

son and his guides, who intended to undertake the same expedition, decided to abandon it. The unfortunate party are stated to have only left the hut at about 8 A.M., and to have been seen on the summit of the Jungfrau at about 5 P.M.

The following day three axes were found on the Rottalsattel, but it was only after a prolonged and dangerous search that the bodies were discovered on August 22, in the Rottal, some 3,000 feet below the Rottalsattel. The whole party are described as, and certainly had every appearance of being, thoroughly competent and well equipped mountaineers. The most lamentable accident, involving the loss of three young lives—the girl being only about 22—must be ascribed, purely and simply, to forcing an ascent in bad weather.

On August 24 Herr Konstantin Knöringer, of Baden, Switzerland, was killed while descending the *Piz Rotondo*. The descent was made on the N. side, and in attempting a glissade Knöringer was killed. His companion went down for help and the body was eventually recovered on the Geren Glacier.

ALPINE NOTES.

'THE ALPINE GUIDE.'—Copies of Vol. I. of the new edition of this work, price 12s. net, and of 'Hints and Notes, Practical and Scientific, for Travellers in the Alps' (being a new edition of the General Introduction), price 3s., can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C.

'THE ALPINE GUIDE,' THE CENTRAL ALPS. PART I.—A new edition of this portion of the 'Alpine Guide,' by the late John Ball, F.R.S., President of the Alpine Club, reconstructed and revised on behalf of the Alpine Club under the general editorship of A. V. Valentine-Richards, Fellow of Christ's College, Cambridge, is now ready, and can be obtained from all booksellers, or from Messrs. Stanford, 12 Long Acre, W.C. It includes those portions of Switzerland to the north of the Rhone and Rhine valleys.

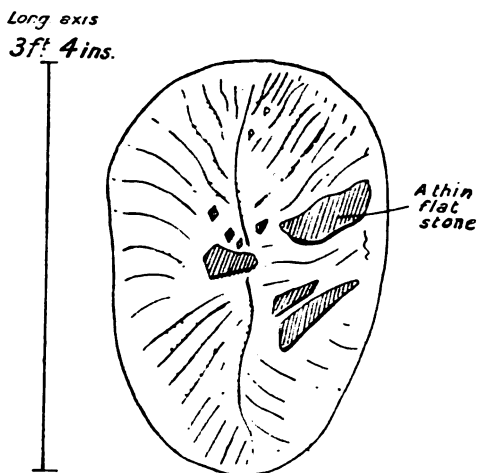
'BALL'S GUIDE.'—Since the Rev. A. V. Valentine-Richards became Dean of Christ's College, Cambridge, his work at the University has very largely increased, and he has been reluctantly compelled to inform the Committee that he sees no chance of being able to finish the revision of Part II. of the second volume of 'Ball's Guide' within a reasonable time, and that he must therefore resign the post of General Editor, though quite willing to do all in his power to aid his successor, and also to continue the revision of certain sections.

The Committee approached the Rev. George Broke, who at first feared that he too would be unable to give enough time to the work, and that, while one or two sections were being got ready for press, the next might get out of date and have to be largely re-written owing to the construction of new mountain railways or club huts. Eventually he consented, partly on the understanding that speed

should be considered of more importance than the maintenance of the high standard of excellence set up in the first volume, and partly in the hope that contributors of material would be willing, not merely to undertake the labour of bringing their sections up to date, but also to assume rather more responsibility for the accuracy of their work than has hitherto been the case. This is the more needful in that Mr. Broke's personal acquaintance with five or six of the easternmost sections is of the slightest.

All the sections, with the exception of No. 33, are now in proof, and have been or are being revised by their contributors, to whom the Club owes a very great debt of gratitude.

