

find a direct route between Courmayeur and Chamonix indicated as the 'Col de Malay,' a name very likely invented in 1802 by the editor of the volume. On page 160 we find the following footnote by the editor :

'M. de Bourcet ne parle point du col de Malay dans ses mémoires ; c'est ce qui nous a fait douter de son existence, comme nous l'avons dit dans la table à l'article de ce col.'

And in the table at the end of the volume (page 349) he adds :

'Quelques cartes assez estimées ayant indiqué ce col on l'a conservé, par respect pour elles, quoiqu'on n'en ait d'ailleurs aucune connoissance et que les glaciers du Mont-Blanc rendent son existence très-problématique.'

The foregoing extracts comprise, I believe, all the important references to the Col Major before 1802 that have yet been brought to light. Of the six authorities I have quoted no less than four describe it in unmistakable terms as either the Col de la Seigne or as that pass combined with the Col du Bonhomme ; while two refer vaguely to an abandoned pass somewhere between the Col de la Seigne and the Great St. Bernard and in the neighbourhood of the former, I have shown moreover, that there are excellent reasons for believing that this abandoned pass lay between the Montjoie valley and the Allée Blanche. In any case it seems to me certain that neither the Col Major nor this abandoned route had anything in common with the great glacier pass we now know as the Col du Géant.

(To be continued.)

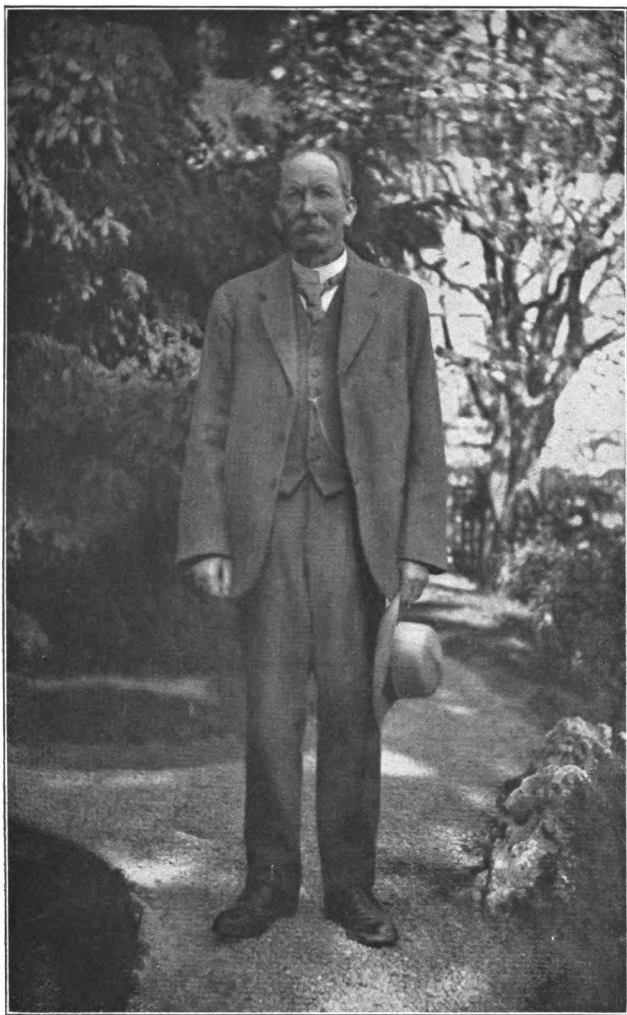
THE EARLY SWISS PIONEERS OF THE ALPS.

BY DR. H. DÜBL.

(Continued from p. 234.)

FRANZ JOSEPH HUGI.

HUGI was born on January 23, 1796, at Grenchen, canton of Soleure, where he was educated, proceeding thence to the universities of Landshut and Vienna. Upon his return he was appointed teacher of natural science at the *Realschule* and principal of the orphanage at Soleure. His work left him time to make long journeys—thus from 1821 onwards



DR. H. DÜBI
1920

he visited the Jura, the Alps, Germany, Hungary, Italy, and Northern Africa, collecting many objects of natural history, which he presented, about 1830, to the museum founded by the town of Soleure at his instigation. He was also founder, and for a long time President, of the Cantonal Society for Natural History and Science. In 1833 he was promoted professor of physic, and in 1835 professor of natural science, at the Gymnasium, which he resigned in 1837, on conversion to Protestantism. He, however, remained director of the Museum, and was in active correspondence with several learned societies in Switzerland and abroad—e.g. the Royal Physical Society of Edinburgh. He died at Soleure on March 25, 1855.

Beside his *Naturhistorische Alpenreise* (1830) and *Ueber das Wesen der Gletscher und Reise in das Eismeer* (1842), he published in his later life books and pamphlets in defence of his theories of glacier phenomena and erratic blocks in answer to the severe criticism of Agassiz and others.

What concern us chiefly are his wanderings in the Alps. I agree with Capt. Farrar¹ that Hugi's work as a mountaineer has been unjustifiably underrated. His itineraries are hard to follow, as in his books he preserves neither chronological nor topographical order. Thus chapter ii. of his *Alpenreise* refers to 1828; the narrative then jumps to chapter iv., p. 92, and then to chapter vi., pp. 170–196. Chapter iii. refers to 1829, the narrative then jumping to chapter vi., p. 196, and then to chapter vii., p. 224.

He first set foot on a glacier in 1822, when he crossed the Tschingelpass from Lauterbrunnen to the Gastern valley.² Of an ascent of the Titlis in 1826 we have no details,³ nor of a journey in 1827, save that he was on the Sefinenfurgge and in the Roththal. The campaigns of 1828 and 1829 are fully described in the *Alpenreise*, the preface of which, dated Solothurn, 15 Juli 1830, announces a new expedition for 'the next week,' a few scattered notices of which exist. Details of the tour of 1831 we owe to Gottlieb Studer,⁴ Hugi's companion from August 13 to September 1. Hugi himself describes his winter journey of January 1832.⁵ He alludes, in 1843, to

¹ *A.J.* xxx. 284, note 12.

² F. J. Hugi: *Die Gletscher und die erratischen Blöcke* (Soleure, 1843), p. 8. ³ *Naturhist. Alpenreise*, p. 260.

⁴ *Bergreisen* (18 vols. of MS. diaries by G. Studer, preserved in the library of the Bernese section, S.A.C.), vol. iv. pp. 1–95.

⁵ *Winterreise in das Eismeer*, pp. 17–56.

an experience of thirteen years of the glaciers since 1829,⁶ but after 1832 we only know of a visit to the Unteraar Glacier in 1836.⁷

These expeditions were carefully planned, and the chapter in the *Alpenreise* describing the outfit of his large caravans is instructive and even amusing. The preparations of the campaigns of 1828, 1829, and 1832 must have caused him much trouble and expense, and compared with the same chapters in Meyer's or Rohrdorf's books the progress, in quantity as well as in quality, of scientific instruments is evident. His equipment included cooking apparatus, blue spectacles, veils, foot-irons, 500 ft. of soft, strong rope, an ice-axe,⁸ and a host of paraphernalia.

Hugi's principal companions and guides for the years 1828 and 1829 have been given in Capt. Farrar's article on the Laueners, 'A.J.' xxx. 283-4. Of the guides, J. Leuthold, J. Zemt, Joh. Währen, Andreas Leuthold, J. Moor, P. Baumann gave the greatest satisfaction to their employer. The hunter Hans Lauener accompanied him in 1828 for fifty-two days; Zemt in 1829 for nearly as long.

We will now attempt to follow Hugi in his wanderings. On August 1, 1828, he left Soleure with his staff for Unterseen. They reached Lauterbrunnen next morning, and slept at the Stufensteinalp with the intention of exploring the contact between gneiss and limestone that is so striking a feature of the upper Roththal. They proposed also to examine the route to the Jungfrau, already tried by two of the guides, Peter Bischoff and Christian Lauener, and the passage from the upper Roththal to the Valais. It was not to be. Rain prevented an early start on August 3. In two parties they ascended the Roththal, Hugi with 'the lean old climber,' Peter Bischoff, exploring *en route* a cave in the rocks of the Bärenfluh, which, in my opinion, does not repay the trouble. (I visited it on July 24, 1881, and one of my guides, Peter Lauener, grandson of the above-named Christian, caught a chill from which he suffered during our traverse of the Jungfrau next day and for some time afterwards.⁹)

They continued, in pouring rain, their exploration of the

⁶ *Die Gletscher*, etc., p. xv.

