

One of the most recent lava streams of Tongariro, that of the Red Crater (which is described later on), flowed over the floor of this crateral hollow and spread out round the base of its northern walls.

The summit of Tongariro is formed of a number of extinct cones, whose crater walls are in a more or less perfect state of preservation. They record a long series of changes, the volcanic action seeming to have made for itself a new channel at each succeeding change, and the craters appear to have diminished in size in their downward course, the new formation breaking up the walls of their predecessors, and pouring lava streams down the mountain sides in fresh places. It is easy to conceive, had the action continued through one vent, what a mighty volcanic cone might have been built up, as, for instance, was the case at Ngauruhoe.

On the mountain top are now to be seen eight large and well-defined craters, which are for the most part encircled by walls composed of their own ejecta, but partly also by the dilapidated walls of former craters.

The two craters of Te Mari are the farthest north of the group. They are situated at an elevation of 5,000ft. above the sea, or about 1,000ft. below the summit of Tongariro. The lower crater has a diameter of 20 chains and a depth of 120ft; its floor is tolerably level, and generally covered by a shallow lake; its sides are rocky and precipitous. The upper crater is situated 500ft. above the lower one; its diameter is from 8 to 10 chains; it has a crateral cavity in its centre of unknown depth, from which steam is constantly escaping. From the upper crater one of the most recent lava streams of the mountain issued. It flowed in a northerly direction nearly to the margin of Roto-Aira, a distance of about 3 miles; at one mile from the crater its width is a quarter of a mile, and its thickness fully 50ft. The lava is broken up into irregular blocks of various sizes up to 20ft. in diameter; along the surface of the stream in several places are seen peculiar concave ridges, the outer sides of which incline inwards, somewhat like the gunwale of a boat or canoe, thus forming a channel or trough, the outer elevated edges of which cooled first and consolidated, and between them the stream of molten metal flowed. The lava has a rough scoriaceous surface, is very dark and heavy. Professor Thomas describes it as "between the basalt and augite andesites." On the extreme north of Tongariro are seen the remains of a very remarkable crater, which from its situation is designated the North Crater. It is a circular area, 45 chains in diameter, having a nearly flat surface, and being, I may say, a level plain encircled by a cliff of lava, which rises to a height of 200ft. on the south side and about 120ft. on the north side; at other places the flat ground is almost on a level with the crateral rim. Close to its margin, on the west side, is a small crater of funnel-like shape, whose diameter at the mouth is about 10 chains with a depth of 70ft.; from this was ejected at least a considerable portion of materials by which the North Crater was filled up; its surface is now covered with fine volcanic ashes, pumice sand, and lapelli.

On the east of the North Crater, and separated from it by a deep ravine 700ft. in depth and some 20 chains across, is another crater of very nearly the same size as the North Crater. Its walls are perfect on three sides, but somewhat broken away to the south-west. It contains a nearly circular lake, over a quarter of a mile in diameter, and covering some fifty acres of the crater bottom; it is bordered by sloping, sandy beaches, whilst the crater sides slope regularly upwards from 300ft. to 500ft., forming a symmetrical basin-shaped hollow, filled at the bottom with water of the most beautiful blue tint, 5,600ft. above the sea. Immediately to the south-west of the Blue Lake Crater, and separated from it by a lava-ridge 150ft. in height, which forms the common crater-wall of both, is another crateral hollow, some 60 chains in length by 50 chains wide; this is surrounded by lava-ridges, which form the lips of the four surrounding craters. It has an almost flat interior floor, which is in part covered by a comparatively recent lava-stream from the Red Crater. The height of the floor is 5,540ft. above the sea; it may have been the site of a former vent, which seems most probable, or it might have received its circular shape and basin-like appearance from the number of craters which surround it.

Situated upon the steep lava-ridge to the southward of the central crater, and 600ft. above the floor of the latter, is the Red Crater, whose diameter at the mouth is 22 chains. This is probably one of the most interesting points on Tongariro; it shows evident signs of comparatively recent activity; beds of deep-red scoriæ, covered in part with bright-yellow sulphur-incrustations, form its upper portions; its sides are very steep, standing at an angle of forty degrees in places; they are formed of cinder, scoriæ ash, and lapelli. On the north side it is scored by a deep breach formed by a somewhat extensive lava-stream, which, bursting through the cone, flowed down over the rocky interior of the crateral hollow to the eastward of it, dropping a height of fully 1,000ft., and spreading out in a fan-shaped bed over the bottom of the old crater for a distance of a mile or more.

This stream is over a quarter of a mile in width and in places about 30ft. deep; the lava, I believe, to be the same as that of Te Mari Stream, or of a basic character. It is here perhaps more than on any other point on the mountains are exhibited clearly and in most instructive form volcanic phenomena of recent date. Flowing into the central crater is also a lava-stream from this vent, bearing precisely the same character, whilst all around are blocks of the same dark, heavy lava, all having much the appearance of basalt. At the foot of the Red Crater cone, on the north side, are three interesting lakelets, apparently occupying the sites of former volcanic vents; the colour of the water is a bright green, and hence it has received the name of Rotopounamu (or Greenstone Lake). From the Red Crater steam was issuing with great violence and the acid and sulphur-fumes from it were almost suffocating. Looking southward across the Blue Lake Crater, the view includes the two active cones, generally emitting large columns of steam, whilst in the distance are seen the snow-capped peaks of Ruapehu. All around the eye wanders over vast fields and ridges of rugged lava, illustrations of the mighty effects of volcanic action spreading over time far back to comparatively recent dates, and forming a scene which, of its kind, is probably not surpassed, if it is equalled, anywhere in the world.

Two other craters occupy the summit of Tongariro, which, from their positions, are designated the West Crater and the South Crater; their character is generally the same as those already described. The South Crater being more of an elongated form, it stretches as far as the base of the