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Alpine Notes
and
The Climbing Foot



18.6.31







ALPINE NOTES AND THE
CLIMBING FOOT







W. ALOIS KALBERMATTEN. XAVER IMSENG. A. B.

Alpine Notes & The Climbing Foot

By

George Wherry

MA., M.C.Cantab., F.R.C.S.

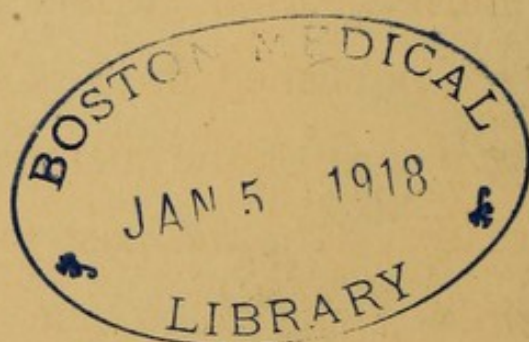
Surgeon to Addenbrooke's Hospital,
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1896

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PREFACE

THE following pages were mostly written with pencil in the railway train when the writer was returning from Alpine holidays. The letters were published in the *Cambridge Chronicle* as a record of the mountaineering season, and extend over the past five years.

A few serious remarks on the climbing foot, and on accidents, are added separately, and little attempt has been made to retouch these yearly letters. Being "touched for the evil" has been known, according to the court wags, to kill a feeble son of Tom Esmond's. There being little but evil in the lad's composition, the royal

touch which expelled the evil from the patient was a fatal performance. Fearing it might prove so for my poor tracts, they remain much as they were originally printed. Only of this I feel assured, that similar notes, put into my hands when I began climbing, would have been read by me with avidity.

If one of these papers be found now and then somewhat technical, and to savour of another craft, more useful even than mountaineering, that possible usefulness must be my excuse for these digressions.

The series of pictures to illustrate the chapter on the climbing foot I hope will prove of interest. Mr. Stearn, the photographer, of Bridge Street, Cambridge, has caught the expression in the infant's foot, which I kept in position with my finger, and the remarkable adaptation of the tiny infant's foot for climbing and all-four

progression is very well shown ; also those by Captain Abney of the Swiss guides have come out exceedingly well.

These notes may be found acceptable to any novitiate, who, after making his first climb, can feel what Meredith's hero in *The Amazing Marriage* so well expresses to his comrade :

“ I shall never forget the walk we've had. I have to thank you for the noblest of pleasures. You've taught me—well, a thousand things ; the things money can't buy. What mornings they were ! and the dead-tired nights ! Under the rock, and up to see the snowy peak pink in a gap of thick mist. You were right : it made a crimsoning colour shine like a new idea. Up in those mountains one walks with the divinities, you said. It's perfectly true. I shall remember I did. I have a treasure for life ! Now I understand where you get

your ideas. The life we lead down there is hoggish. You have chosen the right."

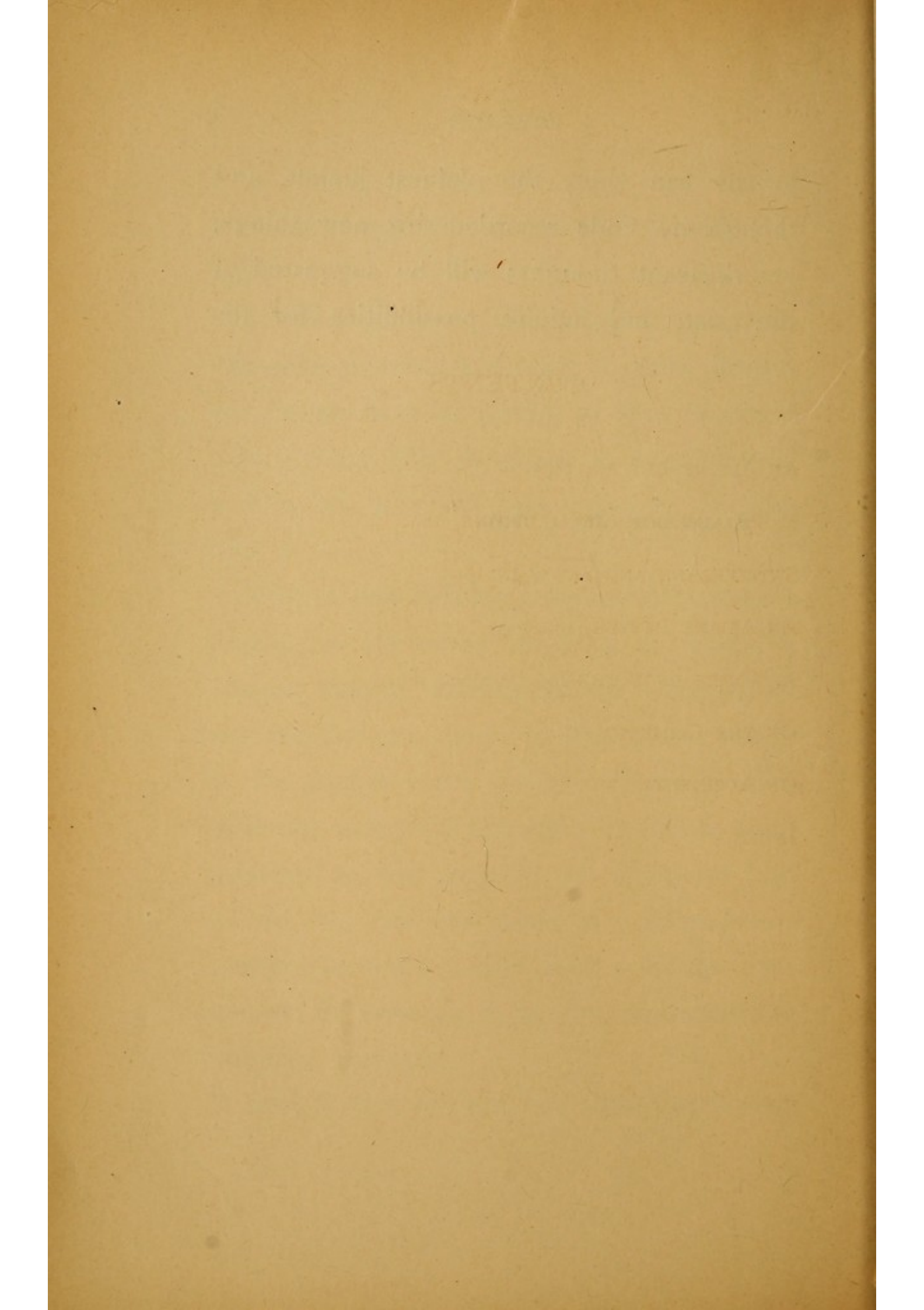
A small matter will suggest pleasant memories of mountaineering to those (harmless degenerates, according to Max Nordau) who see the Mer de Glace in every frozen puddle, as a child sees pictures in the fire.

Many a man helping a dish of Devonshire junket on his table, thinking of Forbes's viscous theory, watches for the place opposite the first gap made by the spoon, where in the junket there forms a chasm parallel with the side, still leaving a fringe or shelf attached to the edge of the dish—for him at the moment that crack is a *bergschrund*—there he finds at one point a bridge convenient for crossing, at another an impossible yawning crevasse.

Such a man will not find these notes dull,

for he can enjoy the plainest junket, and though he finds recorded few new things, yet pleasant thoughts will be suggested of the past, and infinite possibilities for the future.

CAMBRIDGE, May 1, 1896.



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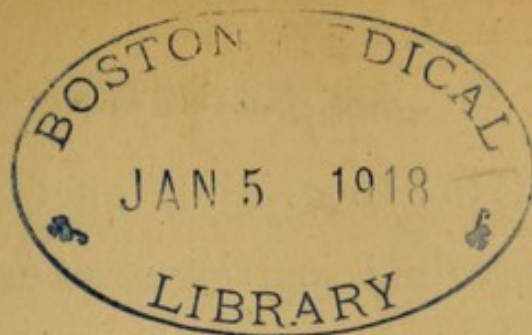
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ALPINE NOTES

An Alpine Letter

1895

Training at Kandersteg—Climbing the south face of the Birrenhorn—The viper's cast—The larches replacing the pines—The ascent of the Doldenhorn—The Petersgrat—The ascent of the Bietschhorn—An interesting anniversary ascent—Ascent of Monte Rosa by the Lys Pass—Cold feet on the glacier—The Furggen Joch—Accident to a guide—Traverse of the Matterhorn—Naked feet of guides photographed in climbing position—The Traverse of the Charmoz—Farewell to Melchior—Lines to my lantern.

EVERY one should try to be in good training once a year, and experience has confirmed my opinion that Kandersteg, in the Bernese Oberland, is a good place to train for a climbing holiday. There the expeditions are interesting enough without being too

serious. The enervating effect of what is ironically called carriage exercise, which only exercises the carriage, and does nothing for the man inside, must be gradually counteracted by hard work in fine air. Also it must be remembered that as one grows older, training is more difficult, and too often hurried in the process.

With a friend of former years, our first little climb up the Tschingellochtighorn resulted in a ducking, and for myself it must be confessed that the bodily fatigue of the first tug up steep slopes hardly permits of the usual interests and enjoyments of the way. Now it is rather sad to reflect upon those two black sluggish lizards that I was too lazy to collect, and that a fine crop of yellow Gentians were merely noticed without pleasure. Climbing the Tschingellochtigrat—a yellow Gentian it was that: and very little more.

Every struggle makes the next more easy—at first it is a purgatory for the pie-crust of the past year, then the later labour is all delight.

Mr. M., that veteran climber, hailed me on my arrival at Kandersteg with a shout: with him was his son, already at sixteen well experienced in mountain craft, and the well-beloved Melchior Anderegg. Mr. M. says "a man is always at his best on the Alps," and surely this is true; his body is most freed from disorder, and his mind from cant, as he climbs away from all the worries of life.

We had an expedition together, a pretty climb up the steep south face of the Birrenhorn; on our way up to the rock we killed an adder. Near this spot last year I found a perfect viper's cast (eye-covers and lips also quite entire). It is now in the Cambridge Museum, and proves that

Gilbert White is correct in his statement that the snake's cast is turned completely inside out. Here too are a great number of large white snails like escargots —“O helix infelix tui quam miseresco sine sheetis aut blankets dormientis al fresco.”

As my friend had made with me this same ascent last year, we were allowed to lead the way up, and had a nice scramble, notes of which are to be found in the *Alpine Journal*, and seen on a later page. This excursion gives a good view of the forests of the two valleys seen from many points above the Kander stream and Oeschinen See. No one can fail to note, when once attention is aroused to it, how the larch is gaining ground in the struggle for existence, and the pine is rapidly diminishing. Rarely does one see a young Arolla pine, and the old trees are pictur-

esque ruins. In the Arolla valley the same observation may be made, and there are decaying stumps of trees, 200 or 300 years old, remaining high up, near the glaciers, where once a forest stood. A great advantage the larch has in being a deciduous tree, shedding its thin and spiky leaves every winter, and riding out the storm with bare poles, when the pine holds on its evergreen branches a great weight of snow, and presents a large surface for the tempest to burst upon.

When these pine trees stand together collecting snow, more opportunities for avalanches occur, and ruin is scattered on the forest beneath. The lovely green tints of the sprouting larches in Spring will bring us some compensation if the pines are to be lost.

According to Mr. Sowerby, in his *Forest Cantons*, the larches always choose the



A REGIMENT OF LARCHES ADVANCING ON VETERAN PINES.

crystalline rocks, while the pines prefer the limestone.

Starting from the Hotel at half-past one in the morning, we had a roasting hot day on that beautiful snow-peak, the Doldenhorn. With Hari as guide, we followed a large swinging oil-lamp, instead of the usual lantern, and toiled up through jungle, to find the snow all fresh and soft; lovely to look upon, but wearisome to travel up; a long ice-slope at the top gave rest to all except our leader, who had to cut steps to the final corniced ridge; there we held him with the rope in leaning over to judge whether we might safely sit down upon the summit.

On our departure from Kandersteg, a lady and her husband joined us in a delightful walk over the Petersgrat. We rested a night at the Selden châlets in the hay, giving the lady the only bed of

the place, and, starting the next morning early, had an easy day over that beautiful glacier pass, arriving at Ried in the Lötschen Thal in a broiling sun. Nothing more was then known of those two poor fellows who went for their last climb a few weeks before, left the little inn and never returned.

My companion had come with me to ascend the Bietschhorn, and we found it a first-rate climb, requiring continual care because of the rotten state of the rock arête. Every stone has to be tested before the weight is allowed to rest upon it, and the movements over the ridge must be lovingly and embracingly made without jerk or hurry. In Alpine slang the mountain is badly in need of repair. We were on the summit during an earthquake, of which we felt nothing, though at Zermatt there was considerable alarm, and a climber

on the Rothhorn is reported to have had to sit tight as though on a bucking horse!

Next day we walked down to the Rhone valley, and came to Zermatt with our guides, Alois Kalbermatten and Peter Perren. Here again Mr. M. was actively at work with Melchior, and as he came down from Monte Rosa, he told me how pleased he was to have made an anniversary ascent of a mountain he had climbed forty years ago!

We made for the highest point of Monte Rosa by starting from the hut by lantern-light, and going up the glacier as if to cross the Lys Joch, then taking a rock arête to the summit, we descended by the usual snowy route to the Gorner glacier, and so back to Zermatt. My feet had been very cold on the glacier; the mass of nails carried, unless the soles of the boots be very thick, chills the feet as the

iron gets cold upon the ice, and in this respect there is more to say for Mummery spikes, which carry the feet slightly off the ice. F. Andenmatten, of Zermatt, made such a successful improvement in clumping my boots, that he obtained an order for another pair on the spot, and I believe him to be an artist of the first rank for climbing boots.

On our next climb, in crossing the Furggen Joch to reach the Italian hut above the Col du Lion, on the Italian side of the Matterhorn, we had an awkward adventure. Perren was helping a porter, who carried up wood for us, over the bergschrund, and was leaning forwards to reach him with his axe, when down came a stone from above—"a bolt from the blue" and struck poor Perren on the head. The blood ran over his face and gave him a ghastly look. The blow did not result in

ordinary shock, it only excited him so that he would not sit down to have his hurt dressed, but shouted out a noisy account of the accident. Fortunately I had an antiseptic dressing and bandage in my rucksack, and though he had a nasty torn wound of the scalp, I decided to proceed at least as far as the hut, though it was five hours' hard climb, and I felt doubtful as to whether he would be fit to traverse the Matterhorn in the morning.

The main object of our expedition was to climb over the top of the mountain from Italy and down the Swiss side to Zermatt. However, when day broke he wished to proceed, and assured me that he could manage the climbing. Rather than risk the success of the expedition, I offered to come down with him, and pay him the same price, but he would not hear of it, and the other guide being quite

confident, with some misgiving I went over the mountain with the wounded man. My fear was of brandy combined with a hot sun, and images arose before me of a strong man delirious on the awful precipices of this south side of the Matterhorn. It was very soon apparent that my guide's powers were fully equal to his work, for our party went strongly and at a fair pace. We had breakfast and rested half an hour on the classic rocks of the Tyndallgrat, and reached the summit in less than five hours from the start, the second time we have stood together on that snowy ridge which crowns the majestic mountain. "Long Biner," a Zermatt guide, who came up with a party from the other side, here told us of the death of Emile Rey, and we were filled with wonder that the famous climber should have ended his career by a fatal slip when all his serious work was

done on the Aiguille du Géant—a mountain which he knew so well.

Returning to the Monte Rosa Hotel for a rest, I was fortunate in falling in with Captain Abney, who kindly photographed for me the naked feet of my guides in the act of climbing a rock. It has often been noticed that a guide can go face forward, and whole-footed up a slope, while the amateur following, and coming to the steep part, has to go on his toes or turn sideways. It seems possible that the angle made by the foot with the leg may be more acute in the guide who has climbed from infancy, and though it is probably very much a matter of balance, I wished to compare photographs of amateurs feet when put into similar action. The guides wear thick leather boots loosely laced at the top, so that it is difficult to see the play of the ankle.

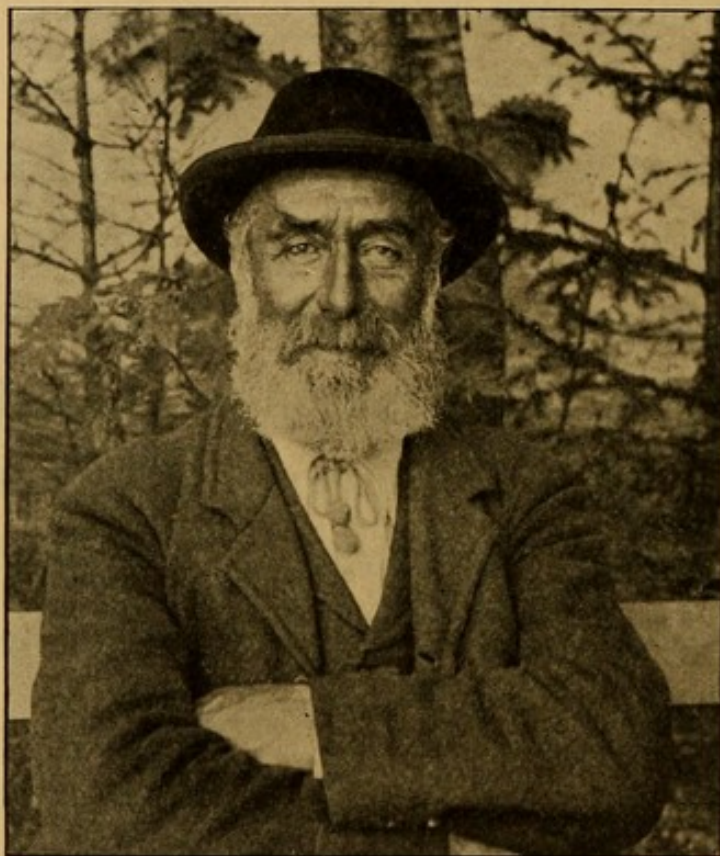
There is a most interesting discussion by Darwin, in his voyage of the *Beagle*, on muscular action and balance in riding, but of course in the case of the guides' feet there may be some structural difference, hereditary and acquired, actually permitting more freedom of movement at the ankle joint, which neither muscular action nor power of balance could give to the amateur. These points are separately considered in another chapter on the "Climbing Foot."

On a memorable morning at the end of August, the morning of Miss Sampson's fatal accident upon the Triftjoch, while we were packing up to travel over that same pass, my friend had a telegram to report the death of his mother at Chamounix. It was his first great grief, and seemed the one unbearable thing in life. With him I travelled to join his afflicted family. The sorrow of others thus threw a strong

shadow over me, and my friend having gone to England, I had now little heart for further climbing.

Nevertheless, taking my guides to Montanvers I traversed the Charmoz, a very fine rock climb, in which five points of varying size are scrambled over. There is a good deal of standing on one another's shoulders in acrobatic fashion in the ascents, and the use is frequent of a second rope looped over a point of rock in the descents. The highest peak is the last climbed, and its couloir is descended to the base of the rock to join the route below the couloir of the first ascent. The glacier which it is necessary to cross is, this year, in a dangerous state; falls of ice are seriously frequent. When on the highest point of the Charmoz, the most awful avalanche of stones came thundering down from near the top of the adjacent Grépon. The noise

was deafening, and a strong sulphurous smell, which lasted some time afterwards, suggested, as Whymper says, that the Devil was at the bottom of the business.



