' substituted.

[47] Presumably the well-known spot near the (now dried up) Lac du Tacul, which was later the usual bivouac for those starting from Chamonix to cross the Col du Géant. De Saussure slept here on his famous ascent to the Col (July 2, 1788), which he reached in 7 hours from the bivouac. The Lac is shown on Mr. Lloyd's print of the view from the Couvercle.

[48] This would give a height of about 1354 m. above Chamonix, or 2395 m. (= 7857 ft.) above sea level, which is 284 m. = 145½ toises more than the height in note 43, as compared with Paccard's estimate of 60 toises more. Forbes gives the height of the Lac du Tacul as 7300 ft., so there is probably some error in Paccard's figures. His own calculation that his sleeping-place was 60 toises (= 117 m.) higher than that of the previous year on the Montagne de la Côte would make it

2111 m. + 117 m. = 2228 m. = 7310 ft.

very near Forbes's height.

N.B.—1 toise (= 6 French ft.) = 1·949 metre. Some readers may be interested in a quick and easily remembered way of reducing metres to feet, which I have not seen given elsewhere. Multiply the number of metres by 3, and to this result add $\frac{1}{11}$ of itself. [This gives an approximate value which is often sufficiently accurate.] To the sum add $\frac{1}{100}$ of itself, and the result is the equivalent number of feet correct to about 1 part in 30,000.

[49] It is a curious parallel that Exchaquet and Hill (in 1786, after sleeping on the Couvercle) found the ice-fall of the Géant so difficult that 'seeing *how little advance we had made in two hours*, and reckoning that it would take many more to get through the bad part of the glacier, we resolved to return rather than risk having to pass the night among the snows of the Tacul' (Freshfield, p. 245). The foot of the Aiguille Noire is at about 8260 ft. (Forbes, ed. Coolidge, p. 113).

over its rocks [50] to avoid the séracs du Géant. *This route then brings one to a glacier, above which is a snow plain,*[51] *towards which several valleys rise from the direction of Courmayeur. The widest of these runs straight to the foot of the mountain behind*[52] *Mont Blanc, and appears to bend to the right towards Mont Blanc behind a granite aiguille* [53] *which hides it. This valley lies so deep below the mountain slopes (which themselves rise to what seems an enormous height above it)* [54] *that it could only lead to Mont Blanc by a very steep couloir.*[55] *An attempt on this side would seem to be most easily made by* [this] *valley in the background, or* else *near Courmayeur by the route which is visible beyond the* [*Aiguille*] *Noire,*[56] *where the innkeeper Abondance of Courmayeur is said to have come in pursuit of a bouquetin, and to have looked down the whole valley of Bayer* [sc. the Mer de Glace [57]]. *Behind* [58] *the Aiguille Percée* [59] *we counted three*

[50] *Cf.* Whymper, p. 119: 'Years ago it was customary to make one's way from the base of the Tacul past the ice-fall of the Glacier du Géant, either *by the lower rocks of the Aiguille Noire*, or by the ice on that side.' In 1863 Freshfield descended by these rocks of the Noire (*From Thonon to Trent*, p. 120).

[51] The wide, gently sloping upper basin of the Glacier du Tacul.

[52] 'Behind' = on the side remote from Chamonix

[53] This I take to be the Tour Ronde.

[54] This appears to be an accurate description of the Brenva valley as seen, or rather inferred, from the upper slopes of the Glacier du Tacul, below the Col du Géant. This may easily be verified on the accompanying photograph.

[55] It is impossible not to be reminded of the magnificent (guideless) climb made by F. S. Smythe and T. G. Brown (by the 'Red Sentinel' and the great couloir on the Brenva face) in August 1927!

[56] *I.e.* the route of the Col du Géant, which, as one goes from Chamonix, turns to the left round the Aiguille Noire. It is remarkable that Paccard seems to know all about this (probably from his father; *cf.* § 3) in 1784, though the first recorded passages of the Col were in 1787, viz. by two guides on June 27, by Exchaquet and two guides on June 28, and by Bourrit with his son and four guides on August 28. Bourrit's account of all this has an important bearing on the accuracy of his version of Paccard's ascent of Mont Blanc. 'The facts relating to the two earliest crossings of the Col du Géant . . . have been frequently distorted. Bourrit appears once more as the principal author of the mischief. . . . If he could manage to cross the "Grand Col" . . . and write the first account of it, he might proclaim the adventure a feat at least comparable to' Paccard's: 'in his own phrase, "a discovery equivalent to the ascent of Mont Blanc." . . . In order to claim for himself the credit for the first passage by a traveller, he boldly omitted all notice of Exchaquet's previous success. . . . Called to account at the time for this omission, Bourrit protested that, having mentioned that two guides had made the first passage, he was not called on to notice any other predecessor. The motive that had led him astray in the case of Paccard and Mont Blanc, viz. his intense jealousy of any climber other than a professional guide, again drew him from the path of truth' (Freshfield, pp. 247, 250).

[57] Montagnier, *A.J.* **34**, 361.

[58] As above, 'behind' no doubt = 'on the side remote from Chamonix.'

[59] Or 'the perforated aiguille.' The 'three granite aiguilles' are obviously the Grand Flambeau and the Aiguilles de Tour and d'Entrèves—as is strikingly clear on the photo referred to in note 54—and therefore the 'Aiguille Percée' must be the Tour Ronde, but I do not know why it is so called, unless it is because of its jagged outline, or the noticeable gap a little below the summit on the right-hand skyline.

granite aiguilles which are invisible from Chamonix, and there are a crowd of others, repeated in many forms,[60] *so that this is the best place in which to study these granite rocks.*

[We crossed the snow plain towards a rocky island (the Petit Rognon) to examine these rocks more closely and to find an easier descent, and] *we rested* [61] [there] *behind the Aiguille du* D *Midi, where we saw a herd of nine chamois.*[62] *Disturbed by the noise we made, they ascended the moraine of a little glacier, got down without our seeing them, crossed the Glacier* du Géant, *and went up to the* Glacier de *Talèfre, where we saw them above*

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[60] The great group of the Chamonix Aiguilles, as seen, *e.g.*, from the neighbourhood of the Rognon.

[61] 'Nous *avons couché* derrière l'éguille du Midi.' One would naturally take this to mean 'we *slept* behind the Aiguille du Midi,' as Dübi suggests (p. 28), though with a ?. But:

(*a*) It is very unlikely that they could have slept in any such lofty and shelterless spot, at any rate without making more of it than this single phrase.

(*b*) There is nothing to suggest that they could have been in this neighbourhood so late in the day as to need to bivouac there.

(*c*) Note that where 'nous couchons' above (see note 46) clearly means 'we slept' ('historic present,' as generally in the narrative), it is followed in due course by 'next morning. . . .' The passage here is thus quite different in context, and presumably in meaning.

(*d*) The next sentences, too, follow much more naturally as something seen and done after a rest during the day, than as the first experiences after what would surely have been a miserable night.

(*e*) Note further that on his trip to the Aiguille du Goûter, Paccard describes himself as having been out *two days and two nights* (see § 5), but here as having spent *two days* (and of course the night between). If he had slept out a second night, he would clearly have spoken of the expedition as lasting *three days* (and two nights).

(*f*) It remains to consider whether the times of this suggested route are possible. If they left their hut ('cahute') about dawn, say, at 4 A.M., they might well get up the ice-fall of the Géant towards the foot of the Aiguille Noire by 6.30, and the 'two hours in softening snow' would bring them some distance on the 'plain of the Tacul'—perhaps towards the middle if it—by 8.30. (It is *à propos* to recall de Saussure's observation that on the Col du Géant the mean temperature of the day is attained by 6 A.M.) They could then reach the Petit Rognon by 9.30, and if, after their rest, they left this at 10.30, they would be down on the Glacier du Géant by 12, and up at the Jardin, *via* the Pierre à Béranger, by 2 P.M. I think these are pretty liberal allowances of time. Even if they did not reach the Jardin till 3 P.M., or later, there would still be ample time on a day in June for return to the valley before nightfall.

(*g*) J. D. Forbes's experiences in this region are instructive. After walking up to the Col du Géant from Courmayeur all night, he left the Col *at* 8 *a.m.*, and spent much time trying the descent of the Géant ice-fall on both sides. The party finally escaped *by following chamois tracks as a guide among the séracs on the side of the Petit Rognon, and got down on to the level glacier at* 1 *p.m.* After a halt here, they reached the Montanvert at 3.45 P.M. See his most interesting account, *Travels*, chap. xii.

Coucher no doubt generally signifies *passer la nuit*, but it also means (Littré) *s'étendre, se reposer*. On the whole, I think there can be little doubt that the latter is the meaning here, and that the interpretation I have suggested is substantially correct.

[62] As to these chamois, *cf.* Forbes (*g*), above.

and beyond the Pierre à *Béranger*. . . . We followed them down and across, and *on the moraine below* the Pierre à *Béranger we found dwarf Achillea. We dined* on the Jardin *below the* Glacier de *Talèfre, where we found some crystals and rock specimens. We then crossed the glacier by the Col de* ,[63] and went down *to a little plain below the Aiguille* [du Moine] *where there are several huts.*[64] *Then we made our way over the grass slopes, and by a little path* [65] *which follows the valley of Bayer* [*sc. of the Mer de Glace*] *under the buttresses of the Aiguille d'Argentière* [*sc. Aiguille Verte*] [66] *and the Dru, towards the latter. The plants here—such as Ranunculus glacialis and a Veronica—are dried up by the heat. We came* home *by the rock of Mouret* [67] [*sc. the Mauvais Pas*]. As a result of this journey I concluded that the approach to Mont Blanc on this side would be too long and difficult from Chamonix, though it might be worth while trying from Courmayeur.

At the end of August I had the pleasure of making the personal acquaintance of M. de Saussure, whose writings I had studied with so much interest and profit, and with whom I had exchanged notes on the determination of heights by the barometer. Madame Couteran's inn, where he usually stayed, being full, he lodged with one of my relatives, and

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[63] There is a gap in the MS.

[64] These huts were doubtless used by herdsmen and crystal hunters.

[65] *Cf.* Forbes (1st edition, p. 66; ed. Coolidge, p. 65): 'There is scarcely any part of this (eastern) bank of the Mer de Glace as high as the foot of the Aiguille du Moine which I have not traversed.' [Some way above the Mauvais Pas] 'are some fine pasturages which extend along the foot of the jagged rocky chain which extends from the Dru to the point of Les Echelets . . . and are grazed by cows for a good many weeks in summer. How a cow can . . . ascend and descend pathways which might be pronounced precipitous by even a not fastidious walker . . . may appear sufficiently surprising.'

[66] The Aiguille Verte was formerly known as the Aiguille d'Argentière (which indeed would be an excellent name for it), or more precisely as the Aiguille d'Argentière d'Envers, from Mont-envers (= 'the pasture at the back'), and this was corrupted to Aiguille Verte, which, of course, is quite inappropriate. The mountain is named Aiguille d'Argentière in the map in Auldjo's Mont Blanc (2nd edition, p. 77), and in the list of heights of peaks given by J. D. Forbes (1st edition, p. 119; ed. Coolidge, p. 114) the mistake is noted as having been made, *e.g.*, by Shuckburgh (1775).

[67] Dübi has (p. 28) 'Monvet' and in another place (p. 260) 'Mouvet,' and regards this as a mutilated form of 'Mauvais pas.' But Durier (*Le Mont Blanc*, chap. xiv.) speaks of 'le rocher du Mouret au mauvais Pas.' No doubt Monvet and Mouvet are errors of transcription for Mouret, which is an established name. (I have since found that Paccard's MS. *has* 'Mouret.') Forbes (1st edition, p. 67) says 'the spot has acquired the name of the *Mauvais Pas*, which it bears more frequently than its proper one of La Roche de Moré,' and he marks both names on his map. In his second edition (and so in Coolidge's edition, p. 65) the name is corrected (both in text and map) to 'Muret,' which is nearer to the true sound, though still not exact.

Photo. W. F. Donkin.

MONT BLANC de COURMAYEUR, MONT BLANC DÔME and AIGUILLE du GOÛTER.

invited me to supper. We parted with sincere offers of mutual help.[68]

§ 5. My Reconnaissance by the Aiguille du Goûter (1784).

On Sept. 9th of the same year (*1784*), *with Henry* Pornet, D
I made an expedition towards Mont Blanc on the opposite side of the mountain, viz. *by the* Aiguille du *Goûter.*[69] *We started at 3 p.m., crossed Vausa* [*sc. the Col de Voza*] *and reached Bionnassay*[69] *half an hour after nightfall. After supper Pierre Perraux's son led us across to the left bank of the stream*[70]*—where I broke my barometer—and down to Villette, where Joseph Jaquet lent me his barometer. His son Jean Baptiste led us to La Grua* [*La Gruvaz*], *and although it was past 11 p.m. we went on through the night to the chalets of Miage. Henry Pornet was taken ill, probably through fatigue and drinking brandy,* and this delayed us, so that *we could not reach Miage till about 3 a.m. Here the barometer stood at* $23\frac{3}{4}$ *inches less 1 line, the thermometer at 11° R.*[71]. . . . *We ascended to the Col de Tricot, where the barometer was* $22\frac{1}{4}$ *inches and the thermometer 20° R.*[72] . . . . and went down to the Glacier de Bionnassay and crossed it *to the little plain beside the lower part of this glacier,*[73] where Henry Pornet stayed behind. From here *we ascended by Pierre Ronde and the Rocher Rosset.*[74] *The rocks, which are of hornblende with fine veins of quartz and granite, are rotten and therefore more difficult than one would think. Some way beyond*

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[68] Freshfield, p. 201. De Saussure's first impressions of Paccard are interesting—'a fine fellow, full of intelligence, fond of botany, creating a garden of Alpine plants, wanting to climb Mont Blanc or at least to attempt it.'

[69] Paccard writes Gouté, Bionnasset throughout.

[70] Presumably by the path which runs from near the church of Bionnassay and crosses the stream by a rough little plank bridge. (There is a better path and bridge a good deal higher up, but this would have involved a considerable détour.) If the path was as narrow, tortuous, and overgrown as it is to-day, it is not surprising that a local guide was needed at night, and that even so the barometer got broken.

[71] This gives a height of about 462 m. above Chamonix, or 1503 m. = 4920 ft. above the sea. Vallot's height is 1559 m. = 5115 ft.

[72] This gives 1041 m. above Chamonix or 2082 m. = 6830 ft. above the sea. Vallot's height is 2120 m. = 6955 ft.

[73] Doubtless the stony meadow which borders (on its right bank) the nearly level part of the Glacier de Bionnassay, just above its final ice-fall. A narrow path, with a sign-post directing to the Col de Tricot, now runs to this meadow from near the Col de Voza along the steep slopes (behind the Pavillon de Bellevue) which shut in the upper end of the Bionnassay valley. From the meadow, steep grass and rock slopes lead up to the left by the 'Pierre Ronde,' to the S. of the present terminus of the Chemin de fer du Mont Blanc, and on to the Tête Rousse inn (*ca.* 10,400 ft.), which is probably 1000 ft. or more above the site of de Saussure's hut (§9 and note 91).

[74] The Tête Rousse.

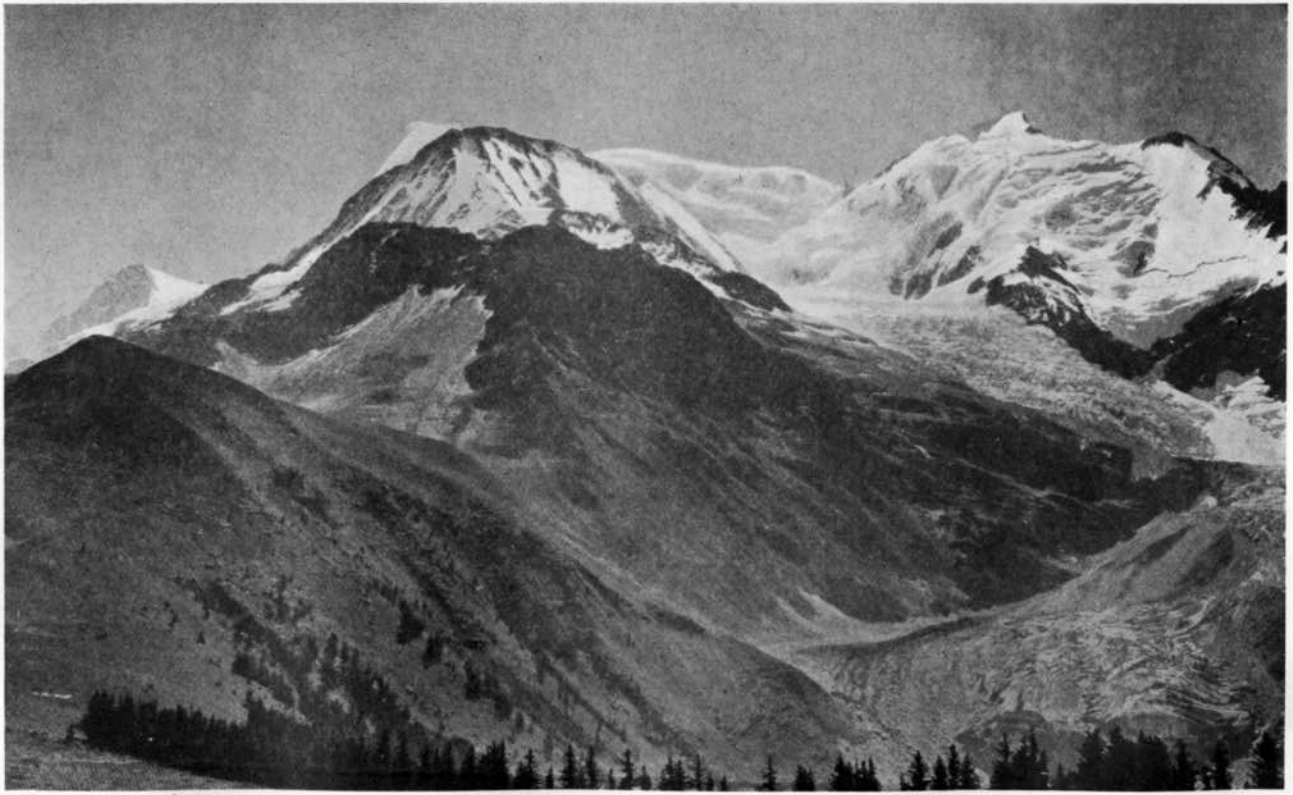

Photo. P. Montandon.

