

over its bed at about 1·6 in. per day and at the snout, in the median plane, at about $2\frac{1}{2}$ in. per day. This it probably does by a kind of rolling of parts (? glacier grains) over one another, and by pressure melting at various points, rather than by actual sliding. Anyhow the figures are impressively small.

The problem was attacked a few weeks after Forbes by Martins and Dollfus.⁹ On an ice wall at the side of an affluent of the Aar Glacier they fixed two pegs in a vertical plane, the upper about 3 ft. below the surface, the lower about 25 ft. below the upper. In 20 days the lower peg was 0·20 m. behind the upper, a retardation of about 0·4 in. per day. At a similar vertical distance Tyndall's observations at the Tacul give a retardation of 0·2 in. per day, and Forbes's at the snout 0·3 in. per day. The retardations are roughly proportional to the actual velocities at the corresponding points, and it is therefore probable that the downward velocities of Martins's and Dollfus's pegs—which they did not measure—were somewhat greater than those observed on the Mer de Glace, and the three determinations are in reasonably close agreement.

⁹ *Nouvelles études et expériences sur les glaciers actuels* (1847), p. 522.

BISITUN

By H. W. TILMAN

SO far as one can see the seven lean years of the ALPINE JOURNAL and its indomitable Editor are not yet over. Since the war ended England has become more than ever like the married state—those who are out wish to get in, while those who are in wish to get out, and find it devilish hard. The Editor therefore must continue to gather his material either by fossicking amongst the tailings of worked-out mines, or (to vary the metaphor) by gratefully accepting for his tally of bricks such odd wisps of straw as have been gleaned by earnest seekers in distant and outlandish alps. Here is a wisp from Persia.

After ten months in Irak the chance of a week in Iran was not to be missed. Officially I was to accompany the Brigadier on an inspection of the Persian defences which the 9th Army had amused itself by building during the winter of 1941–42. A hasty glance at our proposed route on the map showed that near one of our stages, Kermanshah, there was a 10,000 ft. peak called Bisitun. If possible, I determined to tarry there awhile, and the Brigadier, who knew on which leg I halted, proved agreeable. He, and another major who was in the party, were keen fishermen, and they had been told of a river near Kermanshah which, whatever its merits as a defensive line, was noted for its trout.

We crossed the Tigris at El Fata, where we were in camp, and drove across the desert to Kirkuk, the centre of the oil industry. A few miles from the town, in a small hollow in the desert, is the reputed site of the burning fiery furnace which was heated seven times for the benefit of Shadrach, Meshach, and Abed-nego ; here, the gas escaping from the oil below burns perpetually with a lambent, bluish flame. Next morning we drove happily along the wrong road for 70 miles. Such accidents, which happen even in the highest military circles, seldom promote harmony. It was not until we crossed the Persian frontier beyond Kanaqin that the constraint occasioned by this untoward happening began to wear off.

Having been so long in Irak we were not inclined to be hypercritical—any change almost was bound to be for the better—but nevertheless our first impressions of Iran were not favourable. The absence of formality at the Customs House hardly compensated for that terrible rococo building ; but a greater eyesore were the men, who were one and all dressed in shoddy European clothes and cloth caps. I believe the responsibility for this dismal uniformity lies upon the late Shah, who not only decreed that such clothes must be worn, but himself, through his agents, supplied them, at a profit, to his unlucky subjects. For me, who had drawn my ideas about Persia from Morier's *Hajji Baba*, the disappointment was great, and the incongruous appearance of the people qualified even the nobility of the background—the spacious flat valleys, full of fruit trees and fields of ripening corn, and the lofty, sparsely wooded hills, bathed in a soft, clear atmosphere reminiscent of Kashmir.

