

NEW ZEALAND.

AREA AND BOUNDARIES.

THE Colony of New Zealand consists of the three main islands named respectively North Island, Middle Island, and Stewart Island, together with the numerous subsidiary islands which from time to time have been added to the territory by proclamation. The group is situated in the South Pacific Ocean about 1,200 miles to the south-east of Australia. That portion of the Southern Ocean which lies between the Australian Coast and New Zealand is now distinguished as the Tasman Sea, in honor of the first discoverer of New Zealand and Tasmania. Including outlying islands, the total area embraced within the limits of the Colony is 104,751 square miles, of which the North Island with adjacent islets constitutes 44,468 square miles, the Middle Island with adjacent islets 58,525 square miles, and Stewart Island with adjacent islets 665 square miles.

THE NORTH ISLAND.

Coastal Features.

This island is, as its name implies, the northernmost of the group, and is separated from the Middle Island by Cook Strait. In shape it is peculiar, consisting of a roughly square main body, with projections stretching from each corner, the longest being to the north-west. This remarkable northward peninsula is about 280 miles long, and from 53 to 8 miles in breadth, and is almost cut in two by the Hauraki Gulf on the eastern side, and the Manukau Harbour on the west. On the narrow isthmus intervening, the town of Auckland has been built. At the extremity of the peninsula lies the headland of Cape Reinga, from which, according to Maori legend the souls of the dead were plunged into the abode of departed spirits. A little to the eastward is North Cape, and to the west Cape Maria Van Diemen. Off the point lie the rocky islets known as the Three Kings, the scene of several disastrous shipwrecks. Proceeding down the western coast from Cape Maria Van Diemen, the first inlet of importance is Ahipara Bay, with Reef Point at its southern entrance. Next come Kaipara Harbour and Manukau Harbour. Lower down is Kawhia Harbour, with Albatross Point on the southward entrance. Here the coast takes a westerly sweep and forms the North Taranaki Bight. On the extremity of the western projection of the island is situated Cape Egmont, with the prominent landmark of Mount Egmont standing a

little distance inland. Sweeping round to the south the coast line forms the capacious South Taranaki Bight. Port Nicholson and Palliser Bay are situated in the southern prolongation of the island. Rounding Cape Palliser a long stretch of unindented coast line leads up to Kidnapper's Point at the southern entrance to Hawke Bay. Passing Poverty Bay and East Cape and turning westward the Bay of Plenty is entered. Next comes the Hauraki Gulf, off which are situated the Barrier Islands, with Aiguilles Point on the extremity of the Great Barrier. The eastward coast line of the northern peninsula possesses numerous indentations, the most remarkable of which is the Bay of Islands with Cape Brett at its southern entrance. This inlet is one of the finest harbours in New Zealand, being superior to that of Auckland as regards facility of entrance, and possessing deep water and good anchorage in almost every part. As the name implies, the surface of the bay is diversified by numerous small islands, and these, with their verdurous slopes and lustrous beaches, together with the many beautiful bays and headlands on the mainland, constitute a scene which, for charm, stands almost unrivalled.

General Physical Characteristics.

