

K. E. Waller



. . . **Tasmanian** . . .
Field Naturalists' Club



GENERAL REPORT

BY CLIVE E. LORD, HON. SECRETARY

BOTANICAL NOTES

BY L. RODWAY, C.M.G., GOVERNMENT BOTANIST

GEOLOGICAL NOTES

BY W. H. CLEMES, B.A., B.Sc.

Easter Camp - Out, 1918

TO SAFETY COVE, PORT ARTHUR



On the Way Down.



On Scorpion Rock.



Entrance to Port Arthur.

LIST OF CAMP MEMBERS

MR. W. ABBOTT.	MR. E. D. HARRISSON.
MISS O. BARNARD.	MR. E. HERITAGE.
MISS M. BROWNELL.	MR. CLIVE LORD.
MR. F. B. CANE.	MRS. CLIVE LORD.
MR. W. H. CLEMES.	MRS. T. LYONS.
MRS. W. H. CLEMES.	MISS R. LYONS.
MISS J. CLEMES.	MR. L. RODWAY.
MR. E. CRUICKSHANK.	MISS A. ROWNTREE.
MR. K. DOUGLAS.	MISS F. ROWNTREE.
MR. L. DECHAIINEUX.	MR. L. F. REYNOLDS.
MRS. L. DECHAIINEUX.	MISS M. SAGASSAR.
MASTER DECHAIINEUX.	MISS L. SAGASSAR.
MISS DECHAIINEUX.	MR. W. R. SALE.
MR. A. EMMETT.	MR. H. F. SARGISON.
MR. D. GUILBERT.	MR. J. W. TARLETON.
MISS J. KNIGHT.	MR. W. E. TAYLOR.
MISS A. HARRISON.	MRS. W. E. TAYLOR.

ASSISTANTS:

W. H. WOODWARD AND 3 ASSISTANTS.



Very Early Morning Tea.



At Port Arthur.

Tasmanian Field Naturalists' Club

EASTER CAMP OUT

By Clive E. Lord, Hon. Secretary

The fourteenth Easter Camp of the Tasmanian Field Naturalists' Club was held this year at Safety Cove, Port Arthur. The number that attended was not, of course, as large as in pre-war days; in fact, the question was raised at one time whether the camps should be continued during the period of the war, but, after fully discussing it, the committee felt justified in continuing them. Since the inception of the camps in 1905 the localities visited, and the numbers that attended, have been as follow.—

1905.—Bream Creek; camping party, 9.

1906.—Cole's Bay (Freycinet Peninsula); camping party, 40.

1907.—South Bruny; camping party, 27.

1908.—Maria Island, Soldiers' Point; camping party, 27.

1909.—Wineglass Bay (Freycinet Peninsula); camping party, 84.

1910.—Cole's Bay; camping party, 97.

1911.—Southport; camping party, 60.

1912.—Maria Island (Darlington); camping party, 69.

1913.—Safety Cove, Port Arthur; camping party, 80.

1914.—Wineglass Bay; camping party, 100.

1915.—Maria Island (Darlington); camping party, 36.

1916.—Eaglehawk Neck; camping party, 36.

1917.—Wedge Bay; camping party, 33.

1918.—Safety Cove, Port Arthur; camping party, 38.

For several years past it has been the custom for an advance party to precede the main party and prepare the camp. The same policy was adopted this year, and 17 members left Hobart by the s.s. Reemere on Wednesday morning, March 27, taking with them all the camp impedimenta. A beautiful trip was experienced down the river, but crossing Storm Bay the ocean swell made itself felt, and by the time Capo Raoul was reached a few members were beginning to think about the sensation sometimes referred to as mal-de-mer. A short run across Maingon Bay, and the storm-lashed cliffs of Brown Mountain, rising sheer from the sea, were soon abeam, and the wheel swung round in order to enter the port. After rounding Brown Mountain the beautiful sandy strand of Half Moon Bay was passed. Another point rounded, and the "Quiet Corner" in Safety Cove came into view soon after 2 p.m. The genial skipper (Captain Calvert) soon had his boats lowered, and "all for the shore" was passed along. The unloading of the camp gear took some time, and when the menfolk of the party had finished their labours in this direction they were gratified to find that the ladies of the party had the billy boiling, and an alfresco meal prepared. Meanwhile, an inspection of the locality was made, and the camp laid out. A start was immediately made to erect a portion of the tents, and good progress had been made by the time "Tea-o!" was announced.