AIGUILLE du GOÛTER.
From COL de VOZA.

the Rocher Rosset, below the base of the Roche Bionnassay [*sc. Aiguille du Goûter*], *about three hours above the little plain, I slipped and nearly came to grief, and I wrote my name* on a rock *near by. The barometer stood at 20 inches less 2 lines and the thermometer at 22° R.*[75] *We went on along the side of the Glacier* [de Bionnassay] *on the snow, below the Roche Bionnassay* [*Aig.*
* *du Goûter*], *from which stones constantly fall. . . . I spent an hour*
D *in this ascent along the Glacier de Bionnassay.*[76] | *The route by which to go up the Aiguille du Goûter (here called* [*Aiguille*] *de Bionnassay) would be the* [ridge] *most to the right towards the Glacier de Bionnassay. It would perhaps be possible, but only with much difficulty, to get up the first* [? Aiguille ? ridge] *at the side* [starting] *below the wide snow band which lies amidst these*
* *rocks.* | *It was 6 p.m. when the approach of darkness, the difficulties of the way, and even more the fresh snow, made me resolve to descend.*[78] *At the highest point I reached, my barometer stood*
D *at 18 inches 7½ lines and thermometer 20° R.*[77] | *We got back at nightfall to the little plain (where Henry Pornet was waiting for us), and with the help of our crampons*[79] *we climbed the steep ridge above the huts,*[80] *and crossed Vausa* [*the Col de Voza*], *reaching Chamonix at 3 a.m., after two days and nights of continual walking. I had once more broken my barometer.* This expedition showed me that it might be possible to ascend the Aiguille du Goûter from Bionnassay, but it would be difficult, and dangerous from falling stones.

§6. M. Bourrit's Attempt by the Aiguille du Goûter.

D A week later (*16th and 17th Sept., 1784*) *M. Bourrit* made a similar expedition from the Bionnassay valley. *Bringing two men with him from Sallanches, he met le grand Jorasse and Marie Couttet, who had started from Chamonix on the 15th, at La Grua* [*Gruvaz*], *where he also engaged as guides* ('*conducteurs*') *N. F.*

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[75] This gives about 3125 m. = 1605 toises = *ca.* 10,270 ft. The Tête Rousse inn is at 10,390 ft. Note that the heights deduced from Paccard's other readings on this trip are *below* the accepted figures.

[76] From Paccard's letter to de Saussure, September 25, 1785 (Dübi, p. 38).

[77] About 3685 m. = 1885 toises = 12,090 ft. De Saussure's highest point, probably on the same ridge, was about 1900 toises (§ 9) = *ca.* 12,150 ft. The summit of the Aiguille du Goûter is 12,582 ft. = 1967 toises, so that the climbers had got to within rather less than 100 toises, or about 500 ft., of the top, *i.e.* doubtless to about the level at which the rocks steepen considerably. *Cf.* § 9.

[78] From Paccard's letter to de Saussure.

[79] This is almost if not quite the only reference to the use of crampons in the Mont Blanc region at this period.

[80] *Sc.* the chalets above the 'little plain.' This would have been the only convenient way back until the path referred to in note 70 was made.

Photo. H. Bregeault.

CORRIDOR, ROCHERS ROUGES, ANCIEN PASSAGE,
MONT BLANC, BOSSES.

Photo. G. P. Abraham.

MONT BLANC with BOSSES.

Gervais and Cuidet. On the 16th they slept in the last huts on the right of the stream from the Glacier de Bionnassay (i.e. on its left bank), *although there are some huts farther on, below Vausa* [*the Col de Voza*]. *Starting again at 1.30 a.m. they crossed this stream by the light of a candle in a paper cone, and* halted *below the Pierre Ronde,* where *they made a fire and waited for daylight, a little above the place where Henry Pornet had stayed behind* (§ *5*), *below the cross. When day broke, Couttet and Gervais* [81] *left the others and went up to the left, towards Chamonix. They ascended* the Aiguille du Goûter *by the ridge hidden behind the one seen from here* [*sc. from Chamonix*]. *They could not finish the ascent by this ridge, as the rocks overhang, but they cut steps across the snow couloir to the next ridge, which brought them to the top. They are said to have found an easier descent by the next ridge* to the west, i.e. *nearer the Glacier de Bionnassay, beyond the big snow patch* (plaque). *When they were on top of the second ridge, they were seen against the snow by le grand Jorasse from the top of the rognon above the Glacier de la Gria. They caused a fall of stones as it was striking noon at Les Houches.* Meanwhile *M. Bourrit* and the others *had come up to the top of the Pierre Ronde below the Glacier de la Gria, and alongside this glacier to the base of the Aiguille du Goûter where the others* [had] *ascended. M. Bourrit stayed here more than an hour, sketching the view and the valley of Chamonix. But he suffered greatly from cold and headache*—even *by 8 a.m. he was very pale—and* presently *went down to Bionnassay* (*where he drank some milk*) *and Bionnay.*

Le grand Jorasse thinks he saw the two *climbers* [? again] *in* D *the hollow behind the Aiguille du Goûter—they seemed to be ascending the snow slope which rises above the Glacier de Bionnassay. They say that they spent six hours above the Aiguille du Goûter—which must be a mistake* (*faux*), *as they were back below Vausa* [*the Col de Voza*] *before nightfall—and that they advanced to within about 10 toises* (65 feet) *of the* [*Vallot*] *rocks which are at the base of Mont Blanc behind the second* [*sc. the Dôme du Goûter*], *and that they turned the latter at the back towards the* Col du *Bonhomme. They say that the ridge from the Dôme du Goûter is too steep and would require step cutting. The plain at the end of the Glacier des Bossons* [*sc. the Grand Plateau*] *is fine, but it is not possible to climb the snows that cover the points of the central chain which runs towards the Aiguille*

[81] Bourrit says Cuidet, not Gervais, and so does Paccard in §10. De Saussure (*Voyages*, tome II) makes the same confusion between these two men of La Gruvaz, giving the name as Gervais in §1108 (note), but speaking at length of Cuidet in §1116.

du Midi.[82] *They did not suffer from heat, and came down like birds. . . . The crystals they brought down came from the Aiguille du Goûter, but they saw others sparkling in the inaccessible rocks* [83] *below which they turned back. They think it would be possible to construct a shelter on the Aiguille du Goûter,* the top of *which consists of flat slate.*

Gervais rejoined M. Bourrit at about 7.30 [84] *at Bionnay and*
D *told him the story of their climb. Couttet went home, and the Miller* [*sc. Lombard, le grand Jorasse*] *gave him first one half-crown* (3 francs) *and then another on behalf of M. Bourrit. They found their own provisions. There was a bet of a crown* (6 francs) *apiece between the Miller, and Couttet and his brother, and I held the stakes. Couttet bet that he had spent six hours on the Aiguille du Goûter. At first he withdrew his stake, telling me that really they had arrived on the Aiguille du Goûter at 9 a.m., contrary to what the Miller asserts, but that after a circuit they had returned there at mid-day to dine, at the time when the Miller maintains that they had only just arrived there.* [In the end Couttet paid up.]

§ 7. My Traverse of the Buet (1785).

The summer of the next year (1785) was wet and stormy, and nothing was done on Mont Blanc until M. de Saussure's
D attempt in Sept. *On August 16th,* however, *I went up the Buet with Madame Desailloud and her son and nephew. We ascended*

[82] 'Ils disent . . . que la plaine au bout du glacier des Bossons est belle, maisqu'on ne peut monter sur les croutes [*sic*] de neiges des pointes de la chaîne centrale qui se dirige vers l'éguille du Midi.' We may safely take this to mean that, from the Dôme du Goûter, Marie Couttet—who plainly must have been Paccard's informant—thought the Grand Plateau easily accessible (as, of course, it is), but saw no hope of climbing the slopes above it. The 'central chain' is clearly the main N.E. ridge of Mont Blanc, running down past the tops of the two tiers of the Rochers Rouges to the Corridor, rising again to Mont Maudit, and descending through the Mont Blanc de Tacul to the Aiguille du Midi—'the staircases of Mont Blanc,' as de Saussure calls them. 'The snows that cover the points of this chain,' as far as any that can be considered as ways of reaching the top of Mont Blanc are concerned, must therefore be the slopes on the opposite side, *i.e.* to the E., of the Grand Plateau. These are obviously the Corridor and the lower and upper Anciens Passages (see note 113), in relation to which the Rochers Rouges are the 'points.' It is not surprising that Marie Couttet thought these slopes hopeless, but, as we shall see, Paccard formed a sounder judgment by observations from a much more distant standpoint, viz. the Brévent (see § 11).

[83] This reference to sparkling crystals seen in these rocks casts a most interesting light on the events of June 8, 1786 (§ 10). It was no doubt a similar appearance that allured Balmat, the crystal hunter, to climb these rocks, and it was while he was doing so that his companions turned down without waiting for the intruder on their plans to rejoin them. This is surely a noteworthy 'undesigned coincidence.'

[84] Bourrit says at 11 P.M., which is more likely.

by the valley 'Entre les Eaux,' and slept under a rock on the Nollo. Next day we reached the summit over rocks and snow, and came down by the valley of Bérard. I collected many plants and made some instructive observations on the contact of primary with secondary rocks.

§ 8. A Barometric Experiment.

On Oct. 4th 1785 I measured the height of the steeple from its D
foot to the bell chamber, where I hung up a barometer after noting the reading at the bottom and marking it by a strip of paper, cut clean and stuck round the tube. Doing the same above, I found that the mercury had gone down ½ line. Then I measured the height with a string to the end of which a stone was fastened, and found it to be 8 toises 5 feet 3¼ inches. Thus at the Priory, at a height of a little more than 524 toises above the Mediterranean (that being the height of the village), a fall of the mercury of 1 line corresponds to a rise in height of 17 toises 5 feet and ½ inch,[85] *when one carries the barometer from a lower to a higher level without change of weather.*

§ 9. M. de Saussure's Attempt by the Aiguille du Goûter (1785).

Late that summer, *on Sept. 13th and 14th (1785), M. de* D
Saussure with M. Bourrit, the latter's son Isaac, and 9 guides (Pierre Balmat, Marie Couttet, Jorasse, J. M. Tournier, F. Folliguet, J. P. Cachat, F. Cuidet of La Gruvaz, N. Gervais and another of Bionnassay) made an attempt on a great scale on the side of the Aiguille du Goûter. At M. Bourrit's suggestion, *M. de Saussure had had a hut constructed on the Pierre Ronde, over against the lower edge of the vertical icefall of the Glacier de la Griaz,*[85a] *where M. Bourrit had been the previous year.*

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[85] There is a slight error in the figures here, since twice 8 toises 5 ft. 3¼ ins. is 17 toises 4 ft. 6½ ins. It would make it right if we read 8 toises 5 ft. 6¼ ins., but the reading as stated in the text is given in words as well as figures in the MS. of the diary. On the other hand, Paccard repeats the 17 toises 5 ft. ½ in. in a letter to de Saussure (Dübi, p. 40), except that he writes 6 lines instead of ½ in., which is the same thing. Actually a fall in the barometer of ½ line would correspond (at Chamonix, and if temp. = about 20° C.) to a rise in height of about 7½ toises. Clearly it was too difficult to measure the small fall (=$\frac{1}{32}$ in.) with much precision. The figure which Paccard quotes as the height of the village (and as less than that of the church), viz. 524 toises, is equivalent to 1022 m., or 3353 ft. The height now accepted is 1041 m. = 3415 ft., which is probably that of the church floor. Some editions of Baedeker give 1033 m. = 3390 ft., which is perhaps the bridge.

[85a] See note 91.

This was done by Couttet, Tournier and Folliguet on Sept. 11th and 12th in spite of the bad weather—snow fell near the hut. They started down at 6.20 a.m. on the 13th to meet M. de Saussure at Bionnassay, where they arrived at 8 a.m. M. de Saussure had come from home incognito, giving out that he was going to the Little St. Bernard. The whole party started at once and reached the hut at 5 p.m. Two men carried two mattresses weighing about 50 lbs. each; two others took about 50 lbs. of wood each, which was enough for a moderate fire for two nights; two others carried 6 sheets, 5 blankets and 3 cushions; two porters carried the provisions (in a basket for the back and a skin bag), and a third took the ridge pole of the hut. (These three went down again.) The hut was roofed with flat stones, and afforded room for five persons. The others slept round a fire made a few feet from the hut. The party spent a fairly restful night, except young Bourrit, who was sick several times. Next day, Sept. 14 (1785), they started at 6.20 a.m., reached the foot of the Aiguille du Goûter at 8.30, and ascended the ridge (at the base of the mountain) which is seen from Chamonix, and then the ridge behind, which they reached by a traverse towards the Glacier de Bionnassay, crossing two couloirs. They went on till a few minutes past 11, to where the Aiguille is much steeper and seems properly *to begin. M. de Saussure then sent on Pierre Balmat and Cuidet to explore the way. They climbed up steeply for an hour and a quarter, which one may reckon to be about 100 toises (640 ft.), or half an hour's* ascent on ordinary slopes.[85b] *Pierre Balmat shouted down to them that there were two feet of fresh snow ahead. M. de Saussure, who has always shown a great dislike (une horreur) of snow climbing, though he is thought to go well on rocks, decided to stay where he was and make experiments. Everyone was glad, except young Bourrit, who seemed to want to go on, though he had taken nothing but a little brandy and water. M. de Saussure observed the barometer*[86] *and thermometer several times, and these readings gave him a height of 1900 toises (or 1905 toises, according to a letter he sent me).* This is about the same height as I had reached the previous year. *Allowing 100 toises for the height the guides ascended to the top of the Aiguille du Goûter,*

[85b] It is interesting to note that during his three weeks' wait in 1787, before the weather permitted him to start for Mont Blanc, de Saussure experimented on the speed he could attain on the slopes round Chamonix. He found he could ascend from 200 to 360 toises in an hour (G. M. (1), p. 4). At higher levels the former figure would be about the limit possible (say, 1300 ft. per hour), and this is the figure Paccard assumes above.

[86] His reading was 18 ins. 1¾ lines.

this would only leave 426 toises more to the top of Mont Blanc.[87] *This is very surprising, compared with the height of the Brévent (1283 toises), and the apparent heights of the Aiguille du Goûter and of Mont Blanc as seen thence. If a is the height of* * *Mont Blanc above the Aiguille du Goûter, and b that of the Aiguille du Goûter above the Brévent, then a : b = 2426 — 2000 : 2000 — 1283 = 426 : 717 = about 4 : 7, but a : b actually looks about 3 : 2.*[88] *Perhaps Mont Blanc is higher than is thought—its* * *distance may mislead the observer. It would therefore be doubly desirable to carry a barometer to the summit* and observe the reading there. . . . M. de Saussure and his party *started down* D *soon after mid-day. At 4 p.m. they were seen on the snow slope at the base* of the Aiguille, *at about the height of the Buet, behind and above the Glacier de la Griaz. For this descent M. de Saussure had himself tied up like a prisoner; he was fastened with a rope under his arms to Pierre Balmat and F. Folliguet behind, while Couttet showed him where to step in front. M. Bourrit leaned on Gervais's shoulder while Tournier held him by the collar. At difficult places a bâton was held as a handrail ('garde-fou'!) for M. de Saussure to lean on, both going up and coming down. Young Bourrit, who was unwell while going up, held on to Cuidet's coat,*[89] *but needed less help than the others on the*

[87] Paccard (like Bonnet, note 115) appears to take 2426 toises as the accepted height of Mont Blanc. Elsewhere (see § 13) he quotes the heights found by de Luc as 2391 toises and by Shuckburgh as 2451 toises, the average of which is 2421 toises. The actual elevation of Mont Blanc above the Aiguille du Goûter is 500 toises (4807 m. — 3835 m. = 972 m. = 500 toises).

[88] The passages marked * are from Paccard's letter to de Saussure (note 76), where his argument is more clearly stated than in his diary. He seems, however, to have gone astray here. Remembering that the top of the Brévent (2525 m.) is about level with the top of the Montagne de la Côte (2588 m.), one can easily verify on any photograph taken from the Brévent that a : b *looks* roughly about 1 : 2 (which agrees well enough with Paccard's calculation), and does not, as he asserts, look to be 3 : 2 (or 2 : 1, as he says in his diary). Perhaps he reckoned that the top of the Brévent was about level with the Petit Plateau. Such estimates of heights seen across a deep valley are very precarious unless checked by actual observation with a level.

