

lake in the world. [Kara Kul lies at an altitude of 13,430 ft. so that Lenin towers rather less than 10,000 ft. above it.]

‘ (c) The Victory peak (7,434 m.) The following report made by V. Ratsek, a member of this summer’s Tien Shan expedition may be of interest : “ The knot of mountains lying due east of the Soviet Tien Shan have for a long time attracted the attention of explorers. Here, surmounting passes hidden beyond the clouds, by-passing roaring rivers and gigantic glaciers, went expeditions whose work tore asunder the veil which had kept the secret of Nature concealed from Science. Until recent years the current opinion was that the Khan Tengri, the principal summit of the Tien Shan, was the highest peak in Russia. The alpinists conquering the Sary-Jas chain observed in the south-east only clouds covering the peaks of the Kokshal Tau range. Thick banks of clouds perpetually lay on snow-covered ledges. Travellers considered the mists over the Kokshal Tau as a regular phenomenon. Members of the 1940 expedition, however, managed to get a glimpse of the summits of the range from the Sary Jas pass. These peaks clearly surpassed the Khan Tengri in altitude which, however, could not be finally determined as the explorers did not have the necessary precise geodetic instruments, neither had they the benefit of the important preparatory exploration which the exploration of the Military Topographic Department carried out in 1943. Surveys made by that expedition ascertained that about 16 kms. south of Khan Tengri on the upper regions of the Zvezdochka glacier there towers another gigantic pear-shaped ice wall. This peak of 7,400 m. is not only the principal summit of the Kokshal Tau but is the highest point of the whole Tien Shan system. The Khan Tengri, 6,995 m., hitherto regarded as the highest of sky-piercing mountains, should thus stand aside and give up its right to pre-eminence. The 7,440 m. peak discovered in 1943 is the principal summit and not the Khan Tengri. This summit was discovered and its height determined in the phase of our patriotic war when our victory over the enemy was regarded as a foregone conclusion. That is why this gigantic summit, the second in altitude in the U.S.S.R., should serve as a monument to our great victories and bear the proud name of Victory peak.’ [The discovery of a mountain 1,500 ft. higher than Khan Tengri and only about 10 miles from it is very remarkable to say the least. Merzbacher’s survey of the range was fairly thorough.]

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## HIGH MOUNTAIN WALLS

BY C. R. P. VANDELEUR

**L**OFTY mountain walls are always fascinating, whether they can be climbed or not ; and it is interesting to consider which are the highest walls in particular mountain regions, and which is the highest in the world. But first one must try to decide how steep a

mountain-side must be to be considered a wall. I suggest that the average steepness must be at least  $45^\circ$ . Some may think that a steeper angle ought to be considered the minimum. On the other hand, even distinguished mountaineers sometimes speak of slopes certainly not as steep as  $45^\circ$  as if they were walls. The N. face of Nanga Parbat is perhaps the most notable instance of such exaggeration.

If we may begin with the British Isles, perhaps four walls over 2,000 ft. in absolute height may be found. The N. face of Ben Nevis looks wall-like, and I think the N.E. buttress, at least, must 'qualify' as to steepness. The face of Aonach Dubh, above Glencoe, is a wall, apparently the highest in these islands, for it is of the order of 2,500 ft. In Ireland, the great ocean cliff of Croaghnaun in Achill, over 2,000 ft. high, is probably steep enough to rank as a wall. Carrantuohill, the highest mountain in Ireland, has an E. face almost 2,300 ft. high, with an average steepness of probably over  $45^\circ$ , the angle easing off, however, toward the top.

In the Alps, as is well known, some of the greatest walls are found on comparatively low peaks. The Watzmann is generally credited with possessing the highest of all, but estimates differ as to whether it is rather more or rather less than 6,000 ft. As to steepness, I gather it is a genuine wall. Another notable wall of the 6,000 ft. order is that of the Schwarzer Mönch. Indeed, the whole face right up to the crest of the Silberhorn, more than 9,000 ft. above the Lauterbrunnen valley, does not fall very far short of  $45^\circ$  in steepness. Another well known wall, well over 5,000 ft. high, is that of the Vorder Selbsanft. But I know of no other Alpine face of its height quite so steep as the Gitschen, the N.E. peak of the Uri Rothstock group. Unfortunately, strict accuracy compels me to admit that it does not quite average  $45^\circ$  through its whole height of 6,800 ft. from the Lake of Lucerne to the summit. But I think that, if the lowest slopes were eliminated, that average angle would be found to be maintained through at least 6,500 ft., including one or two 'shelves' of easy gradient; so that it may, perhaps, be claimed that this great face of rock and grass-slopes is the highest wall in the Alps. On the greater peaks, the highest walls, such as those of the Wetterhorn and Eiger, and, of a different type, the Brenva face of Mont Blanc and, perhaps, the E. face of Monte Rosa appear to be about 5,000 ft. high.

