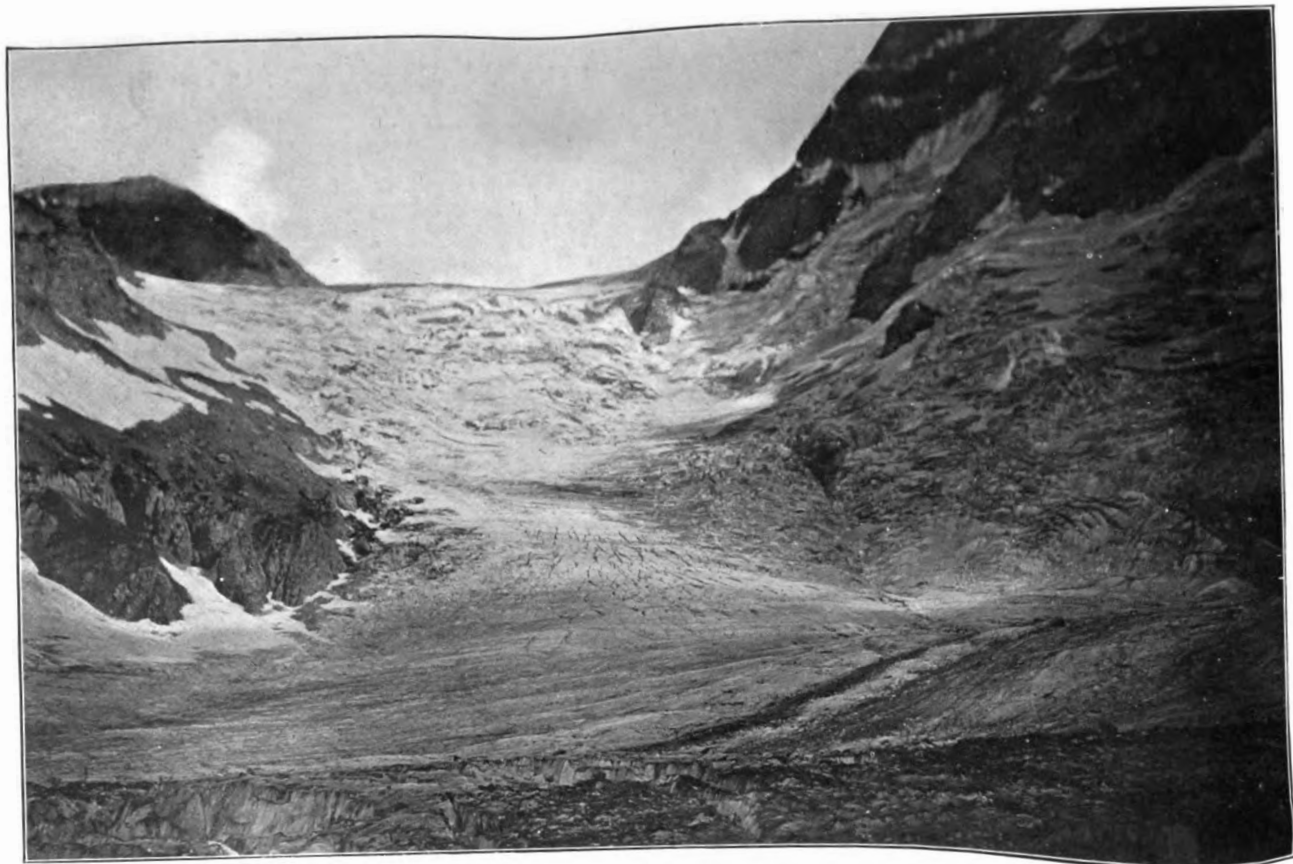


*E. F. Nere, Photo.*

*Scam Electric Engraving Co., Ltd.*

NORTHERN GLACIER OF KOLAHOI SHOWING THREE ICEFALLS.