The main body of the North Island is mountainous, although there are some extensive stretches of plain country, portions of which are of surprising richness and fertility. In the northern peninsula the ranges do not rise to any great altitude, Tutanoe, the highest point, having an elevation of 2,570 feet. Southward from East Cape the highest summit is Hikurangi, which reaches 5,530 feet. On the west coast, south of Whaingaroa Harbour, are Mount Karehoe and Mount Pironghia, reaching an altitude, respectively, of 2,370 and 2,800 feet. The volcanic summits to the south reach a much greater elevation. One of the most remarkable is Mount Egmont, in the New Plymouth District. This is an extinct volcanic cone, 8,260 feet in height, and the summit is clothed with perpetual snow. Rising abruptly from the plain, it presents a sublime spectacle, the cone being one of the most perfect in the world. Tarawera is the well-known volcanic summit in the celebrated Lake District, and rises to a height of 3,600 feet. Farther down are the Te Whaiti Range leading to Kaimanawha, near Hawke's Bay, and the prolongations to Kaweka and the Ruahine Range, ending in the Tararua and Haurangi at Cape Palliser, these successive ranges forming the backbone of the island to Cook's Strait. The Tongariro Mountain in the Lake Taupo District consists of the united outflow of lava from several distinct cones. Ngauruhoe, the highest of these, reaches 7,515 feet. From Ngauruhoe, the Red Crater, and Te Mari discharges of lava took place as recently as 1868, and steam and vapours are still given off from various vents, accompanied by considerable noise. Ruapehu lies south of the Tongariro group, and reaches an elevation of 9,008 feet, being in part above the line of perpetual snow. This mountain is in the solfataras stage, and possesses a crater-lake

which occasionally is troubled by slight eruptions giving rise to large volumes of steam. In March, 1895, an eruption took place, when several hot springs were formed, while the heat of the lake increased. The sides of the depression occupied by the lake are covered with ice and snow, and the water, which is 300 feet below the surrounding crater rims, is inaccessible except with the use of ropes and ladders. This area and the three craters on Tongariro are situated in a straight line which if produced would pass through the boiling springs of Tokaanu on the southern edge of Lake Taupo, the volcanic country north-east of the lake, and White Island, an active volcano in the Bay of Plenty, about 27 miles from the mainland.

The district occupied by the hot springs constitutes one of the most remarkable and interesting features of the North Island. They are found over a large extent of country from Tongariro, south of Lake Taupo, to Ohacawai in the extreme north, a distance of about 300 miles, but it is in the neighbourhood of Lake Rotorua, about 40 miles north-east of Lake Taupo, that the principal seat of hydrothermal action is encountered. Many of the hot springs have been proved to possess remarkable curative powers in certain complaints, and the Government has taken considerable pains to render them accessible to the visitor in search of health. The beautiful Pink and White Terraces in this district were almost completely destroyed by the eruption of Mount Tarawera in 1886, but it is stated that natural agencies are at work which will in time renew them. Some of the hot springs assume the form of geysers, and eject boiling water, fragments of rock, mud, &c., to a considerable height.

Of the plains, the principal are those in the Hawke's Bay District; the Wairarapa Plain in the Wellington District; the West-Coast Plain, stretching from near Wellington to some distance north of New Plymouth; and the Kaingaroa Plain, which stretches in a north-easterly direction from Lake Taupo to the Bay of Plenty. A great portion of the last-mentioned is, however, covered with pumice sand and is unfit for agricultural or pastoral occupation.

The principal river in the North Island is the Waikato. Rising in the Central Range, near Ruapehu, it flows into Lake Taupo, thence flowing north-westward it enters the ocean a short distance to the south of Manukau Harbour. The river is navigable for 100 miles from its mouth by small vessels. The Thames rises in the high land near the Lake District, and after a course of 100 miles enters the sea at the Firth of Thames. Several small streams, including the Tarawera, drain into the Bay of Plenty. The Wairoa, Waikari, and Mohaka fall into Hawke Bay. The Wanganui flows into the South Taranaki Bight, and the Hutt into Port Nicholson.

A large number of streams drain the Auckland peninsula, their courses necessarily being very short. There is, indeed, little of the North Island that can be passed over without meeting a stream of ever-running water.

THE MIDDLE ISLAND.

Coastal Features.