Norway has more than one undoubted wall a good deal nearer 6,000 than 5,000 ft. high. Such are the face of Nonsnib above Loen Vand and that of the Trolldtinder above Romsdal (here a practically vertical drop of about 4,000 ft. may be found). Slingsby gave a graphic description (*A. J.* 23. 'The Ice-axe in Trolldheim') of the precipices of Kalken, at the head of Sundalsfjord, assigning to them a height of fully 6,000 ft. Maps, however, indicate that Kalken is really only about 5,400 ft., though Store Kalken, to the S. of it, is over 6,000 ft., but apparently less precipitous. Slingsby appears to have mistakenly assigned the height of Store Kalken to its lesser but fiercer brother (as *Baedeker* also has done). These mountains, however, deserve further

investigation. But it seems improbable that Norway has any wall of quite 6,000 ft. (not taking into account, of course, the depth to which some of them may plunge beneath the surface of the fjords).

Some of the limestone precipices of the Pyrenees probably approach, or attain, the vertical (like those of some of the outlying Alpine ranges); but I have not heard of any wall of outstanding height there. Among the other lesser ranges of Europe, there is at least one face—the W. face of Capo Tafonato in Corsica—which is said to be of the 6,000 ft. order. But I have no information as to its average steepness.

I have been unable to reach any definite conclusion as to Caucasian walls. One naturally examines Ushba first for the greatest wall, and its W. face has been described as ‘an appalling precipice 6,000 ft. high’ (R. L. G. Irving, *Ten Great Mountains*, p. 78). Moreover, the two photographs between pages 94 and 96 of the same book show that this face is not only of rock, but also of almost sheer ice. If anything like the steepness shown in these pictures is maintained throughout its whole height, there is no doubt as to its being a true wall. This, however, needs further investigation: but alas! what prospect is there of non-Communist mountaineers being able to make such further investigation on the spot? There are also, of course, many great ice-faces, some of which may be walls; the N. face of Tetnuld and the Bezingi face of Shkara would seem to be among the most ‘likely.’ But probably none of them is greater than the Brenva face of Mont Blanc, if as great. It may be, I suppose, that, as in the Alps so in the Caucasus, some of the greatest walls exist on minor peaks. But, on the whole, it seems unlikely that the Caucasus possess any wall of more than 6,000 ft., if quite as much.

But it is, of course, in the Himalaya that one expects to find the highest walls of all; and the S. face of Nanga Parbat, above the Rupal nullah, is sometimes said to be the supreme one. Photographs and maps seem to leave no doubt that it is a genuine wall. As to its height, estimates have gone as high as 17,000 ft. (see *The Nanga Parbat Adventure*, plate 62), but I would suggest that 15,000 ft. is nearer the truth. The huge N. face, over 23,000 ft. high, is sometimes spoken of as if it were a wall, but maps and photographs show that it certainly is not steep enough to ‘qualify,’ the summit lying back fully 15 miles from the Indus, so that this great slope is less steep than that from Chamonix to the top of Mont Blanc. The face of Rakaposhi above the Hunza river is considerably steeper, rising over 19,000 ft. in about seven miles (see *A.J.* Nov., 1948, p. 334). Yet even this is not steep enough to rank as a wall throughout its whole height. The faces of Haramosh above the Indus may be steeper, and are perhaps among the greatest of walls. This demands investigation. As to the various almost sheer walls of the Karakoram giants around the Baltoro, none of them is likely to approach the S. face of Nanga Parbat in height, owing to the elevation of the Baltoro itself.