[89] It is plain from this and other passages in his diary that Paccard took pains to learn from the guides what they could tell him of the climbs in which they took part. He would, of course, know them all, and doubtless 'doctored' most of them and their families. In the present case he obviously found amusement in preserving in his private notes the guides' stories about the incompetence of their 'messieurs,' who to a certain extent were his rivals or competitors. His own speed and endurance are obvious in spite of the unvarnished simplicity with which he records his performances, *e.g.* in the memoranda of his own chief reconnoitring expeditions, and in the story he told de Saussure of his final climb. It is pleasant, on the other hand, to note de Saussure's freedom from jealousy on this point. In his letter to Tairraz, on hearing of the success of Paccard and Balmat, he says: 'I do not flatter myself that I shall get to the top, for I have neither the youth nor the agility of the Doctor' (Whymper, p. 23).

descent.[90] *They reached the hut at 6 p.m., where the guides were paid off. They received 6 francs a day, and the whole expedition cost M. de Saussure 15 louis* (300 francs). *The Bourrits went down with the guides to Bionnassay, taking most of the baggage, including the blankets which M. Bourrit had supplied. M. de Saussure remained* at the hut *with Balmat, Couttet and Cachat, keeping all the mattresses and some blankets and three overcoats. Next morning M. de Saussure made barometric and thermometric observations, took some levels (the huts are a little lower than the Buet),*[91] *and collected four or five plants, and some 40 lbs. of stones from the Aiguille du Goûter and the Pierre Ronde. They left at 7 a.m. and went slowly down to Bionnassay, where they arrived at 1 p.m. and had a good dinner. The guides returned to Chamonix, except Pierre Balmat who accompanied M. de Saussure to Sallanches, where they slept.* Nothing more was done that year.

§10. The Guides' Attempt by the Dôme du Goûter (1786).

Next summer, five guides made an attempt to test the relative advantages of two ways to the Dôme du Goûter as
D a route to the top of Mont Blanc. *Joseph Carrier, J. M. Tournier and Fr. Paccard* (my cousin) *slept comfortably in a shelter*[92] *on the Montagne de la Côte, where Joseph Balmat of les Baux joined them* uninvited. He was not really a guide,[93] but a crystal hunter,[94] who wanted a share in the reward

[90] As we have seen, he had wanted to go on when the party stopped. He and his father had the bad taste to reflect, in boastful letters to de Saussure, upon the latter's climbing powers, and were suitably rebuked (Freshfield, p. 204).

[91] The height of the Buet is 10,200 ft., so if this observation is correct, the hut was not as high as the present Tête Rousse inn, viz. 10,400 ft. In fact de Saussure tells us (*Voyages*, tome II, § 1109) that his hut was at about 1420 toises = 9080 ft. It was probably on the ridge now known as Les Rognes, which crowns the slopes then called Pierre Ronde. (De Saussure remarks that the origin of the name is obscure, since there is nothing specially "round" in the neighbourhood.) This ridge runs roughly parallel to, but below, the Tête Rousse ridge at the base of the Aiguille du Goûter. The Glacier de la Griaz lies between these ridges. De Saussure rightly observes (§ 1120) that his hut should have been 200 toises higher, *i.e.* just about where the Tête Rousse inn now stands.

[92] At Bec à l'Oiseau (Dübi, p. 41).

[93] Bourrit's letter to Miss Craven: August 13, 1787 (Dübi, p. 92). The *Joseph* Balmat is probably a mere slip of the pen—perhaps a careless repetition of the *Joseph* Carrier. Les Baux is the name of the upper part of the village of les Pélerins.

[94] He is so described in the complimentary portrait of him by Bacler d'Albe (Dübi, p. 96; Gribble, p. 162; reproduced here in colour from a fine print belonging to Mr. R. W. Lloyd).

offered by M. de Saussure, which it was plain that the others were hoping to gain. They naturally looked somewhat askance upon him. *Next morning, June 8th 1786, they started early for Mont Blanc. On the same day Pierre Balmat and Marie Couttet, who had slept* in M. de Saussure's hut *on the Pierre Ronde above Bionnassay, went up* from there by the Aiguille du Goûter. *There was still much snow* low down, e.g. *on the Brévent and the Montagne de la Côte, but in the morning the snow bore well. The party that started from the Montagne de la Côte were the first to arrive on the Dôme du Goûter and to reach the foot of the final summit of Mont Blanc at the plain [sc. Col du Dôme]. According to what they say, they went on to the rocks that can be seen there from Chamonix [sc. the Vallot rocks]. They assert that it is impossible to go that way to the top—on the one side is the precipice above the Vallée Blanche, on the left are steep and broken snow slopes which protect it from approach. It seems from there that it would be better to approach behind the Aiguille du Midi. They built a stoneman on the [Vallot] rocks which should be visible from the mill at les Pras, but saw nothing of the one said to have been built by Cuidet and Couttet—on the contrary there was not a stone displaced at the spot pointed out by Couttet as that at which they had made theirs. . . . The party from Bionnassay arrived* on the Dôme du Goûter *after the other four, who had seen them on the shoulder of the Aiguille du Goûter looking like two chamois. The parties shouted to each other, and the two ascended to join the others, but were very tired, especially Pierre* Balmat *des Barrats. Almost all of them felt a kind of faintness. The one from les Baux was revived by some fresh water which he found on the rocks, and he went on alone up these rocks looking for crystals.*[94a] *The others,* without waiting for him, *turned to go down—bad weather was coming up and hail began to fall. They reached Chamonix at 10 p.m., having come down pretty much from the top of the Montagne de la Côte by night. Balmat stayed a long while behind the others, and was caught by the darkness of night while still on the snow. He was following the tracks of the others, who had been sinking in up to their knees, although the snow was hard in the morning. Having felt with his bâton a crevasse which the others had jumped, and not being able to see clearly, he dared not go further, but putting his bag under his head,* his handkerchief over his face,[95] *and his snow shoes*[96] *under his back, spent the night on the snow. Next morning his clothes*

[94a] See note 83.

[95] Dumas.

[96] 'Ses cercles.' This is interesting, and appears to be the only reference to the use of snow shoes on Mont Blanc.

were frozen, but he got down safely to Chamonix by 8 A.M.[97] *Most of the party were sunburnt—Tournier was as red as the* great *fire at les Pras. His skin came off in scales a few days later.*

§ 11. Discussion of Possible Routes to the Summit.

This party thus confirmed the opinion of M. Bourrit's guides in Sept. 1784, that the ridge leading from the Dôme du Goûter towards the summit was too steep and narrow to afford much hope of success in that direction. My thoughts therefore turned again to the possibility of finding a way over
B the snow slopes above the Glacier des Bossons. *During the last*
L β *three years I had often examined this part of the mountain | through the telescope from the Brévent.* It was pretty plain that it would be possible to advance from the top of the Montagne de la Côte to the great snow plain [the Grand Plateau] immediately below the summit, though the crevasses in the lower part of this route would probably cause a good deal of trouble. Three parties however—in one of which I had taken part—had already, as related above, gone some distance towards the great snow plain. But the summit rose far above this plain, and the final slopes were evidently high and steep, and no one had yet got
D near them. *Marie Couttet, who had examined these slopes from the Dôme du Goûter* (§ 6), *thought them hopeless. It seemed to*
S *me*, however, *that one might be able to climb them by a broad bank of snow that slopes steeply up to the left* from the Grand Plateau, between two tiers of perpendicular rocks, towards the eastern shoulder of the mountain, from which, on turning to the right, one would have an easier incline to the top. Unfortunately
Lδ *the bank of snow was exposed to avalanches* from the ice cliffs above it. I observed, however, that *when the snows were low and settled the risk of avalanches was small. Even if that did not prove to be the case, it would be possible to effect another route from the Grand Plateau along the foot of the truncated rock*,[98] i.e. the tier of rocks whose cut-off top supports the bank of snow referred to before, *passing round this and the Rochers Rouges* to the gap above the Glacier de la Brenva and thence to the right to the top. Either of these routes would be a very
B long climb, and *I thought it almost certain that one would have to sleep high up on the mountain.* Now Balmat's adventure had

[97] In Dumas's narrative, Balmat says he took 5 hrs. to come down, arriving home at 8 A.M., which is probably correct.

[98] This is no doubt the lower tier of the Rochers Rouges that forms the flat-topped cliff which overhangs the 'corridor.' The route by the corridor was actually first traversed in 1827, a few months after Paccard's death, note 113.

Mont Blanc from the Brévent, from an early print in the collection of R. W. Lloyd illustrating the paper by E. H. Stevens on Dr. Paccard's "Lost Narrative."

shown that this was possible without excessive risk, and *I determined to make another attempt. My own guide was away, and so when Jacques Balmat offered his services,* as he seemed a strong and enterprising fellow *I accepted his offer and engaged him as porter.*[99] | I should have preferred to take another man or two to share the labour, but Balmat was averse from this, | [100] wishing no doubt to earn the whole of the reward offered by M. de Saussure. Of course he knew that I should claim none of it. La *

It was necessary to wait for good weather and a favourable state of the snows. At last, after three weeks' unsettled weather, we were able to start on Aug. 7th. *I had told Balmat I proposed to go by the Montagne de la Côte. This led him to think I meant to try again by the guides' last route,* viz. that by the Dôme du Goûter, [and he told a 'marchande de sirop' to look out for us in that direction [101] about 9 A.M., when he reckoned we might be there. All the same] *in view of his experiences* on June 8th *he did not think there was much chance of success* by that route. I explained that I had reconnoitred the routes by the Glacier du Tacul and by the Aiguille du Goûter, and had rejected both, but *I now intended to keep straight on from the Montagne de la Côte to the Grand Plateau,* and find a way up from there. Balmat was then in favour of this as the likeliest of the three routes I had in mind.[102] B

[99] 'Comme ouvrier,' as stated in the letter (anonymous, but undoubtedly emanating from Paccard) which opened the correspondence unearthed by Whymper in the pages of the *Journal de Lausanne*, February 24, 1787. See Whymper, p. 24; *cf.* also note 148.

[100] This is from Balmat's story as told by Dumas (see, *e.g.*, Mathews' *Annals of Mont Blanc*, p. 64), but it seems extremely probable.

[101] I have always thought that this statement of Balmat's to Dumas—who could not have invented it—was an unintentionally truthful touch, though of course it is inconsistent with Balmat's own claim to have discovered the 'Ancien Passage,' and to have intended to lead, and to have led, Paccard that way. It is confirmed by the remark later in his story that (at the Petits Mulets) 'just then I was thinking only of the *marchande de sirop* who ought to be watching the Dôme du Goûter'—though it is true that was at 6 P.M. instead of 9 A.M.! It must be added that on this point Durier (in chap. VII. of his *Le Mont Blanc*) makes considerable use of a letter (of January 26, 1839) written by Gédéon Balmat (son of Jacques Balmat) to M. le Pileur and communicated by him to Durier. The letter seems not to have been seen since then and cannot now be traced (Dübi, p. 199). In it Gédéon Balmat is said to have stated that the *marchande de sirop* was told *by Paccard* to look out (no time being mentioned) *with a telescope* (scarcely a likely possession for such a woman) for two men *on the Rochers Rouges*, and that she was the Doctor's 'bonne amie.' The story is improbable, and was plainly designed, when Balmat and Paccard were both dead, to remove an obvious blemish from Balmat's narrative.

[102] This, I suggest, is the simple explanation of the astronomer Lalande's remark (1796) that Dr. Paccard told him he had projected three routes, but Balmat made him prefer that *by the Montagne de la Côte.* (I take this, therefore,

§12. From the Montagne de la Côte to the Grand Plateau.

Accordingly we started soon after mid-day on Monday August 7th, and went up to the Montagne de la Côte, taking with us a blanket, provisions, a thermometer, a compass, and a barometer with a tripod stand.[103] We slept in a shelter
S on the top, and *started next morning*, Tuesday *August 8th* 1786,
B *at 4.0 a.m.*, | *Balmat carrying* most of the provisions and of the
* instruments I have mentioned. It was a cloudless morning,
v.G promising a splendid day,[104] | and indeed the weather remained extraordinarily fine throughout.[105] | We began almost at once
S *to cross the Glacier des Bossons towards the chain of dark rocks*

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as one of the three, not a fourth.) Durier, it is true, regards the remark as decisive in favour of Balmat's claim to the discovery of the route. 'Ce simple aveu tranche le débat' (Ed. 5, p. 109). If it stood alone it might have weight, but I agree with Freshfield and Dübi in thinking that it cannot avail to overturn all the evidence that points the other way, especially in view of the interpretation I have suggested, which involves only a trifling misunderstanding on Lalande's part. I do not agree with Dübi's idea that the route to the Dôme du Goûter, taken by the guides on June 8, 1786, is one of the three Paccard is said to have had in mind, nor that that route is properly described as one 'through the snow valley'—a description that better suits Paccard's own route. Involved with this is Dübi's view, which seems clearly to be mistaken, that the guides' route diverged from Paccard's near the Petit Plateau. To turn to the right thence would be to ascend the very steep slopes of the Dôme du Goûter, from or over which avalanches frequently fall. The point of divergence was obviously some distance lower, as is shown on the marked photograph and by the track to the Dôme du Goûter on the map given in Durier's *Le Mont Blanc* and reproduced in Mathews' *Annals of Mont Blanc*. (Dr. Dübi tells me that he now agrees with this.)

It is likely enough that on hearing Paccard's plan, Balmat remembered the look of the 'steep slope' (which he, like Marie Couttet (see §6), may have noticed [on June 8] from the Dôme du Goûter or the Vallot rocks), and now realized that it might be the long desired route. From this *it would be an easy step in his mind to the belief that he had actually invented the route* as a result of his explorations on that day. This is the more likely, as his other lies are generally adaptations of what he had seen or heard elsewhere (*cf.* note 4), and it is in my opinion the most we can allow him in respect of his claim to have discovered the way (*cf.* note 115). It is, however, only fair to him to remember that next year he found the 'easier way,' presumably by the (upper) 'Ancien Passage,' by which he led de Saussure to the summit. This would naturally have strengthened his claim in his own later recollections, though, of course, it does not excuse his original pretension.

[103] It is plain from the whole tenor of the narrative that they took no rope (the proper use of which was unknown in Chamonix till a good deal later), and not even the short-handled axes then in use (note 44). In any case they could not have carried much in addition to their bâtons and the instruments. The barometer in particular must have been a detestable impediment, and it is no wonder that it got damaged on their hurried and dangerous moonlight descent. It is perhaps not generally remembered that they had it with them—Balmat no doubt carried it for most of the way (*cf.* p. 128, middle)—but it must be borne in mind in considering their achievement. Paccard's barometer was doubtless of a similar model to de Saussure's, which may be seen in G. M. (1), p. 24. Compare Whymper's drawing of J. A. Carrel loaded with the barometer which he carried in the Andes.

[104] Dumas.

[105] Von Gersdorf (see note 17).

Photo. H. Bregeault.

SÉRACS of the 'JONCTION,' GRANDS MULETS,
DÔME du GOÛTER, MONT BLANC.

[*the Grands Mulets*] *above us on our left, where Monsieur de Saussure has since* (*Aug. 15-20*) *had his second cabin built.* We soon got into serious difficulties.[106] The glacier was very broken, and there were a great many wide and open crevasses, besides many others covered with snow.[107] Balmat had passed this way two months ago, and from what he told me it was plain that all this part of the glacier was much easier then, as *most of the crevasses were choked, and the winter snow is firmer than that which falls in summer.* In spite of the awkward load he was carrying, Balmat was very helpful in finding the way across or round the crevasses.[106] But we had to make many détours, and lost much time in finding and forcing a passage. *As we got nearer the* [*Grands Mulets*] *rocks, the crevasses became more numerous* and formidable. *Four times* in all *the snow bridges, by which we tried to cross the crevasses, gave way beneath our feet, and we saw the abyss below us. But we escaped a catastrophe by throwing ourselves flat on our bâtons laid horizontally on the snow, and then, placing our two bâtons side by side, we slid along them until we were across the crevasse.*[108] All this took a great deal

[106] I think this fairly represents the truth behind Balmat's story to Dumas. 'The Doctor's first steps on this sea, in the midst of these vast clefts in whose depths the eye loses itself, on these ice-bridges which you feel cracking beneath you and which, if they gave way, would carry you to destruction, were somewhat unsteady. But gradually he recovered confidence as he saw how I managed, and we got clear of the difficulties, safe and sound.'

[107] *Cf.* de Saussure's account of his experiences at the same place on nearly the same date in the following year (Freshfield, p. 226): 'The entry on the glacier proved easy, but soon one plunges into a labyrinth of séracs divided by great crevasses, some entirely open, some choked with snow, others crossed by frail arches which are the only safe means of traversing them. In places a narrow ice-ridge serves as a bridge. . . . There are moments when it seems that it must be impossible to find a way out.'