MELCHIOR ANDEREGG, 1895.
FROM A PHOTOGRAPH BY MR. MYLES MATHEWS.

Wandering into Couttets' Hotel at Chamonix quite without intention, I witnessed a touching farewell between Mr. M. and Melchior. To see an undemonstrative

Englishman kiss his grey-bearded old guide on both cheeks, when these two have climbed together for forty years, gives one suddenly a glimpse of the pathos of life impossible to recall without emotion.

Beautiful for weather, dreadful for disasters, this season will be remembered as the year in which Emile Rey was killed on the Alps, and Mummery lost in the Himalayas. All who knew the strong and genial Benjamin Eyre have felt his loss, and he was a man with many friends. Then alas! there were others to whom we say farewell for ever.

For this season I have said good-bye to my faithful guides, one of whom is a friend of many other climbs, giving them a modest addition to their moderate fees and the old rope, which I leave behind. My folding lantern shall come away with me for future use; it shuts up into a leather

case no larger than the little sketch-book in which I write the following somewhat heathenish, but very hopeful hymn :

Guide, who breaks my midnight sleep,
Leads me up the glacier steep,
Where the lantern's feeble beams
Shine on snow and icy streams ;
We fear no darkness in the night
While your strong hand controls the light.

Dawn will for the climber rise,
Daylight point him to the skies—
What if all be mist and cloud
When we reach that summit proud ?
Who, conquering, can victory cry,
More gladly lives, dreads less to die !

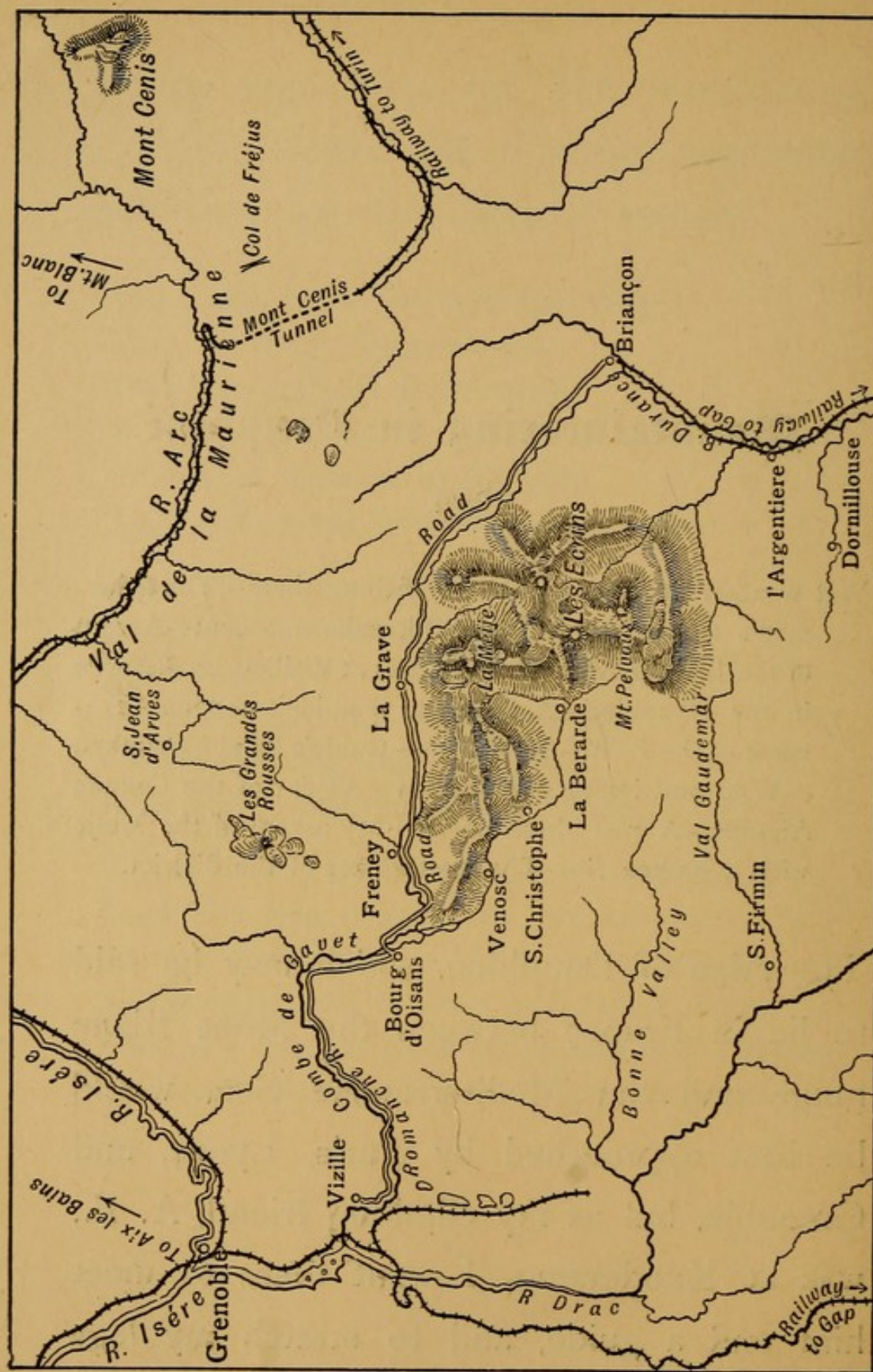
Mighty Guide ! who woke and led me here,
Lend Thy light to make my pathway clear.
Though dim at first on Life's all doubtful way,
The struggle ends in dawn and perfect day ;
Obscuring daylight hides my lantern and Thy star,
But purple glows with gold on glorious peaks afar.

Mountaineering in Dauphiné

1894

Wet weather at Kandersteg—Fly-fishing there—The fisherman's fear of a precipice—Birrenhorn ascent—Ascent of the Blümlis-Alphorn—Chateau at Vizille—La Bérarde in the Dauphiné—Accident to a guide's tongue—Traverse of the Pointe des Ecrins—Guide's hand benumbed—Wild and impressive scenery—Ascent of the Grande Aiguille—A frost-bitten porter—My ascent of the Meije with a broken rib—The heel spikes of the district.

THE Alps of Dauphiné, which may be said to lie in France between the Mont Blanc range and the Mediterranean Sea, would be best approached by Paris, Lyons, and Grenoble, but as my climbing friend, A. B., was at Kandersteg, I went there to meet him and a guide, and to stretch my legs



MAP OF THE HIGHEST MOUNTAINS IN THE DAUPHINÉ.

Walker & Butall sc.

on the Swiss mountains. On the first day after my arrival we inspected, with a view to attack the steep south face of the Birrenhorn, and surmounted the only difficulty of the climb, a steep chimney where a rope is useful to avoid risk. We planned to complete the ascent on the first fine day. On this little mountain I found the most perfect snake's cast I ever saw, which I gave to Professor Newton. Its head end was in the hole where its owner got rid of it. The films over the eyes were present, and by blowing into the mouth I could inflate the cast to a lively resemblance of the creature it had covered.

The weather in the Bernese Oberland was very bad, every day it rained in the valleys and snowed on the peaks ; on any expedition one was sure to get wet, and mountains of any magnitude were impossible. With a Surgeon-Major on leave from India I

took a turn at fly-fishing, not in the glacier water of the Kander, but in a pretty stream with pools, where the trout, though small, would rise to a fly. His Himalayan experience made the Surgeon-Major anxious to stock the glacier torrents of Switzerland with Mahsir, a fish more powerful than the salmon, whose first wild rush on tasting the hook gives such a fierce joy to the sportsman.

My companion, who was a strong walker, described to me his horrible sensations at the sight of a precipice. He told me that his father, though he had shot game in the Himalayas, could never overcome this fear. If the idea of space was absent my friend could climb well, but I gathered that horizontal as well as vertical distance was concerned, because he could not comfortably eat his lunch on a flat platform of an acre of grassland when there were miles

of country far distant below and beyond. Mountain climbing for him was out of the question, his condition was almost that of one suffering from agoraphobia or *la peur des espaces*.

We engaged Joseph Truffer as guide, and as soon as he joined us we completed the Birrenhorn expedition. It was a satisfaction to me to find that he did not climb the couloir easily or at the first attempt, but we had a good scramble on an interesting arête rather like the Portjengrat, in which there is a rock hole or window to crawl through. We went home by a long route up by way of the Ober-Oeschinen Alp, and got thoroughly wet as usual.

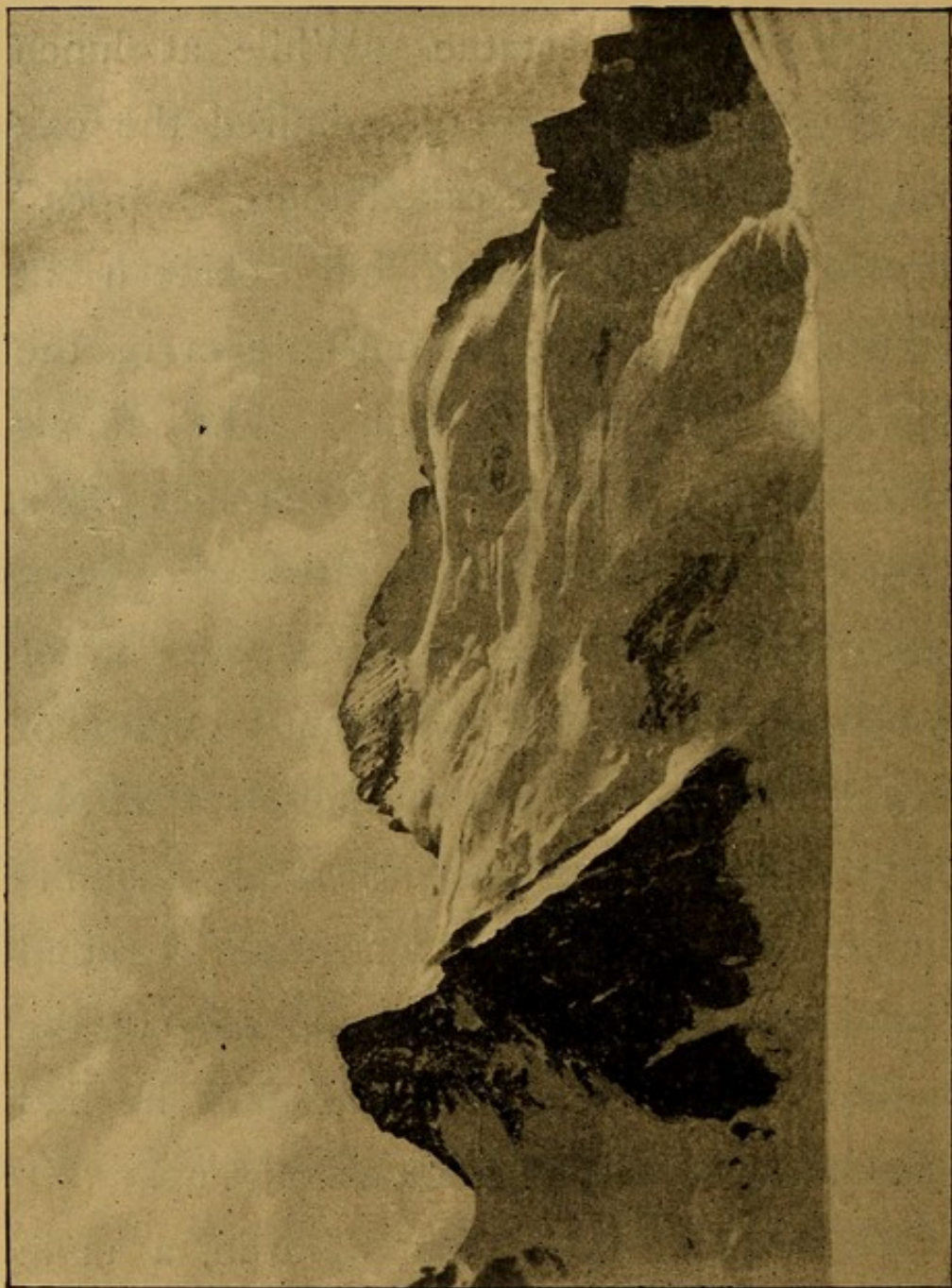
To climb the Blümlis-Alphorn, the highest point of the range, we slept out at a hut, which was unluckily occupied by workmen, who were building another hut close by. Our night in dirty straw was not so pleasant

in dirty company, and the early morning was dark and threatening; we started however at 4.30, led by Joseph Hari, a local man. After crossing the glacier he took us over some smooth slabs of rock arranged like a slated roof and coated with ice to make us careful. These safely crossed, Truffer took the lead, and up the final steep everything was ice wherein steps had to be laboriously cut to the summit. We stood on the top at 10 o'clock, but saw little of our surrounding glories, except occasionally a brief glance round through the mists while standing perched in an ice step. The weather ended up in snow, which shut us in on the glacier below, and made us thankful to be well off the ice, and safely quit of a mountain which, though usually an easy climb, could assert itself seriously in a storm.

Taking Truffer with us, A. B. and I

travelled to Dauphiné; we spent a few hours at Grenoble to see the old church and the Bayard statue. While at lunch at the Hotel Monnet I admired the oak wine jugs, which are called there "Brocs." There is a charming old chateau at Vizille, with a lovely trout stream in the grounds full of big fish. The tennis court no longer stands in which in 1788 a memorable meeting took place to protest against the tax. The late President Carnot unveiled a statue in 1888 in memory of this Revolutionary event and slept at the chateau as the guest of Madame Casimir-Périer. The old soldier who took us round showed an oubliette in the old part of the building—beneath its horrible shaft he had seen armour-coated skeletons dug up.

We walked up to La Bérarde, a mule carrying our baggage. Immediately on my arrival I was told of an awkward accident



LES ECRINS FROM THE GLACIER BLANC.

which had just happened. Two parties were ascending a slope of ice when the last man of the first caravan slipped out of his step and sent his iron-shod heel into the jaw of the leader of the second caravan, who was too near. Poor Maximin Gaspard got a bad torn wound of his tongue, cut by his teeth, which I had to stitch up with silk and horse-hair. As he was in fine health the wound healed well, and in a few days, in fact, as soon as ever he could feed, he was climbing again. Maximin's father, Pierre Gaspard, is the fine old fellow who has made so many first ascents in these districts, and still makes the great climbs.

The highest mountain in the Dauphiné, is the *Pointe des Ecrins*, 13,462 feet, its summit is a ridge of several beautiful points of snow and rock. With Hippolyte Rodier to assist Truffer we started to traverse this peak. We met on the way to the Challeret

hut, a native with a dead sheep on his shoulders; it had been killed by a stone falling from the height above, and no doubt was to be made into "precipice mutton." After sleeping a few hours at the hut we got off at 1.30 in the morning, over the glacier to the Col des Avalanches. Rodier led us to the couloir on the south face, and we began to crawl up; this was a rock couloir, which at a steep part was iced and caused some delay. Our leader, however, got up to a firm position and I followed, but no one else came, and looking down I saw Truffer wringing his hands and in distress. He explained that his right hand was frost-bitten and he could not proceed; nevertheless, he was pulled up by the help of the rope, and finding from the appearance of the hand and from the pain, which is really a good sign of reaction, that recovery was sufficient, we decided to

proceed, with some misgiving on my part. We gained the highest part of the Ecrins about 10 o'clock. There was a great deal of fresh snow on the arête, and in coming down to the glacier Blanc on the north side we worked hard for five hours without a halt to reach the Col des Ecrins. Here we rested and then descended a couloir of 1,000 feet to the glacier de la Bonne Pierre, with its long and dreary moraine. There is a measurement station on this moraine to register the movements of the glacier, and here we found a marmot recently killed, its flesh almost entirely eaten, the entrails strewn around. An eagle's feather on the body suggested the mode of death. The sight of the sheep killed by a stone, and still more the beautiful furry marmot killed by an eagle, added in a strange way to the savagery of the scene. In this wild region stern Nature seems to cry, "I care

for nothing, all shall go." We had a long walk home, the last half-hour by lantern light, having been eighteen hours over our expedition.

We wished next to traverse the Meije from La Bérarde to La Grave, which neither of our guides had ever done, so it seemed best to let Truffer go back to Switzerland, lest on a serious expedition his hand should fail him again and its recovery be delayed. His helpless condition in the iced couloir was explained by the fact that months before he had been ill with a bad hand, and its vitality had been impaired by what was probably a previous attack of frost-bite. Before his departure we had a lovely day on the Grande Aiguille; on the top we basked and slept in the sun after a lunch of tinned fruits and bread and butter. There is a little ice and snow requiring care on this beautiful peak, but we climbed it up

and down without a rope, and here we passed over the slope where the tongue accident occurred.

One evening I was aware of a pain in my chest, especially when I laughed, and I was reminded that at Easter I had broken a rib—in climbing to the top of a cromlech on Dartmoor called “The Spinster’s Rock,” but the bone seemed to have mended in spite of some neglect, and was forgotten until my compass box in the breast pocket jammed against the hurt in some scramble and found out the weak point. I was warned by pains in certain movements of the arms against any attempt to traverse the Meije, and very sadly I had to see my friend take off our guides for a successful expedition ; for though with a suitable bandage on my chest I was quite active, yet could not pull myself up by my arms in climbing.

JOSEPH TURC.

PIERRE GASPARD.

MATHON.

HIPPOLYTE RODIER.



W.

HERR VON RATH.

A. B.

HERR GRISAR.