⁷ *Ueber das Wesen der Gletscher*, pp. 79, 106.

⁸ To judge by the frontispiece of the *Alpenreise*, it had the same form as described by Rohrdorf.

⁹ See *S.A.C.J.* xvii. 280-2, and *A.J.* xxxi. 251.



F. J. HUGL
1829

HUGI'S PARTY ON THE ROTHHORN SATTEL IN 1839

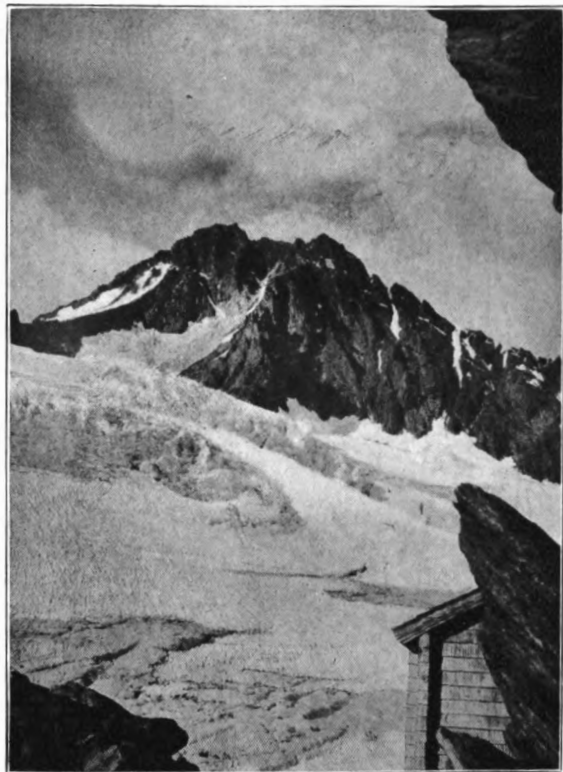


Photo V. A. Fynn]

FINSTERAARHORN
SHOWING THE TWO SUMMITS FROM THE
FINSTERAARHORN HUT

Roththal, first on the right bank of the glacier, then along its centre line. Approaching the end of the valley, they saw that 'the northern and eastern walls meet in an angle in which an almost perpendicular narrow strip of glacier descends from behind the Jungfrau.' This seems to indicate the Roththalsattel couloir rather than the Lauithor. Hugi pushed on to the foot of the couloir, but falling snow forced a retreat to the Stufensteinalp. As the weather remained bad, they descended the next day, August 4, to Lauterbrunnen.

A reference to this attempt is found in Fenimore Cooper's 'Excursions in Switzerland' (vol. i. p. 95): 'A gentleman of Soleure got as high as eleven thousand feet the day before our arrival [August 4]. He was driven back by a snowstorm.'

Capt. Farrar has already discussed the attempts on the Jungfrau from the Roththal in two masterly articles,¹⁰ but he has, in a minor point, been misled by Hugi's confused narrative. It may be convenient to insert a short summary here.

The first attempt was made by two unknown Lauterbrunnen men between 1790 and 1808.¹¹ 'The slab up to which they had got, and whence they did not consider it at all impossible to reach the summit, if provided with the needful to spend the night in the high glacier regions,' was visible from a point high up on the Tschingel Glacier and near the col. The description agrees best with the slabby triangle between my 1881 route and that of the 1885 party, as marked on the above plate.

Much in the same direction was an attempt by Peter Bischoff and Christian Lauener some time before 1828, for, as Hugi¹² says, 'Immediately to the entrance of the Roththal they bore to the left up the rocks.'

The same men, with seven others, were the guides of Messrs. Frederick Slade and Yeats Brown on August 20, 1828, when a determined attempt, as it would seem, by the Roththalsattel couloir, ended 'within a musket shot from the col.'

Of this remarkable expedition we possess two narratives—one in 'A.J.' v. 374, the other in Hugi's *Alpenreise*, pp. 26, 46, and 59–60. We will quote Hugi's words in order to clear up a mistake. Note that Hugi's 1830 book was a hasty

¹⁰ 'The Roththal Face of the Jungfrau,' *A.J.* xxxi. 210 seq.
¹¹ 'The Führerbuch of Ulrich Lauener,' *A.J.* xxx. 277 seq.

¹² *A.J.* xxxi. 211, and the plate opposite p. 217.

¹³ *Alpenreise*, p. 46.

collection of lectures given between 1827 and 1830, and errors in dates occur. (1) In relating the incidents of his second visit to the Roththal, in August 1828, he refers to 'Places where, *some weeks later*, on an attempt made by two Englishmen to climb the Jungfrau, strength and courage forsook even the natives,' etc.¹³ (2) In mentioning the daring attempt of Bischoff and Lauener, he indicates their route as 'up the rocks by which also *a few years earlier* two Englishmen hoped to ascend the Jungfrau.'¹⁴ (3) He writes:¹⁵ 'The ascent by that strip of glacier [the Roththalsattel couloir] seemed possible. *A fortnight later*, in favourable weather, two Englishmen tried it with my guides,' etc.

It is clear that (1) and (3) allude to the attempt on August 20, 1828, by Brown and Slade with the Laueners and Bischoff, and doubtless Hugi got his information from the guides. But what about (2)? Farrar suggests this attempt may be identical with the before-mentioned attempt of the two unknown Lauterbrunnen men before 1808.¹⁶ But this is improbable. L.'s text suggests that the two guides were alone, and Englishmen travelling at a time when Switzerland was in the power of Napoleon must have been rare. Moreover, Hugi's words, 'a few years earlier' than 1828, do not indicate so early a time as 'not later than 1808.' I cannot help thinking that Hugi's 'two Englishmen' were in each case the same, viz. Brown and Slade.¹⁷

I am compelled to curtail the narrative of the less important part of Hugi's journey which followed.

He left Lauterbrunnen on August 5, and crossed the Little Scheidegg to Grindelwald in bad weather that lasted more or less the whole month, putting up at Wettach's inn.¹⁸

On the 8th, with five guides and porters, he slept at the Zäsenberg, and next morning started for the Strahlegg. 'Climbing with hands more than with feet' the steep wall,

¹³ *Alpenreise*, p. 26.

¹⁴ *Ibid.* p. 46.

¹⁵ *Ibid.* p. 59.

¹⁶ *A.J.* xxxi. 211.

¹⁷ See Fenimore Cooper's *Excursions*, vol. i. p. 95: 'Several parties of English amateurs have attempted to ascend [the Jungfrau]; but they do little more than follow where the guides lead, and publish magnificent books afterwards.'

¹⁸ Probably the 'Bär,' as in 1824, and again in 1832, a Samuel Blatter is mentioned as host of the Aigle Noir. Neither in Coolidge's *Swiss Travel*, p. 209, nor in Wäber's 'Zur Geschichte des Fremdenverkehrs im engeren Berner Oberland' (*S.A.C.J.* xxxix.) is Wettach mentioned.

they reached at last the height of the Strahlegg. In vain they tried to descend to the Strahleggfirn. The snow was in a dangerous condition, so they had to retreat, and reached the Zäsenberg in the dark, wet through. The next morning, August 10, Hugi descended to Grindelwald, and ascended the Männlichen and the Tschuggen on the 11th. On August 12 he crossed the Great Scheidegg to Rosenlauri, finding good quarters at Oesch's inn there.¹⁹

On August 13 Hugi, with Lauener and the chamois-hunter, Melchior Keller, crossed the Urbachsattel. They had intended to cross by the then unexplored Rosenegg to the Gauli or Unteraar, but were driven back at the foot of the Dossenhorn by falling stones. So they redescended the Rosenlauri Glacier, turned into a side valley, and gained the Weit-, or Urbachsattel, by 2 p.m., reaching Hof the same evening.

'Föhn' and rain hindered excursions in the neighbourhood of Innertkirchen, so Hugi ascended to the Grimsel. The day after his arrival at Leuthold's hospitable house, he ascended the Siedelhorn with Lauener. The same day the other guides arrived from Innertkirchen and Guttannen, and with them, eight men in all, Hugi on August 18 started for the Finsteraarhorn.