[108] There is a detailed account by de Saussure of a similar escape on an excursion below the Aiguille du Midi (*Voyages*, § 675; Freshfield, p. 165). 'Suddenly the snow gave way under both my feet at once; the right, which was behind, rested on nothing, but the left had still some support, and I found myself half seated and half astride on the snow. At the same moment Pierre (Balmat), who was close behind me, fell also in almost the same position . . . his two feet were both in the air, the snow had even given way between his legs, and through the opening he saw, beneath himself and me, the void of the green depths of the crevasse. . . . He placed in front of me the two crossed bâtons, and I threw myself on them, Pierre in turn did the same, and we thus both happily escaped from our *mauvais pas*.' (They had another guide who was in front and did nothing to help. 'But he told me afterwards very quietly that he had reflected that if Pierre and I fell into the crevasse, it would be as well that he should remain clear of it to get us out'!) A narrow escape—but Paccard and his companion had four such nerve-racking experiences in a few hours. Remember that their bâtons were 8–9 ft. long (*cf.* note 114). Bordier (*Voyage Pittoresque aux Glacières de Savoye*, 1773) tells us that Alpine peasants were in the habit of holding these long bâtons horizontally while crossing a glacier, so that in case of a fall the two ends might catch on the sides of the crevasse, and the mountaineer seize the moment to spring out! (Freshfield, p. 284).

of time, and *it was mid-day by the time we got past the [Grands Mulets] rocks.*[109] *We left these well to our left, swerving towards*
B *the foot of the Gros Mont [sc. the Dôme du Goûter]*, | but *leaving* on our right *the route to the Dôme which the guides had used on*
S *June 8th, and which I had decided not to follow.* | *We kept close along the foot of the Dôme*, and after mounting a steep incline we came to a snowy plain [the Petit Plateau], with steep snow slopes on our right, and the remains of avalanches which had fallen from them.

The glacier was not so difficult here, though at these higher levels *there was much fresh snow* from the preceding bad weather, which *tried our eyes* in the brilliant sunshine, and tired our feet.
B *Balmat was discouraged* by the labour and the lateness of the hour, *and wanted to turn back, saying that he had promised to get back home* that evening *to help his wife with their sick child.*[110] *I thought this was a mere excuse*, and insisted on proceeding, but *I relieved him from time to time of some of his load, and did all I could to encourage him to keep on with me.* (I am grieved to say that, as we found on our return, *the sick child died that*
S *very afternoon.*) After mounting another steep incline *we found ourselves*, about 3 P.M., *on the great snow plain, or at least the very gently inclined snow slope* [the Grand Plateau] enclosed between the summit of Mont Blanc on the south, steep slopes descending to the head of the Glacier des Bossons on the east,
* and the Dôme du Goûter on the west. From here there is scarcely anything to be seen but snow, pure and of a dazzling whiteness, contrasting strangely with the almost black sky of these lofty regions. No living being is to be seen, no trace of vegetation ; it is the abode of frost and silence.[111] Arriving

[109] Probably the highest point of the Grands Mulets chain, which is a good way above the Grands Mulets themselves. (It was on these higher rocks that de Saussure's hut was made.) But even so, 8 hours is a long time for this part of the climb. The difficulties were evidently very serious. They were particularly emphasized in the first accounts of the climb given to de Saussure (by von Gersdorf and perhaps by Balmat), for in his letter (five days after the ascent) to J. P. Tairraz he says : 'As it appears that it is very troublesome to get across the glacier which is above the Montagne de la Côte, I want you to send five or six men to level the way, so far as such a thing is possible.' Bourrit, too (in the account of his crossing of the Col du Géant), says : 'The most dangerous part of Mont Blanc is the Glacier de la Côte.'

[110] Judith Balmat, aged 18 days.

[111] Adapted from de Saussure, who adds : 'When I pictured to myself Dr. Paccard and Jacques Balmat arriving in this wilderness at the end of the day, I admired their strength, spirit and courage.' Considering the great interest Paccard's story aroused in his mind, this sounds like an echo of what he heard from him. There is another hint of the climbers' natural feelings at this point in Bourrit's mention—derived from Balmat and repeated in several of the earliest references to the ascent—of their anxiety and uncertainty about 3 P.M.

in this wilderness late in the afternoon, with no possibility of shelter or help, we had need of all our strength and courage to pursue our course. *As we crossed the plain, we endured* S *great fatigue because the surface was covered with a thin crust which alternately bore us and gave way beneath our steps. Balmat* now *said he could not go on unless I was prepared to take the lead from time to time, and to break the snow. I did this all the way from here to the top.*[112]

§13. From the Grand Plateau to the Top.

From the Grand Plateau, the new route I had planned turned B.S *to the left up the steep snowy bank* | I have mentioned, *planted* Lβ *between two lofty and perpendicular tiers of rocks* [*the Rochers Rouges*], *bare of snow.* | *I went in front to show the way here,* B | and we climbed this bank, *skirting the base of the summit of* S *Mont Blanc,* which rose far above us on our right, and *mounting along the top of the left hand tier of rocks.*[113] | The slope was steep *

[112] This is fully confirmed—as far as the last part of the climb is concerned (*i.e.* from the Rochers Rouges to the top, which alone von Gersdorf watched)—by von Gersdorf's precise memoranda.

[113] De Saussure measured the steepest part of the 'Ancien Passage' as 39°, and the two slopes are about parallel. The fact that Paccard and Balmat ascended by the slope *between* the two tiers of the Rochers Rouges only became known when Freshfield published de Saussure's notes of the account Paccard gave him on August 22. It is the *left*-hand slope in the illustration in Mathews' *Annals of Mont Blanc*, p. 104 (Whymper, p. 21). Next year Balmat told de Saussure that he had found an easier route, which was doubtless the slope above and to the right of both tiers of the Rochers Rouges. It is shown on the *right* of the illustration referred to, and, though narrower, certainly looks less broken and difficult than the other. It is known as the 'Ancien Passage,' and was followed by de Saussure and by all the subsequent (eleven) parties down to 1827, when the way by the 'Corridor' was adopted to avoid the avalanches which endanger the Ancien Passage. *This had been foreseen by Paccard* (see § 11). Paccard's track on this part of the ascent is shown in the photo in G. M. (1), p. 16, but this is an oversight, as that illustration is intended to show de Saussure's route. When there is need to distinguish the two routes, Paccard's might be called the *lower* A.P., and the one used for the next forty years the *upper* A.P. Both are seen on Abraham's photo, herewith.

I only know of one instance in which the *lower* A.P. was again climbed, viz. by Mr. T. S. Kennedy in July 1865. Hudson and Hadow were in the party, and the (very rapid) ascent was made immediately after the second ascent of the Aiguille Verte and a week before the Matterhorn catastrophe. (It will be remembered that Hudson told Whymper that Hadow had climbed Mont Blanc 'in less time than most men.') The account in *A.J.* **3**, 75, is singularly indefinite as to the route, but in *A.J.* **6**, 171, Kennedy makes the fact clear. He is describing his ascent (the first) by the Glacier du Mont Blanc with Johann Fischer and J. A. Carrel on July 2, 1872. On the descent, soon after 1 P.M., 'I made for *the slope between the two Rochers Rouges by which, 7 years before, my ascent had been effected.* A break in the mist showed us *a steep slope with big crevasses*, and Fischer declined to take that way. (It seems that *this short cut* cannot now be used, as the ice has become more difficult than formerly).' (My italics.)

—it must have been somewhere near 40°—and the snow was hard, and we had to make holes with the iron points of our bâtons in order to prevent ourselves from slipping.[114] It was fatiguing and nervous work, with the precipice ever on our left
v.G hand,[115] | but about 5 P.M. we reached the top of the slope. Here, as we afterwards heard, we came clearly into view to those who were looking out for us with telescopes from Chamonix. They had caught sight of us several times during our ascent, but as we were now in shade, but visible against

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The *upper* A.P. has occasionally been traversed in modern times by parties with foreign guides. Mathews (p. 254) says: 'The shortest way from Chamonix to the summit of Mont Blanc is by the [upper] Ancien Passage.' (The lower A.P. is probably shorter still.) 'It has been seen how dangerous this route may be in certain conditions of weather and snow. In settled weather, however, and with a North wind the route is perfectly safe.' (*Note that this exactly accords with Paccard's judgment and his actual experiences.*) 'After the accident to Capt. Arkwright's party in 1866 the Chamonix Guides' Bureau forbade the use of this route—a foolish step.'

[114] This must have been hard work, but it is to be noticed that the bâtons they used were better adapted for the job than the alpenstocks of later times. To judge by the portraits of Balmat (see Mr. R. W. Lloyd's print, and especially G. M. (1) p. xviii), his bâton was a stout pole some 8–9 ft. long, shod with a heavy conical point like a spear-head. This, if used like a crowbar with which one makes holes for posts, would fashion a decent step in frozen snow.

[115] Based on the narrative in which M. Carrier (1854; *cf.* Introduction, p. 100) tells the story, which he says he had obtained from Balmat's own lips, of the latter's (asserted) discovery of the 'Ancien Passage,' of which this is the *only* account. It is repeated verbatim by Venance Payot (1869) and Stéphen d'Arve (1876). There is nothing about it in Dumas, who only says that Balmat crossed the Grand Plateau and arrived at the Brenva Glacier, whence he saw Courmayeur and the Aosta valley. But Carrier's account of the slope and its difficulties rings true, and *exactly suits the conditions of the ascent by Paccard and Balmat. It is, however, entirely inconsistent with the rest of Balmat's tale as told by Carrier.* According to Carrier, Balmat left the Grand Plateau *at dawn* (on June 9) and ascended the slope leading to the top of the Rochers Rouges, on which he 'felt extreme weariness and fatigue'—an hour or two after starting! On top of the Rochers Rouges he 'was again frozen through and through, and almost dead with hunger and thirst.' Paccard and Balmat were in that state at 5 P.M., in a bitterly cold wind, after 13 hrs.' climb, but why should Balmat be so, early in the morning, after two or three hours? The climax of absurdity follows. 'It was late, I must descend'—at seven or eight in the morning! *Clearly the passage embodies Balmat's recollections of his experiences when Paccard led him up the critical slope late in the day,* and not on any mythical solitary ascent in the morning. The Dumas version, which, as quoted above, ascribes the discovery to the afternoon of June 8, is less absurd on this point, but puts an incredibly great amount of climbing (descent to the Grand Plateau, ascent thence to the top of the Rochers Rouges or to the Col de la Brenva, and descent to the Grand Plateau on an afternoon of bad weather, following on three days' and nights' climbing and exposure) into the four hours or so of daylight left after Balmat's desertion by the other guides. (Carrier's version was no doubt intended to relieve the narrative of this absurdity, but betrays itself as an unskilful invention by the inconsistencies I have pointed out.) Moreover, Balmat's claim to have discovered the Ancien Passage is flatly contradicted by his own certificate to Paccard. See further on p. 150.

the still sunlit slopes beyond, we were very conspicuous for a while as we hastened along the more level part.[116]

Having thus borne a good deal to the east, we now turned to S
the right, i.e. southward, towards the final slope leading to the summit, *near the foot of which are some patches of rock sticking out of the snow* [*the Petits Rochers Rouges*]. This slope was less steep, and the snow, which had been in full sunshine all day, was less hard than the slope we had just come up. But the evening was fast coming on, *a bitterly cold* N.W. *wind had sprung up which affected our breathing*, we were hungry, thirsty and tired, and the summit looked still a long way off. *I had* B
foreseen the probability of having to sleep out, and I now told Balmat to look out for a camping place while I examined the rocks I have mentioned, and collected some specimens. *But no suitable resting place could be found*, and I had to make up my mind whether to turn back defeated when thus within sight of our goal, or to go on and risk being benighted on the descent.[117] The weather seemed settled—the wind was from the north—and if we could reach the top and start down again in not much more than an hour, there would be some two hours of daylight left for the most difficult part of the descent, and after that, provided it remained clear, we should have moonlight to help us. So *I resolved to make a push for the summit,* B
hoping to reach the goal of our efforts that evening and get back in safety. *I called to Balmat to follow me,* and we left the v.G
rocks [the Petits Rochers Rouges] at 5.45 P.M. *At that moment* B
a violent gust of wind carried away my hat (although it was tied on by strings) towards Courmayeur, *and we saw it no more.*

The remainder of the way presented no particular obstacles, but was very toilsome. Breathing became difficult, and our fatigue was excessive. Fortunately *the snow was neither too* S
hard nor too soft, and we were able to climb it without making holes for our feet. *But we had to stop every hundred steps*[118] *or so*

[116] See von Gersdorf, note 17.

[117] In a vivid and most moving discussion of climbers' chances of success or disaster in various circumstances, Durier points out (*Le Mont Blanc*, 1st edition, p. 470; 5th edition, p. 406) that on the respective routes the Mur de la Côte, the foot of the Bosses [and, we may add, the top of the Rochers Rouges] are the last and most critical stages for decision in doubtful conditions. As far as I know, no subsequent party has had to make the fateful decision so late in the day. We cannot but admire Paccard's courage, judgment, and energy in resolving to go on, at 5.45 P.M., at a height of 15,000 ft., after 13½ hours' arduous pioneer climb, during which he had ascended some 7000 ft., for the most past over glacier slopes never traversed before, with only one companion, without rope or ice-axe, and several times in imminent danger of destruction.

[118] See von Gersdorf, note 17.

to regain breath and strength, and the higher we got the oftener we had to stop, down to every fourteen paces. I remembered M. de Saussure's experiences on the Buet—described in vol. II of his 'Voyages' recently published—*and had good reason to confirm his theory of the periodicity of fatigue and recovery, for after a rest our strength immediately came back.* It was too cold to stop anywhere for long, and my hands got so frozen that *Balmat lent me one of his fur gloves in exchange for one of my leather ones. We made a short halt in the shelter of the two little rocks which are visible from Chamonix and are perhaps 100 paces below the top*
B [*the Petits Mulets*], | *while I examined these and collected some specimens.* I noticed that these rocks showed a vertical
S.v.G. stratification.[119] *The cold, however, drove us on* | at 6.12, and
B *I made direct for the top, while Balmat,* who was carrying a heavier load, *bore away to the left*[120] *to find an easier slope, and had to run to reach the summit at the same time as I got there,*
v.G.S. viz. at 6.23.[121] *On the final slopes I observed* [what looked like]
Lβ *large hailstones*[121a] *embedded in the snow.* | *Near the top we saw two crows, with yellow beaks and claws.*

§ 14. On the Summit.

At the top, when we wanted to write and eat, we found
S that *the ink in my pocket ink-bottle was frozen, and so was some*
* *meat that Balmat had in his bag.* | We planted a bâton in the snow, with a handkerchief tied to it, which was seen from

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[119] De Saussure records that this was an observation of Paccard's (Dübi, p. 94).

[120] This might seem to be borne out by the double track marked on the highest part of von Gersdorf's sketch of the route he saw them take to the summit (p. 148). But since von Gersdorf speaks of the descent as shown by the *line* on the diagram, it is perhaps more likely that these two tracks were those of the ascent (dotted—von Gersdorf notes that they kept to the left) and the descent respectively.

[121] This makes 38 mins. from the Petits Rochers Rouges to the top (750 ft.)—splendid time for two tired climbers who had started, 14 hrs. before, from the Montagne de la Côte, which is 1500 ft. lower than the now usual base on the Grands Mulets, and is separated from it by hours of difficult glacier work. For those starting from the Grands Mulets Whymper allows 50 mins. as normal time from the Rochers Rouges to the summit, and de Saussure's party, starting from the Grand Plateau (2870 ft. higher than the Grands Mulets), took 1 hr. 43 mins. for the same portion of the ascent. As a curiosity I may add that Captain Farrar told me he once slept in the Rochers Rouges cabane, and in the morning went up to the top in 20 mins. !

[121a] These 'hailstones' are an appearance due to the granulation of the névé. Freshfield remarks (p. 7) that Leonardo da Vinci speaks of finding in July (probably in the Monte Rosa region) 'huge masses of ice formed by layers of hailstones.' This granular structure is now recognised as one of the chief factors in the explanation of the phenomena of glaciers.

Chamonix.[122] In spite of the cold, *the summit snow was not* S
consolidated, and it was easy to plant the barometer stand *as*
deeply as was necessary. | *I noted down the readings of the* B
barometer and the thermometer. The latter showed 6° R. below
zero. | *The barometer reading was 14 in. 9.1$\frac{8}{16}$. The corre-* La
sponding figures at Chamonix were 12° R. and 25 in. 0.0$\frac{9}{16}$. Three
different modes of calculation based on these data and carried out
by various members of the Academy of Sciences *of Turin, give*
2702, 2711 and 2720 toises respectively for the height of Mont
Blanc.[123] *If therefore my observed reading was accurate, it seems*
that the height of Mont Blanc is something over 2700 toises, say
2710 toises as the average [= 5281m. = ca. 17,300 ft.]. This is
considerably more than *the previous measurements, based on*
trigonometrical observations—de Luc found 2391 and Shuckburgh
2451 toises [= 4777m. = 15,670 ft.]. Although *there are reasons,* D
as I have explained above (§ 7), for thinking that these figures may
be too low, it is also possible that my barometer may have got
out of order during our laborious ascent. *I had taken the pre-*
caution to mark the levels of the mercury with a file on the glass
tube, and I hope to be able to verify or correct my reading by
subsequent observations.[123]

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[122] This is definitely stated by Professor Pictet in a short account communicated to the *Nouvelles de la République des Lettres* of September 6, 1786. Balmat's certificate says 'he (Paccard) *left* a mark there' (*sc.* on the top). It is not clear exactly what this means, as, of course, they could not have spared one of their bâtons, except for the half-hour of their stay.

[123] These figures are contained in a communication by Paccard (dated June 16, 1787) to the *Journal de Lausanne*, where it appeared on August 4. If we calculate the height by the accepted modern formula (see note 43), we get 5218 m. = 2677 toises = 17,120 ft. It is pretty clear that the figures were not made public earlier (as Coxe noted, Dübi, p. 132), because Paccard suspected an error, which obviously there must have been. On August 14, 1787, however (as related in his diary, see Dübi, p. 269), Paccard took his new 'English barometer' to the top of the Montagne de la Côte, and found the reading to be 21 ins. 0 lines 3 tenths (*cf.* note 48). The file marks on the barometer he had taken to the top showed that the mercury fell 5 ins. 2 lines 0 tenths on the ascent from the Montagne de la Côte, which would give 15 ins. 10 lines 3 tenths as the reading on the summit. This has to be increased by 3 lines, the amount by which the mercury had risen in the container. Thus the final corrected reading for the summit would be 16 ins. 1 line 3 tenths.