*E. F. Nere, Photo.*

THE THIRD ICEFALL OF THE KOLAHOI NORTHERN GLACIER,

*Suva Electric Engraving Co., Ltd.*

27,000 feet were all brought to light by the scientific operations of the Great Trigonometrical Survey. Dr. Longstaff has named the newly discovered peak Teram-Kangri.

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### MT. KOLAHOI AND ITS NORTHERN GLACIER.

By Dr. ERNEST F. NEVE.

**T**HE finest mountain scenery in Kashmir is always to be found in the vicinity of a great peak. The extreme upper limit of valleys, with their birch-clad and juniper-clothed slopes, with their flowery meadows and fragrant but invigorating air, with the sources of rivers, the stretches of glacier, and above all snowy domes, stupendous precipices, serrated edges and soaring pinnacles combine to satisfy the highest ideals of the lover of Himalayan heights.

The village of Pahlgam, with its pine-covered plateau 7800 ft. above sea level, is a favourite summer resort for Europeans seeking relief from the heat of the plains of India or from the enervating climate of the valley of Kashmir in the hot season. It is situated at the confluence of two streams, the Lidar and the Tanin rivers, and is almost in the shadow of Mt. Kolahoi, the Matterhorn of Kashmir.

Leaving Pahlgam by the Lidar route we soon enter a narrow valley, the sides of which are steep and in many places precipitous. The path, which is practicable for ponies, winds round the slopes and ridges on the left bank of—and some hundreds of feet above—the river, which is here a foaming torrent. Eight miles from Pahlgam we come to Aru, the last village, a collection of dark, reddish brown pine log huts on an extensive ‘marg’ or alp. Here the last supplies are laid in and two more porters procured, bringing our total up to fourteen.

Beyond Aru the scenery becomes increasingly beautiful. The valley is a little wider and stretches of flowery meadow alternate with pine forest. The cliffs on the right, part of the outlying buttresses, of Mt. Kolahoi become bolder and more striking, and on the left side, as we enter a district known as the Lidarwat, tiers upon tiers of cliffs are piled up to a height of 4000 ft. above the river. Crossing the stream just above this point, the path ascends more steeply. Pine forest is replaced by occasional coppices of fine old birch trees, well grown and most picturesque. Immense blocks of rock, fallen from the cliffs above, make the path increasingly tortuous.

At last at a height of 10,500 ft. we emerge from the gorge, and turning round to the right, changing our course from north to due east, we ascend into a more open valley with, on the left, grassy slopes, and on the right birch-clad knolls. Facing us now are the twin peaks of Mt. Harbagwan (16,055 ft.) with to the left of them a small glacier high up. At the end of the valley is the grey snout of the northern Kolahoi glacier. From an ice cave to the right of this issues the Lidar river, at this point a comparatively small stream, which can be forded in the morning. Climbing the slope to the left of and opposite the glacier an excellent view can be obtained of the great pyramidal peak of Mt. Kolahoi, the precipitous N.E. face of which is toward the spectator. The cliffs on its western side are very impressive. On the east side on the sky line is the long arête, the only possible route to the summit, which, however, has never yet been reached. The nearest approach was made by Dr. Henry Holland and myself in 1903, when we climbed as far as the second of the vertical snow streaks visible on the N.E. side of the Peak just below the top. Precarious snow cornices and rocky 'gendarmes' prevented our complete success. The final ascent on that occasion was done from a shelter tent placed on the large snowfield at a height of 15,000 ft. Our base camp was at a point 3000 ft. lower on the S.E. side of the mountain, near the partly frozen lake Har Nag.

This year\* my object was to ascertain whether the névé could be reached by way of the northern glacier. My camp was pitched close to a large rock, a quarter of a mile below the glacier snout. This glacier has receded quite a quarter of a mile since my first visit in 1887. The trigonometrical survey map was completed in 1857. Reference to this and to the relative position of the side streams, especially one which descends from a small lake 1000 ft. above the valley, shows that since that date, in fifty-two years, the glacier must have retreated above a mile.

