

About four miles above the cataracts a beautiful glacier (see Fig. 5) flows in (nearly to the river) from the north, which I named the "Horace Walker," after the then president of the Alpine Club (London). This glacier has no surface moraine, its pure-white ice curving round under a huge lateral moraine, and, curiously enough, flowing *up* the valley. I went about two miles up the ice and found it smooth and uncrevassed. Fine cliffs from 300 ft. to 900 ft. high hem it in as one ascends. Behind the great lateral moraine is a complicated system of old moraine terraces which, some day, will give glaciologists something to discuss; but as no one else (so far as I can ascertain) has yet visited this spot, it is difficult to get up any discussion on its peculiar features.

A mile above the Horace Walker, after passing two small flats, is the terminal of the Douglas Glacier, whose trunk is covered with very rough and heavy moraine for its whole length; another two miles, and the cliffs on the south, which at this point are very grand, open out and disclose a small gravel flat (4,562 ft. above sea-level), nearly a mile long by half a mile wide, at the southern end of which ice-worn rock rises sharply in terraces for 1,550 ft. to the Douglas Pass, over which lies the McKerrow Glacier, by which a route can be taken over Karangarua Saddle into the Main Branch.

It is most difficult to convey any adequate idea of this weird basin, which I venture to say is unsurpassed for grandeur of scenery in our alps. However, I will try and describe it.

On the western side are barren cliffs rising 1,000 ft. or so sheer, and then, in tiers and ledges for another 1,000 ft., to a snow-covered peak; to the south is the 1,550 ft. wall leading up to Douglas Pass; in the south-eastern corner is a narrow defile in which lies the Fitzgerald Glacier covered with debris, and bounded by enormous over-hanging black cliffs from the top of which the ice-fields of the Main Divide by Mount Thomson send down a running fire of avalanches. These cliffs must be well over 2,000 ft. But it is on the north side that the most wonderful sight is to be seen, for here lies the Douglas Glacier coming off the western side of Mount Sefton (10,359 ft.), (see Fig. 4). The glacier has aroused much interest in alpine circles, and is peculiar because *there is no connection at any single point between the névé and the trunk.*

The great ice-field coming from Sefton lies on the southern slopes of the Karangarua Range, and is about four miles long by one mile wide and slopes down to the top of a long, absolutely perpendicular, precipice (only broken in one place) extending its full length and varying from 200 ft. at the western to about 900 ft. at the eastern end, over which great ice blocks "calve" off and drop on to the valley-floor, day and night, to such an extent that ice reforms into a glacier trunk at the bottom. While there I counted from twenty-five to thirty in the hour in the daytime. Perhaps the simplest way to convey some idea is to imagine an ordinary "lean-to" with a roof about four miles by one and the back wall rising from 200 ft. to 900 ft.; on this roof lies the 2,500 acres of *névé* ice, which drops over in such large quantities that it forms a glacier to flow along the foot of the wall.

Personally, I imagine that this basin was at one time occupied by a lake, like the "Marjelen See" in Switzerland, fed by the Fitzgerald Glacier and upheld by the trunk of the Douglas as it flowed past and blocked the northern outlet.

Bad weather in these western ranges is not uncommon, nor is it pleasant to be "bottled" in bad country by three or four days' storm, but I shall never regret having been caught in a terrific storm at night while bivouacing under a boulder in this weird basin. It was grand beyond my power of description. The peals of thunder, the vivid lightning which lit up those beetling cliffs, and Mount Sefton's snows 6,000 ft. above us. The roar of the thunder and crash of ice avalanches echoed and re-echoed from the surrounding precipices. To judge by old Bill's (the Maori) muttered comments that night, he must have thought that all the pakeha and Maori demons had been let loose for our benefit.

So much for the Twain—and though I advise enterprising parties to visit this locality, I must admit a hope that for very many years to come it will only be available to those who are prepared to tackle it in its virgin condition. Such scenes are more appreciated when it has taken hard work to reach them than if accessible by motor-car.

(NOTE.—The visit of Messrs. Scott, Russell, and Johnson in 1934 proves that the Horace Walker and Douglas Glaciers have retreated half a mile since my exploration in 1894 and both glaciers have a terminal lake, which will no doubt gradually silt up.) (See Fig. 6).

*Copland River.*—This is now so well known and easy of access, with its track and huts, that no special description is necessary. Suffice to say that Welcome Flat is in every way equal, and in some respects superior to other "flats" on Westland rivers. Visitors to this locality will agree that the combination of river, luxuriant forest-clad slopes, and grey-rock precipices backed up by the eternal snows of the great peaks presents a picture to stir the imagination and enthusiasm of any but the most blasé tourist.

*Points of interest* off the track of the Copland Pass are:—

- (1) Ruera Stream and Lyttle's Peak:
- (2) The Strauchon Glacier and remarkable precipice from La Perouse, which must be at least 4,000 ft. high and practically sheer:
- (3) Hot spring near Welcome Flat Hut.

*Expeditions and Notes.*—Parties going into Reserve 1019 should include an experienced rough-country bushman and, above all, a man experienced in fording rivers—the latter is *dangerous work in this country*. A bill-hook, or short slasher, is essential for getting through the bush. A base camp can now be taken by pack-horse to Cassell's Flat and pitched at the junction of Twain River and Main Branch—good firewood and shelter. From here the following interesting expeditions can be made:—

- (1) Ford Main Branch (quite easy) and go along the south bank of Twain River as far as possible and look into the great gorge and cataracts.