This is all very ingenious, and is indeed the best that could be done to correct the original erroneous reading (short of taking a barometer to the top again), but of course it could not give more than an interesting approximation to a correct value, since—to mention one obvious reason only—the barometric height on the Montagne de la Côte on August 14, 1787, would probably not be the same as on August 8, 1786. The best way to use Paccard's figures is to deduce from them the elevation of the summit above the Montagne de la Côte, which comes out as 2150 m. Since the top of the Montagne de la Côte is 2588 m. above sea level, this gives as the height of Mont Blanc 4738 m. = 15,545 ft.—about 230 ft. too low. In the circumstances this is not at all a bad result. Many modern and more ambitious barometric—and even trigonometric—determinations of heights show larger errors than this.

In any case Mont Blanc rises far above all neighbouring peaks, which appeared to us dwarfed by their mighty monarch.
Lβ *This great height is due I believe to the fact that the snowy summit is borne up by two converging granite ridges* that run far up beneath it. I took some compass bearings—which seemed to
S show that *the magnetic variation was different from the normal*—and also made some observations on the blueness of the sky by the method of M. de Saussure's cyanometer.[124]

The distant view was unfortunately not clear, as vaporous

It must be added that Paccard's corrected reading is almost identical with that resulting from de Saussure's careful and repeated observations on August 2, 1787, viz. 16 ins. 1 line 0 tenth, which Paccard quotes in his diary on the authority of Bourrit ('Bourrit disant,' Dübi, p. 268). We can hardly doubt that the ingenious correction (made only a few days after de Saussure's observations) of Paccard's original measurement was, if not designed to bring out the same figures, at least inspired by his knowledge of de Saussure's readings. De Saussure's results, as given in *Voyages*, tome iv. § 2003, are collected in the following table for comparison:

Readings on Mont Blanc at	Compared with simultaneous readings at	Height calculated by de Saussure		Height calculated by modern formula.
		In toises.	Equivalent in metres.	
Noon . .	Geneva	2478	4830	4842 metres
„ . .	Chamonix	2471	4816	
2 P.M. . .	Geneva	2482	4837	
„ . .	Chamonix	2489	4851	
Mean . . .		2480	4833·5 m. = 15,858 ft.	4845·5 metres = 15,897 ft.

De Saussure tells us that his calculations were made according to the method of Trembley. He adds that de Luc's method gives a mean of 2418 toises, and Shuckburgh's 2475 toises. Paccard's three results (quoted in text of § 14) were obtained by the methods of Magellan, de Lalande, and de Luc respectively. Finally, note that the accepted height according to the French survey is 4810 m. = 15,781 ft., and according to the Italian Survey (confirmed by Vallot) 4807 m. = 15,771 ft., so that de Saussure's mean result by the accepted modern formula is about 120 ft. above the true value. De Saussure himself adopted (somewhat arbitrarily) as his final result the mean of 5 means (viz. 2480, 2418, 2475 toises as above, together with Shuckburgh's trigonometrical determination of 2450 toises and a 'mixed measurement' by Pictet of 2426 toises) giving 2450 toises = 4775 m. = 15,666 ft. (about 110 ft. too low).

[124] The sheet of paper used by Paccard for this purpose was afterwards given by his son Ambroise to Lord Minto, and is now framed in the library of the Alpine Club. The sheet is ruled into twenty parallel strips, which are roughly painted blue. The colours are still fresh and well graduated, from an almost opaque indigo to the palest and most transparent blue. Unfortunately there is no record of the actual observations. Next year de Saussure, with a similar but more elaborately made scale of sixteen graduations, found that while at Geneva the sky at noon appeared to be of tint 7, and at Chamonix 5–6, on the top of Mont Blanc the colour was 1–2, a 'bleu du roi.'

Photo. G. P. Abraham.

View from summit of MONT BLANC towards N.E.

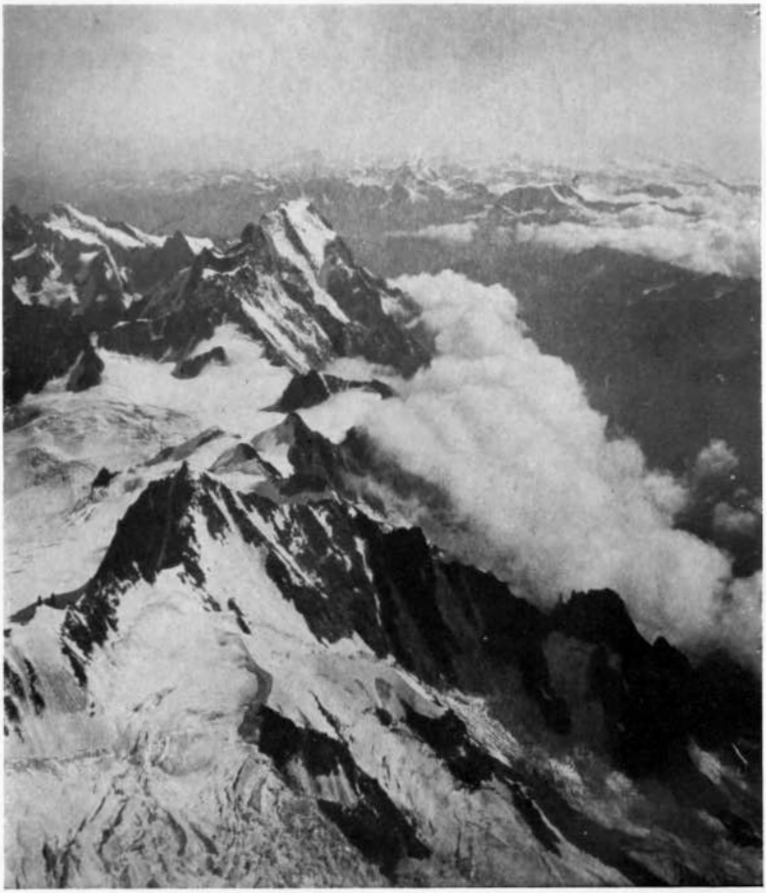

Photo. H. Bregeault.

View from summit of MONT BLANC de COURMAYEUR towards S.E.

clouds had by now clustered round the horizon. | But *we saw*[125] * *the whole of Savoy at our feet, as if enclosed between the course of the Rhône and that of the chain of the Alps.*[126] *The course of the Rhône resembles nothing more closely than a C which embraces Savoy on the N.W., and the course of the chain of the Alps represents very well a 7 which separates it from the valley of Aosta and from Piedmont. The districts which are nearest to the central chain of the Alps are the most mountainous; they are studded with lesser peaks composed of the secondary strata that once covered the globe, of which only strips remain between the depressions partially hollowed out by the rivers running from the central chain. The largest level space to be seen was in the district of Geneva.* The whole scene was lit up by the slanting rays of the sun—now nearing the horizon—with an almost unearthly splendour, which was enhanced by the long, deep shadows cast by every lofty peak and ridge.

We could not stand still long to admire this, by reason of the S cold, *and we had to keep moving.* (In fact, we were insufficiently clothed for the cold we had to face,[127] but we could not have carried much more without sacrificing at least the barometer which I was so anxious to take to the top.) *It was easy to go some way down the gentle slope on the Val d'Aosta side towards*

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[125] This description of the view from the top (from 'But we saw . . .') is taken from a *Notice Historico-Topographique de la Savoie*' (published in Chambéry by Jean Lullin at the end of 1787 or early in 1788), where it is followed by the reference 'Voyez le Premier Voyage fait à la Cime de la plus haute Montagne de l'ancien Continent par M. le Docteur Paccard.' This note is probably the source of the references to Paccard's narrative made by Grillet (1807), Leschevin (1812), and Quérard (1836). The passage was discovered by Coolidge and communicated by him to Mr. Montagnier, who published it in *A.J.* **26**, 49, *q.v.* Montagnier remarks that the only description of the view from the top published before 1788 is de Saussure's (Whymper, pp. 33, 34; Freshfield, p. 232), which has nothing like this, and he considers that the passage emanates from Paccard, either 'communicated' by him to Lullin's work, or quoted from his narrative, if that was ever really composed. Modern maps and photographs show that the description is remarkably apt. It is, however, very unlikely that it could have been invented in 1788 by anyone who had not seen the view. It should be remembered also that Paccard was interested in geology, and records in his diary several observations bearing on the relations between primary and secondary strata. I entirely agree with Montagnier in ascribing the passage to Paccard, and therefore print it in italics.

[126] By the 'central chain of the Alps' is evidently meant the Mont Blanc range, as is plain from the context, and from the fact that the *distant* view was obscured by clouds. The shaft of the 7 no doubt means the main axis of the Mont Blanc group running to the Grandes Jorasses, and the cross piece is the ridge of the Aiguille Verte, or of the Aiguilles d'Argentière and du Chardonnet, or both ridges seen as one in the slanting light from the W.

[127] Bourrit's letter to Bailly, of the Royal Academy of Sciences at Paris, November 3, 1786 (Dübi, p. 69).

some rocks which rise in a sharp crest,[128] *where I looked for a possible sleeping place, but could see none of any use to afford shelter from the wind.*[129] It was necessary therefore to start downwards as quickly as we could.

§ 15. The Descent.

v.G. So at 2 minutes to 7—just before sunset[130]—we left the summit, and ran down in 6 minutes to the Petits Rochers Rouges.[131] On the steep slope from here down to the Grand Plateau we had of course to go much more cautiously, taking every possible care not to slip—for in such a case neither of us could have helped the other—and following the route marked out by the little holes we had made with our bâtons.

B * *Here, and throughout the descent, we took turns in looking out for the track.* The night began to close in when we got over the big crevasse near the bottom of the slope, and fairly caught us

v.G. when we had crossed the Grand Plateau.[132] | Fortunately it was a bright moonlight night, otherwise we should have been in the gravest danger, and should hardly have escaped with

B our lives.[133] | As it was *we were able to descend pretty rapidly,* and to glissade some of the slopes. In the parts of the glacier where the crevasses had caused us so much trouble and waste of time in the morning, the snow bridges were now firm, and as we were able to pick out our previous tracks, we got through the difficulties more quickly than might have been expected.

v.G. Unfortunately, however, my barometer got broken.[134]

S At last, *a little while before midnight, we got off the glacier*

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[128] These rocks are probably those of the Mont Blanc de Courmayeur. They are 300 or 400 ft. below the top (Whymper, p. 150) and, as he says (p. 137), can be visited 'in a short hour from the summit.' Paccard, however, could have had no time for this, but it is easy for anyone on the top to see that the rocks are unsuitable for a bivouac.

[129] This is surely a remarkable total of work and observation for 35 mins.' stay on a summit, reached for the first time, of 15,800 ft., in a freezing wind, just before sunset, by a climber who had been 14½ hrs. on the way, and had still to face a long descent which must stretch far into the night! Compare the difficulties experienced in making observations in much less trying circumstances by de Saussure, Tyndall, and others.

[130] My friend, Mr. H. F. Brand, has calculated for me that the sun would have set at eight minutes past seven, in a direction 23° N. of W., but, as the horizon is not clear in that direction, the sun would *seem* to set a little earlier.

[131] Von Gersdorf (see note 17). By 'ran' ('laufend') he may have meant 'glissaded,' but it is safer to translate literally.

[132] From Dumas—no doubt an authentic memory of Balmat's.

[133] Von Gersdorf (see note 17). This is noted in most of the early references to the ascent.

[134] Von Gersdorf (see note 17).

on to terra firma at *the top of the Montagne de la Côte,*[135] *and here we stayed* in our old shelter *till dawn.*[136] *I had been wearing leather gloves during the day, and,* as I have already mentioned, on the last part of the ascent, where it was so bitterly cold, *Balmat had lent me one of his fur gloves in exchange for one of mine. We now found that each of us had the hand in the leather glove frozen; mine was black—the leather glove having got wet through (from my leaning on the ice) and then frozen—and Balmat's was white. Both were cured by rubbing with snow, but my finger tips remained numb for weeks afterwards.* We ate and drank a little, * wrapped ourselves up in our blanket, lay down pressed against each other as closely as possible, and *went to sleep.* B

Next morning at dawn I was nearly blind. It was strange S *that this came on so severely after the night's rest, for we had felt no great inconvenience from the glare of the sun on the snow on the previous day,* though *we had noticed that fresh snow is far more trying to the eyes than the old. I could not see my way, and Balmat had to lead me* by the hand *down to the Priory,* where we arrived at 8 A.M. We went straight to bed, *suffering* badly *from sunburn.* Our lips were swollen, our faces scorched and blistered, and our eyes inflamed and red. My eyes and fingers did not recover for a long time. But all this was nothing, compared with the satisfaction of having at last achieved our purpose, of having overcome so many obstacles, and of *feeling* * *ourselves the Conquerors of Mont Blanc—the first mortals to set foot on the summit* which, surrounded by a retinue of magnificent peaks, towers far above them all as *the loftiest mountain in our continent. | Our ascent had been like a journey to another,* * *heavenly world, and the memory of it will remain as the most striking experience of my life.*[137]

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[135] Here again one cannot but admire the successful accomplishment of the descent, which speaks volumes for the steadiness and endurance of both climbers. How many of us would care to descend, *without rope or ice-axe,* and after sunset, a steep and hard-frozen snow-slope at a height of 14,000–15,000 ft., a slope which T. S. Kennedy, with Johann Fischer and J. A. Carrel—a strong, fully equipped, and determined party—declined to attempt in the middle of the day ? (note 76). Or, again, to come down, still without rope or axe, from the Grand Plateau across the 'Jonction,' with only the deceptive light of the moon to guide our steps amongst the threatening séracs and crevasses ?

[136] Dübi insists (pp. 51, 55) that they did not make any long halt, but were coming down all night. But de Saussure's report of Paccard's account (not known to Dübi) leaves no doubt that they did stop for several hours, as here stated. The details of their bivouac are from Dumas.

[137] This is what Paccard in 1802 told Dorthesen and Forneret, 'who honoured me with their visits as author of the first ascent of Mont Blanc,' that they would find the ascent to be, and therefore doubtless expresses his own feelings (Dübi, p. 144). The previous sentence is from Paccard's Prospectus.

POSTSCRIPT.

v.G. In the afternoon of the same day (Wednesday), while still in bed, I had the pleasure of a visit from Monsieur le Baron A. T. de Gersdorf and Monsieur C. A. de Meyer. I got up and saw them several times, on one of which Balmat was present. These two gentlemen, in the course of a tour in Switzerland, had passed through Geneva, where they had met M. Bourrit and received from him a MS. itinerary for a visit to Chamonix. They arrived here on Sat. Aug. 5th, and made excursions to the Col de Balme and the Montenvers. On Tuesday morning they went to the Glacier des Bossons, and in the afternoon heard that Balmat and I had started overnight for the Montagne de la Côte, and had been seen that morning ascending Mt. Blanc.[138] They joined in looking out for us with telescopes, sighted us about 5 P.M., and sketched our position. Then they went up to Monsieur Bourrit's chalet, which is higher up on the north side of the valley and commands a better view of Mt. Blanc, and from there they watched the rest of our ascent (making another sketch), and the first part of our descent. Next morning they went up to Planpraz, and thence were able to see our tracks in the recently fallen snow for most of the way from the Grands Mulets to the far side of the Grand Plateau. Mons. de Gersdorf made a sketch of this part of the mountain and of our track, which he showed me that afternoon, and of which he was kind enough afterwards to give me a copy for my narrative. I have been glad to quote some of the notes M. de Gersdorf made and repeated to me in the course of our conversations.

On Thursday my eyes, face and fingers were so painful that I had to stay in bed, but I was able to see M. de Gersdorf once more before he returned to Geneva, where I believe he related our adventures to Mons. de Saussure and others. That same day Balmat had the sad task of assisting at the
B burial of his little daughter, and *Mons. de Gersdorf gave me a new crown* for him, *which I handed over to him the same day together with his pay* for the days he had been with me. Later he received the reward which Mons. de Saussure had offered, and also, through the good offices of Mons. Bourrit, a substantial gratuity from the King of Sardinia. He was thus able presently to build himself a new house in les Pélerins.

Next week, on Friday August 18th, I went up to the

[138] The preceding and following details are from von Gersdorf's diary (Dübi, p. 46).

Montagne de la Côte with my brother (the lawyer) and a guide, and next day we prospected a new route which I hoped might avoid the great difficulties Balmat and I had experienced in crossing the glacier between the top of the Montagne de la Côte and the Grands Mulets rocks. I thought it might be easier to cross the glacier more to the left, towards the foot of the Aiguille du Midi. But the attempt was not successful, and we returned to Chamonix without effecting our purpose.[139]

Meanwhile Mons. de Saussure had arrived from Geneva on the 19th, and was assembling his caravan for the ascent of Mt. Blanc. My brother and I arranged with him to take readings of the barometer and thermometer simultaneously with those he hoped to make on the mountain.[139] He started on the afternoon of Sunday Aug. 20th with his servant and 16 guides. Next day the weather changed and his guides advised him to return.