Of his seven 'Steiger' Hugi mentions six by name—viz. Hans Lauener, Arnold Abbühl, Jakob Leuthold, Andreas Leuthold, Johann Moor, and Arnold Dändler. Of the Lauener and Abbühl I have already spoken. I am indebted to Pastor Lindenmeyer of Guttannen for particulars of the Leutholds.

The family hails from Unterstock, in the commune of Innertkirchen, but a branch settled at Im Boden about 1770, about which time the grandfather of our Jakob, viz. Johann, married Margaretha Bossli of that village. This Johann was for some time intendant of the Grimsel hospice, as was his son Jakob (baptised October 24, 1776; buried December 3, 1844). Jakob married on October 16, 1801, Regina, daughter of Kaspar Egger and Margaretha Abbühl (baptised September 25, 1778; died February 26, 1855; probably an elder sister of Arnold Abbühl of Finsteraarhorn fame). They

¹⁹ Probably the Capricorn. It is interesting to hear that Hugi was satisfied with Seiler's at Münster, Bertha's at Obergestelen, Müller's at Hospenthal, and especially with the hospitality of Leuthold at the Grimsel. But he complains bitterly of the roughness, incivility, and extortion at the Sauvage at Meiringen, so next time went to the more friendly Bär.

had five daughters, the eldest of whom, Margaretha, married in December 1827 Peter Zybach, the well-known intendant of the Grimsel hospice; and two sons, Jakob, called 'der Herrenführer' (baptised September 13, 1807), subsequently celebrated for his ascent of the Finsteraarhorn;²⁰ and Kaspar (born 1820), drowned in infancy. Jakob Leuthold married twice—first, in 1823, Barbara Rueff of Meiringen, divorced in 1829; and secondly, in 1831, Anna Inäbnit of Grindelwald (born 1808; died 1877), who survived him many years. They had five sons, none of whom seem to have become guides, and three daughters. By marriage, Leuthold's family became related to the Laueners of Lauterbrunnen (1858) and the von Bergen of Willigen (1877). Leuthold died on August 16, 1843, at his home, 'An der Lehn,' im Boden, near Guttannen, 'from typhoid fever with hemorrhage,' as the register gives it.

Andreas Leuthold was born at Innertkirchen on April 15, 1792, and was killed while chamois-hunting on February 25, 1846. He married on March 14, 1822, Katharina Abplanalp, and left two daughters. He was brother of Jakob Leuthold, senior (1776–1844), and, like his nephew, a guide of some repute.

Johann Moor belonged to Obermaad, near Gadmen. Arnold Dändler (*recte* Tännler) lived at Schwendi im Boden, near Guttannen, so he was a neighbour of Jakob Leuthold, of Finsteraarhorn fame.

On August 19 Hugi's party went by the Kessithurm and the Bärenegg, reached the Oberaarjoch at 3 p.m., and crossing the Studerfirn gained the Rothornsattel at 6 p.m., just as a snowstorm came on, where they found traces of the Meyers' bivouacs of 1812. It gave Hugi, seconded by Jakob Leuthold, some trouble to persuade the men to remain and construct a stone-hut.²¹ Next morning the weather mended, and Hugi decided to reconnoitre the S.W. side of the peak. They descended to the Fiescherfirn and mounted it²² in the direction

²⁰ *A.J.* xxvii. 263 seq., with portrait of Leuthold.

²¹ See the frontispiece of Hugi's *Alpenreise*.

²² It was here that Hugi questioned Abbühl about his line of descent on August 16, 1812, and about the position of the Finsteraarhorn. Now, seen from this position the top of the Finsteraarhorn, although somewhat masked by the 'minor summit,' is quite distinct (see photograph in *S.A.C.J.* xlii. p. 359). So when Abbühl, standing near P. 3270, pointed to the Finsteraarhorn as lying behind and above a hanging glacier that descended from the main S.E. arête, he was quite right. But Hugi, prejudiced by the absurd statement of Zschokke that the guides

of a snow ridge that seemed to connect the Finsteraarhorn with the 'Walcherhörner,' as Hugi calls the whole range,

of 1812 started from the Oberaarhorn to climb the Finsteraarhorn, ridiculed his guide's perhaps hesitating indications, and proceeded in a direction to which Abbühl could not possibly object, since the 1812 party had, when it was too late, realised that it presented a much easier way to the summit.

I do not accept two other of Capt. Farrar's criticisms of Abbühl. One is his alleged confession that he never reached the actual top. Hugi gives it in two forms. In 1830, he says (*Alpenreise*, p. 172): 'When we reached at last the said height (which I interpret to be the Hugi-sattel), he withdrew his pretension—(*er wollte das Finsteraarhorn nicht mehr erstiegen haben*).' In 1831 Hugi is more precise (see *S.A.C.J.* xxvii. 385, and *A.J.* xxvii. 267): 'He declared repeatedly that he had made a mistake sixteen years ago in respect to the highest point, and that he had not ascended the Finsteraarhorn.' Now, one cannot help thinking that Hugi laid stress on this, to say the least, questionable retraction, because Dr. R. Meyer, in his reply, proposed to bring evidence to the contrary. I have in a previous article given one reason why that evidence was not published till 1852. The other may be this: When Dr. Meyer, on January 6, 1831, published a note in the *Aufrichtige und wohlerfahrene Schweizerbote* to the effect that he was preparing a new issue of Zschokke's account of 1813, based on the MSS. and corroborated by testimony for the real ascent, he was surely not aware that, out of his three witnesses, two, Volker and Abbühl, were dead. When he discovered this, and at the same time realised by Hugi's answer in the number of January 13, that his own credibility was not contested, he may have dropped the matter from indifference to the reputation of a dead guide, but surely not 'in sheer despair of ever arriving at the truth,' as Capt. Farrar thinks. Doubtless Dr. Meyer remained firm in his belief of his guides' ascent to his death.

The other point on which Capt. Farrar lays stress is that Abbühl in 1828 equally failed to convince the other guides, some of them his fellow-servants of the Grimselwirth while the Leutholds and he lived in the same village. Now, in 1828 the real question was not whether the ascent by the S.E. arête was feasible but whether the N.W. arête offered a better route. The decision was not left to the guides. As Jakob Leuthold put it, Hugi had to issue the order, and they would obey as best they could. Moreover, Abbühl outranked by age, position, and fame the others, and his relationship to the Leutholds surely prevented their expressing doubts of him even if they had any. The whole party was also demoralised by the previous bad night and the evident indecision of Hugi's plans. Moreover, the bad terms on which Abbühl was with Hugi since the start prejudiced the expedition.

including the Agassizhorn and the Grindelwald Fiescherhörner. It seemed impossible to gain the summit by the rocky cliffs on their right, so a circuitous way was chosen which brought them to the frontier ridge between the Fiescher- and the Finsteraarhorn glaciers. They gained it probably at the spot named, since 1862, Hugiattel.

Hugi, with the four best men, attempted to follow the N.W. arête, but a furious wind, severe cold, and the breaking of a cornice by which Hugi and Tännler nearly lost their lives, brought the party to a standstill, 'when they were only 200 ft. distant from the top.'²³ They returned the same way to the Rothhornsattel, hurried in bad weather over the Oberaarjoch to the Oberaarhut, reached at nightfall. Towards noon of August 21 they regained the Grimsel, where bad weather kept them for some days.