On August 24 I attempted the terminal ice fall to the left of the cave. It involved too much step cutting, so, retracing our steps, we found, about fifty yards to our left, a shallow crevasse which we followed up and soon arrived on the first icefield, a tract about half a mile square, covered with boulders, *débris* and gravel, with a few *roches moutonnées*. There were very few crevasses, but at the upper end, to the south, was the second icefall, a mass of séracs with fantastic peaks and spires, knife-like edges, towers, and miniature domes. These were

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\* 1909.

quite impassable, and they were hemmed in on either side by precipices. Crossing below this from left to right, and climbing over the extensive lateral moraine; I ascended a steep, grassy slope, gradually rising above the séracs and the glacier-polished cliffs which form their lateral boundaries. The flowers here were most beautiful and varied. Among the heaped up rocks the blue poppy grows and thrives. In places the hill side was golden with ragwort; as a contrast, ever and anon, a little knoll is passed azure blue with forget-me-nots. In the hollows the pink and the deep red and white *pedicularis*, with its curly tailed flowers, or the large pale yellow variety, with calceolaria-like blossoms, the sky-blue 'Jacob's ladder,' and the evening primrose are abundant. Mauve geraniums with flowers two inches across and the petals charmingly pencilled are universal. Falconer's *corydalis*, with rich yellow blossoms, the elegant *swertia* with its spotted orchis-like leaves, the deep blue clusters of *gentiana carinata* and alternate leaved aconite occur in patches, and there are groups of velvet edelweiss and silver-starred everlastings with pearl-drops of dew sparkling upon them, and of large golden potentillas, gently nodding their heads. Here, too, are some of the oddities of the flower kingdom—the Kot or Chinese incense plant, the fragrant root of which is exported for the preparation of joss sticks, and the flower of which is like a black thistle. And at the upper limit of vegetation we find the fluffy *saussurea*, called by the natives the king of medicines, the woolly hairs of which are applied to wounds.

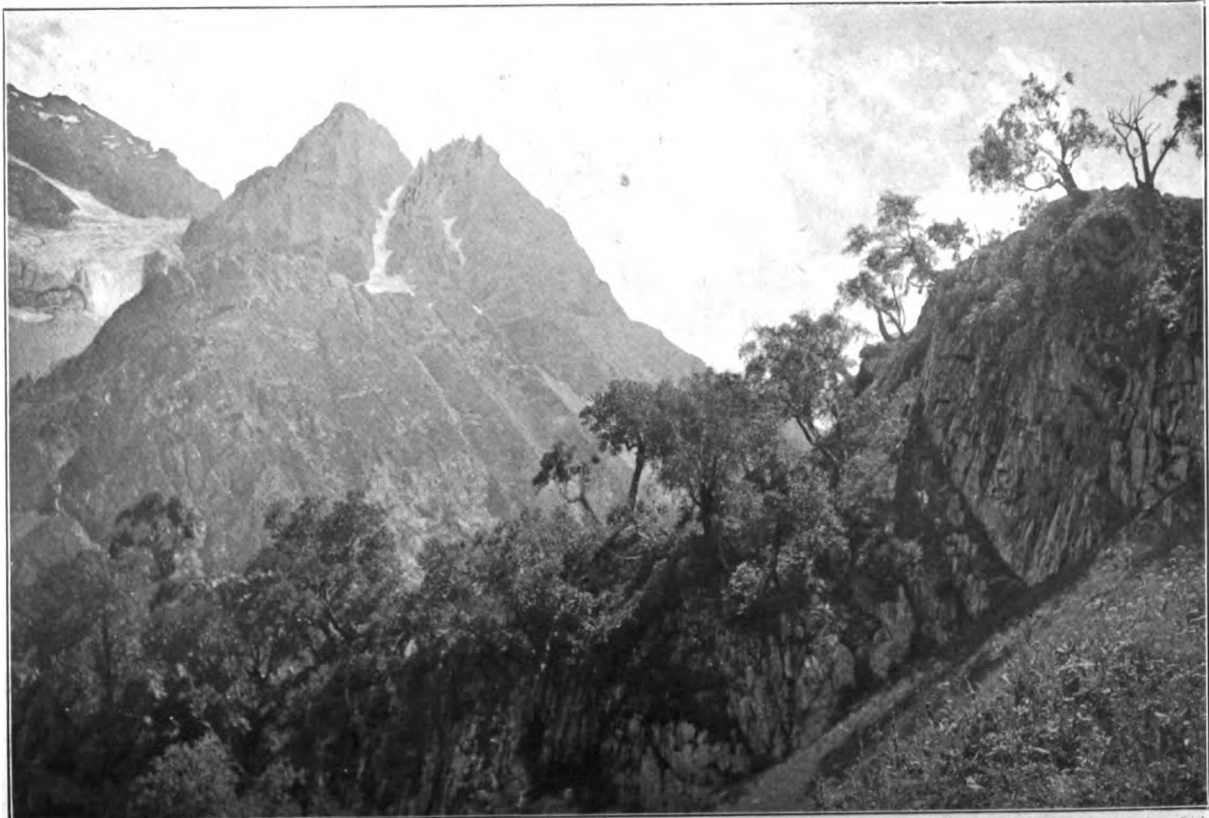
At a height of 11,500 ft. a honey bee is found, with its fawn-coloured furry blouse and four light yellow stripes, its pollen basket full of snow-white food. It is engaged with feverish haste in augmenting its stores. Here, indeed, is a rich profusion of nectar and pollen; but what will it do in the winter? Is it a member of a summer colony which has come high for its harvest and will, later on, migrate to warmer climes? Here, too, in numbers is the less civilised humble bee with its gay orange-coloured raiment.