On Tuesday Aug. 22nd my father invited Mons. de Saussure to dine with us, and I gave him an account of my ascent on Aug. 8th. *As a result of* the discussion of *our experiences and* S *observations, the following points emerged as worth attention.* (a) *The best time for an ascent would be early in the summer, say in June, when the days are long, the crevasses are choked, and the winter snow is firmer than that which falls in summer.*

(b) *A ladder would be useful to save time in passing the crevasses, especially between the Montagne de la Côte and the Grands Mulets.*

(c) *Special precautions should be taken against sunburn and snow-blindness, to avoid the evil consequences from which Balmat and I had suffered so much.*

(d) *The whole climb from the Montagne de la Côte took us* $14\frac{1}{2}$ *hours. To reach the top early enough to make a complete series of observations such as Mons. de Saussure had in mind, it would be necessary to sleep at the Grands Mulets rocks, or even higher, e.g. on the Grand Plateau.*[140] *In the latter case, however, it would be best, in order to avoid the avalanches which sometimes fall from the ice-cliffs under the summit, not to bivouac too far across the Grand Plateau, but to stay on the lower part of it.*[141]

Monsieur de Saussure remained ten days longer at Chamonix,

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[139] See Freshfield, p. 213.

[140] See *Ibid.* pp. 214, 215. Most of these suggestions were adopted by de Saussure and proved very useful.

[141] De Saussure relates that he took this precaution, and Whymper (p. 31) wonders how he knew of the danger. It is, I think, clear that it was Paccard who told him of it. He had observed this from the Brévent (see § 11) and perhaps confirmed it on his own ascent.

but the weather continued broken, and he reluctantly gave up hope of making any further attempt that season. I hope he may have better fortune next summer (1787).

La Towards the end of Sept. 1786 *Mons. Bourrit wrote a letter, which has attained the widest publicity, in which,* to my great surprise, *he gave an utterly distorted version of my ascent. I must deal with this,* even at the risk of some repetition. He admits that his account is based solely upon the story told him by
* Balmat, but in view of *the animus shown in his letter,*[142] and of his well-known inflated style,[143] there can be little doubt that he deliberately exaggerated the lies which Balmat poured
La into his too credulous ears. **In the first place,** *although Mons. Bourrit speaks at length of his own and other fruitless attempts, he says not a word about my extensive reconnaissances (one of which obviously prompted his own attack on the Aiguille du Goûter), or of the fact that I alone devised the route which was the key to our success.* On the contrary—he makes out that Balmat, when abandoned by the other guides on June 8th, had slept out 'higher than the Dôme du Goûter' (!), and next morning had got so near the summit as to observe what he thought would be an easy way up, and then had persuaded me to accept his guidance by this route. In other words Balmat was the initiator (the 'true cause') of the whole enterprise.
D This is all pure invention. *Balmat had followed his companions' tracks down from the Dôme du Goûter,* and his sleeping place was far down towards the Glacier des Bossons. *Next morning his clothes were frozen,* and he was certainly in no case to explore the higher glaciers. As a matter of fact he very sensibly got down to Chamonix as soon as he could, arriving there at 8 A.M.
B *Several weeks later he offered his services to me when he heard that I was intending to continue my previous attempts, and*
La *I accepted them (in the capacity of porter, not of guide) because my usual guide was away.* Even then he had no idea of the route I had planned—and which in fact we followed—until I explained it to him.

In the second place, Mons. Bourrit suggests that on the actual climb Balmat was the hero without whose help and encouragement I should have failed ignominiously, that he reached the top first and returned to help me up the final

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[142] Writing to von Gersdorf, Paccard calls Bourrit's pamphlet 'cette si mauvaise et si méchante lettre' (Dübi, p. 118).

[143] Among many verdicts on Bourrit's style, it may suffice to quote that of Forbes: 'Bourrit conveys the simplest facts through a medium of unmixed bombast' (*A.J.* **19**, 345).

slopes, and that to his skill and endurance was entirely due the successful accomplishment of our dangerous moonlight descent. This also is a tissue of lies. *Balmat was indeed very useful to me*—as I have been careful to explain—*but we shared the labour, it was I who insisted on proceeding when he wanted to turn back, I led the way at the critical part of the climb (and from time to time before and after that), we reached the top together (as* Mons. de Gersdorf saw and undoubtedly told Mons. Bourrit), *and we took turns in finding the way down.* Lα B

Finally, Mons. Bourrit draws an offensive contrast between the well-to-do amateur climber—designing to make profit by obtaining subscriptions for the publication of an account of his exploits, and giving himself out as the Conqueror of Mont Blanc—on the one hand, and on the other the needy peasant who has received no recompense for the labours that have endangered his health, to whose deserts his employer is so meanly indifferent as to have shocked Mons. de Gersdorf, and whose merits remained unrecognised until Mons. Bourrit proclaimed them. The true facts are these :—

(*a*) *On the day after our return I paid Balmat his proper wage, and handed over to him a new crown which Mons. de Gersdorf had given me for him.* He will also doubtless receive—or has already received—Mons. de Saussure's promised reward (which in spite of Mons. Bourrit's insinuation I of course have never thought of claiming) as well as the money collected for him in Germany by Mons. de Gersdorf. Of course *I found the provisions* for both of us. B B

(*b*) *I have a letter from Mons. de Gersdorf* [144] *repudiating the suggestion that he regarded me as ungrateful to Balmat,* and explaining that he would gladly have done for me what he was doing for Balmat had it appeared necessary or suitable. *

(*c*) It is true that *I have issued a prospectus asking those interested to subscribe for copies of my account of the ascent. In this prospectus I have spoken* not of the Conqueror [145] but *of the Conquerors of Mt. Blanc,* and in my narrative I have done justice to Balmat's strength, ability and steadiness. *

Mons. Bourrit has not removed the damaging effect of his misrepresentations by the apologetic postscript [146] which on

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[144] Dübi, p. 119.

[145] Though de Saussure *does* speak of him as 'the conqueror of Mont Blanc' (see p. 144).

[146] This postscript (to be read after the third paragraph on p. 612 of *A.J.* **25,** 612) runs as follows :

'P.S. I think that M. Paccard will not be offended at the publication of this letter. I have been asked so many questions about this journey that, not

second thoughts he has added to his letter. I can only suppose
La that in his eager desire to ascend Mt. Blanc *he is jealous of the success* of his old acquaintance and more youthful rival, and *has snatched at the opportunity* afforded by Balmat's inventions *to disparage the amateur's achievements by attributing almost all the credit*—both of discovery and of execution—*to the so-called guide.*[147] As to Balmat, he, with his peasant's grasping propensities and petty cunning,[148] was no doubt glad to seize

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knowing how to reply to them, I have found myself obliged to tell what I had learned from Balmat himself concerning the interesting journey they made. It is doubtless a long way from this letter to the description which M. Paccard gives the public reason to hope for. His knowledge of mineralogy and botany, joined to the glory of having been the first to arrive on a summit so often attacked in vain, assures for his work all the success it deserves, and for his courage the praises that are due to it and the glory which I envy him.'

It is now known that this postscript was added to the later copies of Bourrit's pamphlet in deference to the advice of de Saussure. On August 11 Bourrit had written to de Saussure from Sallanches, insinuating that Paccard might not have reached the actual summit. Finding this argument untenable, he wrote his pamphlet with the double object of asserting his own claim to be the real explorer of Mont Blanc, and of disparaging his rival by giving all the credit to Balmat. This pamphlet was brought to de Saussure's notice shortly after his return to Geneva, and thus just after he had heard the accounts of von Gersdorf and of Paccard himself. He at once wrote to remonstrate with Bourrit. The latter's rejoinder exhibits a deplorable mixture of obsequiousness and self-assertion, but he found it expedient to add the postscript, with its disingenuous apology for the terms in which Paccard had been mentioned. Here is de Saussure's acknowledgment, dated October 19 (1786):

'I thank you a thousand times for the fresh copies of your letter that you have sent me. The postscript you have added will throw some balm on the wound which the body of the letter cannot fail to inflict on the Doctor, and if it is at my instigation that you have written it, I am glad that I wrote to you, and thank you for your compliance. The description of the Doctor's journey, whatever form it may take, will be read from one end of Europe to the other, and I should have been sorry to have seen in it what must have caused you pain. No doubt you would have replied, but you would have suffered annoyance, and that is what I wished to avoid.' (For all this, see Freshfield, pp. 217, 218.)

The whole incident, like that of the Col du Géant (see note 56), shows how utterly unreliable Bourrit's account is, and as this account is the germ from which the whole Balmat legend sprang, the legend itself is discredited from the outset. In my reconstruction of Paccard's postscript, following Montagnier's opinion that 'if [Paccard's account] was ever printed, it would assuredly have contained some reference to the charges made by Bourrit' (*A.J.* **26**, 38), I have made Paccard say exactly what de Saussure anticipated. Actually Paccard's reply was made through the *Journal de Lausanne*, and was so conclusive that neither Bourrit nor Balmat attempted publicly to answer it.

[147] See, *e.g.*, notes 56, 146.

[148] The traditions of de Saussure's family about Balmat fully bear this out. They are expressed as follows in a note, which was probably written by Monsieur Henri de Saussure, and is attached to a copy (preserved in the family archives) of some polemical poems brought forth by the first ascents of Mont Blanc (see Dübi, p. 98): 'Balmat was never anything more than a workman ["ouvrier," as Paccard also called him; see note 99] in the pay of de Saussure. It was solely the lure of a considerable sum promised by the latter that in the end brought Balmat to the top of Mont Blanc. If he finally joined Dr. Paccard,

the chance of grossly overstating his share in our enterprise, in order to impress a possible employer, who might also be of service to him in securing Mons. de Saussure's promised reward, and in other influential quarters such as at the Court of Turin and with Mons. de Gersdorf.

As I could not let such misrepresentations pass unnoticed, I obtained from Balmat on October 18th (1786) a properly signed and witnessed certificate, stating the main facts as I have related them, and contradicting in every point the lies to which Mons. Bourrit has given currency. The account I have given above is the plain truth, and is, I believe, beyond controversy. In any case I hold Balmat's certificate, which I shall publish if I find it necessary. I am very sure that neither Balmat nor Mons. Bourrit will venture publicly to challenge its accuracy.

[M. G. PACCARD.]

CONCLUSION.

And they never did! Considering the bitter tone of Bourrit's letter to the *Journal de Lausanne*, in which he challenged the production of the Balmat certificates, it is obvious that he would have been delighted to spike Paccard's guns by impugning the genuineness of the certificates, if he had been in a position to do so. But, in 1792, he had a quarrel with v. Gersdorf and with Balmat, by reason of his delay in handing over to the latter the sums collected by v. Gersdorf[149] for his benefit. This perhaps altered his views as to the respective merits of Balmat and Paccard, for in his 'Descriptions des Cols ou Passages des Alpes' (1803)[150] he says, after mentioning the moneys he obtained for Balmat from the King of Sardinia, and from M. de Saussure (*sic*), 'it is nevertheless true that Dr. Paccard rightly shared ("a dû partager") the glory of this Chamouiard, if indeed he was not, as we have reasons to believe, the prime cause ("la première cause") of it.' The truth at last!

Balmat, however, made an effort to minimize the effect of his certificates. On the afternoon of Monday, July 9, 1787—a wet and miserable day—he reached Chamonix with de Saussure's party for the latter's projected ascent of Mont Blanc. Perhaps he felt himself

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it was because the latter claimed nothing for his share. In Balmat is found the most pronounced type of the Savoyard who thinks of nothing but gain. Balmat the explorer, eager to make discoveries, striving for glory, as some writers [*e.g.* Durier] have sought to depict him, is a mythical and purely imaginary figure.' Freshfield (p. 240) adds that this agrees exactly with what Monsieur Henri de Saussure told him personally in 1891.

[149] See Dübi, pp. 122–125.

[150] See Dübi, p. 146. Bourrit adds that visitors can buy minerals from 'Balmat dit le Mont Blanc,' but does not name him in the list he gives of the (21) guides of the valley.

fortified by de Saussure's patronage, and that same evening there was an unseemly brawl in the streets of Chamonix, between Balmat and some of his relatives on the one side, and François and other Paccards on the other, provoked by Balmat's charges of fraud against Dr. Paccard. He seems to have asserted (*a*) that the Doctor had asked him to supply a certificate that he had really been on the summit of Mont Blanc, under the pretext that Bourrit was representing him (Paccard) as an impostor or thief in claiming to have climbed the mountain (Bourrit *had* tried to dispute the ascent; see note 146); (*b*) that on Balmat's declining to sign the prepared document, Paccard had agreed to modify it, and got him to sign a blank sheet, which he had then filled up with the statement to which Balmat would not agree; (*c*) and had published this at Lausanne. The parties were drinking at Couteran's wine-shop near the bridge at Chamonix, and Dr. Paccard came upon the scene. Balmat said 'Isn't it true that you made me sign it?' Paccard lost his temper, struck Balmat across the face with his umbrella, and knocked him down. De Saussure did his best to smooth over the quarrel, which seems to have gone no further.[151] Montagnier is disposed to think there may have been something in Balmat's contention, but it is difficult to believe (I agree with Freshfield and Dübi in this) that the certificates, witnessed by two Chamoniards of repute, can have been anything but genuine. Also, as suggested above, Bourrit would certainly have rejoiced to make play with such a scandal, if he had any reason to believe he could maintain its reality.

On Tuesday, July 10 (the day after the brawl), Dr. Paccard left Chamonix, accompanied by Lombard, 'le grand Jorasse,' for a trip to Courmayeur. De Saussure called on Secretary Paccard on the Saturday. He writes in his diary: 'I think that his son, the Doctor, the conqueror of Mont Blanc, does not want to see me before my expedition.' During the doctor's absence his father was unfortunately drowned. Although an old man (about seventy-five), he had insisted on starting alone in horrible weather (Tuesday, July 24), and in spite of his daughter's protests, to meet the Intendant of Faucigny at Servoz. He missed his footing while crossing a plank bridge over a torrent, near Les Houches, which was in flood. Bourrit, with François Paccard, hurried to the spot from Chamonix—followed later by the lawyer son—and found his old friend still breathing, but he soon passed away. Bourrit and his

[151] This is about as much as can be made out from some disjointed and almost illegible memoranda of H. A. Gosse (Dübi, p. 87), found amongst the papers that had barely escaped destruction by mice, and that included the unique copy of Paccard's prospectus (see Introduction). The date of the brawl is fixed and the fact confirmed by the diary of Bourrit's young son Charles, who had come to Chamonix with his father, almost on the heels of de Saussure. Writing on Tuesday July 10, he says: 'After breakfast we went for a walk with Balmat, who told us he had been knocked down on Monday by a blow ("soufflet") from Dr. Paccard' (G. M. (1), p. 36).

son were present at the funeral on Thursday, July 26. 'The whole valley,' he says, 'lamented his loss, and with good reason, for he had rendered it great services.' De Saussure and Bourrit seem to have done what they could to show their sympathy with the daughter and son. The Doctor heard of the sad event on Thursday evening at les Contamines, and hurried home, but too late for the funeral. De Saussure called on him on Friday. 'Dr. Paccard does not seem greatly touched by his father's death. He had just as bad weather on the other side of the Alps as we have here. He took advantage, however, of the intervals of fine weather to observe the mountains of Val d'Aosta and the passes of Col Ferret and the Col du Bonhomme. He seems to have taken pains to go, whenever he could, higher and further than I have been.'[152] One gets the impression that a certain coolness had arisen between the two men. De Saussure apparently found Paccard unsympathetic in this matter, and perhaps, too, in his relations with Balmat, and, as Freshfield suggests,[153] he may also have been 'human enough to be at heart a little jealous of his precursor ("the conqueror of Mont Blanc"), and of the climbing powers of the younger man.' When de Saussure, a few days later, achieved his long desired ascent, Paccard obtained the details of his barometric readings only from Bourrit, although the year before he and his brother were to have assisted de Saussure by making the necessary comparison readings at Chamonix. The knowledge of de Saussure's figures perhaps prompted Paccard to take his new barometer to the top of the Montagne de la Côte on August 14, 1787, and make observations there with a view to correct his own erroneous reading of the previous year on Mont Blanc. (See note 123.) We hear nothing of any further intercourse between the professor and the village doctor. But the narrative of the explorations preceding his own ascent, which de Saussure published in vol. iv. of the 'Voyages' (§§ 1962–1965), seems somewhat less favourable to Paccard and more so to Balmat than his references to the subject in 1786, which are discussed in note 115.

During the occupation of Chamonix by the French (1792 to 1814) Dr. Paccard was *Juge de Paix* for seven years (with interruptions) from 1793, was Mayor of Chamonix in 1794, and married Marie-Angélique Balmat in 1796. He had a son, Michel Ambroise, who travelled with Lord Minto in 1830 (accompanying him up the Breithorn at Zermatt), told him of his father's claims to the chief share in the first ascent of Mont Blanc, and gave him the colour scale which his father had used on his great climb to measure the blueness of the sky. Dr. Paccard's salary as *Juge de Paix* remained partly unpaid, and in 1810 he applied for the arrears (1900 francs) to the Municipal Council, who, however, decided to take no action in the matter. Jacques Balmat was one of the councillors who signed this resolution![154]

[152] For the matter of this paragraph, see G. M. (1), pp. 4, 8, 9, 40, 41.
[153] See Freshfield, p. 223. [154] These details are from Dübi, pp. 150–151.