On August 25 he crossed with Lauener the Grimsel to the Valais. On August 27 he ascended with Lauener and some porters from Laax by the 'Mörileralp' to the ridge dividing it from the Aletsch glacier, crossed the Elsilücke to the glacier and the Aletsch lake, intending 'to penetrate into the glacier region between the Jungfrau and the Finsteraarhorn.' But the incapacity of his porters and bad weather obliged him, after some excursions, to redescend to Laax. Thence he made two excursions—one by Grengiols and the 'Mehlfluh' towards the Bortelhorn, the other by Aernen to Binn, and from there by Heilig Kreuz and the Langthal 'to the highest crest of the Pennine Alps.' On this occasion he was accompanied by three men, all ignorant of the region, Hans Lauener from Lauterbrunnen, and two porters from Laax. He seems to have gone straight up from Heilig Kreuz by the Kriegalp valley to the Kriegalppass, followed thence the frontier ridge in a N. direction, keeping on the Swiss side under the Güschihorn and the Cherbabung and crossing the Güschi glacier, the Wannen glacier, and the ice-field (unnamed in S. map) between the Fleschenhorn and the Schwarzhorn. Hence he found his way down to the Furggelti and by it to the Hockboden or the Maniboden, and so to Giessen, where he passed the night. The next three days he passed in the Binnthal, engaging the 'crystal hunter,' Franz Weltscher, who gave every satisfac-

²³ Hugi no doubt underrates the distance. The difference is 186 mètres, and the incident must have taken place not far above the Hugiattel, as only in the lower part of the arête do cornices occur.

tion. With him Hugi mounted again twice more 'by the rocky mountains directly to the crest of the Alps.' He regained the Rhone valley, and went up it to Münster, visiting on August 31 the Münster glacier. On September 1 he went up the Eggenthal to the foot of the Griespass and over the Nufenenpass to Airolo; and on September 2, over the Gotthard to Hospenthal. He and Lauener then made geological excursions to the St. Anna glacier, the Unteralp, the Wyttengewasser glacier, the Lucendro lake, and, on September 4, the Bätzberg. They crossed, on September 6, the Sustenpass from Wassen to Gadmen. Probably still with Lauener, he visited the Wendenthal, 'between the Titlis and the Urazhörner,' ascended with great risk the rocks of the Titlis towards the Titlisjoch, and visited the Wenden glacier. He next went down to Hasli im Grund, whence his former fellow travellers, the men of the 'Spittler,' on September 8, conducted him in triumph on horseback to the Grimsel. With the Count v. Paar from Vienna, he made on September 9 and 10, excursions to the Rhone- and the Unteraar glaciers. They then went down to Meiringen, lodging at the Bär. Hugi returned to Soleure.

As 1828 was evidently a record year for the guides and porters in the Oberland, I have drawn up a sort of schedule of their doings. Then, as now, one may distinguish the Lauterbrunnen men, the Grindelwalders, and the Hasli men. The wages were the same for guides and porters—i.e. 4 (old) francs if the guide fed himself, 2 (old) francs if the traveller provided for him.²⁴ Evidently the latter method was adopted by Hugi and Rohrdorf, and probably by Brown and Slade. Two old francs are equivalent to 2 francs 90 centimes, present Swiss money, but the purchasing power of money in 1828, compared with 1913 (to say nothing of war-time), was double or more. Our list will also show what the rapid development of guidecraft meant for the respective centres on one hand, and for the advancement of mountaineering on the other.

A. LAUTERBRUNNEN MEN.

Peter Bischoff.—August 2-4, with Hugi: Roththal; August 5-7, with Rohrdorf: Kalli; August 20-22, with Brown

²⁴ Wyss: *Reise in das Berner Oberland*, vol. i. p. 101. From Fenimore Cooper (*Excursions in Switzerland*, vol. ii. p. 729) we learn that 'Six French francs (= 4 old Swiss francs) was the established price for a guide in Switzerland, he paying his own expenses.'

and Slade: attempt on Jungfrau; 9 days' service; wages about 27 francs and keep.

Hans Lauener, the chamois-hunter.—August 2 to September 20, with Hugi: Roththal, Strahlegg (not traversed), Urbachsattel, Siedelhorn, Oberaarjoch (twice), Rothhorn-sattel (twice), Hugi-sattel, Elsilücke, Kriegalppass (from N. only), Münster glacier, Nufenenpass, St. Anna glacier, Unteralp, Wyttengewasser glacier, Bätzberg, Sustenpass; 52 days' service; wages about 168 francs and keep.

Johann Lauener, the guide.—August 2-4, with Hugi: Roththal; August 20-22, with Brown and Slade: attempt on Jungfrau; 7 days' service; wages about 18 francs, etc.

Christian Lauener.—August 2-4, with Hugi: Roththal; August 20-22, with Brown and Slade: attempt on Jungfrau; 6 days' service; wages about 9 francs, etc.

Gertsch, jun.—August 20-22, with Brown and Slade: attempt on Jungfrau; 3 days' service; wages about 9 francs, etc.

B. GRINDELWALDERS.

Christian Roth.—August 5-9, with Rohrdorf: Kalli and journey to Berne and back; August 19-29: Mönchjoch (twice), Sattelknopf; September 8-11, with six others: Mönchjoch (twice), Jungfrau (to Roththalsattel only); 20 days' service; wages about 48 francs plus 21 francs from the Government.

Ulrich Wittwer.—August 21-29, with Rohrdorf: Mönchjoch (twice), Roththalsattel; September 8-11, with six others: Mönchjoch (twice), Jungfrau; 13 days' service; wages about 27 francs plus 21 francs, etc.

Peter Moser.—August 21-29, with Rohrdorf: Mönchjoch (twice), Roththalsattel; September 8-11, with six others: Mönchjoch (twice), Jungfrau; 13 days' service; wages about 27 francs plus 21 francs, etc.

Peter Baumann.—August 9-12, with Hugi: Strahlegg (not traversed); August 21-29, with Rohrdorf: Mönchjoch (twice), Sattelknopf, Roththalsattel; September 8-11, with six others: Mönchjoch (twice), Jungfrau; 17 days' service; wages about 39 francs plus 21 francs, etc.

Hildebrand Burgener.—August 9-12, with Hugi: Strahlegg (not traversed); August 21-29, with Rohrdorf: Mönchjoch (twice), Jungfrau; 17 days' service; wages about 39 francs plus 21 francs, etc.

Peter Roth.—August 9–12, with Hugi: Strahlegg (not traversed); August 21–29, with Rohrdorf: Mönchjoch (twice), Roththalsattel; September 8–11, with six others: Mönchjoch (twice), Jungfrau; 17 days' service; wages about 39 francs plus 21 francs, etc.

Christian Baumann.—August 21–29, with Rohrdorf: Mönchjoch (twice); September 8–11, with six others: Mönchjoch (twice), Jungfrau; 13 days' service; wages about 27 francs plus 21 francs, etc.

Hans Baumann and Peter Burgener.—Herds at the Zäsenberg pastures. August 26–29, with Rohrdorf: Mönchjoch (twice); 4 days' service; wages about 12 francs, etc.

Christian Schlunegger, Jakob Grüneisen, Hans Bohren, Peter Burgener, Christian Bernhard.—August 21–26, with Rohrdorf: Stieregg hut, Kalli, Eigerhöhle, etc.; 6 days' service; wages about 18 francs, etc.

C. HASLI MEN.

Melchior Keller, chamois-hunter. —August 16, with Hugi: from Rosenlauri by the Urbachsattel to Im Hof; 2 days' service; wages about 9 francs.

Arnold Abbühl, Jakob Leuthold, Andreas Leuthold, Johann Moor, Arnold Dändler (Tännler).—August 18–21, with Hugi: Oberaarjoch (twice), Rothhornsattel (twice), Hugi-sattel; 5 days' service; wages about 18 francs each.

I return now to Hugi's wanderings in 1829.

On July 16 he left Soleure, with Peter Gschwind and Joseph Zemt. At Lauterbrunnen his friend Jakob Roth and the guides Peter Baumann, Peter Bischoff, Hans Lauener (the chamois-hunter), Christian Lauener (his brother), and Johann Lauener (the guide) joined the party. They started early on the 18th, and at 1 p.m. reached the entrance of the Roththal.²⁵ As the weather was fine, they proceeded up the valley and built a stone hut.²⁶ Hugi, with Peter Baumann and another guide, meantime went on to reconnoitre. His topographical description is, as usual, more copious than clear, but by what I understand him to say about the contact lines of granite, gneiss, and limestone, and from what he states he saw, I incline to think they ascended to the so-called Inner

²⁵ See Plate, *A.J.* xxx. opp. p. 284.

²⁶ The spot may be in the neighbourhood of the old S.A.C. hut. The building is reproduced in *A.J.* xxx. opp. p. 285.

or S.W. arête of the great splayed buttress that makes so great a show from the Ober Steinberg,²⁷ followed it for some time towards the Hochfirn, then traversed horizontally to the outer or W. arête forming the S. bank of the Silberlautobel, descended this for some time, and regained the entrance of the Roththal at nightfall. If the other guide was Peter Bischoff or Christian Lauener, the party covered ground familiar to him from a former expedition.