Down in the valley below can be seen the shepherds' tents with widely scattered browsing sheep and goats. These are folded at night, but great mischief has been wrought among them recently by a red bear, which has returned night after night. Meanwhile we have mounted a thousand feet, and are above the séracs, and before us lies the second icefield. This also is thickly strewn with large angular blocks of trap and basalt. In many places the former is seamed and dotted with quartz. Occasionally blocks of pretty suleimanite with daisy-

like crystals are seen. The strike of the strata in the peak is N.W. to S.E. This second icefield is larger than the first owing to its being joined by an additional glacier, which debouches from the west side of Kolahoi. This is not marked in the Government Ordnance map. The third icefall on the main glacier is not very steep, but it is deeply fissured by vertical crevasses. Fortunately there are comparatively few transverse rifts on the face, and we succeeded in making our way to the crest, at either side of which there is a maze of crevasses. The nearer we approach to the side on our left, the more intricate do they become. Three separate attempts are made to get off the ice, but we are headed back each time by impassable chasms. A fourth effort is successful, and by cutting steps to the bottom of a shallow cavity we make our way along an edge between two crevasses and reach a snow slope. The third icefield is small but completely intersected by transverse crevasses. Above it is the fourth icefall, very steep and broken up into séracs. Our route turns the flank of both these obstacles, and mounting first on snow, then on very steep, rocky slopes and shale slides and, finally, on shelving snow requiring careful step cutting, we at last reach the snowfield above the glacier. This is part of the same névé as that on which I had pitched a shelter tent on a previous occasion already mentioned.

The weather now became bad and we were enveloped in mist and rain, which obscured the near and impressive view which we should otherwise have obtained of the final 3000 ft. of the Kolahoi Peak. Here a most absolute silence reigns, unbroken even by the distant roar of the torrent in the valley below, or the trickle of innumerable rills of water on the ice. Four times the thunder of avalanches, a most awe-inspiring and solemnising sound, reverberated from the stupendous cliffs opposite.