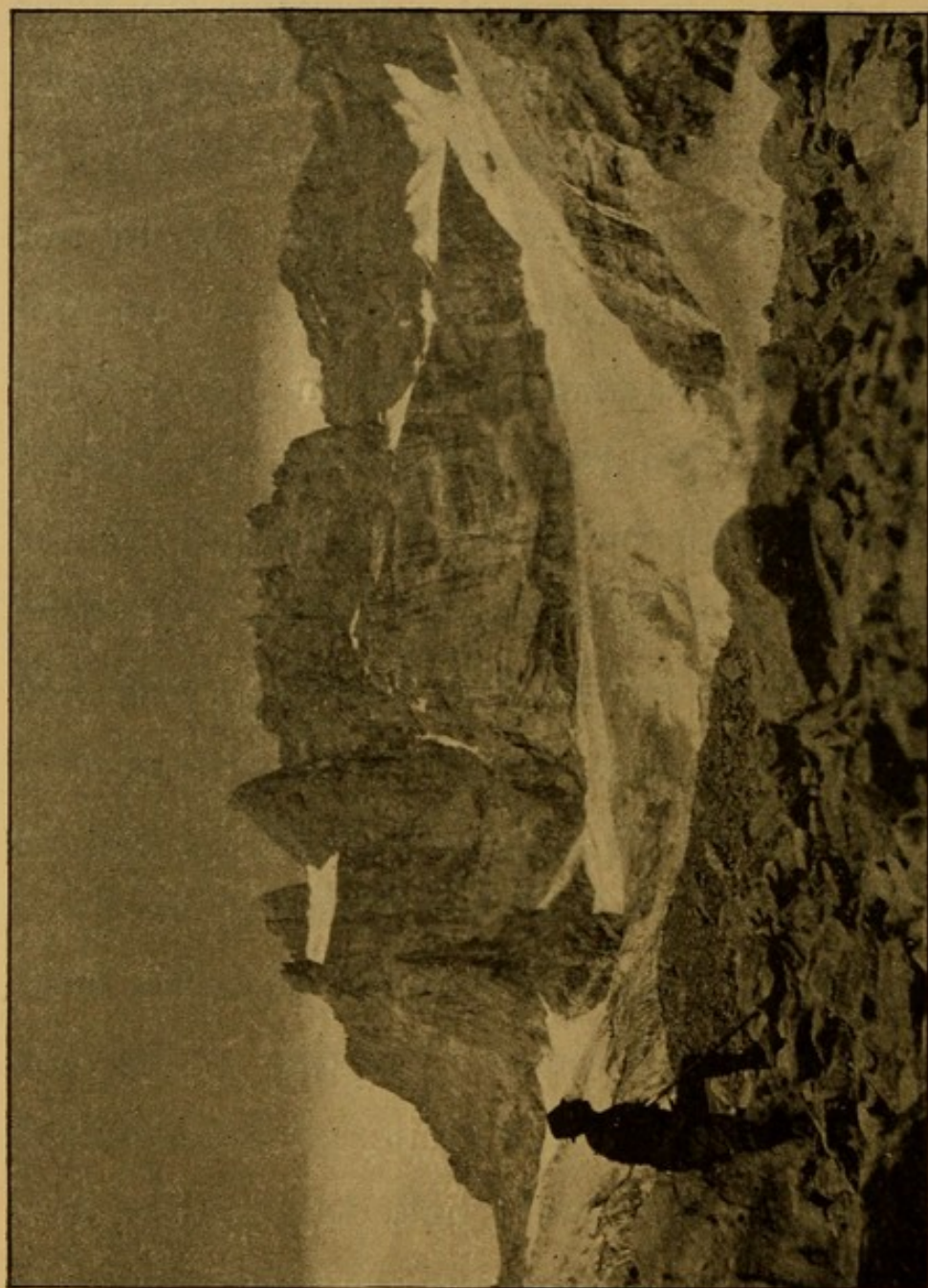
We had parted from Truffer with mutual regrets, for he was a very good fellow, and taken on Joseph Turc, a more experienced man than Rodier, and they worked well together. This Turc had just come over from La Grave with a porter named Étienne. The latter, a poor wizened sun-baked little man, had all his finger tips on each hand blackened with frost-bite ; his thumbs had escaped. It appears that a Frenchman who could not climb well was taken by Turc to traverse the Meije from La Bérarde. They got no further than the Pic Central, there they had to spend the night—next day getting into La Grave. The poor porter was allowed to sleep with his fingers in this bad state, and come back over a pass to La Bérarde where in the afternoon I saw him. He had had some pain in the morning of this day, and this encouraged me to attempt

treatment; so during two or three hours I rubbed him and watched him, and was assisted by my friend; it was satisfactory to find a considerable improvement, especially in his right hand, which next morning was even more apparently improved when the limits of the black dead portions were more defined—his nails will probably come off, and there will be ulcerated surfaces on his finger ends, which will be months in healing. The aspect of this man presented a pitiable combination of apathy and patience, reminding me of the wolf-bitten Russian peasants I saw in Pasteur's laboratory in the Rue D'Ulm years ago. The guide with the frost-bitten feet, of whom I wrote in my letter last year, is only now hobbling about with sticks, the wounds of his amputated toes still unhealed, so much is the process of repair hindered in tissues damaged by frost-bite.

What I call determination, but my friends describe as obstinacy, now induced me, after three days' rest, to climb the Meije, 13,081 feet. It is a serious rock climb, decidedly stiffer than the Matterhorn, and I did not attempt the traverse, but it was an error of judgment to have climbed it in my crippled condition. Doubtless the fine air, which makes a man laugh so easily, and makes the careworn light-hearted, steals away the reason like champagne—making the old man seem young—so the poet writes—

“The plague of guide and chum, and wife and daughter
Is Senex who will climb and didn't oughter.”

My friend having returned to rest from his expeditions I took off the guides for the ascent of the Meije. We walked up the valley and halted at the hut. Joseph Turc wanted to put his skin of wine, containing over five bottles, into my rucksack, and we had a difference, as I



LA MEIJE FROM THE VAL DES ETANÇONS.

objected to his claret leaking into my shirts, so he had to carry it separately; it was quite an easy matter, as I had a porter to carry my sleeping bag to a rock gîte where the night was to be passed, a climb of several hours. On reaching the glacier, Joseph and I being in front of the others, who carried the rope, he asked me if I was afraid to go over the glacier. Probably he meant without the rope. I said it was what I had come for; but when we began to get to steep ice I found he did not cut steps, and as he had three large spikes in each of his heels he could go where I could not follow without using my axe vigorously. He then said he could not cut the steps because of his wine skin, and thus I was left either to cut on up all the slopes or carry his skin. After a little hesitation I offered to carry the wine for fear of hurting my rib, and I carried it up

to the sleeping place, though I did not find the steps cut much better after his burden was removed.

We went to sleep under the stars on a lovely night, but the day broke dark and gloomy, so that it was half-past four before we could start. We roped at once, leaving the porter to take the things back, and Turc led, but instead of placing me second I was left to the last. With my own rope of 80 feet long it happened frequently that the men passed out of sight, and I had no sort of communication with them unless I chose to pull and shout. But this is well enough when going straight up. It is a difficult corner or traverse where the position is a bad one; the experts who have been on their own mountain before, leave the traveller alone to get round his corner as best he can. "In medio tutissimus ibis," is a good motto.

I gained the summit at nine o'clock, but just at the final struggle, where it is necessary to straddle on a sharp red rock ridge, called the "cheval rouge," with fine precipices below, my rib gave way, and went completely broken through. In spite of firm bandaging, the coming down was a painful experience, for I could feel and even hear the ends of the broken bone grating together; but I kept at it, going down steadily and slowly with groans and grunts. The guides sang and shouted and drowned my feeble exclamations. They had had a good feed with tinned peaches and plenty of wine on the top when we rested, and it seemed to make them very happy. They carried seven bottles of wine on this expedition, besides each man a flask of brandy, and as I do most of my climbing on cold tea, they had a good allowance.

Joseph Turc is a real genius at rock climbing, a truly brilliant performer; but on ice, as he can't cut steps, another time I should get spikes or crampons. The guides here use three spikes in each heel, driven in, fixed by gomphosis, not like the Mummery spikes with a screw.

I got to the Inn in time to change for the table d'hôte, not in the least fatigued, only blaming myself for the painful ordeal I had passed through. While changing my garments in the small bedroom we occupied together, my companion could plainly hear across the room the grating of my fractured rib. So soon as exertion ceased I was entirely well, and had a good dinner and night's rest.

No traveller who goes for mountain expeditions to the Dauphiné district will leave without feeling a debt of gratitude (mixed with envy) to his own countrymen who have

climbed and walked all over this wonderful country. The maps and climber's guide by Mr. Coolidge are marvels of convenience and accuracy, and must be carried by everyone who wishes to learn his way about these very difficult regions. Mr. Whympers ought to be as proud of the conquest of the Pointe des Ecrins as of the Matterhorn.

My friend had a good climb on the Pic Bourcet, but of course I did not attempt this, returning to England by easy stages, halting at Aix-les-Bains and at Paris. In London I found laughing at "Charley's Aunt" a serious matter for my damaged rib, though I thoroughly enjoyed this absurd farce, as I enjoyed every day of my vacation, and there was no day I would not willingly live over again.

Switzerland and Savoy

1893

Begin at Kandersteg—Benighted on the Zinal glacier—
Glacier tables and baths—Wild beasts in the hut—
The Col Durand—Guide in a crevasse—Ascent of the
Dent Blanche—A climber exhausted—Ascent of the
Weisshorn—A thunderstorm—Death of Mr. Lucas and
Mr. Seiler. The Furggen Joch—Italy and the Italian
side of Mont Blanc—The hut on the Aiguille Grise—
The traverse of Mont Blanc—Anxiety as to weather—
The observatory on the summit—Ascent of Aiguille
du Dru. Ascent of the Aiguille Verte—Frost-bitten
guide—Peculiar dangers of a fine season.

WHEN Albert Smith made the ascent of
Mont Blanc in 1851, he did not seem to
enjoy himself much; he was thoroughly
exhausted and done up, as well he might
be, with sixteen guides, and £20 worth of
provisions. If he did not have a good time

our fathers did, in hearing his lecture, or in reading his dear little book. They listened with the greatest interest to his serio-comic groans. A hundred bottles of wine, sixty-seven fowls, joints of meat in proportion, and ten cheeses carried up the mountain ought to have led to trouble somewhere. On the other hand I enjoyed myself so much in the ascent of Mont Blanc that I fear I have nothing left to entertain others. My climbing friend was with me and two guides, also friends of former years; we had no certificate and no cannon. Nor was there any pretty Julie down below to give me a cornelian heart and talk about "une alliance."

But I will begin at the beginning, and travel first from Cambridge to Kandersteg, from the land of fen and bog to the land of fine air and bright mountains—the Bernese Oberland. At Kandersteg my friend was

staying in Egger's most comfortable inn, and there we made a plan of campaign. We were fortunate in crossing the Gemmi to obtain a fine view of the mountains we were about to attack. We slept at Sierre in the Rhone Valley, and in the morning went up the Val D'Anniviers, one of the finest valleys in the Alps, a beautiful journey to Zinal, where we met our trusty guides—Alois Kalbermatten and Xaver Imseng. We must needs try and reach the hut high up the glacier that same night, and consequently got benighted, and arrived very late at the Mountet Cabane, rather cross and tired. While the daylight lasted I saw on the glacier hundreds of glacier-tables, like a crop of gigantic mushrooms. The hot weather this year may have made these more apparent, for on all the glaciers I walked over they seemed more conspicuous than usual. A stone, as big as a teacup or

a cottage, when it lies upon the glacier, protects the ice beneath from the sun, so that in time the ice melting all round leaves the stone perched on a pedestal of ice. The icy pyramid gradually yields on the sunny side, and allows the stone to tilt and fall always in the same direction. On the Gorner Glacier I saw a stone supported by two separate pyramids, but this is unusual. If the stone which lies upon the glacier be thin enough, it may be so warmed through by the sun that it makes a hole for itself in the ice, and is buried in a pit full of water. So may dirt make a bath in the glacier, or if it be in large quantity, may leave a cone of solid ice all dirt covered, looking like a large ant heap.

The deep pits full of water are started in the manner indicated, but the sun-warmed surface water is continually being replaced by the ice-cold water below, and the warmed

water deepens the pit in the ice, until a large bath is formed, often two or three feet deep, with steep sides, and no warning ledge or ridge around, so that a careless walker might go in, and in the dusk they are very difficult to avoid.

We had a dark experience on the glacier, and had to leave it for the icy-hearted moraine for fear of accidents, thankful to find shelter after some hours of weary stumbling along, when there was light enough to see our dangers but barely enough to permit us to avoid them. When in the welcome shelter of the hut, we shared with fleas and rats that rough abode—whether the rats in the straw had guides to this place is a curious problem; the fleas in the rugs were unusually fierce and hungry. There was a rat in the hut before its building was completed; when I called M. Constans' attention to his first visitor,

he remarked in surprise "Déjà!" but it no doubt migrated from the old Mountet Cabane near by to the Constantia, as the present place is called in honour of the architect.

All next day the weather was too bad to climb, and we had to give up our traverse of the Rothhorn ~~this~~ season, having been beaten in the same way last year after coming over the Triftjoch. We went to Zermatt over the Col Durand, which led us to an ice slope of some steepness up which steps had to be cut, and then over snow. As we neared the top of the pass, with no suggestion of any crack in the smooth white surface of snow, we walked along all roped together; quite suddenly our leading guide disappeared down a crevasse. I was last on the rope and saw nothing but his hat; however, he was soon out again by wrigglings on to his back,

shook himself free of snow, and appeared to mind it about as much as a Newfoundland dog minds water. But it was a good lesson in the use of the rope, which alone can make such an ordinary journey safe. My first care in reaching Zermatt was to have my boots well nailed. English nails are no good, though Flack's boots stood me well. My next thought was to present the local chemist with a prescription which puzzled him for the moment—Mr. Pulex Irritans—*R*: Pulvis usque ad mortem pulicibus ferocibus quantum sufficit. My friend said this dog Latin was appropriate, for dogs and fleas were inseparable. I was soon supplied with a tin of Keating.

The weather was too good for dawdling, and we proceeded to attack the Dent Blanche. Taking provisions and rugs to the Schönbühl rock, our men cut bits of dry trees with their ice axes before we left the woods

below us to cross the glacier, and thus provided fuel to cook the excellent supper we enjoyed before we slept. There were two other parties on the rocks that night—the Stockje hut being in ruins. We crept into a hole and had a good night there, in a natural cave which was warm and dry. When in the small hours of the morning we were drinking our chocolate, a cry suddenly arose from one of the other parties that their rope was missing. We stirred the fires and searched with lanterns, and it was all very picturesque, but did not lead to discovery—the rope was lost. So only two parties started off early and began to climb, and reached the summit after a hot fatiguing ascent up ice, snow, and rock. The younger man of this other party climbed in a boating sweater, appeared to feel the heat exceedingly, and went to sleep whenever there was a halt. Before the

descent was over he was decidedly ill, but fortunately not utterly collapsed until after the more dangerous ice slopes had been descended ; his "legs" were then quite gone and he had to be supported by the guides before he reached the sleeping place, where we left him wrapped in my shawl with his friend faithfully beside him to pass the night.

The unlucky man whose rope had been lost was a Britisher not easily beaten. He sent his guides back on their tracks, and by daylight the rope had been found, where it had been carelessly dropped, upon the glacier ; so that, though rather delayed, his ascent was made successfully, and the traveller returned by another route to Ferpèche. We, after having decided that the sick man was safe enough and fast asleep, found our way with difficulty in the dark, except for lanterns, across the

glacier, whereon we wandered nearly three hours, and Xaver refreshed himself by falling into a big water bath. Finally we had to stay at Staffel Alp instead of at our hotel at Zermatt. But we here enjoyed a sound refreshing sleep all night, and walked down cheerfully in the sunlight of the early morning.

As the Weisshorn was to be our next peak we took train one afternoon to Randa and climbed up the Schalliberg some hours to the rocks below the ruined hut. This was a warm sleeping place, though rather exposed, where we slept well beneath the stars, woke up quite fresh, and enjoyed the climb immensely. On the rock arête at about 12,000 feet up, and while the dawn was lighting the peaks around, a dense black cloud appeared over Italy slowly moving towards the Matterhorn; lightning came flashing out of it every few

seconds. It was a strange sight to witness this storm-cloud bursting over a distant land, while all about us the sky was clear and the stars were seen fading before the rising sun. A climber has related his experience in a thunderstorm which stopped him on the Dent Blanche, when the electric current made his goggles hiss upon his head. The hissing of the ice axe is generally near enough for an unpleasant sensation, and is not a rare occurrence, but the snow glasses being affected makes a more powerful appeal to the imagination. We had a good day on the Weisshorn (14,804 feet), and rested at the gîte on the rocks as we descended, then later had a refreshing tea at Randa, where we heard the first sad news of the loss of life that morning upon the Täschhorn just opposite us. A party of four, two gentlemen and two guides, trying to traverse

the Täschhorn from Saas Fée to Randa, got benighted in the descent. By light of a lantern they got to a point of comparative safety where all four lay down to sleep, but only three woke up; Mr. Lucas had wandered off in the night and fallen over a precipice, where his body was found in the morning.

At Zermatt, though the hotels seem crowded, there are not many climbers, they go up higher or appear only for a day and off again. The place is full of people—omnibuses run over you in the streets—and you may be there some time before you notice that Mdlle. Biner has now started a cabin near the Monte Rosa and shaves you as well as ever, advertising herself as a coiffeuse. She is dressed in black, mourning for her brother, the guide killed this year with young Seiler on the Matterhorn. Just up the street is a

tailleuse, a useful person sometimes after climbing rocks, and when your wardrobe is scanty.

Leaving Zermatt we spent one night at the Schwarzsee Hotel, close to the Matterhorn, intending to cross over into Italy by the Furgg-joch—this pass skirts the Matterhorn; we climbed to the top in about two and a half hours; starting from our inn at 4, we arrived at Valtournanche about 10 a.m. Then taking a carriage after a long rest and refreshment, our driver just made us miss the train at Châtillon, when the Italian sun was at its hottest; we had a siesta and dined there, and so in the evening to Aosta, where we slept the night. We took places in the diligence to Courmayeur next morning, and saw Mont Blanc before us in a few hours. The Aiguille Blanche de Péteret is well seen from the road, a sad reminder to all

Cambridge men of Dr. Frank Balfour, who perished on that mountain in 1882. It has been climbed by Sir Seymour King, and again this year by Dr. Güssfeldt with Emile Rey as guide. Six hundred francs is said to have been paid as fee for guidance.

We were up early for an eight hours' climb, with a final rock scramble to the Italian Quintino Sella club hut on the Aiguille Grise (11,812 feet). Here we had good food and sleep; our men went out for an hour and cut steps up a steep ice slope, ready for the ascent of Mont Blanc in the morning. As this ice slope appeared to be dangerous from falling stones, we began early, and were greatly helped by the steps already cut; if any stones came down we were not aware of them, though out of sight is not out of mind in these steep places.

The weather when we began our climb in the dusk before the day broke was very threatening, and later on a light fall of snow and hail gave us anxiety, as we clambered up the steep rocks, lest we should be driven back to our hut, the difficulty and danger of such a repulse increasing every hour until it was necessary to go on and make the ascent whatever befell us.

We passed on the higher rocks an enormous rusty ice axe of an ancient pattern, which doubtless has a story; we left it on the spot for others to wonder at. We made the ascent in about eight hours, including halts, and I stood on the highest point in these Alps—the great snow summit of Mont Blanc—15,780 feet. But let us not be proud, the highest mountain in the world, Mount Everest, is nearly twice as high.

On the curve of snow at the highest point a huge timber skeleton of a building is erected; heavy beams as thick as my body, strongly fixed together, make a truncated pyramid with a rectangular base, which looks as if it might stand the storms, or get buried in snow. At present the wind whistles through, and it presents no surface to the blast. M. Vallot, who is building this for an observatory, has had to plant the foundations in ice, finding no rock after thirty feet excavation. Whether the ice will move, or piled up snow will displace the structure, remains to be proved. Snow collects always more on the north (French) aspect of the summit, and this tendency to collect may be increased by the obstruction. The workmen stated at Chamounix that plum stones were found at a depth of twenty feet, and if this be true it is exceedingly interesting and important as showing that

these stones, which must have been dropped on the summit by travellers, had maintained their verticalness, and had not been carried down towards the glaciers below. There the hut stands at present with a small tricolour flag floating alongside. My vulgar wish to climb the timbers was unexpressed and unfulfilled. We were shut in completely by dark fog. Cold wind and the dangers of storm drove us down to just below the top on the Chamounix side, where there is a hut built as an observatory. This shelter we feared at first to leave; wind and darkness kept us there, no tracks were visible, nor anything to guide us but the snow all round. The wind was not the dangerous (south) Föhn wind, and presently, after a cold blast, we were able for a moment to see our direction; then by the advice of our guides we hurried down over the Grand Plateau, scuttling and

sliding to the Grands Mulets, and safety, in two hours and ten minutes. After a cup of tea and a rest we continued our journey over the beautiful glacier des Bossons in bright sunshine. We reached Couttet's capital hotel in Chamounix at six o'clock, thus traversing Mont Blanc from Italy into France in fourteen hours, including halts by the way. This is a far finer expedition than up and down from Chamounix, but is not so popular, and the traveller, bringing with him foreign guides into the place, is not saluted by a salvo of artillery.