A CURIOUS GLACIER MARKING.—The diagram given here represents a strange marking which I saw in August last on the Ober-Aletsch Glacier ice. The figure was oval, and in the long axis



measured three feet four inches. The surface enclosed by the oval outline was slightly hollowed like a very shallow spoon. The outside boundary line was cleanly cut and of about the same value at all points, not ridged, but cut as if with a knife, and made very distinct by dirt washed into the crevice. The radiating runlets towards the centre were less marked, but perfectly defined. The thin flat stones lay in the position indicated in the figure. There was no stone near which could have rested on the markings, and the ice was hard with no evidence of snow or snow-ice on the surface. The glacier in that place was open and the stones on it lay scattered about as glacier-tables with plenty of room everywhere between them for walking. The spot where this marking occurred was about midway between the Ober-Aletsch hut and the moraine on the true right of the glacier where one turns off to leave the ice for Bel Alp. The remarkable appearance on the ice did not startle me, as Robinson

Crusoe was surprised by the footprint on the sand, because in former years I had seen similar markings, but smaller, more circular and wheel-like, and could never find any explanation of the phenomenon. The spoon-shaped marking was situated on a very slight incline, the pointed end of the oval being lowest. It may be easy to explain the little runlets or spokes towards the centre of a depression, but the well-defined circumferential line is not easy to explain. The route taken was over familiar glacier ice where I had plenty of time to look about me, and I made a diagram on the spot instead of a photograph because my guide with the camera was some distance away.

In the early morning of that day I had left the Concordia hut, and walking westward over the Löttschen Lücke had seen the fine sky-colouring in the gap I was approaching, which was chiefly a fore-glow, due to the same causes which produce the rosy after-glow, and partly due to the horizon coming into view at a lower level over the Pass, while the adjacent mountains cut off the sky on either side. The snow-curve of the Lücke was broken on the north by what looked like a great rock; on nearer approach it proved to be a hut built for the skisters in the winter. By keeping up as much as possible after crossing the Lücke, leaving the glacier below on the true left, making towards the Beich Grat, the Beich Pass was climbed, and so the Aletsch glacier being reached, the day ended with a pleasant saunter to the Bel Alp. The day before, on coming down from the Mönch Joch to the Concordia hut, I had witnessed what I had never seen before on so large a scale, a volume of water on the surface of the ice washing downwards, and joining with pools of melted snow to make a rushing 'bore,' which after careering over the surface of the ice for a time was suddenly sucked into a crevasse. It needed a nimble run through the slush to avoid being soured in the flood. The glacier was covered with melted snow, and pools of water, shallow or deep, made the walking rather slow and careful. In the early walk to the Löttschen Lücke, though the rope is necessary, there is nothing to prevent one looking about for the beauties of the morning, and this way to the Bel Alp, which I traversed some ten years ago, makes an easy expedition, yet of great interest, with a cheerfully easy walk both at the beginning and at the end of the journey.

One delight of glacier walks is found in the fact that, however many seasons one traverses the snow and ice, there is always something new for the observant eye.

G. E. WHERRY.

THE ALTITUDE OF MOUNT HUASCARAN.—In 1908 Miss A. Peck recorded an ascent of the north, lower summit of Mt. Huascarán in Peru. She made no instrumental observations above an altitude of 5,975 metres (19,600 feet), but estimated that the northern summit had a height of at least 7,317 metres (24,000 feet), and was thus the highest mountain of South America.

Believing Aconcagua to be the highest Andean peak, I decided to have a careful detailed triangulation made of the two summits of Mt. Huascarán. Through the assistance of Messrs. Fr. Schrader

and Henri Vallot, acting for the Société Générale d'Etudes et de Travaux Topographiques of Paris, an expedition was sent to Peru for me, under the direction of M. de Larminat, to effect this purpose.

Assisted by the Peruvian Government and favourable weather M. de Larminat and his assistants were able to carry out this work successfully between August and November 1909.

A base 1,600 metres (5,248 feet) long was measured in the Rio Santa valley in the Black Cordillera at an altitude of 3,800 metres (12,464 feet). This base was measured by means of a 50-metre (164 feet) tape of Invar metal. From two stations, one at either end of this base, and from two others, the positions and altitudes of which were determined by trigonometrical measurements from them—that is from four stations in all—the positions and relative altitudes of the two summits of Huascaran were fixed by azimuthal and zenithal angles taken by theodolite.

In order to ascertain the true height of these stations above average sea-level, a progressive levelling was conducted from the highest station, called the Garganta Signal, down along the mule path leading from Yungay by way of Quillo to the sea at the port of Casma.