The Middle or South Island, as it is sometimes called, is much more compact in shape than the North Island, from which it is separated by Cook Strait, the passage being about 90 miles across in its widest part, and 16 at the narrowest. From Jackson's Head, in Cook Strait, to Puysegur Point, at the extreme south-west, the length of the island is about 525 miles, the greatest breadth, in the Otago District, being about 180 miles. Sailing across from Wellington, in the North Island, the first port of call in the Middle Island would, probably, be Picton on the opposite shore of the strait, at its narrowest part. Here is the beautiful inlet called Queen Charlotte Sound, which Captain Cook described as a collection of the finest harbours in the world. The immense bays in this fine stretch of water were much frequented by whalers in the early days. Westward lies another capacious inlet called Pelorus Sound. The approach to Tasman or Blind Bay, the next important indentation on the north, lies through a narrow but deep channel, between D'Urville Island and the mainland, called French Pass. Shut in by high precipitous hills, the scenery in this passage, with its swift-running current, is remarkably imposing. At the head of the bay is the township of Nelson, encircled by a background of lofty hills, and a few miles eastward is the village of Whakapuaka, where the cable from Australia reaches the land. Golden or Massacre Bay, at the extreme left of the northern shore, was the scene of the murder by the natives of an entire boat's crew belonging to the company of the explorer Tasman. Rounding Cape Farewell, the upper portion of the western coast will be found somewhat deficient in noteworthy indentations. Westport, on the southern shore of the Karamea Bight, possesses a good harbour. At Greymouth, lower down, large sums of money have been spent on the improvement of facilities for shipping, the port being the outlet for a rich mineral and agricultural district. Thence southward the coast line presents no important indentations until the wonderful inlets of the western Otago district are reached. Here, between the parallels of 44° and 46°, the rock-bound coast rises in places sheer from the ocean depths to a height of 5,000 or 6,000 feet, and is pierced by numerous sounds or fiords, which penetrate inland for distances ranging from 6 to 20 miles. These inlets are narrow and very deep. Milford Sound, the finest example, has a depth in its upper part of no less than 1,270 feet. It is surrounded by mountains, which, with the exception of Mount Cook, are the highest on the south coast, and its narrow entrance appears still more restricted from the height of the gigantic precipices on either side. Within the sound, a sublime spectacle opens out, towering mountains rising on both sides of the narrow channel, clothed with verdure at their base, and with magnificent waterfalls tumbling down their flanks. Here and there the cold blue mass of the glacier protrudes itself, while,

far above, the mist-wreathed snow-clad cones rear their heads in silent majesty to the skies. The great Sutherland Waterfall, in the vicinity of the Sound, is stated to be 1,904 feet in height. Of the other inlets of this class to the south of Milford Sound, the chief are George Sound, Doubtful Inlet, Daggs Sound, Breaksea Sound, Chalky Inlet, and Preservation Inlet.

The southern and eastern shores of the Middle Island do not offer any noteworthy indentations. Close to Invercargill is the Bluff Harbour, a well known port of call for vessels trading to the south. On the east coast the principal harbours are Otago Harbour, at the head of which Dunedin is situated; Oamaru, the outlet for the district of the same name; Timaru, at the elbow of Canterbury Bight; and Akaroa and Lyttelton Harbours, on Banks Peninsula.

General Physical Characteristics.

The inland physical features of the Middle Island are particularly striking. Almost throughout its entire length the island is traversed by a range of mountains called the Southern Alps, which throws off numerous lateral spurs towards the east and west. In the south, a network of ranges spreads out over the Otago district. In the east, towards the centre of the island, are the Malvern Hills and Hunter's Hills, and the ranges occupying the greater portion of Banks Peninsula. The Kaikoura Range runs between Cook's Strait and Banks Peninsula. South of Nelson, the Spenser and St. Arnaud Mountains break off towards the east. The highest peak in the Southern Alps is Mount Cook, situated about the centre of the range, and rising to a height of 12,349 feet. This mountain was called by the natives Ao Rangi, or the Cloud-Piercer. Other notable peaks are Mount Stokes, 12,200 feet, and Mount Aspiring, 9,940 feet. In the southern system are Earnslaw, 9,165 feet; Double Cone, 7,688 feet; and Mount St. Bathans, 6,600 feet.