After a comfortable night in the well-covered and tightly-closed hut, Hugi, with the guides, went to the upper valley, whence in 1828 he had intended to cross to the Valais. But the guides were reluctant, Baumann asserting that in this direction they could neither reach the Jungfrau nor descend to the Aletsch Glacier. With some trouble the party gained by a hanging 'firn' the first rocks, but the work of cutting steps in the hard snow of the couloir was so tedious, and the Lauterbrunnen men showed so little zeal, that Hugi was forced to abandon the enterprise and descend to the Stufensteinalp. They had overtopped their cabane by only 100 m. One cannot help thinking that the rivalry between the Lauterbrunnen and Grindelwald men contributed much to the failure of the expedition.

On July 20 Hugi descended to Trachsellaenen and remounted thence on the right bank of the Lütschine by the Hohenalp (which he mentions), the Breitlaenenalp, and the Tanzhubel, to the Oberhornalp, and thence went down to the Ober Steinberg. It seemed to him that a passage to the Valais would be possible by the Breithorn Glacier [the Schmadrijoch], while the ascent over the much-crevassed glacier between the Breithorn and the Tschingelhorn [the Wetterlücke], or the attack on the latter by its rock face, was apparently hopeless. Bad weather on the following day, July 21, prevented all real attempt. So the party descended to Lauterbrunnen. As the weather mended on July 22, Hugi remounted to the Ober Steinberg. To gain these huts he took a roundabout route, ascending first the Sefinen glen to the 'Kirchbalm,' which he visited. Thence, with Peter Baumann alone, as the Lauterbrunnen men preferred to go round by Stechelberg and Trachsellaenen, Hugi ascended to the 'Steinengrat,' whose height he reached probably at P. 2826. From here he saw the Ober Steinberg, 'below in the nebulous depth.' But they failed to reach it directly by

²⁷ See Plate, *A.J.* xxxi. opp. p. 217.

descending in a southerly direction. So they went eastward over loose stones and débris (here Hugi sprained his ankle), round the Ellstab, and descended by a gap he calls Busetjoch ²⁸ to the Ober Steinberg.

On the early morning of July 23 Hugi, with eight guides and porters, started for the Lötschenthal. They went by the Tschingeltritt—Hugi finds this passage not difficult 'for naturalists and capable guides,' but thinks a ladder and a few artificial steps would be useful for tourists—and 'rounding the Mutthorn by its left side,' reached the Petersgrat ²⁹ at noon, although he spent much time on geological and meteorological observations and measured many angles for the sake of his map. Note also that he was nearly lame from his sprained ankle, remaining an invalid for six weeks, and his personal failure on the Finsteraarhorn may be mainly ascribed to that.

From the Petersgrat the party did not descend directly S. by the Telli glacier, but in order to find out whether a descent from the 'Breithornsattel' [the Wetterlücke] was possible if one succeeded in reaching it from the N., they rounded the Tschingelhorn till just below that col, and then descended, by the Ausser Thal probably, to the main valley and down to Kippel, where they arrived early in the afternoon. They had some trouble to find quarters in the curate's house for so many and so strange-looking men. The next day, July 24, Hugi remounted the Lötschen valley, conversing much *en route* with the natives—his description of their life and manner is the first given by any tourist—so that he reached the foot of the Langen glacier only at 3 P.M. They ascended it for about an hour, along the left bank apparently. Arrived on the last grass at the foot of a snow lane descending from the 'Nesthorn' [the Lötschenthaler Breithorn], they built a stone hut,³⁰ where they passed a very cold night, without fuel, the thermometer sinking to -8° Réaumur.

²⁸ The name is evidently taken from the Bussenalp just N. of the col. It may be the 'Schneeige Lücke' of the local tradition. For this gap and Hugi's denomination in that region, see *Climbers' Guide to the Bernese Oberland*, vol. i. pt. ii. pp. 49–54.

²⁹ I think the *Climbers' Guide* (l.c., vol. i. pt. i. p. 50) is right in assuming that the name of this col derives from Peter Baumann, Hugi's leading guide on that expedition. At all events it was given by Hugi. (*Alpenreise*, p. 270.)

³⁰ The spot is marked with a $\square$ on Hugi's map, and a view of the hut is given in *A.J.* xxx. opposite p. 285 (No. 3).

Hugi had some trouble to induce the Lauterbrunnen men, on the chilly morning of July 25, to follow him into the unknown regions of the Aletsch Glacier, and more than once the comforting wine flask eased their weary tramp of five hours up to the Lötschenlücke. Leaving at 9.30 A.M., they reached the old bivouac place on the Grüneck about 1.30 P.M. All, and especially the leader, Peter Baumann, were drenched to the skin by wading through and occasionally falling in the abominable morass that blind admirers of scenery call the 'Place de la Concorde.' Hugi intended to remain here for at least eight days, but the weather got rapidly worse and the guides were unwilling to do the usual masonry work. So the party descended in four hours to the huts of the Märjelenalp. As these were already occupied by 'a hundred of half-naked Italian people,' engaged in digging a tunnel to drain the Märjelen lake into the Fiescher valley, they resolved to descend to Fiesch. So finishing their wine, and leaving the uneatable black bread bought at Kippel and other food to the herds of the Märjelenalp, they stumbled down, partly in pitch dark, over rock-cliffs and débris to Fiesch, where they arrived at 11 P.M., thoroughly exhausted after a twenty hours' journey. Even the 'giants' Baumann and Zemt had enough of it.

Sunday, July 26, was necessarily a day of rest, and as the weather remained uncertain, Hugi dismissed the six Oberlanders, who went back by the Grimsel to Grindelwald and Lauterbrunnen. He took advantage of his stay at Fiesch to search, without result of course, for traces of the old route from Fiesch to Grindelwald by the Walchergrat. More fruitful was his excursion in Val Formazza with Peter Gschwind and Joseph Zemt, which enabled him to draft a geological profile of the mountains from Formazza to Obergestelen, but he did no climbs worth recording.

On July 30 he went from Ulrichen by the Oberthal and the Ulricherjoch, and along the N. side of the Siedelhorn range to the Grimsel. Thence, on July 31, he started with eleven men, all well laden with signal poles, materials for the hut to be built on the Unteraar Glacier, and victuals for several days.

At noon they reached the selected place, on the moraine near the Abschwung, and while the engineer Walker and Peter Gschwind began to trace out a stationary line for their glacier measurement, indicated on Hugi's little map, the rest erected between two granitic boulders a regular stone hut

that served as headquarters for the scientific staff of the party during the rest of the summer.³¹ I cannot enter here on that part of Hugi's work. He confesses himself that the inconstant weather did not allow him to push the triangulation as far as he wished. After three days' stay at the hut Hugi returned to the Grimsel, leaving Walker and Gschwind to continue their work on the glacier.

On August 4 he left the Grimsel once more, with J. Leuthold, Joseph Zemt, Joh. Währen, J. Moor, Kaspar Nägeli, B. Horger, and Klaus Fahner.

Of Leuthold and Moor we have already spoken. Nägeli was, to judge from his name, a Guttannen man; so was Fahner. I would remind the reader once more³² that it was not a Nägeli, but a Fahner, who, on August 14, 1799, led a detachment of French troops by a steep and difficult tract from Guttannen over the Nägelisgrätli (known under that name since 1760) into the rear of the Austrians, who held the position of the Grimselpass. It is curious that Hugi (p. 224) was unaware of this fact, although a Fahner and a Nägeli were in his service. I know nothing about Horger. Zemt was from Soleure—a strong, active, and trustworthy man. Währen belonged to St. Stephan, in the Upper Simmen valley. He was a son of Andreas Währen and Margaretha Schläppi, a stonemason by trade, residing at Innertkirchen.³³

They crossed the Oberaarjoch, the Rothhornsattel, and descended to the Fiescherfirn, traversing thence along the S.W. face of the Finsteraarhorn. The only site for the usual hut³⁴ was an islet of débris in the snow, probably where now the Finsteraarhorn hut stands. Two of the porters, Horger and Fahner, proved utterly useless, and are immortalised by Hugi as prototypes of a since well-known specimen, who eat a lot, work little, drag the blankets off their sleeping comrades, and drink the wine during the night.

By six the hut was finished, and, as a snowstorm raged, they soon crept in and tried to sleep. Next morning, August 5, the cold was intense, and fresh snow rendered climbing impossible. On the Rothhornsattel they were caught in a dense mist, and Hugi managed, solely by aid of

³¹ The hut is marked on both Hugi's maps and figured in *A.J.* xxx. opposite p. 285, as number 1.