Next day we were at Montanvert admiring the Mer de Glace, and during thunderstorms of many hours we made our arrangements to climb the Aiguille du Dru. Sleeping out under a rock, where we had passed a stormy night last year, we began in fine weather our steep ascent mostly of rocks, with plenty of opportunities for

adventures on the way. There is one place in climbing the rocks where a rope is hung over a precipice, and by gently swinging on this rope a long step or giant stride is made across to a foothold beyond. It is only one of the many positions in mountaineering where imagination shows you what a slight distance there is between what you are and what you may become. In the descent a frightful avalanche of stones fell down just as we cleared the rocks, but it was not near enough to shake our nerves.

On the 28th of August I slept at the Couvercle to climb the Aiguille Verte. This sleeping place is a good one where an enormous rock overhangs the little platform on which the sleeper stretches, and it is grandly situated above the famous Jardin in the Glacier de Talèfre. Being roused before midnight in threatening weather, we hesi-

tated before attacking such a mountain as the Aiguille Verte with a high wind and storm-clouds in prospect; meantime we had some hot chocolate, and only set off with some misgivings at one in the morning. The wind moderated as the day broke, we got over the bergschrund, and made a successful ascent in about nine hours. The summit of the Verte is of snow, commanding a fine view of Mont Blanc and the peaks around. We noted with feelings of annoyance that the majestic snow curve upon the head of the Monarch is broken by the erection of Vallot's wooden building, which looks from here like a projection of dark rocks. Time may revenge himself, and play skittles with the timbers.

When I parted from my guides, whose conduct was worthy of all praise, and came down to Chamounix, I saw there a most piteous sight, that of a fine young fellow

with both feet frost-bitten. All the toes of both feet were black, and large blisters appeared on the reddened skin of the foot above the blackened toes. He was a guide named Maquignaz, and forty-eight hours before my visit had been exposed during one night on the Italian side of Mont Blanc; he was with Mr. F. and another guide, a cousin of the same name. The others of the party put their feet into their knapsacks, and took such like precautions, and so escaped. On examining this poor fellow's boots I discovered that, though sound enough in the soles, they had the tongues fastened only halfway up the upper leathers, and with no gaiters or other wrapping except his trousers, he must have got his feet wet. The latest accounts I heard were not hopeful as to saving the big toes. Without the great toes he cannot climb again and his occupation

will be gone; the loss of the little toes is not so serious. The reflection after such a sad sight is forced upon one, that though over sixty deaths are said to have occurred on Mont Blanc, history takes small account of the travellers who have lost portions of their bodies upon the mountains and had their after lives wrecked by their maimed condition.

The delay caused by an endeavour to help this unfortunate man, decided me to journey to Geneva with my friend rather than travel alone over the Tête Noire. It was late next night before I reached Zermatt again and joined my wife, who had reached the Riffelberg from Paris ten days previously. We found most comfortable quarters at the Riffel Alp lower down, in an enormous hotel, where two hundred and seventy people dined every day, including an archbishop and forty-five clergymen.

The weather this year has been good for climbers, though there have been peculiar dangers associated with the sunshine; and as every season has its own peculiar dangers, so this year the weather was almost too good. The sun tamed the severity of giant peaks, and made the descents dangerous from avalanches.

The great rocks have been bared of ice and snow and tempted attacks, while earth-fast and frost-bound stones were loosened from the heights above and made the mountains dangerous. The steep couloirs of the Aiguille Verte were decidedly dangerous from falling stones, and though I do not pretend to have any hair-erecting story to tell, it will be understood that we made our way up and down on the rocks, as much as possible avoiding the tracks of the stones. The traverses across the couloirs were as rapid as caution could permit, and only

made when absolutely necessary. Great stones occasionally hurtling down as if shot from a catapult, with enough force to dash the brains out or hurl to destruction the poor climber balanced in his ice step. Thus upon the Aiguille Noire a man was killed by a blow on the head, and many had narrow escapes. On all great mountains where ice, snow, and rock have all to be climbed over, it must be difficult to find weather which will suit so as to find everything in perfect order, but for the true enjoyment of a climb both the man and the mountain must be in fine condition. The weather of the day I have described on Mont Blanc, though it gave us some uneasiness, was just perfect for avoidance of fatigue and mountain sickness. Absence of sun and presence of wind enabled the climbers to feel fairly vigorous, though at such a height. In other conditions of hot,

still weather, the strain might have been severe.

These days are now delightful memories for me, and if my remarks just written do not rise above what Scott called the "ordinary bow-wow," at least they are "high notes" in one sense, and may find an echo in the hearts of those who love the mountains.

An Alpine Letter

1892

Saas Fée—Grimsel Pass—Mountain sickness—A tired lady on the Matterhorn—Ascent of the Matterhorn—Ascent of the Ober-Gabelhorn—The Trift Joch from Zermatt to Zinal—The Concordia Hut—The Jungfrau—The Lötschen Lücke—Mr. Nettleship's death on Mont Blanc—Beaten by bad weather on the Dru—The disaster at St. Gervais—Neuchâtel to Bâle.

“IN all my wanderings round this world of care” I have found few places so free from the black canker as the mountain tops. Let the climber carry out a burden as big as was Christian's in the *Pilgrim's Progress*, he leaves it all behind upon the high peaks. If Mr. Gladstone could only have managed to attain to the summit of Snowdon he

might have seen more than the coast of Ireland.

Truly it may be said that the outside of a mountain is good for the inside of a man. So once again I take my holidays upon the Alps, and will hope that the following account may interest readers who travel, for these like to be reminded of beautiful places they have visited, and those who stay at home may be encouraged to try the mountains abroad.

In order to avoid the hot part of the Rhone Valley, and to reach Saas Fée, our first halting place, by an interesting route, my wife and I took the train for Lucerne—by way of Calais, Rheims, Laon, and Bâle. This journey takes less than a day. Starting from London at 11 A.M. we found ourselves the following morning in a boat on the blue Lake of Lucerne with the mountains around us. Travelling by rail over the Brünig

Pass, which we had crossed on foot ten years before, we reminded each other of a long walk from Meiringen to Lauterbrunnen in one day, over the Greater and the Lesser Sheidecks when our porter over-ate himself at Grindelwald, about midway, and nearly collapsed at the end of the journey, turning very white and sick in the steep descent to Lauterbrunnen. We came to Meiringen, still chiefly in ruins from the recent fire. The hot, strong Föhn wind blowing from the south is the cause of these awful fires, it will both start and spread the flames. For miles round Meiringen there are notices forbidding smoking in the open road when this wind is blowing. From this sad spot by easy roads we came to Guttannen and here spent the night, rising early next morning for a walk over the Grimsel Pass, with a man to carry our light luggage.

The first early morning walk in Switzer-

land is always delicious, and wipes away the discomfort of the journey out. We stayed at Handeck to look at the finest waterfall in the country. Two converging torrents, "with a mighty uproar," pour their waters into an unfathomable, mysterious abyss, hidden by clouds of spray, where a rainbow arches in the sun.

As we walk up the pass, which has been described as a "sepulchre unburied by the sun," there are, on either hand, enormous, dark, smoothly rounded rocks, the evidence of glacier action in the ages gone. The Grimsel Hospice is situated in the most savage rock scenery, and is not improved by containing a piano, electric bells, and a smart waiter in dress clothes. However, I made use of their telegraph to order a mule from Saas Fée to meet us at Stalden for my wife to ride up there. All the crooked places are now

being made plain by means of telegraphs and railways!

A great new road is in process of making over this pass, and as we reached the summit, the blasting operations were heard in many explosions; each was at first like the pop of a champagne cork, but after a pause came a tremendous thundering echo from all the mountains around. We left the Rhone glacier on our left hand, and descended to Obergestelen in the upper part of the Rhone valley, taking there a carriage to Brieg. The sensations are delightful on a sunny day, when, after some hours' walking in bleak, bare, rock wilderness, you come down into a green and fertile valley; the effect of the keen fresh air is still with you as you drive along among the trees and flowers in the sun, and you are cheered with a sense of well-being in the present and the future.

Here you "cannot see the smiling earth and think there's hell hereafter." A night was spent at Brieg and then a short journey by rail to Visp and up to Stalden, from whence I followed my wife's mule to Fée. After spending a few days in comfortable quarters there I left to make some expeditions.

My climbing friend, A. B., was at the Eggishorn Hotel, and had just made the ascent of the Finsteraarhorn, the highest peak of the Oberland, whereupon he had been taken with mountain-sickness, and made his ascent with some difficulty, his guide helping him on and holding his head occasionally while he vomited. His trouble was, probably, caused by his going too fast up his first peak, for, though accustomed to the mountains, he had only been out from England a few days of this season. This interesting malady is well

described in Whympers travels amongst the Great Andes of the Equator; both himself and his men suffered from headache and fever, but the conditions were very different from what obtains on our mountains; the highest point is here only 15,700 feet (Mont Blanc), compared with over 20,000 on Chimborazo. All exertion seems more severe at great heights, and though in Europe mountain-sickness is rare; there are few climbers who have not felt at 14,000 feet a sense of breathlessness if going upwards at any great pace. It is often hard to distinguish it from mere fatigue, and I do not think that guides would acknowledge it in themselves; but for myself I have had the feeling, and "thought I could not breathe in that fine air." Whympers observations prove that man may gradually accustom himself to these great alterations in barometric pressure,

though the dangers of want of training and of sudden ascents are well known.

Paul Bert, by means of a metal cylinder, in which he shut himself, had the pressure of the air reduced to be equivalent with that on Mont Blanc, but was soon sick and dizzy; afterwards, in experiments, he was able so much to revive himself with bags of oxygen gas, that three balloonists were emboldened to ascend to a height of 28,000 feet, taking with them a supply of oxygen: with the result that when the balloon again reached earth two of the aeronauts were dead, and the third had a very narrow escape. Man has not yet gained the summit of Mount Everest.

Very extraordinary is the description given of the effects of altered atmospheric pressure by early climbers. Mr. Fellows (afterwards Sir Charles Fellows) in 1827, with Mr. Hawes and ten guides, writes

that at the distance of 1000 feet below the summit of Mont Blanc, "the effect of the rarity of the air was still more striking, for the noses of several of our guides burst out with blood. . . . None of us were free from many effects of the peculiarities of the atmosphere: we all spat blood; the eyes of all were blood-shot, our faces were blistered, and in our respiration we all suffered intensely; for it was impossible to proceed many paces without stopping to recover our breath." Near the summit "two of our guides fell from faintness, and copiously vomited blood, while all of us gave proof of its internal loss (we all experienced symptoms of haematuria)." Mr. Fellows and his companions suffered less than did the guides.

Those who are interested in this subject should read the account of the ascent of the German Emperor's balloon *Phoenix* in

1895, in which Coxwell's record was beaten. Oxygen cylinders were used.

My friend, A. B., joined me at Schwarz See to climb the Matterhorn. Our two guides were also ready; the leading man, Alois Kalbermatten, we usually called Hercules; his brother, a still stronger man, was named Quinbus Flestrin, or the man-mountain. Together we went up to the hut to spend the night, ready to begin our ascent in the morning. As we were thinking about supper there came down a wretched, worn-out, grey lady, who said she had been up the Matterhorn, was too exhausted to proceed, and must stay the night with us. The place was very unfit, dirty, and stuffy, so we made her rest awhile, restoring her with brandy and lemonade. I then made her guides rope her carefully the whole of the way down, and she reached the hotel safely.

On a fine day when the Matterhorn will "go," the hut is always crowded, chiefly with foreigners, and we stretched ourselves on the bunkers alongside of a polyglot Pole, who talked half the night. Italian guides stole one of our lanterns, and my friend's silk scarf.

We had a lovely day for our ascent, which occupied six hours, including halts and feedings. Upon the summit we spent about an hour of most glorious life in view of Italy on one side and Switzerland on the other, while we walked carefully on the delicate ridge of snow which forms the apex of the peak. The ascent of the Matterhorn from the Zermatt side is more interesting historically than as a climb. The hut occupied by Whymper in early attempts still remains, and as the guides pass the fatal spot they cheerfully point out where poor so and so broke his neck, where poor

Dr. B. died. The shattered photographic apparatus remains on the precipice upon which, two years ago, an entire party was killed.

The difficult parts near the top are now so strongly roped that some are tempted to make this climb who are not fitted by previous training, and as a tired man is a dangerous man on a steep mountain which is 14,700 feet high, I fear we have not done with accidents on the Matterhorn. The descent ought to be carefully done, and almost as long a time given to it as the ascent. At present there is no railway up, but such a project is seriously in the air, or, like the mountain, *in nubibus*.

After a pleasant day at Schwarz See wandering above the beautiful Zmutt valley, we went to Zermatt and thence to the Trift Inn to try the Ober-Gabelhorn, but bad weather beat us back. Later on we were

successful, and had a glorious day, starting at two in the morning in the starlight.

“So climbers by some Alpine mere,
Walk very softly thro’ the clear
Unlitten dawn of day :
The morning star before them shows
Beyond the rocks, beyond the snows,
Their never-travelled way.”

We were five and a half hours climbing up, and were back about half an hour after mid-day. The snow was in good order, but coming down we had a run to dodge falling stones, though none came upon us. Next day we crossed the Trift Joch, a famous pass from Zermatt to Zinal. From our inn we reached the Mountet hut under five hours, intending to return over the Rothhorn next day ; but at the hut a great storm of hail and wind kept us in shelter for a time, and drove us down in the afternoon to Zinal, where it rained night and day continuously.



ICEBERGS STRANDED ON THE BED OF THE MÄRJELEN SEE AFTER THE DEPARTURE OF THE WATER.

With such a downfall, which on the high peaks would be mostly snow, it was useless to think of any Zermatt mountains at present, so we decided to go to the Eggishorn Hotel, and then try the Jungfrau, one of the Oberland giants. The storm had rather scattered me, for I had some wraps at the Trift inn, a bag at Zermatt, unpaid bills at both places, besides a wife at Saas Fée. However, this was settled so far as luggage and payment concerned me, by sending our man to arrange it, and we went off to the Eggishorn. On a Sunday afternoon, after service in the little church, we walked to the Concordia hut, and found the Märjelen See drained almost dry; instead of a great blue sheet of water with icebergs floating in it, there is nothing but a muddy pond. This is partly the result of draining operations, and makes the valley below much safer as

a dwelling place, but takes away from the beauty of this part of the great Aletsch glacier.

It is interesting to note the great stones which now and then are carried about on these icebergs, or left stranded when the water is low; thus illustrating, on a small scale, the theory which best explains the position of erratic boulders—namely, that they were carried by icebergs in the glacial age.

The Concordia hut is grandly situated near the beginning of the great glacier, close to the Oberland mountains, and is a starting-point for many expeditions. A member of the Swiss Alpine Club who shared the hut with us was a most excitable little man, and signalled his arrival by letting off with a frightful explosion a large maroon, and to my horror he carried another, quite as large as my fist, ready

for his departure in the morning. He actually began to light the thing inside the hut just before our start, but we got outside and out of the way, while in the darkness before the dawn, under the quiet stars, he yelled, and waved his hands about, and burst his infernal machine. It is hard to forgive these queer foreign manners. He afterwards stopped his guide that he might exchange cards with us.

After this adventure we had a quiet time and a perfect day on the Jungfrau. We took five and a half hours to make the ascent, including breakfasts and halts. There is just room to stand or sit carefully on the highest point of snow. We had a glorious view. The beautiful green valleys of Grindelwald and Lauterbrunnen spread at our feet, and all the peaks around us far and near were perfectly defined. The sun was all day very powerful, and the reflection off

the recent snow was dazzling in brightness ; my face and ears got touched slightly in spite of anointing with lanoline, and peeled, though not painfully, during the next few days. To prevent sunburn hazeline cream is a most excellent application, combining a vegetable astringent with lanoline.

Early on the morning following we crossed the Lötschen Lücke, a beautiful pass of snow and ice, with the finest crevasses full of strange ice architecture, and came to Ried in the Lötschen Thal, where is a comfortable inn at the foot of the Bietschhorn, the mountain we were anxious to climb. Here the weather broke, great clouds came with a south-west wind, and gathered all over Italy. The peaks could not be seen in the stormy sky, while a large eagle or lämmergeyer hovered over the hotel.

We had to give up our expedition, and after a quiet day in this peaceful inn we

went down to the Rhone Valley, dined at Sierre, slept at Sion—lulled to sleep by pouring rain—and next night came to Chamounix by way of the Tête Noire. A shadow was over Chamounix because of the sad death on Mont Blanc of that well-known Oxford scholar, Mr. R. L. Nettleship. I saw the newly turned sods on his grave in the little churchyard, and heard again the story of his loss, so far as it ever will be known. After a stormy night spent in a snow shelter, his guides came down and left his body on the mountain, where it was found by a search party later on. Mr. Myer's beautiful lines seem to have been made for such an event :

“ Here let us leave him ; for his shroud the snow,
For funeral lamps he has the planets seven,
For a great sign the icy stair shall go
Between the heights to heaven.”

The survivors must have been very strong

fellows and able to carry very thick clothing. Certainly a storm on a great mountain is very awful to encounter, and the strongest man may die if he tries to face it and fight the elements.

At Montenvers, above Chamounix, there is the well-known inn, comfortable enough if the weather be fine, from which we took blankets and food, and crossing the *mer de glace*, bivouacked a few hours up the rocks on the other side, in order to climb the Aiguille du Dru.

“The Dru is a Dragon of mountains,
They *scaled* him long ago.”

Pardon the parody. But we were not to be fortunate—an angry sunset, so gorgeous as to repay any day of laborious mountain climbing, was followed before midnight by a storm of wind, hail, thunder, and lightning. Crouched under a rock with the rain running into our ears, we got through the

hours of darkness, and in the morning, though we could hardly stand up for the wind, our guides managed to light a fire in a deep hole, and cooked some chocolate for us, and, as soon as the weather and daylight allowed us, we climbed down to the inn.

My wife in my absence had arrived there, while I was on a rock all night in the storm, and we each had our adventures to relate. A few days of broken weather ended in snow all round the hotel. No more mountains were to be climbed by me this year, and regretful good-byes had to be said to my guides.

Our journey home was made by Geneva. On the way we passed the scene of the great catastrophe at St. Gervais in July last. Here miles of mud covered the green meadows, uprended trees stripped of their bark and branches, demolished houses,

fragments of timber and rock, were strewn about wherever they had been hurled by the violence of the flood. An inhabitant of a near village told me that at one in the morning the avalanche and deluge came down on the ill-fated hotel, crushed down everything in its way; that he saw next day the people who were saved from the flood were dying in numbers, as he said, choked and poisoned (*empoisonné*) by the filthy stuff which had filled their mouths, lungs, and stomachs. One hundred and twenty-five bodies were found, but the number of the dead will never be known. Only a week ago an arm and part of the bust had been found five miles from St. Gervais; many such dreadful relics are yet to be discovered. A baby still in its cradle was carried miles away to a village below, but had not survived the perilous voyage.

The best account of the cause of this catastrophe appeared November 1892, in *Knowledge*, written by The Right Hon. Sir Edward Fry. An enormous amount of subglacial water was suddenly let loose from high up on the Tête Rousses glacier, where two great chasms were photographed next day. The moving mass of ice and water destroyed the village of Bionnay and hurled down everything in its irresistible course, including a rock of vast dimensions. "The villagers of Bionnay were intending to celebrate a fête on the 14th July, and, with a view to letting off feux de joie on that occasion, holes had been bored in a stone then in the village. That stone, with its holes, is now at St. Gervais, and was probably highly effective in the destruction of the baths. It is rather a rock than a stone. It is further stated that the iron safe in the office of the baths was carried

five miles down the stream to Sallanches, where it was found."