In point of beauty and sublimity of scenery, the Southern Alps compare favourably with the Alps of Switzerland, while as regards variety they are superior to the European range. The snow line in New Zealand is below that of Switzerland, so that the mountains, while not quite so high as the Swiss Alps, nevertheless present all the varied features of the Alpine uplands. On both sides of the range there are extensive glaciers, those on the western side descending in places to within 700 feet of the sea level into the midst of evergreen forests, and most of them are easily accessible. The Tasman Glacier, on the eastern slope, has an area of 13,664 acres, with a length of 18 miles and an average width of over a mile, and as regards length and width is superior to the famous Alletsch Glacier of Switzerland. The Murchison Glacier contains 5,800 acres, and is 10 miles long and over three-quarters of a mile in average width; and the Godley Glacier, 8 miles long and over a mile wide, has an area of 5,312 acres. In addition to these, there are numerous others of smaller extent, all of

them possessing features of great beauty and interest. The waters produced by the melting of the snowfields and glaciers give rise to numerous rivers, nearly all of which flow through the fertile plains of the east.

The Middle Island possesses numerous lakes, many of which are of great beauty, and some of them are situated at a considerable elevation above the level of the sea. Lake Tekapo, in the Canterbury district, is 2,468 feet above the sea-level, and is 15 miles long by about 3 broad. Thirty miles distant, towards the south, is Lake Pukaki, one of the most picturesque Alpine lakes in the island. It lies at an elevation of 1,746 feet above sea-level, and, like similar lakes in this and other Alpine regions, has probably been formed by the retreat of an immense glacier. Close to the lake, the majestic cone of Mount Cook, crowned with snow and ice, is a conspicuous feature in the landscape. Lake Ohau, near Pukaki, is 12 miles long and $2\frac{1}{2}$ miles in width, and its waters are less turbid than those of its larger neighbours. Several fine lakes are found in the Otago district. Lake Manapouri covers an area of 50 square miles, and is nearly surrounded by beautifully-wooded snow-capped mountains. Te Anau is the largest lake in New Zealand. It is 38 miles long, and from 1 to 6 miles in width, and has an area of 132 square miles. Wakatipu is 52 miles long, and from 1 to 3 miles broad, with an area of 114 square miles. The lake is situated at an elevation of 1,070 feet above the level of the sea, and, as its depth has been proved by soundings in various places to be from 1,170 to 1,240 feet, a large portion of its bed is considerably below sea-level. Wanaka and Havea are two beautiful little lakes in the northern Otago district. From what has already been said, it will have been concluded that a great portion of the surface of the Middle island is mountainous; nevertheless there are several fairly extensive plain districts, particularly on the eastern side of the main range. Of these, the most noteworthy are the Canterbury Plains, with a length of about 130 miles, and a width varying from 30 miles north of the Rangitata to very narrow limits further south. In the north are the Karamea Plains, the Waimea Plains, the Fairfield Downs, the Wairau Plains, the Hanmer Plains, and the Amuri Plains, lying between Cook Strait and the Hurunui River. In the Southern district are the Oamaru Downs, Moraki Downs, and the Mataura Plains.

The Middle Island is well provided with rivers, but, for the most part, they are merely mountain torrents, fed by the snows and ice-fields of the ranges. At times, when there is a more excessive melting of the snows than usual, they are liable to rise in flood, and, where not confined by precipitous rocky walls, form beds of varying width, frequently strewn with enormous deposits of shingle. The Clutha is the largest river in New Zealand as regards volume of water. It drains an extensive area of the southern mountain region, and after a course of 154 miles enters the sea about 60 miles south of Dunedin. It is navigable for small vessels for about 30 miles from its mouth. From

the proximity of the mountains to the shore, the streams on the western coast have short rapid courses. The Buller, Grey, and Hokitika are navigable for a few miles, but great expense had to be incurred in connection with the removal of the obstructing sand-bars at their mouths. The Grey and Buller possess special importance from the fact that they are the chief ports of shipment in connection with the coal export trade of the west. On the eastern slope there are hundreds of small streams along the whole extent of the island.