Further E. in the main Himalayan range, the N. face of Nanda Devi is a genuine, and very grand, wall, said to be about 8,000 ft. high. In

forbidden Nepal—doubtless the greatest mountain country in the world, containing, as it does, the majority of the known peaks of over 26,000 ft., not far from deep valleys—we may expect huge walls to exist. Incidentally, it is probable that the gorge of the Kali Gandak, between Dhaulagiri (26,800 ft.) and Morshiadi (26,500 ft.), surpasses the Indus gorge under Nanga Parbat in immensity, and it would be most interesting to have information as to the steepness of the mountain-sides which bound it.

Coming to the Everest group, we may have here the greatest rock-wall in the world—probably not on Everest itself, but on the South Peak, Lhotse. It is surprising that Lhotse was never noticed till the first Everest Expedition ‘discovered’ it, and that even now it is invariably mistaken for Cho Uyo, or some other peak to the N.W. of Everest, when seen from the Singalila ridge. As it stands immediately to the S. of Everest, separated from it only by a single col, it is surely obvious that it must be the great black peak that appears on the left of Everest in the well known views from Sandakphu and Phallut, to the S.E. It is sometimes remarked what a sight Everest must be from the S.—but, as a matter of fact, it would be completely hidden by Lhotse, except that, in distant views from the plains, Everest peeps over its crest. What can be seen of the face of Lhotse in such distant views from the S. or S.E. is an appalling black precipice. It must be nearer the vertical than the S. face of Nanga Parbat, for snow can only rest on it in the most meagre streaks and patches. As to its height, we are kept in tantalising ignorance by the fact that we can see only its upper part—unless, indeed, there exists a photograph by the Everest fliers that shows the whole of it. The Sandakphu view is as good as any at present available to non-fliers. From there, the portion of the great wall visible, before it disappears behind a snowy ridge, may not be much more than 6,000 ft. high. It is, perhaps, improbable that the full height of the wall equals that of the S. face of Nanga Parbat. Still, if any mountaineers are ever so fortunate as to get a complete view of it from only a few miles distance, they will not be likely to forget the sight. Lhotse is a peak of most striking individuality, and should certainly, I feel, be considered a separate mountain from Everest. I venture to think it is probably the most savage peak in the world. Mallory noticed it from Kampa Dzong in 1921. Graham and his Alpine guides saw it in 1883 from Kabru (or whatever summit it was that they attained). For it is evident that they mistook Makalu for Everest, and that the two summits that looked higher, ‘one of rock and one of snow,’ were, in fact, Lhotse and Everest itself. Probably, then, we have here within a compass of a dozen miles, the most savage, the most sublime (Makalu), and the highest mountain in the world—unless, indeed, Everest is overtopped by some remote peak of N.E. Tibet.

As to the faces of Everest itself, the E. face, at the head of the Kama valley, does not look steep enough to be accounted a wall: it has the appearance of a huge, almost featureless, snow- or ice-slope. The N.W. face, rising from the main Rongbuk glacier to the summit, is perhaps

just steep enough to rank as a wall. I guess its height to be about 11,000 ft. But the most abrupt and grandest wall appears to be the S.W. face, even if it is not so lofty as the N.W. face. There, Everest and Lhotse must combine to close the West Coom (is it not a little absurd to cling to the Welsh spelling?) with a marvellous curtain of precipice.

In the Kangchenjunga group, Jannu appears to possess the greatest wall, i.e. the N.W. face, which is a grand rock-wall, perhaps 10,000 ft. high (see Freshfield's *Round Kangchenjunga*, illustration facing p. 180). Kangchenjunga's finest face is its E. face, S. of the historic N.E. spur. Although this face may not rise more than 6,000 or 7,000 ft. above the lofty bay of the Zemu glacier at its foot, it is a specially fine piece of mountain structure—a genuine wall, wonderful in its architecture of rock and ice (photo facing p. 179, *Romance of Mountaineering*).