Geologists do not perhaps yet realize what such deluging catastrophe can effect. Slow action, as of evolution among the living, and the gradual change effected by ice and water in the inorganic world, chiefly impress us to-day. But such conditions of ice as are described by Sir Martin Conway in his valuable book on the Karakoram-Himalayan glacier, whereon large quantities of water would lie with no crevasses or chinks to carry it away, seem to afford opportunities for catastrophe on a gigantic scale, and help the imagination to realize such possibilities in the glacial age.

These great disasters, with the terrible boiler explosion on the Lake of Geneva, have made the fire at Grindelwald seem quite a small affair, and there have been

very few climbing fatalities this season. My wife told me that a victim of the Grindelwald fire arrived at Fée in his only surviving suit of clothes. To the victim the rhyme fitted aptly :

“I’ve lost my portmanteau ! I pity your grief !
My sermons were in it ! I pity the thief !”

For all the poor parson’s garments were looted, but he discovered at the Fée post-office his two bags crammed one inside the other, containing only his twelve original sermons and two old shoes !

A romantic robbery took place at Arolla, where a gentleman walking alone on the glacier was set upon by a brigand, who covered him with his gun, and made him put his property on the snow—a selection was then made by this Italian rascal, who fled over the frontier into his own country, where such thieves abound.

The railway journey through Neuchâtel

to Bâle is through fine country, and Bâle itself between the Black Forest and the Jura, with its old-world look and its bridges over the Rhine, is well worth a visit. You will find here memorials of Erasmus, of Holbein, of Paracelsus, with museums full of interesting mediaeval work—while at the Hospital you have evidence that modern methods are understood, and the appliances, especially on the surgical side, are the best obtainable in Europe. Three hundred beds are contained in the building, and, like our own noble institution of Addenbrooke's, this is endowed and supported by liberal citizens, who wisely use their wealth and knowledge, not merely for profit and loss, but "for the glory of God and the relief of man's estate."

A Month upon the Mountains

1891

Contrast between fens and mountains—The south side of the Lake of Geneva—The Great St. Bernard Pass—The St. Bernard dogs—A walk in Italy—The St. Theodule Pass—Last year's accident on the Matterhorn—The Täsch Alp hut and a lady climber—The Mischabeljoch and Alphubel mountain—Saas Fée and the walk by the chapels—The old stone bridge at Fée—The Portjengrat—The ascent of the Südlenspitze and Nadelhorn—The Laquinhorn with Mr. Eyre—The Rothhorn ascent from Zermatt—The Märjelen See.

WHAT change can be imagined greater than from these "gray flats" to the glorious snow mountains? The sea, except where there may be a bold and broken coast line, is too much like our own surrounding

surface, which God never meant to be seen, and which, according to our forefathers, we owe entirely to Drains, Dutchmen, and the Devil. My wife and I are both active persons, and, as we usually take our excursions in the Alps, it may interest other travellers to have this year a brief account of a fen man's adventures in foreign parts. To start at 11 o'clock in the morning from London it was formerly necessary to sleep in town overnight: now the train serves, and we go direct from Cambridge and travel in twenty-four hours to Switzerland. Rather avoiding the more usual routes, after a nasty game of pitch and toss in the channel we arrive at Paris, cross that city in a cab, refusing to be dropped by the ingenious driver at the wrong station (Vincennes instead of P.L.M.), dine comfortably, and then sleep uncomfortably in the carriage until we reach the

Lake of Geneva, the south side of which, by the way, is not so well known as is the other. This blue sheet of water is shaped like a crescent moon, the horns pointed downwards so that the concave edge is south, and along this we coasted fifty miles in a small steamboat, admiring the beauty of the lovely lake and the vine-covered slopes of the shore with the mountains beyond. It was too far away to the north for any view of the other coast—or of the famous castle of Chillon. On board we can wash, feed, and write letters, delight ourselves with the varied scenes around, the voyage made more refreshing from the contrast after the dusty shaking railway box in which we were packed so many hours.

Landing at Bouveret—our heavy luggage having been sent by post to Zermatt from Geneva—we are free of everything except

satchel and stick, knapsack and ice-axe. A short journey by train to Martigny in the Rhone Valley brings us at about 4 P.M. on the second day of our travels, and here we took a one-horse carriage up as far as Liddes, on our way over the famous Great St. Bernard Pass. At 9 o'clock the new inn at Liddes was all dark and shut up, but we soon had out the landlord, who got us supper and good beds. Next morning we were up at 4 o'clock, and I walked after my wife's mule as far as the Hospice, just halting to see the place, the monks, and dogs. All is very like the Hospice on the Simplon Pass, with like rules and regulations for the society of Austin Canons regular who live here a life of genuine charity. Alas! to give up the cherished delusion that the dogs search for lost travellers in the snow! Have we not seen the picture of the dog with a child on its

back and brandy keg round its neck?
“Travellers pass every day during the winter, notwithstanding the perils of such a journey at such times. These persons, when they arrive at a certain house not far from the summit, are desired to wait until the following morning, when a servant and a dog descend from the top to this kind of refuge and take up all the persons assembled, the servant being conducted by the dog, who, it appears, never misses his way, but, entirely hidden, except his tail, in the snow, directs the march of the whole cavalcade.” If any traveller lie dead or dying in the track, the dog will probably discover him, and in this way rescue has come for wanderers over the pass when lost between the stations.

There are five or six dogs at the Hospice; they are not so fine and large as the show of St. Bernard dogs in

England. They are bred in the canton of Berne, and are supposed to be a cross between the Newfoundland and the Pyrenean.

The Great St. Bernard, though not so grand as other high passes, is full of historical interest—we are on the track of the great Napoleon, we lunch in the same room at Bourg St. Pierre—we realize what it must have cost him to drag his cannon over such a place. From the Hospice we both walk an hour down to St. Rémy, the Italian frontier—with our muleteer, who left his animal at the Hospice, to carry our things; he was anxious to know whether I had tobacco or cigars, and carefully hid his own modest packet before he led us to the Custom House. The soldiers dismissed us civilly after a complete inspection of our knapsacks.

At St. Rémy, after lunch we drove

down to Aosta. In this valley live many cretins; everything else is perfectly beautiful under the blue Italian sky, strangely different from the desolate and dreary pass above.

From Aosta a short railway journey brought us to Châtillon at about 4 P.M., on our third day out. Hiring a likely looking man, named Luigi Bich, to carry our traps up to Valtournanche, we finished the day by a good four hours' walk, all up hill, with a very fine view of the Matterhorn at the end of our climb. Here we sup and sleep, rising before day to follow a lantern and walk over the St. Theodule Pass to our hotel at Schwarz See, above Zermatt. We had breakfast at Breuil, best known to British travellers from its forming the base of operations in the ascent of the Matterhorn from the Italian side.

Our guide, who seemed rather out of condition, begged to be allowed to bring along a boy, his nephew, who was to be no further expense to monsieur. When we reached the top of the pass after a hot and fatiguing walk through fresh snow, a little mountain inn offered us rest and refreshment. The view is very fine, especially of the Matterhorn and the range on the other side beginning with the Breithorn; here the sunlight on the vast snow slopes was far too brilliant to be faced without dark glasses. After a short noon-day sleep this is indeed like waking in another world. The wily Italian at the proper moment now interviewed me, and represented that it was impossible he could properly care for madame unless he should bring his boy also; of course the boy went with us, and obtained a vast amount of pleasure at a small cost to his employer.

We roped as in duty bound over the nevé, and came to Schwarz See; the hotel is built on one of the spurs of the Matterhorn, about three hours above Zermatt. As usual we found friends in residence, and after so long a journey were glad of the shelter of a comfortable inn. A daughter of the great Alexander Seiler is in charge, and is devoted to the care of her visitors, who find all they can possibly wish for, and more than would be expected at 8,000 feet above the sea.

One object of my visit here was to climb the Matterhorn, that grand rock which is more impressive than most higher peaks from its isolated position, standing "alone in its glory." It is impossible to avoid thinking of the many mountaineers who have been killed there; one comes to regard it as a great gravestone in memory of these, and can fully realize the expression

of Tyndall as to the "moral effect" of this mountain upon the climber. Unfortunately, the Matterhorn would not "go" this year—only three ascents were made so far as I know—whereas in a good year 75 have gone up.

Of these three ascents I witnessed the second, and could see with a telescope that it was a long and laborious business, with much snow to plough through, and many steps to be cut. The man with his two guides came down just before dark, so why the *Times* should in the notice of this feat have left the poor fellow on the summit at 9 P.M. it is hard to say. In September a party of five got up, and came down with difficulty, much of the descent being by lantern, and only arrived at Schwarz See at 3 in the morning. They had found, near where ropes are stretched over a difficult bit of the mountain,

a portion of the camera which belonged to the party of three who were killed last year, thus confirming one theory of the disaster, that in the descent the box on the back touched the steep slope, and throwing the bearer off his step, hurled the whole party to destruction.

A man who saw their bodies told me that they were battered beyond recognition, and described how the brother of one of the victims howled loudly at the sight, in that utter abandonment to grief so rarely seen in a strong man, so terrible to witness.

But these are the adventures of others—to continue my own. By a short excursion round to Staffel Alp I nearly completed a tour of the Matterhorn; it appears from this aspect like an enormous snow cathedral, just the tower remaining to show the dark rock of the peak, the rest is ice and snow.

The weather was too uncertain to attempt

much of an expedition, and after a week, down came the snow—over boot tops—all round the hotel. But all is ready, guides are waiting, an active friend comes to the hotel, and as soon as the sun shines we go down to Zermatt, where I part with my wife, she to journey next morning to Rieder Furka, while I and my friend with guides sleep up at the Täsch Alp hut for an ascent in the early morning.

My first experience here occurred of a real lady climber in action; she had sent on her guide and secured a room to herself, rather hard upon the unfortunate male, as the dens of the wooden cabin contain each two or three beds. My friend and I had to toss up who should sleep on the floor—I won the only remaining bed. This lady was dressed in a Norfolk jacket, knickerbockers, and worsted stockings; she looked very business-like; one of my guides

was much interested and said, "She is a gentleman-lady." She was a Viennese, and kept possession of her more comfortable quarters, though my friend was not polite enough to say that he preferred sleeping on the floor. On this point I feel very strongly, that a lady should behave on such occasions exactly as if the cabin were a railway carriage.

At about half-past two we were up, intending to traverse the Mischabeljoch, and ascend the Alphubel Mountain, thence down to Saas Fée. We followed a lantern up to the snow and rock, on a very steep, frozen moraine, awkward to walk on in the dark; then roped, and had a good day, except that the snow was fresh and fatiguing. Also we were longer in the descent than we liked, my friend's knee, which had been slightly hurt on a mountain some days before, was now rather severely

taxed, and this was the only expedition we accomplished together. We stayed at Saas Fée, one of the best places in Switzerland, good for walkers or climbers; it is about three-quarters of an hour above Saas Grund—said to be the abode of Mrs. Grundy, who has not yet reached Saas Fée.

The most charming walk down to the valley is by the chapels, of which there are a dozen or more, each full of quaint, coloured wooden figures, about two feet high, representing scenes in the life of our Lord. The artistic merit of these figures is very unequal—some few are said to be the work of an Italian artist named Tabaketti, of the sixteenth century, who crossed the frontier and worked on the Swiss side. An odd effect is produced by the villainous-looking wretches who are torturing the Saviour, being represented with goitres and a cretinous aspect truly repulsive.

A few minutes' walk from the hotel towards Mattmark is a wonderful old bridge over the mountain torrent. It is one of the most ancient structures in Switzerland; flat stones are laid, over-lapping more and more, to meet similarly placed flat stones on the other side of the stream, advantage being taken of big boulders of rock which approach to form natural buttresses. The whole is so overgrown with trees and moss that many pass over it without notice.

At Saas Fée, on a moraine in the midst of glaciers and ice falls, there is a tiny timber-built inn, presided over by Clara, who is well known for the good tea she always gives the tired traveller, and certainly her name ought to appear in the guide books. If only a hut could be built higher up the Lange Fluh, mountaineers could sleep above, and Clara could supply provisions from below; this would be a real gain to climbers.



OLD STONE BRIDGE AT SAAS FÉE.

To test my friend's feeble knee, he was to try the Portjengrat, a most interesting climb, in which I was much tempted to join; but having done it in a former season, I took a lazy day—then finding that after his climb my friend limped a good deal, I set about a serious expedition, the ascent of the Südlenzspitze, without him. With two good guides, and a porter to carry up blankets, firewood, and provisions, I started one afternoon and reached a rock some hours above Fée, where we were to sleep; with our axes we cleared away several hundredweight of ice and snow, lighted a fire, cooked two tins of Moir's turtle soup, mixing it in a big pot with pannikins of snow. Words can't express how good it was, how it hit the right place! We ate in the dark, except for a feeble lantern; then spreading a rug over the little shelf we had cleared, we all lay

down as tight as sardines in a tin, so that I could not even turn on my long axis. I was not very cold, having on three pairs of stockings, three waistcoats, a shawl, a rug, and the blanket in which we were all packed. There was no need for me to fear walking in my sleep over a precipice. I didn't sleep. The wind nearly blew me out of my rug and howled like a savage beast, but at length the morning broke and "tipped the hills with gold." Day-dawns such as these live in the memory for ever. After a cup of hot chocolate, the porter went down, and we began to climb the Südlenzspitze, a peak over 14,000 feet high, next to the Dom one of the highest points in Switzerland; several parties had failed this year, and we were anxious to do it with the Nadelhorn as well, to crown our success. The Südlenzspitze is not a "guide book mountain," but it is a good

climb, and there is an awkward *gendarme*, or pinnacle, standing up like an obstructing sentinel on a ridge along which it is necessary to travel. This *gendarme* may be the size of a church or not larger than a lamp post, and give serious trouble to the climber. However, we struggled to the top, and found a tremendous wind on the peak, so that we had to wear our sleeping caps over our ears and feel now and then our frozen features. Byron must have imagined such an ascent when he wrote those fine lines :

He who ascends to mountain-tops, shall find
 The loftiest peaks most wrapt in clouds and snow.
 He who surpasses or subdues mankind
 Must look down on the hate of those below.
 Though far above the sun of glory glow,
 And far beneath the earth and ocean spread,
 Round him are icy rocks, and loudly blow
 Contending tempests on his naked head,
 And thus reward the toils which to these summits led.

We left a card in a bottle at the top,

where none had been this year before us. Descending a steep snow edge to come to visiting terms with the Nadelhorn—a peak of steep but easy rocks with some gendarmerie—my leading guide loosened a big stone at the top, which narrowly missed me and dropped on the man below, hitting on the steel of his axe, but he held firm, and this was the only escape I was aware of. We came down into a snow storm and thick mist, but got safely home after fifteen hours' climbing, then a light dinner with a glass of champagne, and so to bed.

From Fée I walked with a strong man who wanted to stretch his legs to climb the Laquinhorn. It is a long way there and back, but not a great climb; we returned by the chapels, after a roasting day in the sun. My companion had bargained with me over night that he was to be allowed to stop and feed every four hours. He

did so, and ate up everything, even the cheese; the guides then hurried us home lest they themselves should be eaten too! Alas! there will be no more such pleasant walks. Eyre was killed on the Sparrenhorn, 1895. Later on, again I went to Zermatt, slept at the Trift Inn, and climbed the Rothorn. I greatly wished to go down from the summit to Zinal and back by the Trift Pass next day, but my guides would not permit the descent to the Constantia Hut, and no doubt they were right. How do these men, Xaver Imseng and Alois Kalbermatten, win my regard? Xaver has an angel face, and Alois a form like Hercules. It is not only their courage, skill, and devotion to duty, but their sympathy with my delights or difficulties—this is the great charm.

One night only at Zermatt and then up at 4.30 to catch the six o'clock train from

Zermatt to Visp in the Rhone Valley. This is the new line which many climbers believe will disturb the happy hunting-grounds. The journey was very pleasant; being allowed to stand outside, and the train moving slowly, I enjoyed the scenery and chatted with one of the few men who this year climbed the Matterhorn.

Four hours' walk above Brieg in a blazing sun on one of the hottest days known, ended in a storm of rain which wet me through; it delayed me in a forest where I had the luck to see a fine fox at close quarters; we watched each other quietly for some minutes. I found my wife and friends at Rieder Furka and walked with them up and down a baby mountain called the Riederhorn; then later, with an active fellow made the ascent and back to the hotel in twenty-two minutes, just to dry my clothes.

The hotel is well placed above the Great Aletsch Glacier, upon which delightful expeditions are made, especially to the Märjelen See, a wonderful ice-bound lake with icebergs in it, which has before now threatened Brieg with a flood from the sudden bursting of its waters upon the valley far below.

Home again by Geneva, I visited the Cantonal Hospital there, which is well built and planned; but in the summer the building is empty and clean, the patients being in open-air barracks, timber-built with canvas sides. Would that our English climate would allow of the like. On the other side of the city, at the Rothschild's Eye Hospital, there seemed every comfort, but few patients to be treated.

The sight of England again always cheers us, with homely peaceful scenes; well may

we say in travelling through the Kentish hop fields :

“ Let Frenchmen boast their straggling vine,
Which gives them draughts of meagre wine,
It cannot match this plant of mine
When autumn skies are blue.”

NOTE

The Birrenhorn by the south face. This good climb, which has probably not before been done by travellers, is said to be a hunter's way.—*Alpine Journal*, Nov. 1895, p. 600.

To climb the Birrenhorn (2,511 metres) by the south face, go from Kandersteg up the nearest and steepest grass slopes which lie to the E.N.E. of the Victoria Hotel, to a couloir which is found by following the highest shingle. Here it is well to rope in order to ascend the couloir to a chimney. Climb through this to a shelf above, and turning slightly to the W. continue straight

up until a narrow horizontal shelf is reached running to the W.S.W. as far as some little pine trees; thence ascend by going up the face more to the E., until after a stiff scramble up twelve feet of difficult rock (which may be avoided by a circuit) a cleft is found in which lies an enormous grass-covered fallen block. Beneath this you crawl through a "Fenster," and soon reach a narrow grass saddle with views into the two valleys (Kander and Oeschinen). The final climb is then before you. Cross the grass saddle, ascend the rocks or grass slopes beneath which the shepherd's path is seen. The rock arête above the highest grass has a cairn and pole on the summit, reached in four and a half hours from Kandersteg. In descending the path towards the Oeschinen See, the way down to the valley is difficult to find, especially if there be any mist. The three-fingered rock

(Drei Eidgenossen) will be seen opposite the couloir, which is the last but one before reaching a great grass promontory. After a considerable descent a traverse is made to the right, where two iron stanchions guard an awkward place.

The Climbing Foot

It has often been noticed in mountaineering that a guide can go face forward and whole-footed up a slope, while the amateur following, and coming to the steep part, cannot plant his whole foot upon the slope, but has to go on his toes or else turn sideways.

The difficulty with the young climber seems to be to get his heel down, and he learns to look out for little humps or embedded stones on which he may place his heel.

Then if his calf muscles permit his foot to be correctly planted down, this interferes

with his upward step, giving him discomfort at the back of the leg, experience very slowly enabling him to walk with the pelvic roll characteristic of the guide's uphill gait.