By many hairpin bends, over a steep loose-surfaced road, we climbed to the Paitak Pass (5300 ft.), the gateway through the Zagros mountains to the Iranian plateau beyond. Next day we reached Kermanshah, and as we approached the town we saw beyond it the high, serrated ridge of Bisitun, the black rock face slashed with white snow gullies, the whole rugged mass rising abruptly from the green plain. The town itself is modern, commercial, tinny, and uninteresting, but a few miles out where the main road comes against the mountain and turns E., are the grottoes and rock carvings of Tak i Bostan, a pleasure retreat of the Sassanian kings. The grottoes are cut in the face of a limestone cliff from whose foot a mighty jet of water gushes into a big artificial rock basin fringed with trees. One noble old *chenar* looks as though it must be almost contemporary with the carvings. Of these the principal is a colossal figure of Chosroes (A.D. 400) in armour mounted on a horse. Twelve miles to the E., on the rock at the base of Bisitun itself, are other carvings commemorating the life of Darius.

We sampled some wine and cheese in a flyblown hotel whose name, the Bristol, had aroused false hopes, and then drove out to the local military headquarters which was sited no more than a mile from the deep, azure pool of Tak i Bostan. That in itself was pretty well, but in addition their tents were pitched right under a magnificent face of

rock, while up a narrow side valley one caught fascinating glimpses of peak after peak receding into the wilds of Kurdistan. They had been several months in that delectable spot, surrounded by some of the noblest works of God and man, and were surprised when we failed to sympathise with them over their hard lot. They envied us our sunbaked desert. 'All places that the eye of heaven visits, are to a wise man ports and happy havens' is a counsel of perfection, or else wise men are rare. For my part, rather than regard the deserts of Irak and the mountains of Iran as equally happy havens I should prefer to be classed as a fool.

The Brigadier left next day to examine the defences of his trout stream, leaving me to probe the defences of Bisitun. The mountain consists of a hogsback ridge, broken by a number of towers, running for several miles in an E. to W. line. A deep notch high up on the Tak i Bostan end seemed the obvious jumping off place for a complete traverse of the mountain, which was the ambitious plan I had in mind. It would involve sleeping on top, finishing the traverse the second day, and jumping a lorry on the main road at the foot of the eastern end to get back to Kermanshah in time.

An officer from the headquarters elected to accompany me. By means of a narrow gorge we got round the foot of the W. end of the ridge to the N. side of the mountain where easy grass and shrub-covered slopes led up to a scree gully below the notch. A convenient track conducted us to some sheep folds high up on these slopes before leaving us to find our way to the scree. Although we were carrying only food for the night and a blanket my companion soon began to show signs of distress, and although I begged him not to stop stirring till the pudding was done he decided to turn back.

About midday I reached the notch where after some climbing of moderate difficulty I gained a lodgment on the crest of the ridge. On this, which seemed endlessly long, the towers presented the main interest; many of them would not yield to a frontal attack and had to be turned from the S., for the N. side was precipitous. By the time I reached the foot of what I hoped was the culminating point it was 4 P.M. After making several attempts to climb it direct I was forced to descend 500 ft. to find an easier way. From the summit it appeared that another tower half a mile on challenged our superiority; but I had had enough for one day, so descending a few hundred feet, I bivouacked by a patch of snow, lit a fire from some scanty vegetation, and dined off water, chapatties, cheese and chocolate.

There is no more satisfying ending to a climb than to spend the night on the mountain, preferably on the top. It is better, of course, if it is done deliberately, but provided the hardship imposed is not too severe an involuntary bivouac should be welcome both as an adventure and as a lesson. The bond between man and mountain, forged in a daylong struggle, never seems so strong as when at its close you seek the meagre shelter of some rocks near the summit with which you were so recently striving to get on terms. On most

climbs, for reasons which are obvious, such a happy consummation is not often possible, but if it be so, and we spurn the delights of tea, beer, baths and a warm bed in favour of cold stones and hard fare, we may remind ourselves as we lie shivering that 'abstinence from low pleasures is the only means of meriting or obtaining the higher.' To protest, as we all do, that our pleasure derives simply from being on a mountain and has nothing to do with reaching the top, and then, having inadvertently, as it were, arrived on the summit, to hasten down again after the briefest of halts, is surely to give ourselves the lie.