In North America, the N.W. face of Denali (miscalled 'Mt. McKinley') is sometimes spoken of as if it were one of the world's greatest mountain-walls. In particular, Hudson Stuck, speaking of the view of Denali and his Queen<sup>1</sup> (miscalled 'Mt. Foraker') from Lake Minchumina, says (*The Ascent of Denali*, p. 15): 'There the two mountains rise side by side, sheer, precipitous, pointed rocks, utterly inaccessible, savage, and superb.' I do not doubt that this is, in fact, one of the finest mountain views in the world. But Stuck's description of the extreme steepness of those great mountains is certainly misleading—though they may, of course, look steeper than they really are, as mountains so often do. Photographs showing this N.W. face of Denali suggest that it is a steep continuous slope, not wall-like in appearance, and probably, in fact, under 45°. So far as I am aware, no outstanding wall has up till now been discovered on Logan, St. Elias, or any other great mountain of the far North-West. South of the Alaskan boundary, innumerable lofty walls of course exist on the great North American ranges. Huge limestone faces, practically sheer, are a characteristic of the Canadian Rockies. A particularly fine example of such a wall is afforded by Mount Geikie, whose 'portrait' adorns the Club rooms. But, in all those ranges, I know of no wall which seems likely to surpass 6,000 ft., even if any attains that height.

South America probably still holds more secrets of Nature than any other Continent. For instance, at the headwaters of the Caroni, not far from Roraima, lies that appalling valley accidentally discovered in 1938 by an American airman, but probably unvisited since by white men, enclosed by the most fearful sheer or overhanging cliffs several thousand feet high, amongst which a waterfall, probably much higher than any other known, plunges in one sheer leap into the abyss. What a goal, this, for a small party of explorers!

<sup>1</sup> Hudson Stuck suggested the name '*Denali's Queen*' in place of *Mount Foraker* on the grounds that it represented the native Indian name of the mountain. But Stuck confessed privately to the late Lord Conway that the Indians had a name *only* for *Mount McKinley* ['*Denali*,' the Great One], and that they called *all* the other mountains 'the women' indiscriminately. Presumably, the Indian tribes have squaws but not Queens.—*Editor*.

Many of the great peaks of the Andes of course have huge walls ; but I know of only one which seems likely to rank amongst the highest in the world, namely the E. face of Illimani, a mountain which, to judge by photographs and by Conway's descriptions, is perhaps the finest and most fascinating of all the great Andes. In his narrative of his conquest of it in 1898, Conway gives a most graphic account of a moonlight view of this great face seen from its brink. In his *Bolivian Andes* (p. 133) he estimates its height as 'at least 14,000 ft.' and in *Mountain Memories* (p. 236) as 'at least 15,000 ft.' He gives no estimate of its steepness, but in both books he calls it 'appalling,' and in *Bolivian Andes* he implies that it was impossible to traverse along it ; it forced the party to keep strictly to the arête. Conway estimated the base of Illimani to be 'not more than 5,000 ft. above sea level' (*Mountain Memories*, p. 233), but atlases suggest that it is a good deal more, perhaps 7,000 ft. This may mean a deduction of 2,000 ft. from his estimate of the height of this face, but even if it is only 12,000 ft. and is a true wall, it is one of the greatest. Surely an expedition to investigate this great face would have, both for the party and for the mountaineering public, a freshness and charm which no longer characterise attempts to conquer the now familiar giants of Asia.

## PENTEDHAKTILOS

BY JOHN HUNT

**I**N the long chain of hills bordering the N. coast of Cyprus are a number of fine pinnacles and crags on which, despite the disadvantages of vegetation due to the comparatively low elevation of the range, a wealth of opportunities awaits the cragsman. The interest is the greater in that few climbers appear to have explored these hills. The rock is limestone, and is sound.

One peak in particular deserves attention—its striking silhouette will be familiar to all who have visited Nicosia, the capital of the island. This is Pentedhaktilos. As the name indicates, its formation suggests the fingers of a hand, with five distinct towers of grey limestone, separated by well-marked gaps. The peak stands apart, in a saddle of the main range ; it looks especially impressive when viewed in profile from the E. or the W. The highest point is 2,430 ft., and the general scale of the towers, whose average elevation from the screes is 300–400 ft., compares with our own Lakeland crags. By far the most challenging feature is the E. ridge, which is some 700 ft. long, and falls away at an angle little short of the vertical in the lower third of the distance towards its base. It is unclimbed.

During a second visit to the island in July 1948, my wife and I were fortunate enough to meet Mr. M. V. Fleming, who is a member of the Cyprus Government, and a keen mountaineer. He is one of the few