

CONTRIBUTION TO THE PHYSIOGRAPHY OF TASMANIA.

By COL. W. V. LEGGE, R.A.

[Plate.]

No. 1.—PINE ISLAND, GREAT LAKE.

PINE ISLAND is one of the five or six islets which, at wide intervals, dot the surface of the magnificent sheet of water known as the Great Lake.

Considering the shallowness of its waters and its extremely irregular outline, it is singular that there are so few islands in this lake. Those that do exist are all of small area.

Pine Island is situated in the north-eastern corner of the great bend of the lake, the eastern shore of which skirts the foot of the so-called "Sand-bank Tier," a rugged talus-strewn range, about 4 miles in length. The local name has its origin in the sandy shore which bounds this part, and along which the water is remarkably shallow, running out for about half a mile, with a depth of not more than a couple of feet.

During a recent visit, I was much struck with the singular character of the shore of this island; and the desirability suggested itself of writing a short descriptive account of the spot for the information of our Fellows, and in the hope that a satisfactory explanation of the causes which have led to the formation which I noticed, may be arrived at from a discussion on it.

The distance from the head of the lake, where the boat belonging to the "Improvement Association" of Deloraine is kept, is about four miles, and on the afternoon of my trip, in March last, we sailed down (my son and myself), accompanied by Police Trooper Archer, in about half an hour.

The long, low outline of the island is visible from the starting-place, and as we neared it the basaltic "tors," which rise from its centre, became conspicuous. It is said to have been formerly covered with timber, the King William Pine having been chiefly in evidence, but the only signs of this that now exist are the gaunt and bleached trunks of one or two "Cider" gums and one pine. At the "Cove," on the eastern shore, there are several large

fallen trunks of pines lying partly in the water: further evidence of the ravages of fire! The stupid practice of setting fire to the country by shepherds and others, which obtains in the western wilds of this country, is probably answerable for the desolate state of this islet at present. On nearing it, however, scattered green bushes are seen, chiefly near the margin, and these are the only prominent signs of botanical life until one lands, when the surface is found to be fairly covered with the usual coarse vegetation and low bushes found in all open tracts of this upland region.

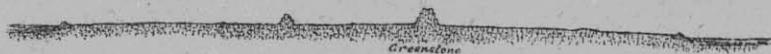
At about half a mile distant the singular character of the shore becomes apparent, the entire coast-line consisting of a raised terrace, rising about 7 feet from the water, and looking as regular and uniform in structure as if it had been built artificially. In looking for a landing-place we were able to examine the structure of this curious terrace, and found the rocks composing it to vary from somewhere about one ton in weight to stones of nearly one cwt. The face forms a regular slope of  $35^{\circ}$  or steeper in some places with an almost concave profile, and stands on a formation of small rocks below the surface, projecting outwards about four or five feet as a rule, and skirted by a flat bottom of shingle, the water being not more than three feet deep. The water is shallow all round the island, as indeed it is throughout the better part of the great bay at the north of the lake.

The contour of the west side is circular, the terrace sweeping round in regular curves to the northern and southern sides, which run almost due east to the eastern end, where the terrace is broken by a little cove of shingle, which my son visited, but which I did not, myself, see. The island is about 600 yards long, 250 broad at the widest part, and contains about 30 acres. The shape is roughly given in the accompanying sketch, enlarged from the 1-inch to the mile map of the lake. On landing, we found the group of "tors" we observed in the distance to consist of six or seven mounds of basalt, rising more or less perpendicularly from the surrounding and, in some directions, almost level land, the whole describing a crescent across the centre from west to east. The highest of these eminences was in the centre of the island, and rose to a height of 45 feet above the water, and 30 feet from the ground at its base. The others, at a distance of about 30 to 50 yards from each other, were smaller, the groups at the west end of the crescent being sub-divided into detached rocks. The class of rock, both in the "tors" and the boul-

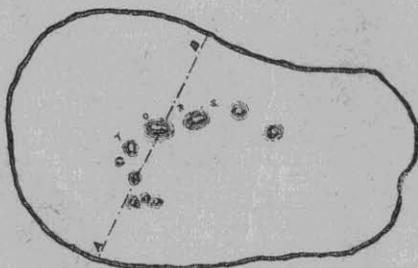
ders which form the terraced show, is greenstone, of which the entire structure of the island also consists, as here and there the same formation projects through the shallow soil. In view of this fact some clue is obtained as to the cause of the terraced formation of the shore.

The island lies almost in the middle of the strait—about  $1\frac{1}{2}$  mile wide—which connects the two great water tracts at the north of the lake, namely, the large "North-West Bay" and equally wide "East Bend"; and from all points of the compass, save two—north-east and south-west—it is exposed to the full force of the waves, with several miles of water behind them. The prevailing gales on the lake are from the north-west, south-south-west and south-west, and an extremely violent sea rises with them. After a hard winter, when the ice is from three to five inches thick, it generally breaks up during these gales, and drives in huge floes, with great violence, on the shore of the island. It seems, therefore, reasonable to suppose that, during the course of the centuries, the effect of wave and ice pressure has been sufficient to cast up what was formerly a foreshore of scattered stones and boulders into rampart, or terrace, now existing. Once this began to assume the elevated character of a roughly-formed terrace, there is no doubt that the ice movement and force of the waves would gradually mould it, little by little, into its present form. The formation of the rampart is equally regular on the south-west and north-west sides, the latter part being somewhat less exposed to heavy weather. Round the whole island, with the exception of the cove or break on the east side, the rock bank is almost of uniform height.