³² See *Climbers' Guide to the Bernese Oberland*, vol. ii. pt. i. p. 3.

³³ *A.J.* xxvii. 297.

³⁴ See *A.J.* xxx. opposite p. 285, under number 4.

the compass, to find the Oberaarjoch, whence the party reached the Grimsel. The same evening the indefatigable Zemt started for the Unteraar Glacier to help Walker and Gschwind in the transport of the instruments.

After a rest of two days Walker and Gschwind returned to their work on the Unteraar Glacier. Hugi himself, on August 9, left the Grimsel at 9 A.M., with Jakob Leuthold, who persisted in joining the party, although ill, Moor, Währen, Zemt, and Nägeli. At 8 P.M. they were in their old gîte on the Rothhornsattel. They had a splendid evening with full moonlight. The old supply of fuel enabled them, for the first time in all Hugi's expeditions, to dry their shoes, stockings, and gaiters. After the meal Zemt and Leuthold washed and bandaged Hugi's swollen foot. Then they lay down on the stony floor, covered themselves with a great oil-cloth, and slept undisturbed.

Early on August 10 they started for the ascent of the Finsteraarhorn, taking with them only the necessary food, some instruments, and a pole 7 ft. long and as thick as a man's arm. With some trouble, as there was less snow and more ice than the previous year,³⁵ they reached the Hugi-sattel. Thence Hugi ascended in a north-westerly direction, till he could look down 'into a narrow snow valley bordered on the East by the Walchergrat, on the West by a lower range of cliffs [the Grönhörner], that descended from the Fiescherhörner and ended as a small glen in the Fiescherfirn.' He thought that, if the legendary passage from the Valais to Grindelwald led, instead of over the Aletsch Glacier, over the Fiescher Glacier, which was more probable, it must have been by that particular valley. After some observations of that kind he returned to the Hugi-sattel, and the party now started to climb the Finsteraarhorn. With some difficulty they gained by steep snow patches 'a first and second step' of the arête. But to reach the foot of the final buttress, consisting of sheer rocks, Leuthold and Währen had to cut steps 'across an icy couloir that fell rapidly down' towards the W. probably. Much time was spent on that work, and meanwhile Hugi's swollen foot became quite benumbed. So when Leuthold returned to lead him over, the passage appeared too risky, as Hugi had not strength enough to plant his lame foot firmly on the ice. Moreover, Leuthold declared openly

³⁵ That is, to my mind, the real meaning of Hugi's (p. 209) perplexing phrase, 'Bei so tiefem Stande des Firns.'

that, if Hugi slipped, he could not move to save him. An attempt to creep over in stockings failed ; nor could the guides help their employer with the rope. Neither of the others cared to pass that *mauvais pas*. So Hugi had to remain where he was,³⁶ perched on the edge of the arête, while Leuthold, with the cumbersome pole on his back, joined Währen on the other side of the couloir. The manner in which he did it would have caused Tyndall the same delight as Bennen's artifice on the arête of the Weisshorn in 1861. Hugi describes it as follows : ' He thrust his foot firmly into the first step, and let his shoe be slightly frozen to the surface to which he clung, then he drove with both hands his steel-pointed stick into the wall, held on it, and took a stride to the second step. When he was fast there, he drew out his stick,' and so on. Then both clambered speedily up the rocks and gained the top. There they built a pyramid of rough stones 7 ft. high, and planted on it a flag that was instantly seen from the Grimsel, and, later, from Berne and even Soleure. They found no trace of a previous ascent it seems ; but as the signal of 1812 was a simple pole, this might have vanished long ago. Leuthold and Währen left some things that had served for the flag—it consisted of iron rods screwed together and covered with a black waxcloth, which were found in 1842 by Sulger's guides. They went over the sharp crest of the summit that was free from snow and ice, towards the south, till they saw the region of their hut on the Rothornsattel. Then they returned to Hugi and the others, somewhat agitated by their hazardous climb. Währen had even fainted twice while working at the signal. Before leaving the 'sattel'

³⁶ He calculated that he was 13,033 French ft. (about 4120 mètres) above the sea, and only 200 ft. below the top. Both figures are erroneous. The difference of height between the Hugi-sattel and the top is 186 m., and the spot where Hugi rested in 1829 is certainly not much higher than that where he turned back in 1828. His 'times' also are confused. Once he says (p. 209) that he was on that spot at noon already ; then (p. 208) that he waited nearly two hours while Leuthold and Währen cut steps across the couloir ; further (p. 207), that the two were busy building a pyramid on the top for three hours. On Tables VI and VII he notes an observation made 'on the first step' (12,606·2 ft. above the sea) at noon, and another 'on the second step' (13,033·2 ft.) at 1 p.m. Now, as the two guides were back at Hugi's resting-place shortly after 4 p.m., we may reasonably allow them four hours for the ascent from the Hugi-sattel and the return to it.

Hugi deposited in the rocks a thermometrograph enclosed in a bottle.

Then, having emptied their wine flasks, they began the descent. It was slow and difficult because of Hugi's condition, the softness of the snow and big crevasses. The party was roped, and when the leader Leuthold testing with his stick suspected the snow bridges, he crossed them on his stomach and pulled the others over with the rope. They reached their gîte by nightfall, but as bad weather was threatening they decided to go on to the Grimsel at once. Near the Oberaarjoch Hugi's foot was so badly swollen that he proposed that he and Zemt should seek shelter in the rocks of the Oberaarhorn, while the others descended to the Oberaaralp for help. Leuthold promptly took Hugi on his back, relieved from time to time by Währen and Zemt. They reached the Oberaaralp before midnight.

The next morning, August 11, Hugi, packed in a back-basket, was carried by Leuthold and Währen alternately down to the Grimsel. Eight days later, taking leave of his good comrades, he descended on horseback to Guttannen and Im Hof.

Alone with Zemt he made an excursion in the Urbach valley (August 18), and crossed the Brünig (on August 19) to Lungern and Stans; then to Wäggis and, on horseback once more, over the Rigi (August 21) to Goldau. Thence they went to Küsnacht and Lucerne.

Here Hugi engaged three porters, the brothers Franz, Johann, and Marx Huber from Kriens, to help Zemt with the heavy luggage. With four men and, as he thought, provisions for three days, he went on the evening of August 22 to Eigenthal, at the N. foot of the Pilatus. The next day they mounted by pastures and rough ground to the 'Kriesiloch,' at the foot of which they halted for lunch at 2 P.M. It is amusing to read of Hugi's experiences with worthless porters repeated once more. In two meals, one near the Kriesiloch, the other at the border of the marshy 'Lake of Pilatus,' the victuals were nearly consumed; in vain the Hubers tried to haul the big basket up the narrow Kriesiloch, till Zemt, who had gone ahead with Hugi, redescended, charged the whole load of eighty pounds on his broad shoulders, invited one man to ride on the load as extra weight, and remounted the Kriesiloch to the Tomlishorn, smoking his pipe! The party ascended the 'Esel,' the highest summit of the Pilatus. On the return to the Eigenthal the porters, in storm, mist, and rain, lost the

way on their own mountain and arrived at Eigenthal towards midnight (August 23), while Hugi and Zemt, descending as best they could, came in two hours sooner.

From Lucerne Hugi went by the Entlibuch, Schangnau, and the Schallenberg to Thun. There he waited four days, intending to return by the Simmenthal to the mountains, but as the weather remained bad he returned to Soleure.

It is mostly the fault of Hugi himself if we know so little about his alpine doings in 1830. He published no detailed account, and his isolated statements in later publications are vague and often disfigured by slips of the pen or faults of memory. For July and August Hugi planned a new expedition to the High Alps. He had provided himself with more scientific instruments than ever, and engaged the botanist Roth, the painter Disteli, and the engineer Walker as his staff. What became of the plan to survey a new portion of the glaciers of the Bernese Oberland and to make geological profiles like those in the *Alpenreise*, we do not know. The only climb we hear of was an ascent to the Mönchjoch. He describes it as follows: ³⁷ 'In 1829 [*recte* 1828] some Grindelwalders went easily over the Walchergrat, but in 1830 the hanging névés and glaciers descending from that arête were so broken up in wild séracs that none of these men recognised the spot where they had been. So possibly no expedition was so troublesome and hazardous as that we were obstinate enough to carry through.' In the same year Hugi may have visited his hut on the Unteraar Glacier, but we have no certainty about the fact. On p. 106 of his 'Wesen der Gletscher' Hugi notes that he marked in 1830 an immense block on the moraine, near the Abschwung, and that he found the same in 1836, with the date still painted in oil on it, but several thousand feet lower down as a glacier table in the middle of the glacier. But on p. 79, where he seems to allude to the same block, he tells us that he reached it by way of the Gauli Glacier and the Ewigschneehorn in 1830. It is, however, certain that this visit was made in 1831, as we will see.