STEWART ISLAND.

This small island, which embraces an area of about 425,000 acres, is the southernmost of the group. It is separated from Middle Island by the passage called Foveaux Strait, and is distant 25 miles from the Bluff on the south of the Middle Island. The greater portion of Stewart Island is rugged and forest clad; but, although lying so far to the south, the climate is mild, and the soil when cleared of the thick undergrowth is very fertile. Mount Anglem and Mount Rakeahua are the highest peaks, the former reaching an elevation of 3,200 feet, and the latter 2,110 feet. The coast line possesses numerous attractive bays and fiords. Half-Moon Bay is the principal port, and near by is situated a beautiful sheet of water, about 10 miles by 4 miles in extent, called Paterson Inlet. Port Pegasus is a fine land-locked harbour, 8 miles long and about $1\frac{1}{2}$ mile wide. Fish and game are abundant, while the oysters are of fine size and flavour, and have achieved an Australasian reputation.

THE OUTLYING ISLANDS.

Of the outlying islands, the principal are the Chatham Islands, the Kermadecs, the Auckland Islands, and the Cook Group. The Chathams lie 480 miles east-south-east from Wellington. The largest island of the group has an area of about 222,500 acres, of which an irregularly-shaped lagoon in the interior contains 45,960 acres. A fourth of the entire area is clothed with forest, but there is good pastoral country in the remainder. Pitt Island has an area of 15,530 acres. In addition to these, there are several smaller unimportant islands. Sheep-raising is the principal industry in the group.

The four Kermadecs are named, respectively, Raoul or Sunday Island, Macaulay Island, Curtis Island, and L'Espérance or French Rock. Sunday Island contains 7,200 acres, Macaulay Island 764 acres, Curtis Island 128 acres, and L'Espérance 12 acres. Sunday Island is 20 miles in circumference, and its highest point reaches an elevation above sea-level of 1,723 feet. The surface is rugged, and almost the whole area is covered by a dense forest. Throughout the island the soil is exceedingly fertile, resulting from the decomposition of volcanic lavas and tuff. There are three fresh-water lakes in the interior, but they are so difficult of approach as to be practically useless.

The Auckland Islands are situated 290 miles to the southward of the Bluff Harbour. The largest of the group is 27 miles long, with a breadth of about 15 miles, and in its highest part is 2,000 feet above sea-level. There are some fine harbours in this island, Port Ross being considered one of the best harbours of refuge in the world. A depôt for the use of shipwrecked mariners is maintained on the island by the Government of New Zealand.

The Cook Group contains several beautiful and fertile islands. Rarotonga rises to a height of 3,000 feet above the level of the sea, and its fertile soil is covered with rich vegetation right to the summits of the mountains. The island is well-watered, but is deficient in good harbourage. Aitutaki has a circumference of 18 miles, and contains some splendid groves of cocoanut trees on the level lands near the coast, with fine pasturage inland.

Palmerston Island is about 220 miles from the nearest island in the Cook Group, and contains areas of good soil with some fine hardwood timber. The island is remarkable as being the "San Pablo" of Magellan.

Penrhyn Island is about 1,200 miles east of Samoa, and is one of the most famous pearling islands of the Pacific. It possesses a splendid harbour, capable of accommodating the largest vessels.

Suvarrow lies about 500 miles to the eastward of Apia in the Samoan Islands. It is a coral atoll, 50 miles in circumference, with a reef enclosing a land-locked lagoon about 12 miles long and 8 miles wide. The entrance is half a mile in width, and there is unlimited anchorage with depths of from 3 to 30 fathoms. Situated out of the path of the hurricanes, the island, which is uninhabited, is sufficiently fertile to support a small population, and would form a valuable trading depôt for the various islands in the neighbouring Pacific.