It is worth noting here that rowing men in using sliding seats cannot always keep the heel down on to the stretcher at the beginning of their stroke.

It seems possible, and many climbers must have considered it so, that the angle made by the foot with the leg may be more acute in the guide who has climbed from childhood, and that in the case of the guide's feet there may be some structural difference, both hereditary and acquired, actually permitting more freedom of movement at the ankle-joint, which neither muscular action nor power of balance could ever give to the amateur.

The guides wear their thick leather boots loosely laced at the top during an upward

climb ; so that it is difficult to judge of the play of the ankle : but last year I was fortunate in falling in with Captain Abney, who kindly photographed for me the naked feet of my guides in the act of climbing a rock, and in other positions for purposes of comparison.

So leaving out of the question all lateral movements at the ankle-joint as difficult and complicated to estimate, we will briefly consider the question of the ordinary angle that the foot makes with the leg so far as it is less than a right angle, and whether the trained guide has any advantage over the amateur in this respect.

To begin with the foot of an infant, we notice that the foot, like the hand, is all adapted for climbing. Dr. Louis Robinson has shown that the infant's hand-grip is so strong, that the whole weight of its body can be borne by the prehensile power of



FOOT OF AN INFANT FIVE WEEKS OLD, SHOWING THE INSTEP TOUCHING THE SHIN ON SLIGHT PRESSURE OF THE FINGER.
The adaptation of the foot for progression on all fours. The baby is wrapped in a napkin and black velvet, and held by a nurse.

the hand. The miner in Bret Harte's *The Luck of Roaring Camp* realized this strength of grip when he said after an experience with a cradled infant, "He wrestled with my finger, the d——d little cuss!"

The following photographs show how the child's foot can be made by a touch of the forefinger to approximate the instep to the leg until there is actual contact. The toes curl round to take a great grip of the object pressing against the sole, and generally speaking there is the most wonderful adaptation both for climbing and for progression on all fours.

The infant chosen for the first photograph was rather an unusually thin baby, but it had a fair amount of vitality, and illustrates better than a chubby child the points which it is necessary to bring out. If, with tracing paper placed over the



FOOT OF AN INFANT FIVE WEEKS OLD TOUCHED WITH THE FINGER TO SHOW THE ANGLE OF THE FOOT WITH THE LEG AND THE PREHENSILE TOES.

The baby is wrapped up in a napkin and black velvet, and held by a nurse.

picture, a pencil line be drawn along the bearing surface of the sole of the foot, and another along the leg to meet the former line below the heel, the angle made by these two lines will measure about twenty degrees.

Some may claim that this wonderful function in the infantile foot is a remnant of its former arboreal existence. "Hush-a-bye baby on the tree top" is evidence on this point also according to other most learned people. This remarkable function of the infantile ankle-joint is probably an evidence of our origin, and if we have really descended from apes we should rather be proud of our present position than ashamed of our ancestry. We may well suppose that in the pre-natal state, the child was continually occupied in climbing the walls of its narrow prison, like an infantile Sisyphus, and the flexibility of the ankle-

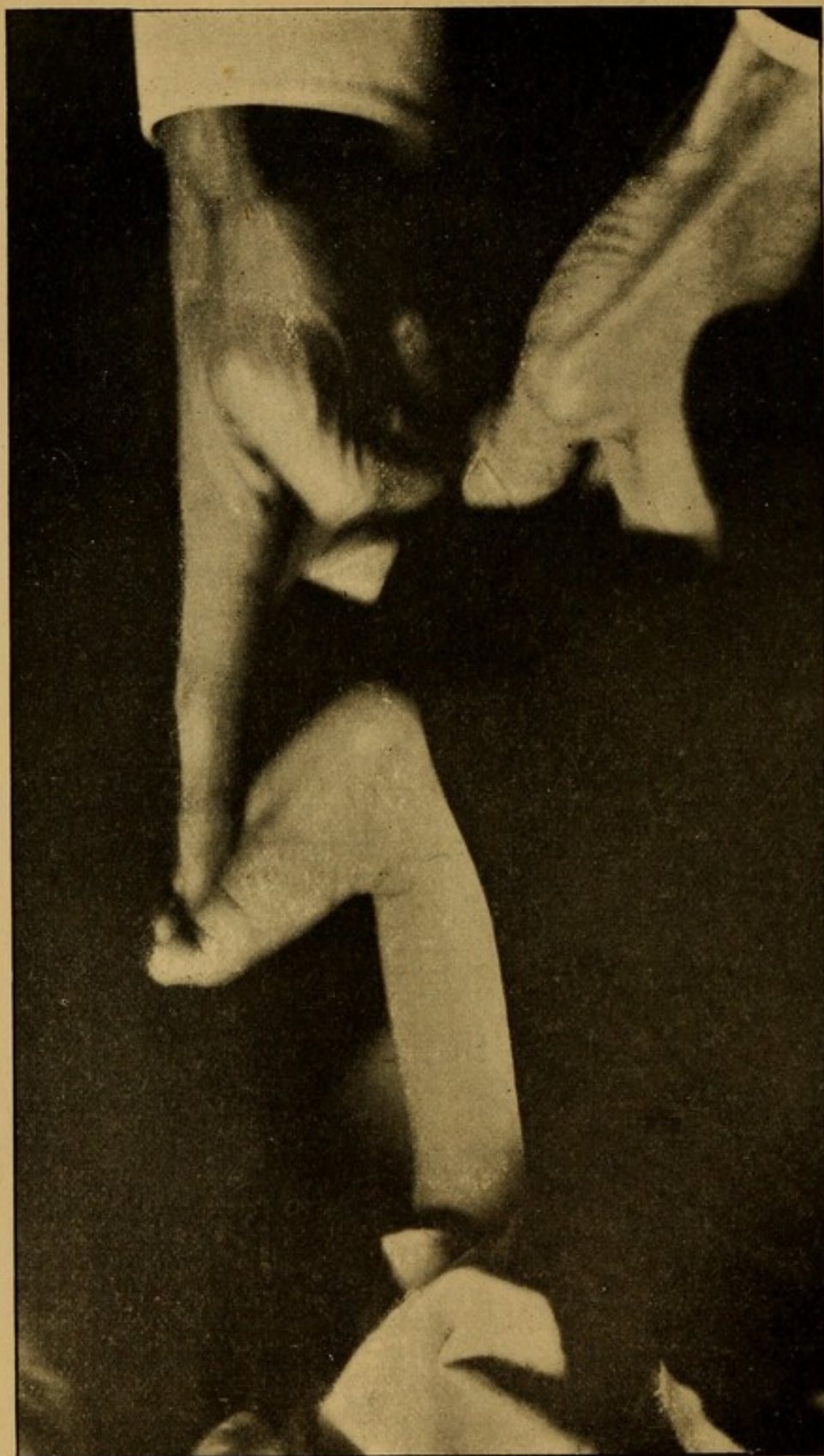


FOOT OF AN INFANT FIVE WEEKS OLD. THE INSTEP IS MADE TO TOUCH THE SHIN BY SLIGHT PRESSURE OF THE FINGER. The foot is adapted for climbing and progression on all fours. The baby is wrapped in a napkin and black velvet, and held by a nurse.

joint was an advantage for the maternal structures.

In the very tiny infant then of a few weeks old, nothing stops the foot from making the most acute angle with the leg except contact. The child a year or so old has lost some of this freedom, and begins to be adapted for the upright position; later on will begin to "feel its feet," as the nurses say, and soon to rear itself upon its hind-limbs. The infant's foot is plantigrade, and gradually during growth becomes adapted for the erect posture, and loses freedom of movement as it gains in strength.

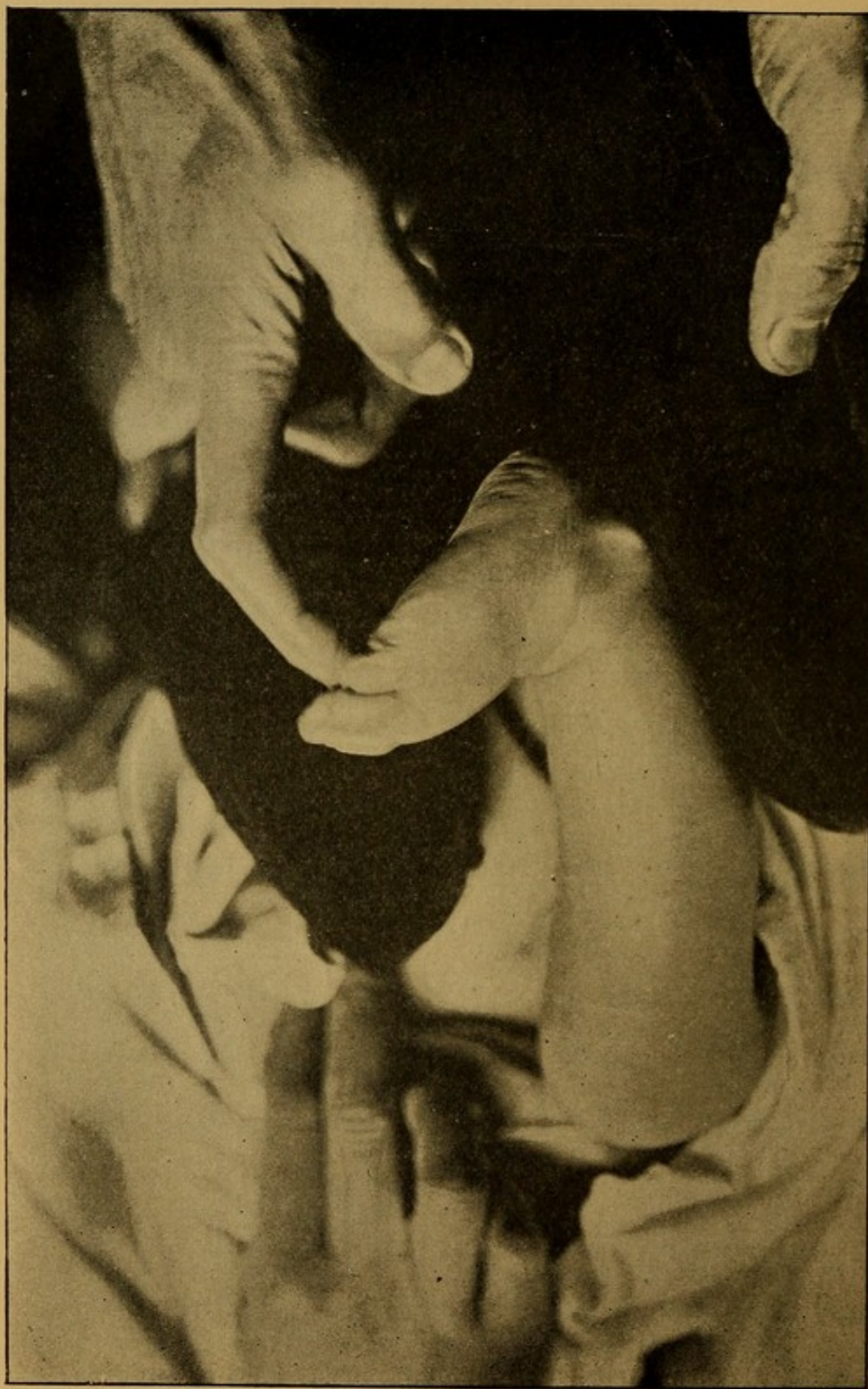
In the adult, in order to measure the angle required, it is necessary to get the long axis of the leg and the long axis of the foot, and then take the angle both when the foot is pressed upon and also when no pressure is permitted. To obtain



FOOT OF AN INFANT NEARLY A YEAR OLD.

On pressure with the finger the angle of the foot with the leg is less acute and more adapted for the erect posture.

this angle shadows may be tried; photographs are good, from which diagrams may be made with tracing paper and pencil; also mechanical plans, such as placing the back of the leg on a plane surface (as a table) allowing for the calf by a block behind the ankle, and then pressing a thin board against the sole of the foot, measuring with a suitable instrument the angle the board makes with the table at moments of extreme position, both with pressure and without. With the sole of the foot on the floor, and the heel well down when the leg is carried forward to the extreme position, the angle that the leg makes with the floor will indicate sufficiently, much as is shown in the picture of sitting down using only one limb. Whatever method is used the result is only approximate, but they will all agree, and are sufficient for our purpose. The measurements made when the feet are pressed



FOOT OF AN INFANT NEARLY A YEAR OLD.

Already the angle of the foot with the leg is less acute and more adapted for the erect posture. The child is wrapped up by a nurse in a black velvet covering.

gives alike in the Swiss guides and in the adult amateur an angle of about 60 degrees; without pressure the angle is nearer 70 degrees, and I measured two rowing men who could get no more acute angle than 70 degrees under any conditions. Always remembering that there is a fairly considerable "personal equation," we may conclude that if there be any difference between guides and amateurs it will not be enough at any rate to explain more than a trifling part of the superiority of the guides in walking up a slope. The height of the boot heel may be taken to be the same in all mountain boots, but the guides tend to wear heels rather high.

At Zermatt, on a sunny afternoon, Alois Kalbermatten and Peter Perren were good enough to allow me to pose them with their bare feet on a well-known rock, appropriately named the Shohorn, while Captain

Abney made admirable photographs, from which the reproductions accompanying this chapter were selected.

The guides laughed like schoolboys over the business, or over my solemnity at a scientific experiment. The photographs show very well the climbing position of the foot, and, if a comparison be made of an amateur's foot, it does not appear that the angle made by the foot with the leg is more acute in the case of the guide. Even with Röntgen's rays I do not think that any structural difference in the bones of the foot would be discovered.

In the case of the infant, so much of the bones of the foot is in the cartilaginous stage that nothing of the configuration could be studied with these searching rays, because cartilage shows so little shadow.

The foot then of the infant can be flexed until it is almost parallel with the

leg; during growth it loses flexibility as it gains in strength and becomes adapted for the erect position and for walking, which is the natural gait of man. The angle made by the foot with the leg in adults is fairly fixed, and a difference between guides and amateurs in this respect is not easy to discover.

Nevertheless, there may be more power on the part of the experienced to keep a straight knee under the conditions of a flexed foot, and as the straight position is the strong position of the knee, the guides may well have an advantage there.

Mr. Clinton Dent has so ably described the mechanism of the uphill walk in the Badminton book on mountaineering, that it is only necessary to remind sportsmen of the figure therein of "ein junger," page 92, going on his toes, using so much



GUIDE'S FOOT IN CLIMBING POSITION AGAINST THE SHOEHORN ROCK
AT ZERMATT.

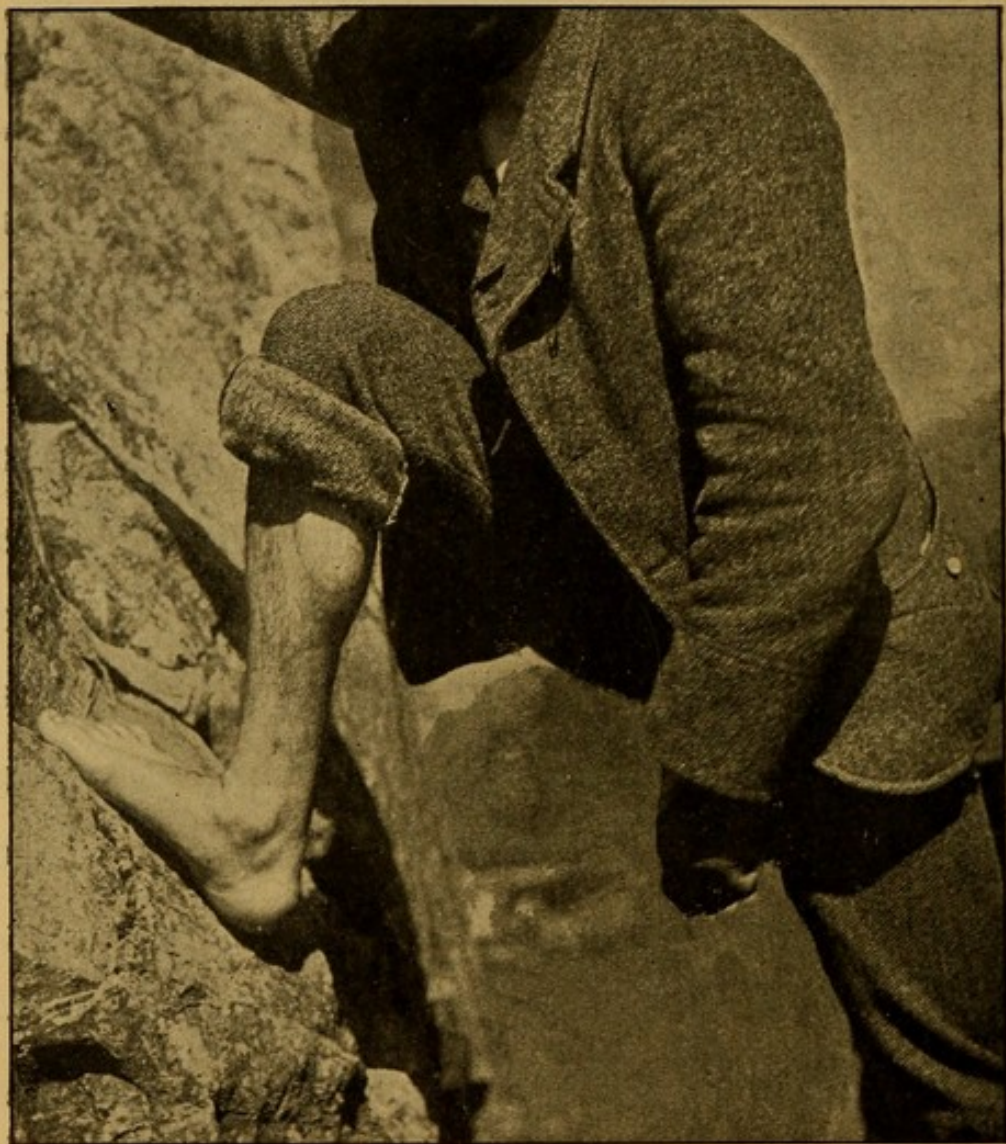
Alois Kalbermatten photographed by Captain Abney. The angle made by the
foot with the leg is about 60 degrees.

his calf muscles, and so little his greater powers above.