Such, I hope, were my reflections as I lay alone on Bisitun watching the shadows creep down the slopes and then reach across the valley to mingle with the golden haze still lingering on the opposite side. Only a companion was lacking. Society has not yet condemned the man who sleeps out alone (no officious policeman molests the tramps on their newspapers in the Green Park), but it regards the activities of the solitary climber and the solitary drinker with distaste. The one is unsafe, the other unsocial, and either is likely to lead those who indulge in them into difficulties. A man who habitually climbs alone for preference is liable to be misunderstood. The state of mind of men like Maurice Wilson who died when attempting to climb Mount Everest alone, and of Farmer, the American who lost his life on Kangchenjunga, must be regarded with suspicion, and as a confirmation of a part at least of Dr. Johnson's dictum that the solitary mortal is certainly luxurious, probably superstitious, and possibly mad.

In such cases, if something goes wrong, no one has any grounds for complaint, except possibly the unfortunate relatives, while the man who gives rein to his rashness only when climbing in the orthodox way may involve others besides himself if he comes to grief. The practice of climbing alone teaches self-reliance and caution, though the critic may cavil at the paradox of learning caution by performing an admittedly incautious act. My own experience is that when alone I become cautious to the point of timidity, and the question of 'Can I or can't I?' is usually resolved with shameless rapidity after a very tentative trial. But few would climb alone from choice; it is usually the absence of a suitable companion which drives one to solitary climbing and afterwards to its justification; and in wartime the opportune occasion was more frequent than the man. In that case inaction in the face of fleeting opportunity is the crime, whereas climbing alone rather than not at all is but a venial impropriety.

I was up at five next morning and reached what I thought was the highest point by 7 A.M. Now, of course, it looked to be the lower. On a long ridge it is often impossible to say which is the highest point and it is best to assume that it is where one is standing, just as wherever the McLean sits is the head of the table. The ridge seemed to stretch away interminably. I had little food left and less energy, so, with an uneasy feeling of having left undone something which I ought to have done, I turned to go down. I had forgotten or, worse still, never

noticed that on the S. side for a thousand feet above the main road there was a long rampart of cliff. Taking the first gully which offered I was soon brought to a stand by impossible waterworn slabs. The next three or four which I tried in quick succession proved equally unfriendly, so that it was not until 2 P.M. that I got off the mountain and on to the road. The lorry drivers must have been taking their siesta. I trudged the whole length in the hot afternoon sun, buoyed up by the thought of the cold, blue waters of Tak i Bostan. Hot, tired and thirsty, as I took 'the cool silver shock of the plunge in a pool's living water,' all the essential conditions were fulfilled and one more was added to my already long but select list of memorable bathes.

THE YEARS BETWEEN : DAYS TO REMEMBER

By W. N. LING

IN these times of stress, it is pleasant to relax and to cast the mind and thoughts back to the happy days of peace, and recall the happenings and experiences of those days. The excitement of a first visit to the Alps in the last year of the old century stands out vividly in my memory. My companion was G. T. Glover ; we had done a fair amount of summer and winter climbing in the Lakes and the Highlands and were keen to measure ourselves against the bigger mountains. We had only a fortnight, and trained ourselves to make the best use of it. We travelled out with a member of the Club, who asked us what our plans were. We modestly said we thought of trying the Rothorn. He was discouraging, a first class peak on our first visit ! We said we had done some climbing in the Lakes and Scotland. He thought little of this, so we invited him to come to the Lakes for a week end after our return. In the event, we climbed the Riffelhorn guideless by the Matterhorn couloir, and then, with guides, the Rothorn, Weisshorn from a bivouac, before the days of the hut, and traversed the Matterhorn from the Italian side in a week, and went home very pleased with ourselves. When our friend came to the Lakes we took him to Great Gable and made the first ascent of a new chimney there. Then across to Scafell and up Moss Ghyll, and down Slingsby's Chimney and Steep Ghyll in the dusk, and back to Seathwaite at 10 P.M. after a fourteen-hour day. His comment was, 'If these are the days you do in the Lakes, you are entitled to start for anything.'

The next year Cortina di Ampezzo was our headquarters, and from there we climbed a number of peaks with attractive names, Cinque Torri, Becco di Mezzodi, Piz Popena, Croda da Lago traverse, Tofana di Mezzo, Kleine Zinne traverse and Monte Cristallo. Tobia Menardi and Angelo Zangiacomi were our guides. I remember well the north face