We know nothing further of Dr. Paccard's life, except that many distinguished visitors to Chamonix paid their respects to him, and that he was consulted by most of those who climbed Mont Blanc, and frequently lent them scientific instruments (barometer, thermometer, electrometer, compass, prism, etc.), which they often broke or lost. He died on May 21, 1827, aged seventy. A copy of the certificate of his death was discovered by Whymper,[155] pasted on the flyleaf of the 'Régistre No. 10 des Ascensions au Mont Blanc.' There is no other record or memorial of his death or his burial-place.

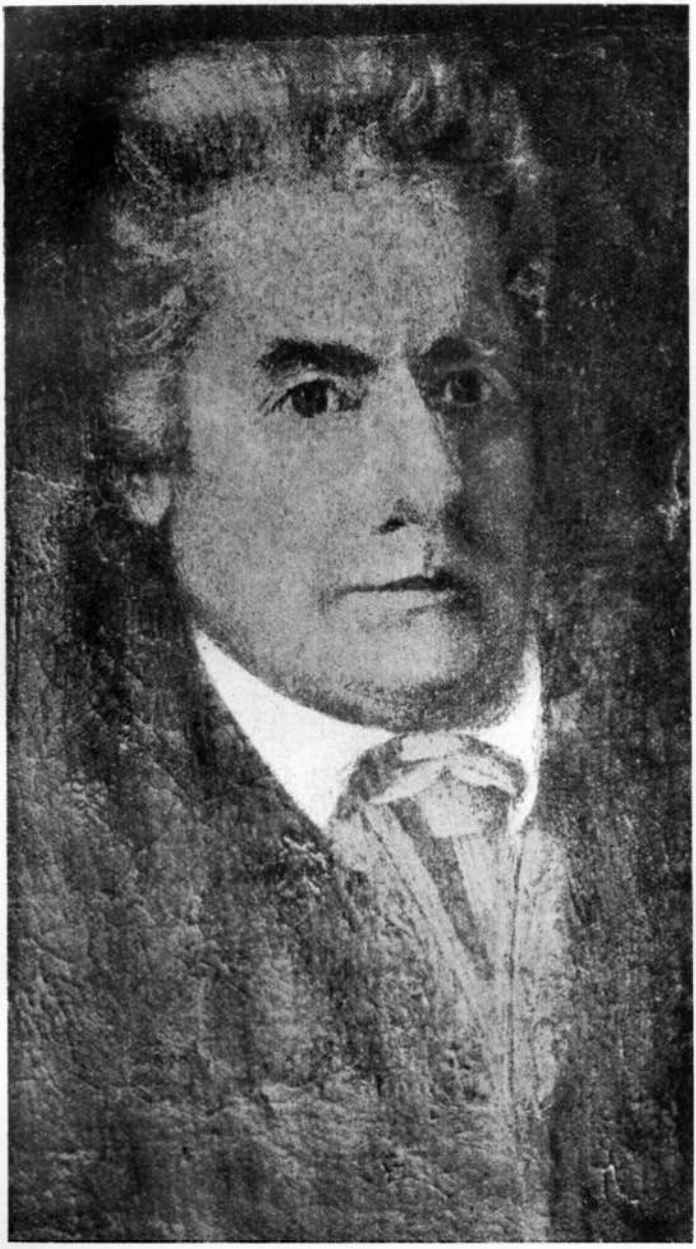
What judgment is to be formed of the village doctor as a man and a mountaineer? Almost everything we know of him is favourable and to his credit. He was a man of culture and scientific attainments, of keen powers of observation and inference, interested in botany, geology and physics, and keeping himself surprisingly well provided with scientific instruments, which he used with knowledge and effect. His accounts of his own climbs are quite remarkably objective and straightforward, free from all exaggeration or boasting. They are worlds away from Bourrit's bombast, and in their scientific precision compare well even with de Saussure's writings, though, of course, they are on a much smaller scale, and show neither the power nor the sensibility of that master-mind. As a mountaineer, Paccard set before himself the greatest Alpine problem of his day, and brought to its solution a combination of enterprise, courage, sound judgment, endurance, steadiness and speed, which it seems to me was unparalleled among amateurs *or guides* up to his own time, and for many a long year afterwards.[156] Having solved his problem, he left the arena to his successors, in whose doings, however, he retained the liveliest interest, as his diary shows.

These favourable impressions are strongly confirmed by the portraits, especially the delightful one of him in his later years, which Matthews discovered and which is here reproduced. Every line of this portrait breathes high spirit, good breeding, intelligence, energy and decision—and perhaps also a certain hardness. To repeat the words of his great contemporary de Saussure, he was indeed 'a fine fellow, full of intelligence, good at botany, keen on climbing Mont Blanc,'[157] and as we look back over the years that have elapsed since

[155] Whymper, p. 27.

[156] In support of this judgment I would ask the reader to consider notes 61 (*f*), 89, 117, 121, 129, 135.

[157] See note 68. *Cf.* the verdict of de Saussure's grandson, Monsieur Henri de Saussure ('Les Explorateurs Genevois,' presidential opening address of the fifteenth International Conference of Alpine Clubs, 1879 : see Dübi, p. 227 ; *A.J.* **19**, 347). He brought to light various letters from Paccard to de Saussure (referred to above, see notes 37, 43) which prove that the Doctor was a man of scientific culture, with a good knowledge of physics and natural history, and that from 1783 on, stimulated by de Saussure's earliest writings, he had busied himself with the problem of ascending Mont Blanc and measuring its height. 'This modest and sympathetic character has been very unjustly relegated to the second rank behind the somewhat theatrical figure of his countryman



MICHEL GABRIEL PACCARD

from an old portrait in the possession of M. J. P. CACHAT, his grandson.

his great achievement, we find ample reason to give him a very high place amongst the most capable and successful pioneers of modern mountaineering. If Chamonix is proud to be reckoned one of the chief homes of the mountaineering art, she would do well to remember with gratitude and honour that son of her own, whose well-earned fame has been so unjustly dimmed by the detraction of envious rivals and the chance caricature of the greatest of story-tellers,[158] but who in truth first found the way to the summit of her great mountain.

Note 17 *cont.*—*Von Gersdorf's Narrative.*

'Monsieur Michel-Gabriel Paccard, the doctor of Chamonix, has at length succeeded, together with Jacques Balmat, another inhabitant of that place, in reaching the summit of Mont Blanc, which, though frequently attempted, had never been climbed before. They left Chamonix soon after midday on August 7, and slept in a shelter-hut on top of the Montagne de la Côte, which lies between the glaciers of Taconnay and the Bossons, on the right of the latter. Starting again at daybreak on the 8th, they crossed the Sea of Ice [*sc.* the "Jonction"], [mounting] over steep ice and snow slopes, and went on—their tracks being visible from here—through rather soft fresh snow, and over many crevasses, some freshly covered, others open. Further up they climbed a steep snow slope (on which I discovered their footsteps next morning from Chamonix) between the big rocks on the left and the big depression [on the right] which has a rock visible in the middle of it. [This is no doubt the slope leading up to the Grand Plateau, which from Chamonix or Planpraz appears to rise between the Rochers Rouges and the Col du Dôme (with the Vallot rocks), though these really lie further back.] They were several times seen ascending [the mountain] by watchers with telescopes from Chamonix, and I myself discovered them shortly after 5 P.M. on the level ridge immediately above the rock-ridge *a*; they were advancing rapidly to the left on this level [course], and as they were in shade they were very [clearly] visible against the [sun-]lit [slopes of the] mountain. Soon they disappeared behind the upper slopes [lit. the uppermost (part of the) mountain] at *b*. I went up with several companions to Monsieur Bourrit's chalet, which lies further up on the N. side of the valley, and shows much more of the summit of Mont Blanc than is seen from the inn. From here the climbers were first seen again just below the larger of the rock-patches which are higher up [*sc.* the Petits Rochers Rouges], at *c*, which they must undoubtedly have reached by passing through a hollow. They halted for a few minutes amongst these rocks, and left them at 5.45. They rested for a moment after about every 100 steps, and changed leadership several times. One of them was always about 100 steps ahead. At 6.12 they passed two very small rocks that stick out of the snow [*sc.* the Petits Mulets], and going on again, bearing constantly to the left, they arrived on the actual summit at 6.23, as was clearly seen through telescopes by ourselves and a Russian officer, Herr von Lansky, together with many

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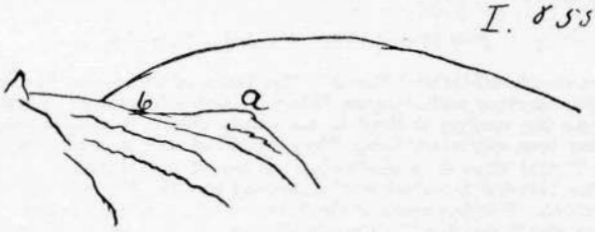
Balmat. Paccard was a mountaineer of great merit. It was not the attraction of a monetary reward which led his steps to the summit of Mont Blanc, but the generous aspirations of a man who understood the aims of science and pursued them without regard to self.' The testimony even of M. Carrier, Balmat's most ardent champion, is equally favourable to Paccard: 'M. Paccard was devoted to hazardous excursions of this kind (*sc.* attempts to climb Mont Blanc). He was a skilful doctor, and equally distinguished as a naturalist, and about this time (*sc.* 1786) was busying himself with various researches in natural history, chiefly in botany and geology' (Dübi, p. 211).

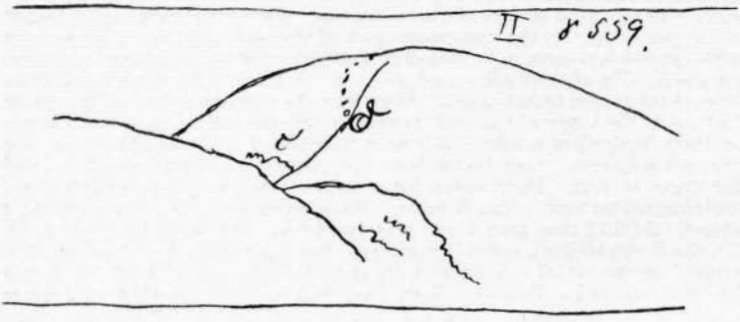
[158] 'Balmat was a child in the hands of the first of interviewers and the greatest of story-tellers' (Freshfield, *A.J.* **19**, 342).

inhabitants of the place. We were all filled with joy and wonder [at the sight of their success].

'They at once disappeared behind the summit, but were soon seen again for about a minute. They did not appear again for some time, for the sharp frost (which Dr. Paccard found to be 6° R. below zero) obliged them continually to move around on all sides of the somewhat declivitous top. After about half an hour, *i.e.* at 6.57, they started back, and ran down, as shown by the line [on the diagram] to the lower [patch of] separate rocks at *c* [*sc.* the Petits Rochers Rouges], which they actually ["schon"] reached in 6 minutes. I did not see them beyond this, and I suspected that they had wanted to find a



bivouac place there in order to go up again early in the morning. But in fact the cold compelled them to continue their descent, and with the help of the bright moonlight—without which they must inevitably have perished—they came down all through the night without stopping to rest, and got safely back to Chamonix at 8 o'clock in the morning of August 9. They had had incredible difficulties to overcome on account of the frequent steepness of the way and the many crevasses in the snow and ice. But the weather had been extraordinarily fine, and the rarefied air on the top of this lofty mountain had caused them no very unpleasant sensations. On the other hand, they suffered greatly



from the dazzling snow and the keenness of the air. Their faces and hands were blistered, and both of them had dreadfully red eyes, which were very painful and constantly running, and they could not bear the daylight.

'That same day (August 9) we went up to Planpraz, starting at 5.10 A.M., arriving at the Chalet at 12.45, and getting back at 2.37. [There must be some error in these times; probably we should read 7.45 for 12.45.] The Chalet is finely situated, facing S., and it was uncommonly warm and pleasant [there]. We spent the whole time sketching. On the snow-covered parts of Mont Blanc we saw the footsteps of Dr. Paccard and Jacques Balmat for the greatest part [of their way], but we could not discover how they got up the steep snow-

slopes above the Sea of Ice [*sc.* the Grand Plateau]. As a souvenir of their route I made a drawing of the upper part of the mountain, on which the yellow line [the thick winding line on the reproduction] shows the climbers' tracks.

'In the afternoon we visited Dr. Paccard, who was in bed, but soon got up. I went in again alone several times, on one of which Jacques Balmat was

present. Early next day I visited the Doctor again. He was obliged to keep to his bed, and was in much pain. [He told me that] the barometer which he had taken with him to the top of Mont Blanc was broken on the way back. He intends to print some [account] of his ascent. I must say I could wish, for the benefit of the public, that the Doctor, in addition to his robust frame, had a wider knowledge of Physics and Natural History. His chief subjects are Botany and Mineralogy, and even in the latter his knowledge is not great, as I observed yesterday on looking through his small and unimportant collection of minerals.'

Von Gersdorf also gave a certificate—at the request of Paccard's father—which runs as follows (it is in French, and was originally written in the first person singular, and was then corrected throughout to the plural, no doubt in order that von Meyer might sign it as well as von Gersdorf. See Dübi, pp. 52, 53):

'We, the undersigned, declare that being in the township of Chamonix in Faucigny in order to view the glaciers and other curiosities of the place, on August 8, 1786, we saw with our glasses that Monsieur Michel-Gabriel Paccard, Doctor of Medicine, of the said place, arrived with his guide Jacques Balmat on the summit of Mont Blanc at 6.23. We saw him walk about there, and they stayed on the said mountain 34 minutes. They began to descend at 6.57. We, together with several inhabitants of this township, saw the traces of their route in the snow, which we observed with our glasses. In witness whereof we have signed these presents at the request of the said Dr. Paccard at Chamonix on August 9, 1786.

'Adolph Traugott de Gersdorf de Meffersdorf.
'Charles André de Meyer de Meffersdorf.'

It is perhaps worth notice that the track marked on von Gersdorf's drawings might seem more consistent with a route by the *upper* than by the *lower* Ancien Passage. But Mr. Lloyd's print shows that the curving line of snow on top of the *lower* Ancien Passage is so much more prominent a feature in the view than the slope above it, that it is not surprising von Gersdorf neglects the latter in his sketches.

An interesting side-light on these events is to be found in an amusing letter by the Rev. Tho. Brand describing a visit to Chamonix in 1786 (*A.J.* 32, 77). 'Two or 3 days before our arrival a Dr. Packard and a young man of the name of Balma atchieved the long wish'd for adventure of gaining the highest summit of the Mont Blanc . . . the sun & snow together made all the skin peal off their faces & almost blinded them, & for the following days their sight was too weak to distinguish objects even at small distances & everything appear'd to them of a blood red. They spent two nights on the upper part of the Montagne de la Côte . . . They were seen by many people from Chamouni & other parts of the Valley with the common little telescope. The Baron de Hersdorff (or some such German name) saw them thro' a good achromatic glass so as to distinguish the identity of their persons.'

Note 115 *cont.—Paccard's Route or Balmat's?*

As this is one of the vital points of the whole Paccard-Balmat controversy, I would draw special attention to the statements in two letters written by de Saussure and his uncle *before* de Saussure had heard Paccard's own story, though he *may* have heard Balmat's account. On August 13, in a letter to J. P. Tairraz (Whymper, pp. 23, 24) de Saussure uses the following phrases: 'The happy result of Dr. Paccard's expedition.' . . . 'I have neither the youth nor the agility of the Doctor.' . . . 'This Jacques Balmat who made the journey with Monsieur Paccard.' On August 18, C. Bonnet, uncle of de Saussure, wrote as follows (Dübi, pp. 55, 56; Mathews, p. 97): 'On the 8th inst., a young Doctor of Savoy, accompanied by a single montagnard, had first the glory of attaining that summit.' . . . 'the new route which he has discovered' . . . 'the Doctor has thus reached 2426 toises above the

Mediterranean.' . . . 'My nephew is preparing to follow the steps of the Doctor and to make more precise observations.' It is plain that de Saussure and his circle regarded Dr. Paccard as the initiator of the climb and the discoverer of the route, and 'this Jacques Balmat' as merely his assistant. Note also the reference to 'more precise observations,' showing that something was known thus early of Paccard's work on the summit.

The only evidence of any weight against this is de Saussure's later account (in which he may have been influenced by his further intercourse with Balmat and Bourrit, and by the coolness which seems to have arisen between himself and Paccard; see 'Conclusion,' p. 145) of Balmat's observations on June 9. (Even so, Durier reproaches de Saussure—of all men—with injustice to Balmat in describing him on that occasion, as Paccard also does, as chiefly on the lookout for crystals. This, of course, is exactly what he was doing, for he was a crystal-hunter by trade; *cf.* note 83 and *A.J.* **19**, 348.) It is particularly to be noticed, as Freshfield pointed out in 1899 (*A.J.* **19**, 344), that when de Saussure in his later narrative speaks of Balmat having discovered the only possible route, he proceeds to explain that this is the route 'that seemed the most natural, and had already been tried'—viz. that through the 'snow valley' (see §§ 1, 2, 3 and note 102)—but had then been abandoned in favour of the Goûter ridge on account of the supposed stagnation of the air in the 'snow valley.' That Balmat was in favour of the 'valley route' as against the 'ridge route' in consequence of his observations on June 8 may well be the case. Indeed, in his certificate he declares 'We believed we had seen on June 8 last that the route by the Montagne de la Côte (*sc.* the Bosses ridge, which they had reached *via* the Montagne de la Côte) was impossible.' (Incidentally note that it follows from this that Balmat thought—until Paccard told him his actual plan—that he was intending to try the Bosses ridge again.) But the crux was, how to get up the final slopes? This is what Paccard devised and always claimed, viz. the discovery of the (lower) Ancien Passage. What de Saussure says in no way invalidates this claim, against which there is, therefore, no evidence save Balmat's pretensions. Even apart from his certificate, it must surely be admitted that his story (*a*) is utterly improbable—who can believe in the four days' and nights' climbing and sleeping out? (*cf.* note 4); (*b*) bears all the marks of a frequently varied and gradually elaborated myth; (*c*) has been shattered by von Gersdorf's testimony as to one of its main elements, and *therefore deserves no credence on other points*; (*d*) was so obviously to his own interest in gaining credit with Bourrit and de Saussure as to be suspect on that ground alone. When to all this one adds the conclusive statements of the certificate, there is, in my judgment, not a shred of Balmat's claims left.