It is in balance that the guide has such strength. *He maintains his equipoise under all conditions with the minimum of muscular effort*, so that even under adverse conditions of sudden blasts of wind, pulls on the rope or other disturbances, he can keep his feet firmly planted, and his balance sure. At the end of a long day's climb he is little wearied, and at the end of a long life he has a lot of climbing left in him. Let it not be supposed that great muscular strength is not there, because the guide does not put it out injudiciously. That great observer, Charles Darwin,¹ writing on balance in riding, makes the following interesting remarks on this very important subject :

“The Gauchos are well known to be perfect riders. The idea of being thrown,

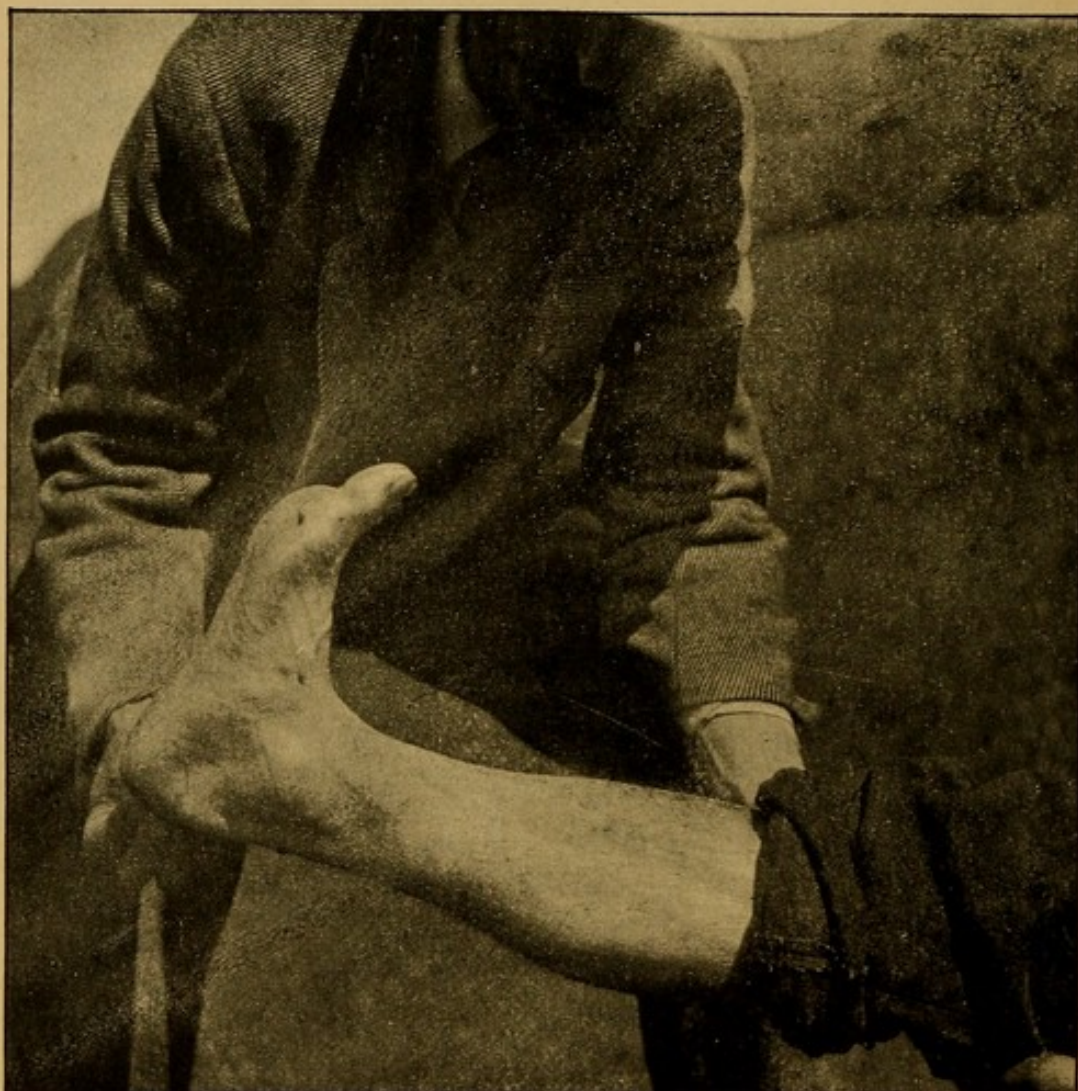
¹ *Naturalist's Voyage round the World.*



GUIDE'S FOOT IN CLIMBING POSITION AGAINST THE SHOEHORN ROCK
AT ZERMATT.

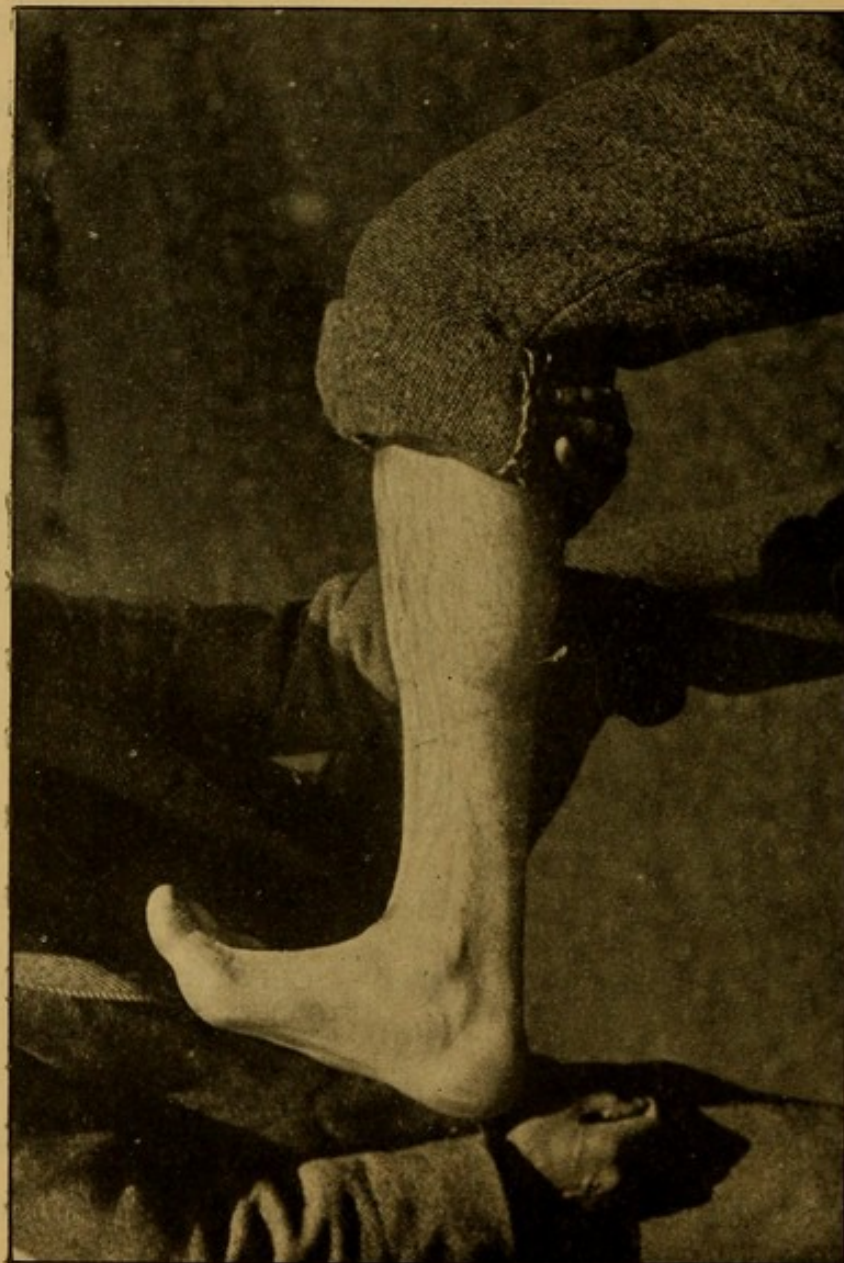
Peter Perren photographed by Captain Abney. The angle made by the foot
with the leg is about 60 degrees.

let the horse do what it likes, never enters their heads. Their criterion of a good rider is a man who can manage an untamed colt, or who, if his horse falls, alights on his own feet, or can perform such exploits. I have heard of a man betting that he would throw his horse down twenty times, and that nineteen times he would not fall himself. I recollect seeing a Gaucho riding a very stubborn horse, which three times successively reared so high as to fall backwards with great violence. The man judged with uncommon coolness the proper moment for slipping off, not an instant before or after the right time; and as soon as the horse got up the man jumped on his back, and at last they started at a gallop. *The Gaucho never appears to exert any muscular force.* I was one day watching a good rider, as we were galloping along at a rapid pace, and thought to



GUIDE'S FOOT, TO SHOW THE ANGLE MADE BY THE FOOT WITH THE LEG
WITHOUT PRESSURE.

myself, surely if the horse starts, you appear so careless on your seat, you must fall. At this moment a young ostrich sprang from its nest right beneath the horse's nose. The young colt bounded to one side like a stag; but as for the man, all that could be said was that he started and took fright with his horse." And again Darwin writes in reference to balance without apparent muscular effort, "Each morning, from not having ridden for some time previously I was very stiff, I was surprised to hear the Gauchos, who have from infancy almost lived on horseback, say that under similar circumstances they always suffer. St. Jago told me that, having been confined for three months by illness, he went out hunting wild cattle, and, in consequence, for the next two days his thighs were so stiff that he was obliged to lie in bed. *This shows that the Gauchos, although*

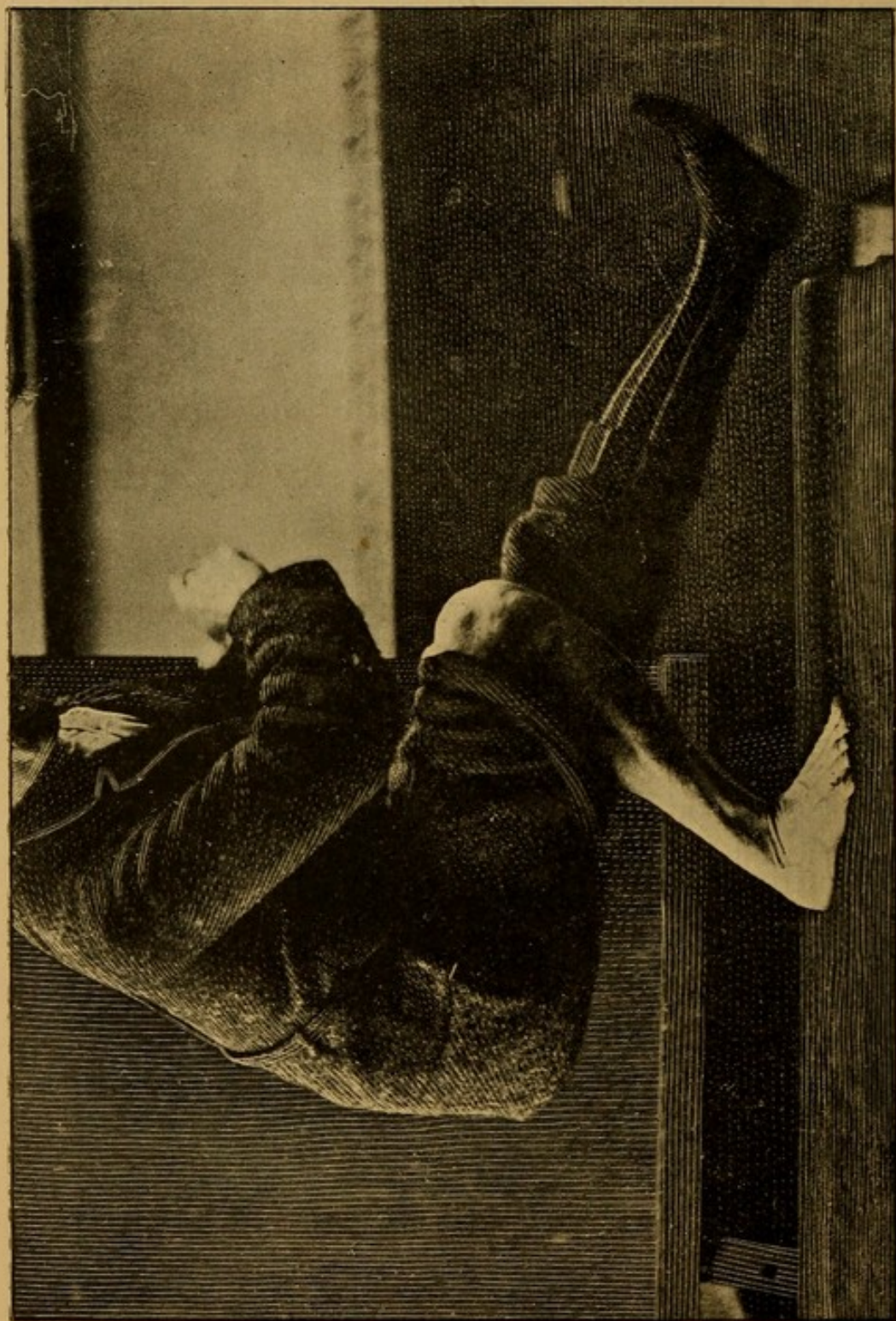


FOOT OF A SWISS GUIDE.

The angle made by the foot with the leg without pressure. From a photograph by Captain Abney.

they do not appear to do so, yet really must exert much muscular effort in riding." The guides, in the same way, do not appear to exert much muscular effort, but great power is there both latent and manifest, and none of it is wasted in a useless manner. There is even found in climbing that *ars celare* which is so pretty in figure-skating.

For an example of strength in balance, combined with bending at the ankle-joint, a climbing friend of mine, who is as graceful as a Greek athlete, and has a good balance, maintaining his equilibrium with the least possible muscular effort in mountaineering, has given me the study of carpet athletics photographed below. It represents two positions in the feat of standing on one foot, sitting slowly down, and then getting up again with the same leg without touching the floor except with the buttock.

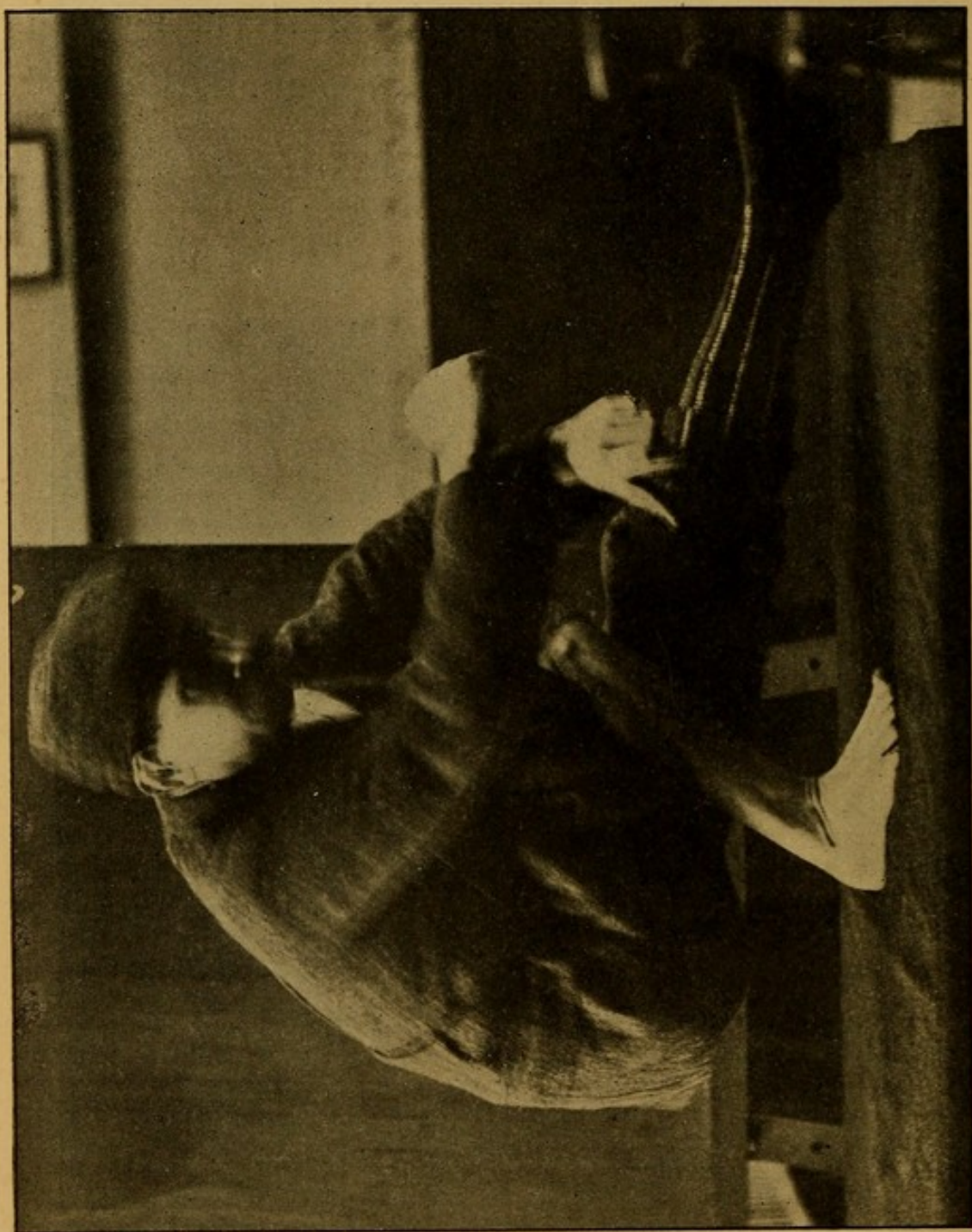


THE ACT OF SITTING DOWN, USING ONLY ONE LIMB, TO SHOW THE BALANCE WITH THE BENT KNEE AND ANKLE.
First position.

It is best not to attempt this performance often after the age of fifty, but it is no matter to mountaineers, for on the Alps all of them are of the same age, *i.e. about five and twenty.*



FOOT OF AN EXPERIENCED AMATEUR, TO SHOW THE ANGLE MADE BY THE FOOT WITH THE LEG.



THE ACT OF SITTING DOWN, USING ONLY ONE LIMB, TO SHOW THE BALANCE WITH THE BENT KNEE AND ANKLE,

Second and more extreme position.

On Accidents

Forethought should go with courage—A life saved by the use of a big knife—Dr. Jenner's ride in a snowstorm—Death by lightning on the Drym—Mr. Justice Wills' warning—The three great dangers of the Alps—Climbing accidents among British labourers—Our plans of prevention far behind our methods of cure—Value of collective investigation—Sure-footedness more important than speed—Pace not to be hurried.

As accidents will happen in so dangerous a sport as mountaineering, it is the duty of every climber to study the causes of these accidents, as far as possible to prevent them, and to remember that in danger "presence of mind," as it is called, is generally due to careful thought beforehand, and to the rehearsal in imagination of every possible disaster.

It is curious that men should brave more danger when most they are in the enjoyment of life, and that loving life the most they should then fear the least to die. "For surely the love of living is stronger in an Alpine climber roping over a peril, or a hunter riding merrily at a stiff fence, than in a creature who lives upon a diet, and walks a measured distance every day in the interest of his constitution."

Climbers must take care that the courage born of fresh air and fine training does not develop into foolhardiness. In my notice of the ascent of the Meije with a broken rib, this warning is conveyed.

In these pages various accidents have been mentioned without much effort to point the moral, though in every case an attempt has been made to suggest the cause of casualties, however slight.

In connection with the risk that a man

runs who climbs alone without a companion, or who climbs over a serious place without his axe (thus Mr. Eyre lost his life), it is well worth giving an account of the narrow escape related to me by an old climber, who was once travelling over a mountainous path in the dusk. He wandered off the track, and not having even a pointed stick with him, he slipped over the edge of a dangerous slope, the turf and vegetation gave way at his clutches, so that he ceased struggling, and hung in a cold sweat over a dark abyss. Fortunately, at that moment he thought of his big knife which hung ready; he was just able to open it, dig it in, and anchor himself safely, until courage and strength saved his life, leaving a never-forgotten experience, which is recorded because in some such emergency a strong knife might prove again a good friend.

Frost-bites, and the losses of limb or life from cold, are not confined to Alpine snows. Phenomenal weather occurs even in England, and the account by so good an observer as Dr. Jenner, in his own words, of a snowstorm to which he was exposed, will interest many mountaineers.