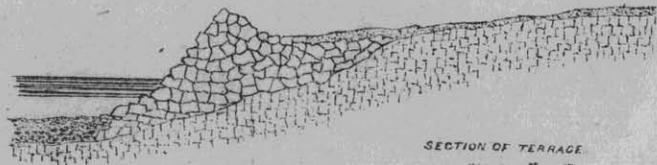
As the botany of these high regions is interesting, it may be proper to remark on the vegetation which we found clothing the islet. The surface is practically level, there being a gentle rise from the shore towards the "tors" in the centre. The soil is, for the most part, covered with a dwarf form of the ordinary cattle or "thatch" grass (*Poa caespitosa*), thickly interspersed and patched with the Epacris-like bushes *Pultenaea rubumbellata*, *Bechia gunniana*, and *Comesperma retusum*. The second of these was in flower at the time of my visit, and gave colour to the sward. We noticed that the dead tussocks of "thatch" grass (*Poa*) were partly covered with a curious earthy-looking deposit lying on them in thick patches, and on closely examining them found, to our surprise, that the covering was a lichen. The grass is killed in the usual way, by cold and age, as in the lowlands on our cattle-runs, and is



IDEAL SECTION ON AB, SCALE 30" TO 1" = 1"

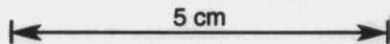


PLAN, ENLARGED 12 TIMES  
FROM 1" TO MILE MAP.



SECTION OF TERRACE  
SCALE 12" TO 1"

PINE ISLAND.



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apparently then fastened on by this curious lichen. Of flowering grasses, we gathered the tall Alpine Holy grass (*Hierochloë redolens*), the *Craspedia richiei*, whose tall stalk and downy, button-shaped flower towered above the dwarf *Poa* grass; we also gathered two other species (*Hypochaeris radicata* and *Prasophyllum fuscum*). On the northern shore, near the bank of stones, and here and there elsewhere, isolated bushes of the "Mountain Pittosporum" were found, and these were the tallest shrubs on the island. The Pepper tree (*Drimys aromatica*), with its red stems and berries, was more plentiful than the last, and grew in company with the pretty little bush *Bellendenia montana*, which has green leaves, with a red obverse surface. The "Yellow Bush," so well known on the mountain plateaus of Tasmania, with its intensely hard wood, is found on the island, as well as round the shores of the lake; but I have not seen it anywhere so plentiful as on Ben Lomond. Other small shrubs make up the vegetation we observed, and are included in the list at the end of this note, and for the identification of all of which I am indebted to Mr. Rodway.

As regards the zoology of this lonely little tract, one would naturally expect to find it devoid of life; but Mr. Archer assures me he once saw on it the largest specimen of a Porcupine (*Echidna*) he ever came upon; the inference of which discovery is, that this animal must be a permanent inhabitant of Pine Island, or crossed over on the ice previous to a thaw. Whip-snakes are also said to be denizens of it.

The only bird seen was the ubiquitous Pipit, or Ground Lark (*Anthus australis*). The little Gull breeds, at times, plentifully on Garden Island, near the Police Station, and no doubt affects this one, but we had not time to look for evidence in the shape of old nests, many of which we came upon in the former islet.

The list of grasses and shrubs observed on Pine Island is as follows—

SHRUBS.

<i>Drimys aromatica</i> .....	Pepper Tree.
<i>Pittosporum bicolor</i> .....	Pittosporum.
<i>Orites revoluta</i> .....	Yellow-bush.
<i>Pultenea rubumbellata</i> .....	Native Wallflower.
<i>Bellendenia montana</i> .....	Mountain Roebel.
<i>Coprosma nitida</i> .....	Mountain Currant.
<i>Comesperma retusum</i> .....	Purple Broom.
<i>Olearia myrsinoides</i> .....	Rough-leaved Daisy-tree.
<i>Ozothamus Hookeri</i> .....	Hooker's Scent-bush.
<i>Bæchia gunniana</i> .....	Gunn's Bæckia.
<i>Hakea microcarpa</i> .....	Small-fruited Hakea.

## GRASSES.

<i>Hierochloë redolens</i> .....	Tall Holy Grass.
<i>Poa cœspidosa</i> .....	Thatch Grass, Dwarf.
<i>Craspedia richii</i> .....	Soldiers' Buttons.
<i>Hypochoeris radicata</i> .....	Deep-rooted Dandelion.
<i>Prasophyllum fuscum</i> .....	Brown Fly-Orchis.
<i>Prasophyllum patens</i> .....	Fly Orchis.
<i>Brachycome sp.</i> .....	Mauve Daisy.
<i>Helichrysum bracteatum</i> ...	Coarse-flowered Everlasting.
<i>Celmisia longifolia</i> .....	Mountain Aster.
<i>Eriochilus autumnalis</i> .....	Autumn Orchis.

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