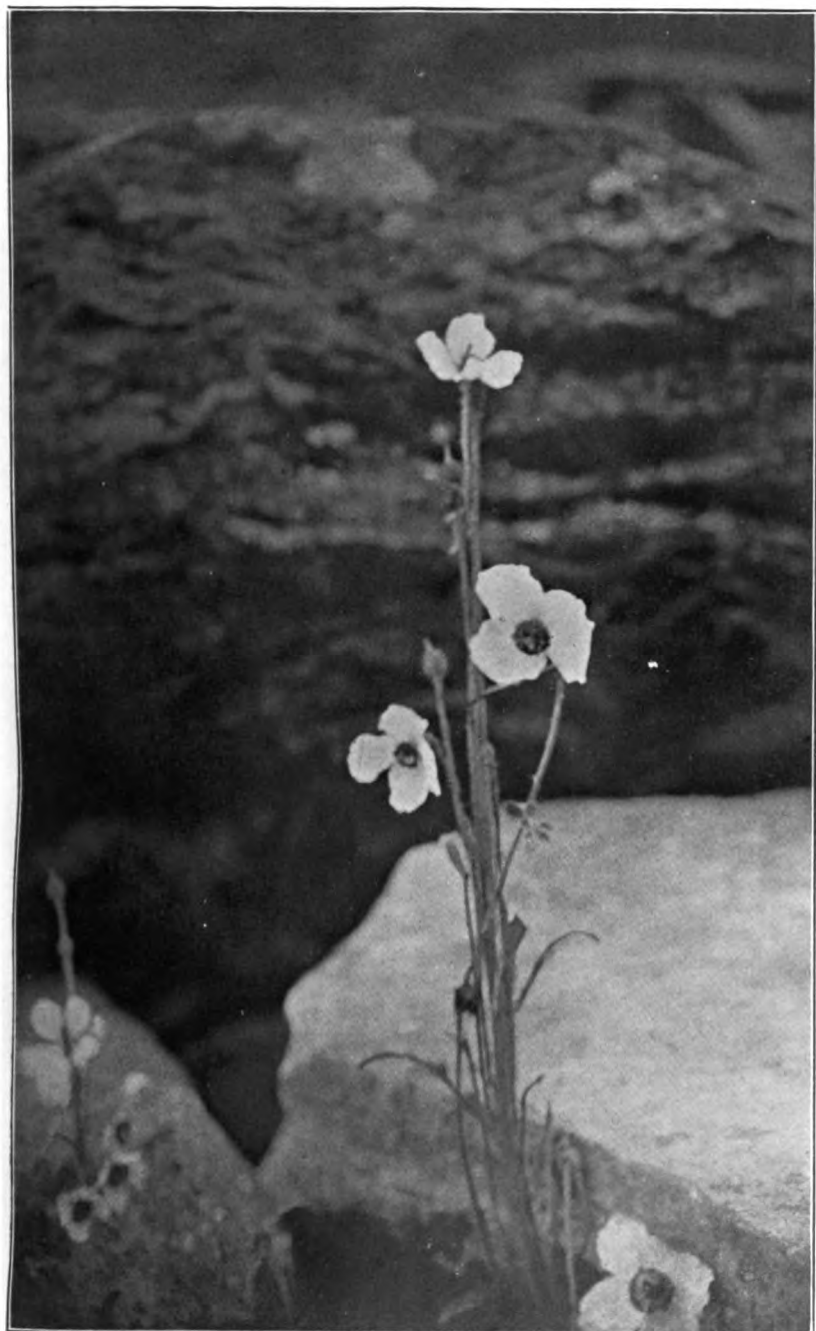
The total time required for this climb and descent to camp was twelve hours. The result was to show the accessibility of the Kolahoi snowfield from the north. But undoubtedly the south-eastern route is easier. The vertical western face of the Kolahoi Peak rises from the west glacier which separates it from its two great buttress ridges, which pass off respectively north-west and north-west by west to the upper Lidar valley.



*E. F. Nee, Photo.*

*Swan Electric Engraving Co., Ltd.*

**MT. HARBAGEVAN WHICH FACES KOLAHOI ON EAST SIDE OF NORTHERN GLACIER.**



*E. F. Nere, Photo.*

*Swan Electric Engraving Co., Ltd.*

**MECONOPSIS ACULEATA.**