Gaillard and Montagnier, however, in spite of the latter's contemptuous dismissal (in 1912) of Dumas's narrative as a tissue of exaggerations and inventions, now accept most of Balmat's story, as told to Dumas, about the events of June 8 and the preceding days [G. M. (2), p. 83]: 'This is how, in our opinion, things must have happened. Jacques Balmat, who had spent the night of 6–7 June at the Grands Mulets, and that of 7–8 at the Bec de l'Oiseau [on the Montagne de la Côte] after making an attempt towards the Dôme du Goûter [Balmat's MS. asserts that he was *on* the Dôme du Goûter], was going down to Chamonix on the morning of the 8th when he met the three guides who were going up to sleep on the Montagne de la Côte. Balmat went home to change his stockings and gaiters and fetch some provisions, and started again at 11 o'clock in the evening of the 8th June to join the Carriers and F. Paccard [next morning, after walking up all night]. It was no doubt against their will that he joined their party [but Balmat's MS. contradicts this; *cf.* note 4]. Having reached the Dôme [du Goûter next day] they were joined by Pierre Balmat and Marie Couttet who had started from Pierre Ronde. The united parties went on as far as the Col du Dôme. Here Jacques Balmat alone tried to climb the Bosses ridge [probably only the Vallot rocks] alleging that he was going to look for crystals or actually doing so. Meanwhile a mist came up, and the guides made off. It was probably against his will that Balmat remained behind. However that may be, at 4 P.M. he descended to the Grand Plateau

and ascended [*sc.* by the "Corridor"] to the Col de la Brenva, whence he saw the valley of Aosta. On coming down again, did he turn to the left and reach the foot of the Ancien Passage? It is possible. In any case it was probably in the crevasse which is found at this place (on the Grand Plateau, at the foot of the Ancien Passage) that he passed the night. Next morning he was back at Chamonix at 8 A.M. He had had no time to make any further exploration that day, as he states expressly in his MS. account, assigning as his reason that the mist remained on the top all the time. Moreover, can one imagine that after three successive bivouacs—the last spent in so cruel a fashion on the snows of the Grand Plateau—he could have wanted to do anything but get back home?'

As to this, (*a*) I invite the reader to disbelieve entirely Balmat's story of his three days' and nights' explorations, of which we hear nothing till forty years after the events (when Paccard was dead), and which reeks of egotistic invention (*cf.* note 4).

(*b*) Gaillard and Montagnier take Balmat up the 'Corridor'—which, as far as we know, no one *except Paccard* (see § 11) had even thought of till 1827—and they do not venture to suggest more than that Balmat *may* have turned up to the left after coming back down the Corridor, and have reached the foot of the Ancien Passage. There is not a scrap of evidence for this most improbable suggestion, and in any case what Balmat claimed was the discovery of the route he took with Paccard, and that was not the Corridor, but the (lower) Ancien Passage.

(*c*) Gaillard and Montagnier ascribe this exploration to the afternoon of June 9 (the more probable date is June 8), though there are three versions of the story (Bourrit, de Saussure, and Carrier) to one (Balmat in his MS. and his story to Dumas) against this and for the following morning. [Personally, I regard these discrepancies as evidence that the whole story is an invention; *cf.* note 4, and the first paragraph of the present note on p. 130.]

(*d*) According to Balmat's own account, the weather had turned bad, mist and hail came on, and the mist still covered the summit next day. De Saussure speaks of storm, snow, and hail. Who can believe that Balmat could have crossed the Grand Plateau, ascended to the Col de la Brenva and returned on an afternoon of such weather following, as he alleged, on four days and three nights of continuous climbing and exposure?

(*e*) The crevasse is described by Balmat himself as one which they (or he, MS.) had crossed in the morning. How could this be a crevasse at the foot of the Ancien Passage, seeing that the guides had taken the shortest route to the Dôme du Goûter, which turns off to the right below the Petit Plateau and does not touch the Grand Plateau at all? [In the Dumas narrative this is still further coloured by declaring that the crevasse was that in which the three guides of Hamel's party had perished in 1820.] Of course the crevasse was on the descent from the Dôme du Goûter towards the Glacier des Bossons (quite likely on the Glacier des Bossons itself), at a height where an open bivouac (not in, but above the crevasse), though a remarkable feat of endurance, was at least possible. Remember also (*a*) that, to Bourrit, Balmat had declared he had slept out 'higher than the Dôme du Goûter' (!), while (*b*) in his MS. he impudently annexed the height of de Saussure's bivouac as that of his own, and further (*c*) that he describes himself as having seen the lights of Chamonix from it, whereas (see Whymper, p. 19) Chamonix cannot be seen from the Grand Plateau. Contrast this shifting farrago of contradictory inventions with the straightforward and credible narrative of Paccard (§ 10), which, as far as Balmat's adventures after his desertion by the guides are concerned, must have been derived from Balmat himself, and which gives him due credit for his *one* night's bivouac on the snow. (It is worth notice that Dr. Martin Barry, in his account of an interview with Balmat in 1834 says that Balmat spoke 'of *a* night spent in solitude, in a storm, upon the glacier.' His last recorded words at least were true!) With all respect to Gaillard and Montagnier, their construction seems to me quite incredible, save in its last sentences.

CHRONOLOGICAL TABLE.

Date.	General.	Mont Blanc.
1739.	M. T. Bourrit born.	
1740.	H. B. de Saussure born.	
1757.		
Feb.	M. G. Paccard born.	
1760. } 1761. }	De Saussure's first visits to Chamonix and	Offer of reward to anyone climbing Mont Blanc.
1762.		
Jan.	Jacques Balmat born.	
1766.	Bourrit's first visit to Chamonix.	
1775.		Guides' first serious attempt to climb Mont Blanc.
1779.	De Saussure's 'Voyages,' vol. i., published.	
1782.	Balmat married.	
1783.		
July 12.		Guides' second serious attempt to climb Mont Blanc.
Sept. 16.		Attempt by Bourrit and Paccard.
1784.		
June 4, 5.		Paccard's reconnaissance by Tacul basin.
Sept. 9. 10.		Paccard's reconnaissance by Aiguille du Goûter.
,, 16.		Bourrit's attempt by Aiguille du Goûter (his guides reach Col du Dôme).
1785.		
Sept. 14.		De Saussure and Bourrit's attempt by Aiguille du Goûter.
1786.	'Voyages,' vol. ii., published.	
June 8.		Five guides' and J. Balmat's attempt by Dôme du Goûter.
July 21.	Judith Balmat born.	
Aug. 8.	Judith Balmat died.	Ascent (I) by Paccard and Balmat [Balmat 1].
,, 20.		De Saussure starts but returns next day.
,, 22.	De Saussure hears and records Paccard's story.	
Sept.	Paccard issues his Prospectus.	Exchaquet and Hill's attempt to cross Col du Géant.
,, 20.	Bourrit's pamphlet.	
Oct. 18.	Balmat's first certificate.	
1787.		
Mar. 25.	Balmat's second certificate.	
Feb.–May.	Letters of Paccard and Bourrit in *Journal de Lausanne*.	
June 27.		First recorded passage of Col du Géant (two guides).
,, 28.		Second recorded passage of Col du Géant (Exchaquet).

CHRONOLOGICAL TABLE—*continued.*

Date.	General.	Mont Blanc.
July 5.		Ascent (II) by Balmat with two others [Balmat 2].
„ 9.	De Saussure's arrival in Chamonix; Paccard-Balmat brawl.	
Aug. 2.		De Saussure's ascent (III) [Balmat 3].
„ 9.		Beaufoy's ascent (IV).
„ 16.		Paccard's visit to Montagne de la Côte with barometer.
„ 28.		Bourrit's passage of Col du Géant.
1788.		
July 2–19.		De Saussure on Col du Géant.
Aug. 5.		Woodley's ascent (V) with Bourrit, who got as far as Petits Mulets.
1792.	Chamonix occupied by French.	
1793.	Paccard *Juge de Paix.*	
1794.	Paccard *Maire* of Chamonix.	
1796.	Paccard marries Marie A. Balmat.	
„	'Voyages,' vols. iii., iv.	
1799.		
Jan.	De Saussure died (59).	
1802.		
Aug. 11.		Dorthesen and Forneret's ascent (VI) [Balmat 4].
1809.		
July 14.		Maria Paradis' ascent (VII) [Balmat 5].
1812.		
Sept. 10.		Rodatz's ascent (VIII).
1814.	Chamonix restored to Sardinia.	
1818.		
Aug. 4.		Count Matzewski's ascent (IX) [Balmat 6].
1819.		
July 12.		Howard and van Rensselaer's ascent (X) [Balmat went as far as Montagne de la Côte].
Aug. 11.		Captain Undrell's ascent (XI).
Oct.	Bourrit died (80).	
1820.		Hamel accident.
1822.		
Aug. 19.		Clissold's ascent (XII).
1823.		
Sept. 4.		Jackson's ascent (XIII).
Oct.	Paccard's first letter to *Journal de Savoie.*	
1825.		
Aug. 26.		Clark and Sherwill's ascent (XIV).
Sept.	Paccard's second letter to *Journal de Savoie.*	

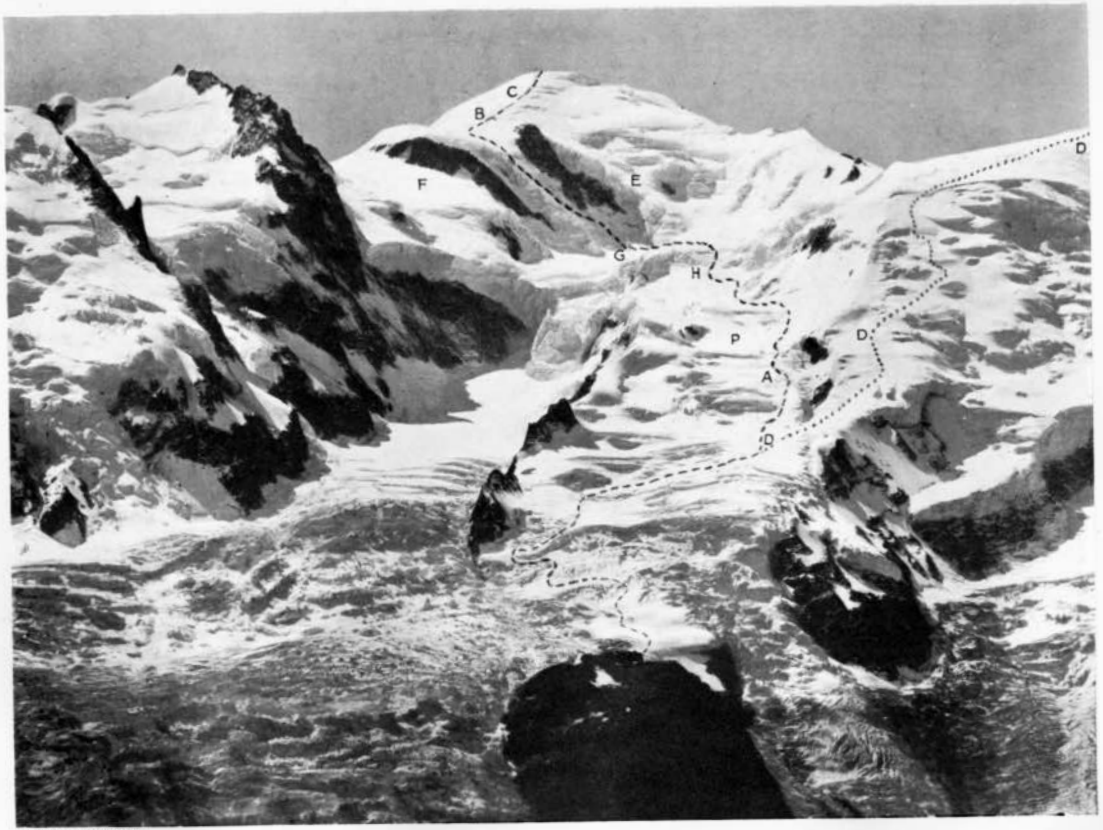


Photo. Tairraz.

MONT BLANC.
Showing original routes.

CHRONOLOGICAL TABLE—*continued.*

Date.	General.	Mont Blanc.
1827.		
May.	Paccard died (70).	
July 25.		Hawes and Fellows's ascent (XV), first by Corridor.
Aug. 9.		Auldjo's ascent (XVI).
1830.		
Aug. 3.		Wilbraham's ascent (XVII).
1832.	Balmat's interview with Dumas.	
1834.		
Sept. 17.	Balmat's interview with Barry.	Barry's ascent (XVIII).
?	Death of Balmat (72).	
Oct. 9.		Count de Tilly's ascent (XIX).

NOTE ON THE ILLUSTRATIONS.

On the lettered illustration, the upper part of the Montagne de la Côte appears in the middle of the lower edge of the plate. A is the slope leading up to P, the Petit Plateau. [Above and to the right of A is where 'the snow arches over the first rocks at the foot of' the Dôme du Goûter (note 36).] H is the slope leading up to G, the Grand Plateau. [From Chamonix this slope seems to rise between the Rochers Rouges and the Col du Dôme, 'the depression with a rock (*sc.* the Vallot rocks, below the Bosses du Dromadaire) visible in the middle of it' (v. G.).] B are the Petits Rochers Rouges, C the Petits Mulets. Paccard's route is marked - - - -. It turns to the right below the Grands Mulets rocks. Between the lowest D (which is probably the point reached about midday) and G, it is copied from von Gersdorf's sketch (p. 149). Above G it runs up the (lower) Ancien Passage *between* the two tiers of the Rochers Rouges. [The upper part of this portion is where Paccard and Balmat were seen 'hastening along the more level part' (§ 13), and then disappeared in a hollow (behind the bulging snow on top of the lower Rochers Rouges; *cf.* Mr. Lloyd's print of the view from the Brévent) before reappearing near B.] E is the upper Ancien Passage, and F the Corridor. The track now usually followed is faintly visible far to the left of A. The guides' route on June 8 (§ 10) is the dotted line DDD to the Dôme du Goûter (just beyond the highest D).

In the view from the Col de Voza, the 'little plain' (§ 5) is vertically below the Col de Bionnassay, about 1 in. above the lower edge of the plate. [The Col de Tricot (not visible) is a gap in the great ridge of the Aiguille de Bionnassay, which would come beyond, and not quite as high as, the middle of the right-hand edge of the plate.] The dark slope above the 'little plain' is the Pierre Ronde, the undulating top of which, stretching in front of the Aiguille du Goûter, is les Rognes. The fainter ridge just above and behind this is the Tête Rousse ridge. Behind it, but not visible, are the upper (eastern) slopes of the Glacier de Bionnassay, to which descends the widest snow patch (the 'plaque,' § 5), seen on the face of the Aiguille du Goûter. The 'couloirs' are to the left of the plaque, and to the left of them is 'the ridge seen from Chamonix.' The Tête Rousse inn is $\frac{1}{8}$ in. above the middle (rounded) summit of les Rognes.

On Donkin's photograph of Mont Blanc seen across the Glacier du Tacul,

the site of the Lac du Tacul (which itself is visible on Mr. Lloyd's print) is near the lower left-hand corner. The background of the Tacul basin is shut in (from left to right) by 'the three granite aiguilles' (Grand Flambeau, Aiguille de Toule, Aiguille d'Entrèves) and the Tour Ronde. The Aiguille Noire rises on the further edge of the massive rock slopes above and to the left of the Séracs du Géant. The route to the Col du Géant turns to the left between the Aiguille Noire and the Grand Flambeau. The Petit Rognon is the rock island above and to the right of the Séracs.

Of the two views from the summit of Mont Blanc, M. Bregeault's shows the main axis of the chain running to the Grandes Jorasses (the shaft of the 7), while Abraham's gives the continuation of this to the left, showing the Aiguille Verte—the cross piece of the 7 (§ 14).

Of the lower and upper Anciens Passages, there is an impressive view in Mathews, p. 104, and also another, somewhat heightened, in Whymper, p. 21.

My best thanks are due to Mr. R. W. Lloyd, Dr. H. Dübi, Sir Ernest Benn, M. Bregeault, and others, for permission to reproduce their illustrations.

E. H. S.

On the Fringe of the Pamirs.

By W. RICKMER RICKMERS.

EVER since my first visit to Bokhara in 1894 the mountains of Western Turkestan have held me enthralled. Exploring the ranges of the Zarafshan, of Hazrat-Sultan, Peter the Great, and Darvaz, I moved further and further E., although

the Pamirs themselves remained closed to me. In 1913, my party penetrated into the western valleys of the Sel-tau, that long meridional chain forming the western fringe of the Pamirs. Here white spots on the Russian map—or rather nests of irresolute 'worms'—had fascinated me as long as I can remember. Here was the lure of legendary passes, of unknown glaciers, of peaks fabulously high.

Then the world stood still for a while, its activities being