For 1831 an expedition in the glacier region near the Aletschhorn was planned, but at the last moment, for an unknown reason, the plans were altered. So, on Saturday, August 13,

³⁷ *Winterreise*, p. 47. At p. 54 he tells that he, in 1831, stood on the 'snow arête behind the Eiger'; but we shall see that the campaign of 1831 pervaded the regions of the Grimsel, the Furka, and the Gotthard, and ended at Lucerne.

Gottlieb Studer, who had been invited in the spring to join Hugi, left Berne with Hugi, Zemt, and a new porter, Stadlin from Zug, and slept at Unterseen. On Sunday, August 14, they went by Interlaken, Brienz, and Meiringen to Im Hof, near Innertkirchen. There they engaged as guides Andreas Leuthold, uncle of Jakob, and Johannes Währen. Jakob Leuthold, who met them by chance coming from Meiringen, was bound for the Grimsel, but promised that he would meet them next day on the summit of the 'Aargrat,' i.e. the Gaulipass. When Hugi and Studer, with A. Leuthold, Währen, and Zemt, left the inn at Im Hof on the early morning of August 16, the weather was damp, and some showers fell during their march up the Urbach valley to the Urnenalp. Rain also accompanied them the next morning, August 17, over the Gauli Glacier and the Grünbergli to the col. They left the 'Happislümmelti'³⁸ (9127 m.), the lower of the two gaps that form the Gaulipass, to their left and steered for the higher one (8206 m.), next the foot of the Ewigschneehorn. They crossed the bergschrund, Leuthold leading, Währen bringing up the rear, the others holding to the rope with their right hands. On the col they listened in vain for the signal shots of Jakob Leuthold, who had supposed they would not come in such bad weather. Hugi and Studer did *not* ascend the Ewigschneehorn, which—so Studer says in his diary—they could have reached from the col in about an hour. They descended to the Lauteraar Glacier, passed the old and new 'Jäger Herberge' ('A.J.' xxxiii. 95, note 33), and visited near the Abschwung the hut erected by Hugi in 1829. It was already in ruins. Only some laths and heaps of rhododendron bushes remained to indicate the spot that was 504 ft. farther from the Abschwung than in 1829. In good time they reached the Grimsel. On August 17 Hugi reposed, while Studer and Zemt ascended the Siedelhorn. Leuthold and Währen were dismissed; Stadlin, who had taken the high road by Guttannen and the Handeck, arrived with the barometer. So on August 18 the four went by the Mayenwang and the Furka to Realp, where they stayed at the house of Father Brunner. Studer left Hugi on August 31 at Lucerne. Together they descended to Hospenthal, went up to the Gotthard and back, and down the Reuss valley to Amsteg and Altdorf. But while the others

³⁸ As for that name, see *Climbers' Guide to the Bernese Oberland*, vol. ii. p. 136.

were engaged in geological studies which required no serious climbing, Studer was permitted to ascend, on August 22, with the innkeeper of the Gotthard, the Fibbia; on August 23, alone, the Winterberg or Piz Orsino, and on August 27, with Melchior Trösch, the Kleine Windgälle. So this campaign ended with greater advantage, from the mountaineering point of view, for the volunteer than for the leader. No doubt Studer was useful to his employer, collecting minerals and geological specimens in situations beyond the reach of Hugi.

In 1832 Hugi made something new in the record of mountaineering, viz. a winter expedition to the glaciers of Grindelwald. His idea was that the thick and durable covering of snow in the Alps might allow him to reach spots that had proved inaccessible in summer 'during the low state of the névés and glaciers.' The aim, to attain which he underwent great hardship and serious risk, not to speak of considerable expense, was in the first line scientific. It concerned questions of glaciology that had been raised by De Saussure, Charpentier, and others. I am not competent to judge those matters, so I shall confine myself to a mountaineering narrative.

At noon, on January 4, he arrived at Grindelwald with Zemt and the necessary instruments, after an adventurous journey in bitter cold. A few days were passed with experiments on the snouts of the Upper and Lower Grindelwald glaciers. Then, on January 8, after a 'tremendous' breakfast, a start was made, although the weather was threatening, with eight herdsman and chamois-hunters and provisions for two or three weeks. He mentions Baumann, probably Peter, Burgener, and Roth 'der Felsenmann,' and describes the heartbreaking scenes of departure. All the guides had spikes of steel 2 inches long screwed in the heels of their shoes, and Hugi was only too glad to follow their example. Hugi³⁹ ridicules travellers and alpine writers who recommend foot-irons as absolutely indispensable. Hugi finds them, in summer, unnecessary on turf or grass, superfluous on glacier and 'firn,' as those are either granulous or soft, and decidedly dangerous on rocks. Good nailed shoes, not too heavy, are quite sufficient in his mind.

With enormous trouble and danger the vanguard of the caravan reached, at half-past three P.M., the place where Hugi

³⁹ *Ueber das Wesen der Gletscher und Winterreise in das Eismeer*, pp. 28-29.

supposed the Stieregg hut to be. A prominent snow mound showed its position, but night appeared before they could manage to enter it from above. Here they remained thirteen days, continuing the experiments on the nature of the glaciers, their grain and structure, depth of the crevasses, etc., and making excursions. Three of these are worthy of record. On the fourth day of their stay at the hut, *i.e.* on January 12, Hugi with the three best guides set out for the Strahlegg, while two others were sent out towards the Walcherhörner to search for a cave or other shelter for the night. The others remained at the hut busy with household work and scientific observations. This time Hugi followed the right bank of the glacier beyond the Bänisegg along the foot of the Schreckhörner. They went fast in high spirits, because of the good wine they had with them, and reached the Strahlegg at noon. Once more Hugi persuaded himself that 'the best passage from Grindelwald to the Aar glaciers and the Grimsel goes over the snow lane on the Klein Lauteraarhorn,' *i.e.* the Strahleggpas (8351 m.) of recent guide-books and maps. Hugi did not try to descend to the Strahleggfirn, but 'hastened over towards the Walchergrat.' Behind the 'Grünenwang' they found their two comrades shivering and miserable. During the whole day they had in vain sought for the desired shelter. So the plan to explore the Walchergrat the next day in the direction of a col S. of the Klein Fiescherhorn, or between the two Fiescherhörner, was given up and retreat begun at once. It proved difficult and troublesome, as night had fallen and snow covered everything. Even Peter Baumann, 'the Gletscherhirt,' was unable to find the big boulder against which his hut was built. In the séracs caused by the junction of the Grindelwald-Fiescherfirn and the Lower Grindelwald glacier, they became so entangled that for a moment they thought of passing the night in a crevasse into which they descended with the help of the rope. But the cold was too intense. So they remounted to the surface and continued, roped, the wearisome and dangerous traverse till they reached towards midnight the Stieregg hut. Another day, on January 16 probably, Hugi made an attempt to reach the Mönchjoch, but the day proved too short, and wisely he contented himself with reaching the great plateau below the Bergli rocks. On January 18 Hugi travelled up and down the whole length of the Grindelwalder Eismeer. He seems to have ascended nearly to the Finsteraarjoch, but not to its top. On January 21, as the weather broke and 'föhn' set in, the party returned in

great haste to Grindelwald, which they reached safely, going by the Bäregg as on the way up. The descent was even more risky than the ascent had been. Two days later he ascended the Faulhorn in frosty weather, but was blocked in the hut there for three days, because soft snow on the heights rendered an immediate return too dangerous. On the frosty morning of January 26 he descended to Grindelwald, and soon afterwards went home.