The late Dr. Edward Jenner, of Gloucestershire, gives the following account of a ride through a snowstorm which he had to undertake in the above-named year.¹

“January 3rd, 1786. I was under the necessity of going hence (Berkeley), to Kingscote. The air felt more intensely cold than I ever remember to have experienced it. The ground was deeply covered with snow, and it blew quite a hurricane, accompanied with continual snow. Being well clothed, I did not find the cold make

¹“A Country Doctor’s Ride,” from the *Lancet*, January, 1896.

much impression upon me till I ascended the hills, and then I began to feel myself benumbed. There was no possibility of keeping the snow from driving under my hat, so that half my face and my neck were for a long time wrapped in ice. There was no retreating, and I had still two miles to go—the greatest part of the way over the highest downs in the country. As the sense of external cold increased, the heat about the stomach seemed to increase. I had the same sensation as if I had drunk a considerable quantity of wine or brandy, and my spirits rose in proportion to this sensation. I felt as if it were like one intoxicated, and could not forbear singing, etc. *My hands at last grew extremely painful*, and this distressed my spirits in some degree. When I came to the house I was unable to dismount without assistance. I was almost senseless; but I had just

recollection and power enough left *to prevent the servants bringing me to a fire*. I was carried to the stable first, and from thence was gradually introduced to a warmer atmosphere. I could bear no greater heat than that of the stable for some time. *Rubbing my hands in snow* took off the pain very quickly. The parts which had been most benumbed felt for some time afterwards as if they had been slightly burnt. My horse lost part of the cuticle and hair at the upper part of the neck, and also from his ears. I had not the least inclination to take wine or any kind of refreshment. One man perished a few miles from Kingscote at the same time and from the same cause.

“The correspondent who sent us the above extract from a letter of Edward Jenner, being a medical man, must feel, as we do, grateful that January, 1896, has

not opened with the rigour of January, 1786. We print it because it paints a remarkably true and vivid picture of the alteration of sensation under the influence of extreme cold."

The pain poor Jenner suffered, when occurring so immediately after exposure, should rather have cheered him, as a sure sign of recovery of frozen limbs; and he was indeed fortunate in retaining sufficient power to prevent the servants bringing him to a fire. The rubbing with snow and gradual introduction to warmth saved his hands, and Dr. Jenner lived to give the world his experiments on vaccination some years later.

In the height of summer, often in extremely hot weather, weather of the finest, there comes another risk, that of thunderstorms. A climber soaking wet, with his iron-shod boots, his steel-pointed axe, and

metal framed goggles, makes as good a lightning conductor as could well be found without manufacturing a lighting-rod.

The ice-axe fizzling in the hand, and the spectacles upon the head, with hairs of the scalp set all bristling,—these are signs which at any moment may appal the stoutest heart that ever faced a storm.

In July last again, another country doctor, Mr. Reese, who lived at the village of Ystradgynlais, in the Swansea Valley, made his way to an urgent case of a poor child accidentally burnt, over a mountain called Drym.

When at the summit he apparently entered the focus of a severe storm, and a discharge of lightning took place through his body and that of his horse, killing them both instantaneously. A mountain-top is a most dangerous place in a thunder-storm; a cloud is attracted by the most

elevated point, and any one crossing is extremely likely to be struck by lightning. The doctor was probably wet, and, being on a horse, had a good earth connection by means of the horse's iron shoes, so that any discharge between the earth and the cloud would be very likely to traverse his body. If he could only have waited on the lower slopes he would have been safer, but his anxiety to reach the patient led him to his most honourable death.

Mr. Reese no doubt knew his risk perfectly well, and took his chances at the call of human need. In pointing out the warning to keep off prominent peaks and buttresses of a mountain in such a storm, I should be sorry to withdraw attention from this noble devotion to duty. To bear their silent testimony, three thousand friends attended the funeral of this brave man.

To avoid being a prominent object when on a mountain may be difficult, for self-effacement is not an easy thing. Moreover, on the plains a man may be killed, as offering the best conductor for the lightning, and determine the direction of the discharge, no tree or other high point being near.

The traveller should find a hollow place or hole as soon as possible, and stay there until the storm has abated. The sensitive aneroid may have given warning of the approaching clouds, a warning to take, as sailors say, "any port in a storm."

The danger of standing under a tree is well known, but this applies rather to trees that offer a prominent mark. In large forests it appears that the lightning does not always single out the tallest trees, and the trees when struck are seldom set on fire, though foresters find the lightning a convenient excuse for their own carelessness.

In the huge forests of Russia and Norway, the pines, with their thousand masts and millions of pointed leaves, are said to act as protectors for themselves and to relieve tension for the whole district by their distribution.

Mr. Justice Wills sounds a true note of caution in the introduction to Mr. Dent's Badminton book, when he says: "There are three things specially to be dreaded on the mountains as beyond human control and occasionally beyond human foresight: bad weather, falling stones, steep grass slopes, with herbage, either short or dry, or long and wet and frozen. I do not think it possible for any one who has not felt it to have any idea what very bad weather means in high places, even in places by no means of the highest; or to imagine the rapidity with which, under unsettled atmospheric conditions, the de-

structive forces of nature can be raised, and the worst assaults of the enemy delivered.

“Falling stones may come from the most unexpected places, and I have seen from my own Alpine home a whole flake of mountain side peel off without warning, and sweep with a cannonade of thirty hours’ duration a gully that I and mine have used for years as a highway to the upper world.

“Slopes of grass look so easy, and are so treacherous, that it is scarcely possible to secure for them the respect which they have a deadly fashion of enforcing. There are few other dangers which care and knowledge will not eliminate.”

It will be pardoned me, I trust, if, making a digression from the special to the general, I pass from Alpine accidents to consider others connected with climbing, which fre-

quently occur to workmen. It was my sympathy with climbing which first drew my attention to the number of disabling accidents resulting to labourers from using only one hand in climbing ladders and carrying something, however slight, which hampers the other hand. There is no general understanding or training among workmen on this point. The weight could nearly always be so slung or balanced as to keep both hands free for climbing steps or ladders.

Scaffolders often run greater risks than bricklayers in attempting to climb ladders, using one hand instead of both. Under my care lately was a scaffolder who fell thirty feet, breaking his collar bone and several ribs, lacerating his right lung and the liver. From the latter injury, by an abdominal operation, I drained away several pints of bile and blood clots. He made a

good recovery and returned to his wife and six children still able to earn a living for them. He tells me that never again will he carry a bundle of shavings under one arm when climbing a long ladder. On nearing the top, and in making the traverse to reach the platform, the slip occurred which was so nearly fatal. Both the balance and the grip were wanting at the critical point.

The slightest slip or want of balance when only one hand is at work may lead to a fall. When an Alpine climber comes to any hair-erecting place on rocks, he takes care to have both hands free, his ice-axe is slung round his arm or wrist, so that his grip is secure. There is no pretence that mountaineering is not a dangerous sport; but the dangers are reduced by forethought, and when accidents occur it is generally from the neglect of simple

measures of precaution. Rules for avoiding dangers are made, and it would be quite unsportsmanlike to cross *névé* without a rope, or show other sign of inexperience in mountain craft.

It is significant that the members of the English Alpine Club—though the mortality is far too heavy—do not provide the most victims of accidents, and certainly this is not from any want of adventurous activity in the Alpine Club.

In 1893 I saw a guide who had both feet frost-bitten, all the toes were gangrenous, and Melchior Anderegg, kindest of nurses, was applying the dressings, muttering “*schlecht, schlecht!*” A climber with his two guides had been exposed during one night in snow. Of the three, this guide was the only one who suffered frost-bite. He wore new boots, which I inspected, and found the tongues not sewn

to the upper leathers; also he used no gaiters or other appliance to keep the snow out of his boots. Neither did he put his feet in the rüch-sack as did the others. His boots were simply converted into bags of ice.

In the year 1894 I saw a case of frost-bitten fingers in the Dauphiné which was due to violation of every wise law. There, too, I came across an accident rather unusual in mountain experience. A guide was struck in the mouth while ascending an ice-slope by the iron-shod heel of the man above, who slipped from his step. Two caravans were together too closely, and the leading guide of the second party suffered in consequence. His tongue was badly torn, and I had to put in several stitches.

There is a quantity of good literature about Alpine accidents, and their causes

and prevention. What is done in this way for the scaffolder? What training has he corresponding to that of the mountaineer? The fault did not lie in the least with my scaffolder's employers, who are most careful of their people; but that there are no definite plans of prevention among the men themselves; no general rules of their craft such as obtain among climbers. Now, if a bricklayer, when he takes bricks up a ladder, uses the ancient hod which balances on the shoulder, it is not gripped by the hand, and takes nothing from the prehensile power of the man. If anything drops, it is the bricks, not the bricklayer; but his business nowadays is rather with small buildings, for the larger buildings, with scaffoldings, which are quite works of art, do not require the carrying of the hod, but take their weights up by pulleys to platforms above.

The way in which the Alpine Club have met the risks of the mountains is interesting as showing how intelligent men deal with danger, and should make us hopeful that in the future we shall deal with many of the risks which workmen incur in their less dangerous avocations.

As to accidents in general, we are too military altogether ; in our attitude with regard to them, we seem to expect to give and take injuries. Ambulance lectures are organized all over the country which teach wise plans of first aid to the injured. This is very good and helpful, but if, with this teaching, were combined methods, thoughtfully planned and taught, of prevention of accidents, especially those common or peculiar to the occupations of the districts, these lectures might be made most valuable means of spreading useful knowledge.

Notification and collective investigation, as in infectious diseases, would soon put a check to many common accidents in our villages,¹ and we should reflect more on this subject because the progress of surgery saves so many lives formerly regarded as hopelessly lost. The individuals so saved are often mutilated, and no inquest being held on eyes or limbs, the value of a public inquiry as to the accident is lost. Many are the lives saved in our hospitals, many are the lives lost or maimed by our ignorance and carelessness, for our plans of prevention have by no means kept pace with our methods of cure.

The intelligent sportsman always leads the van, and invents new ways of protecting himself; for example, those men who, being short-sighted, have to shoot in spectacles, and wear shot-proof glasses, have rather

¹ See *Preventive Surgery*. Deighton, Bell and Co.

gained an advantage over the keen-sighted by this useful protection against stray pellets.

It is obvious that forethought should extend to every sport and occupation, especially when attended by danger, and with regard to hunting a useful article has lately appeared on accidents in the hunting field in reference to prevention, by Mr. Noble Smith.¹ It would be well if this kind of formulated knowledge could extend and spread among British workmen, especially agricultural labourers, whose awakened intelligence has to deal with new machinery, making new accidents, into the causes of which no methodical inquiry is ever made.

Let every young climber read Dr. Claude Wilson's chapter on the dangers of the mountains, as a thoughtful epitome on this important subject. Climbing will not be

¹ *Clinical Sketches*, 1895.

less enjoyed by men possessing knowledge of the dangers; and more successful expeditions are made by those who understand such matters best, and look on their knowledge as an essential part of the sport.

If, in spite of every care, an accident occurs of a minor kind, it will often happen that an antiseptic pad and bandage ready in the rucksack and skilfully applied will give confidence to the party, and prevent the expedition from being a failure. Every man of the caravan in climbing should have his little packet, there would thus be enough bandages altogether to steady a sprain or a dislocation, or to deal even with a broken limb.

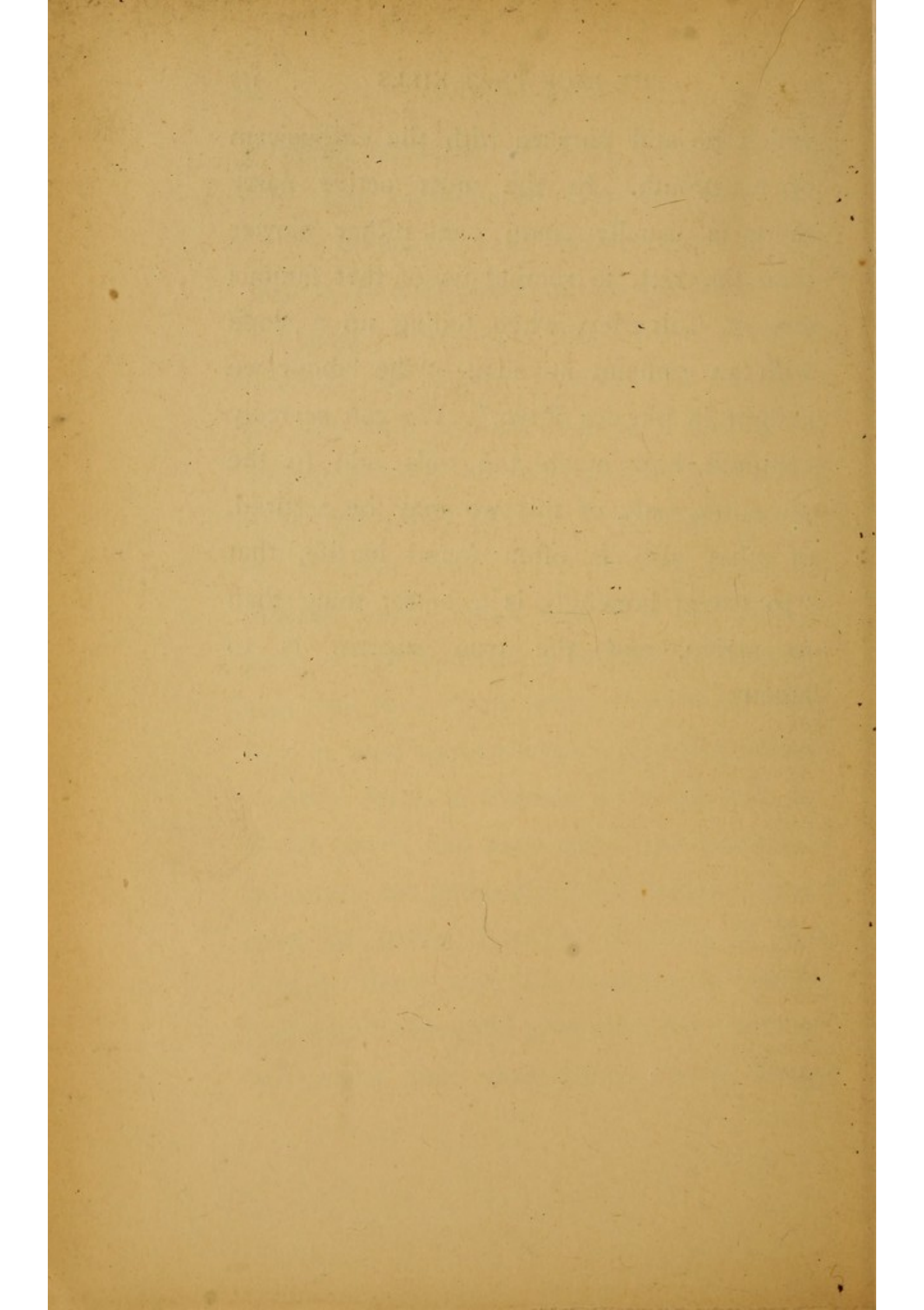
A note should be kept of all casualties occurring in the cognizance of the climber, so that comparing records of minor accidents may prevent greater ones. The methodical yearly records of the *Alpine*

Journal, summed up now and then by able and experienced climbers like Mr. C. E. Mathews, may prove of value, not only to mountaineers, but to mankind.

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After forty, a climber is in the old age of his youth, and must not be so reckless as to pace; his endurance and sure-footedness may be better, but his elasticity is less, though there may be nothing to remind him that "change of time with hand severe" will make him soon those sports forego

which he still pursues with the enthusiasm of his youth. In the most active party there is usually some one rather slower than the rest, to remind us of that famous jest of Calverley, when toiling up a slope with an eminent novelist,—“the labour we delight in physics Payn.” We can scarcely compute how much the toils add to the pleasures, only of this we may be assured, of what also is often found in life, that “to travel hopefully is a better thing than to arrive, and the true success is to labour.”



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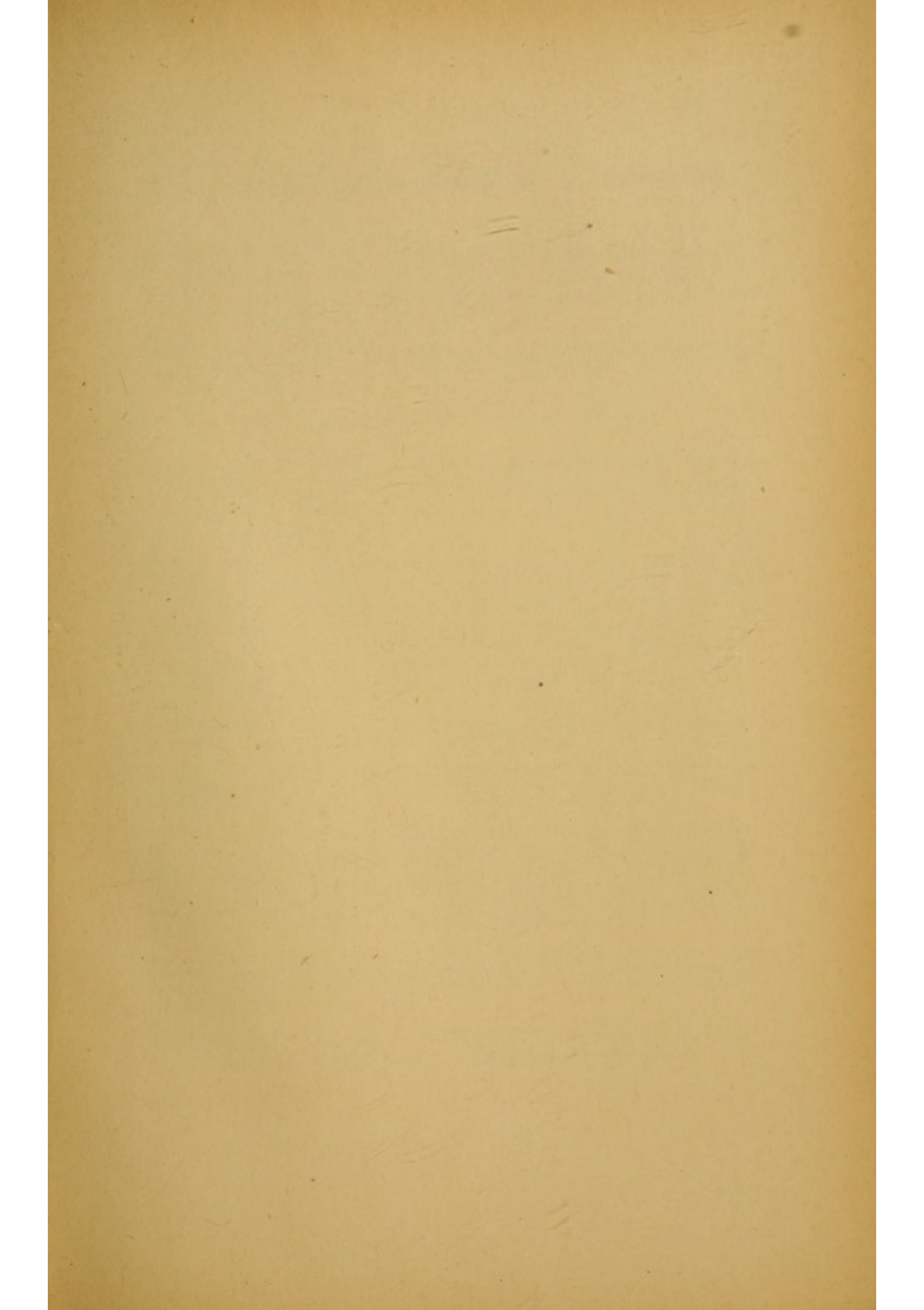
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