The Garganta Signal is higher than the col where the path between Yungay and Casma reaches its highest point. The difference in height between these two was ascertained by triangulation from the Garganta Signal to be 159 metres (521.5 feet). From the col down to sea-level at the port of Casma the levelling was performed by means of the tachometer. The altitude of the Garganta Signal being thus established, it was an easy matter to fix the altitude of the other three stations, from which the triangulation of the summits was made.

From two of these stations from which it was visible the altitude of the church tower at Yungay was also established at 2,568 metres (8,432 feet).

The average sea-level was determined by four double observations of two water-marks made at intervals of six hours ten minutes between each. The agreement of these was satisfactory owing to the small amplitude of the tide at Casma, and also to the fortunate circumstance that the observations were made at time of neap tide.

The results of these measurements show the height of the north peak of Huascaran to be 6,650 metres (21,812 feet), and the height of the south peak 6,763 metres (22,182 feet).

FANNY BULLOCK WORKMAN.

SWISS NATIONAL PARK.—Reverting to the note in the May 'Journal,' p. 184, Mr. L. Rueff, Swiss Bankverein, Lothbury, London, E.C., is authorised to receive subscriptions.

DEATH OF HANS GRASS OF PONTRESINA.—This famous guide, well known from the writings of Dr. Güssfeldt and others, died in August last at Pontresina, aged 80 years.

RAILWAY FROM MARTIGNY TO ORSIÈRES.—This was opened in September. The length is 19.3 kilometres and the journey is timed to take 57 minutes.

RAILWAY UP THE NIESEN from Mühlennen, on the Spiez-Frutigen line, was opened on July 18.

HUTS OF THE S.A.C.—During the three years 1908, 1909, and 1910 the following new huts have been completed: Concordia, Val Puntaiglas, Val des Dix, Piz Err, Piz Rotondo, Schönbühl, Strahlegg, Fuorcla de Lavaz, Guggi. The Club now possesses 79 huts.

NEW HUT ON THE MATTERHORN.—The negotiations between the S.A.C. and the commune of Zermatt to grant a site for a small emergency hut near the Moseleyplatte have fallen through. It will be remembered that a sum of 800*l.* was presented to the S.A.C. by Monsieur Solvay, of Brussels, to provide this hut.

THE 'JAHRBUCH DES S.A.-C.', vol. xlv., has now appeared and contains a classified index of the contents of vols. xxi. to xlv. This work was carried out by Dr. C. Täuber.

REVIEWS AND NOTICES.

Sigmund Freudenberger (1745-1801). Zehn kolorierte Stiche.
Stämpfli, Bern, 1909. (10 francs.)

SPECIAL mention was made in our account of the A. C. Winter Exhibition of Alpine Prints, &c. (p. 59), of two prints by the Bernese Freudenberger. It may, therefore, interest some of our readers who are not able to acquire originals of these prints to know that they, with eight others by the same artist, have been reproduced by the three-colour process. For all practical purposes these reproductions are as pretty as the originals, and may be procured at far less expenditure of trouble and money. The eight other plates are 'Le Départ du Soldat Suisse,' 'Le Retour du Soldat Suisse dans le Pays,' 'Les Soins maternels,' 'Le Villageois content,' 'La Toilette Champêtre,' 'La Propreté Villageoise,' 'La Fileuse,' and 'La Déveuse.' The ten prints are issued loose in a case, with two pages of introduction by Monsieur Charles Montandon, of Berne, who possesses a very fine collection of old Alpine prints. W. A. B. C.

Aufzeichnungen zweier Haslitaler. Andreas Fischer.
Francke, Bern, 1910. (3 francs 75 cents.)

Dr. Andreas Fischer (who will be known to our readers as a Caucasian explorer) has here printed, with too short an introduction, two MSS. which are preserved in the library of the Basel Section of the Swiss Alpine Club. Both were written by Hasli peasants, natives of the Gadmen glen of the Hasli valley, and are illustrated by some delightfully naïve original sketches by the two authors. Both were named Johann von Weissenfluh, and were members of a family which still enjoys many manorial rights in the Gadmen glen. The elder Johannes (1762-1821) contributes a sort of diary of local events from 1792 to 1821, which contains many curious and instructive side-lights on the history of those fateful years. He seems to have been a man of some education, and possessed a fine copy of an illustrated translation of Plutarch, that is still in the hands of his