Later in the same year Hugi attempted to climb the Jungfrau. We possess only indirect accounts of this assault that ended at some distance below the Roththalsattel. Desor⁴⁰ and Forbes⁴¹ tell us that in 1841, when their party slept at the Märjelenalp before their ascent on August 28, a man was despatched to the village of Fiesch to fetch a ladder that had served Hugi and Jakob Leuthold in 1832 and was left by them on the Jungfraufrn. It was found and brought down later by a peasant of Fiesch who, having repaired it, claimed it as his own property. It would seem that Hugi's party had come to that spot from Grindelwald over the Mönchjoch, and that the attempt was defeated by bad weather somewhere near the Roththalsattel. It is odd that Hugi never speaks of this expedition.

As stated, we know little of Hugi's alpine career after 1832, save that he returned to his hut on the Unteraar glacier in 1836, and even later.

In conclusion, we will endeavour to say something about the literary merit of his two alpine books. Although Hugi was an enthusiastic climber and an educated writer, both are, judged from a modern standpoint, not so illuminative in form and style as the Meyers',⁴² and even Rohrdorf's pamphlets. We learn less from Hugi than from the others of the technique and practice of our craft in those bygone times. While we get some idea of Hugi's scientific equipment, we are told little about his commissariat. We learn that broth, chocolate, and ham were in favour with the party, and that they did not despise a good supply of wine. Indeed, when Hugi started for the Finsteraarhorn the first time, he took for himself and his seven 'steiger' a barrel holding thirty litres and a

⁴⁰ *Excursions et séjours dans les glaciers et les hautes régions des Alpes* (1844), pp. 277-8.

⁴¹ *Travels through the Alps*, new edition, edited by W. A. B. Coolidge (1900), pp. 440, 442-3.

⁴² See Capt. Farrar's remark, *A.J.* xxvii. 295.

couple of wine-bags filled with best Lacôte, reckoned to suffice for four days. Of course he also had spirits with him, and when, on January 8, 1832, Roth collapsed on the glacier below the Stieregg and refused to move, he was drenched with 'Kirschgeist' till he allowed himself to be led to the hut. It is a pity also that Hugi gives no details of the condition of himself and his men during their climbs. His general remark ⁴³ that there was no difference of pulsation, respiration, bodily temperature, etc., in the observations noted at high or lower stations, save those caused by exertion, fatigue, and especially fright, is but poor compensation for the missing tables of such observations. As students of alpine history, we miss accurate details of Hugi's climbs and routes and, above all, better maps. The great map entitled 'Uebersicht der Gletscher zwischen Grindelwald, Wallis, Hasle und Lötsch' is chiefly based on that of Wyss of 1816, and repeats all its errors. The new items in Hugi's map are a few names, the site of his huts, and a contour line marking the boundaries of névé and glacier. The map of the 'Unteraargletscher mit seinen Verzweigungen' ⁴⁴ is an extract from the greater and more detailed plan designed by Walker. It is based on a scheme of triangulation that was never finished nor issued, and was speedily deposed by Joh. Wild's survey of the Unteraar glacier while he was in Dollfus' service.

On the other side it is only fair to state that the geological chapters of Hugi's books are full of interesting and useful observations and notices, and show a veritable advance in our knowledge. Although his studies on the phenomena of glaciers are honest and trustworthy work, and his general theories met with sharp criticism from Charpentier, Agassiz, and Desor, and are not tenable in the light of modern knowledge, I think Professor Forbes does Hugi only justice when he says: ⁴⁵ 'He points out the correct method of observation: and although his work contains no accurate measures, he was perhaps the first who, by observing the position of a remarkable block upon the Unteraar Glacier, indicated how such observations might be usefully made, instead of trusting (as appears to have been the former practice) to the vague report of the peasantry.' And let us not forget that Hugi, after some hesitation, guided the discussion of the 'old route

⁴³ *Alpenreise*, p. 218.

⁴⁴ See Forbes' *Travels through the Alps*, new edition (1900), p. 437.

⁴⁵ *Travels through the Alps*, new edition (1900), p. 121.

over the Walchergrat ' into the right channel by his discovery that the entries in the parish registers of Grindelwald were dead against the tradition of a regular passage used by Valaisan wedding and christening parties⁴⁶ in the sixteenth century. And if in his early studies Hugi was driven to incorrect ideas as to the legendary passage and hence searched for a chapel of St. Petronella in the Fiescher valley, it was mainly because of the incorrect reading of the inscription on the old church bell of Grindelwald supplied to him, viz. :

SANCTA-PETRONELLA-ORA-PRO-NOBIS. 1044.

It is worth noting that in 1879 Gottlieb Studer, seconded by Friedrich Bürki, of whose alpine merits I will treat later, proved that this bell,⁴⁷ which was destroyed in the great fire of 1892, bore no date.

Hugi's alpine career began in 1822 and ended about 1842. It was, we may say, an honourable if not a splendid one.

NOTE.

By J. P. FARRAR.

Dr. Dübi will, I trust, permit the following remarks on his note 22. They are made with all the respect that is due to his acknowledged position as an able and acute Alpine critic.

Par. 1, line 14. Meyer's own words (par. 17 of my article ' A.J.' xxvii.) are :

' Auf dieser Seite, wo wir herabgekommen waren (westwärts) ist der Berg ganz ohne Schwierigkeit zu erklimmen,'

which surely only refer to the way they had just descended and not to a route *far away out of sight*, as no part of the N.W. arête would be visible.

Par. 2. We have Hugi's direct statement that Abbühl admitted that he had not reached the highest point in 1812. I showed in my article in ' A.J.' xxvii. the improbability of his having done so.

It should be noted that Dr. Meyer's words (on January 6, 1831) are : ' Hoffentlich wird es mir bis dahin [by next summer] noch möglich sein, Zeugnisse für die Ersteigung des Finsteraarhorns

⁴⁶ In his masterly article, ' Zur Frage des alten Passes zwischen Grindelwald und Wallis,' in *S.A.C.J.* xxvii. pp. 253-274, my late friend, A. Wäber, does not mention this special merit of Hugi. So I make good this oblivion.

⁴⁷ *S.A.C.J.* xv. pp. 512-5.

vorzulegen.' ⁴⁸ (It is to be hoped that by next summer it may be possible for me to present evidence of the ascent, &c.)

Dr. Dübi is able to point out that when Dr. Meyer wrote these words he may not have been aware that Abbühl had been killed on March 3, 1830. But no further 'evidence,' as we understand that word, was, in any circumstances, possible, as Dr. Meyer, on reflection, probably saw.

Par. 3. I cannot agree that 'in 1828 the real question was not whether the ascent by the S.E. arête was feasible but whether the N.W. arête offered a better route.' My view is that Hugi proposed to repeat the 1812 route, and for that very purpose took with him Abbühl, who led on that occasion. When Abbühl got, as I hold, to the Frühstückplatz and saw the two distinct summits ⁴⁹ he, according to Hugi, realised his error in thinking that in 1812 he had reached the *higher* summit. Dr. Dübi thinks he only realised this when he reached the so-called Hugiattel; but from that point he could not distinguish the two summits at all and would gain no fresh knowledge.

I have always abstained from accusing Abbühl and his companions of any intentional deception, but it should be noted that when Abbühl and Huber, after their reputed ascent of the higher summit of the Finsteraarhorn on August 15, reached Grindelwald on September 3 ⁵⁰ they, 'who a fortnight ago were . . . on the summit of the Jungfrau, told us that the ascent is easy and without danger. But to climb the Finsteraarhorn is, so they say, a very risky undertaking.'

This is not the kind of statement a reporter could invent or get hold of by misunderstanding: it obviously suggests a certain willingness of the two guides to accept an unearned honour, since the ascent of the Jungfrau had been made by the two Valaisans Volker and Bortes and *they themselves had no personal knowledge of the ascent.*

With the utmost respect for the great authority of Dr. Dübi, I venture to adhere to the opinion as to the *probable* course of events, expressed in my article in volume xxvii. of this Journal.

MONT DOLENT FROM THE GLACIER D'ARGENTIÈRE AND THE COL DES GRANDES JORASSES.

BY RAYMOND BICKNELL.

(Read before the Alpine Club, February 1, 1921.)

IN his valedictory address at the end of 1919 our retiring President expressed views on the subject of guideless climbing in the high Alps which, to those of us who indulge in that most fascinating branch of our sport, were more

⁴⁸ *S.A.C.J.* xxvii. 385.

⁴⁹ See the picture with this paper, where they look equally high.

⁵⁰ *A.J.* xxxiii. 97.