This was partaken of under some spreading gums and beside a stream of fresh water. Behind this rose a small hill, surmounted by typical Australian foliage, through which the gleams of the Easter moon soon appeared. By moonlight the locality, which was to

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The Cup That Cheers.
At Carnarvon.



Creek at Safety Cove.

be our home for the next few days, looked even more picturesque, if possible, than by daylight. The long curve of silver sand stretching like a bow from Point Puer, a mile or so away, terminated in a rocky knoll. Towards the south end of the beach the sand dunes were slightly raised. Then came a sandy hollow, and the hill rose sharply. It was in the dip between the sand dunes and the hill that the camp was pitched, midst bracken below and spreading eucalypt above. As we rested round the camp fire amidst such scenes of beauty, our thoughts naturally turned to the days of years ago, when Port Arthur was noted as a convict settlement. The historians of our party were soon busy explaining how, when the settlement was in the height of its glory—or degradation—there were no less than 7,000 prisoners employed on the Peninsula. At the northern end of Safety Cove, Point Puer juts far into the bay. It was here that the boy convicts were imprisoned, and it is stated that on occasions there were as many as 800 boys, whose ages did not exceed 18 years, imprisoned. This portion of the settlement was not used after 1857, so there is not much to be seen now of the spacious buildings which were once erected there. Off the end of Point Puer lies the isle known as Dead Island. It was here that hundreds of the convicts found their final resting-place, as it was used as the cemetery of the settlement. Just to the north of Point Puer there is Opossum Bay, and it was on the shores of a picturesque cove in this bay that the main convict settlement was situated. This beautiful spot was selected for the settlement by Governor Arthur in the year 1830, and a start was immediately made to prepare for the future. How rapidly the settlement grew can be judged from the fact that when the famous Dr. J. O'Hara Booth had charge of the station, the number of convicts under his charge was over 7,000. These, of course, were not all stationed at Port Arthur, but were spread over the other settlements on the Peninsula. Port Arthur, however, was the main station, and the majority of the convicts were stationed there.

This period of Tasmania's history, and the fact that we were camped near the site where, not so many years ago, thousands of convicts had been at work, and the result of all their labour was

fast going into decay, gave us food for thought as we "swapped yarns" round our camp fire on this glorious Easter evening. Reverting to the present, we turned our attention to the country to the south of the camp, and those of our party who had not previously visited the locality were told of the charms of the Remarkable Cave, which is situated on the cliffs of the South Coast, of the views from the top of Brown Mountain, of the charms of Half Moon Bay, and of the other natural beauties of this district. Thinking of the pleasures in store, we sought our tents early, and were soon lulled to sleep by the soft beat of the surge on the beach. Thursday morning saw several members courting Neptune in the bay, after which breakfast, and then to work. The camp "roads" were set out by an authorised surveyor, and the various claims located. By lunch-time most of the tents were pitched. After lunch a large dining-tent was erected, and various improvements made to the surroundings of the camp, and by night-fall the camp was quite ready to receive the remainder of the party, which would bring its numerical strength up to 38. The main party left town at 7 p.m. on Thursday evening, and arrived at the camp in the early hours of Good Friday morning. After a refreshing "supper" tents were soon sought, and quietness reigned supreme.

The camp woke to the calls of the parrots among the overshadowing gums, and it was not long before the melodious sound of the breakfast gong showed that Chef Woodward and his assistants had been astir early. At breakfast, plans were made for the day, the majority of the campers resolving to visit the Blowhole and the Remarkable Cave. Accordingly, lunches were procured, and a merry party started off for the cave, while other campers made up parties to visit other portions of the country. The main party visited the Blowhole first. This is situated on the coast, between Brown Mountain and the Remarkable Cave. It is simply a large split in the rocky formation of the coast, the split forming a hole, at the bottom of which the sea, a couple of hundred feet below, roars in from the ocean, evidently by a tunnel. The Blowhole, in its present state, is distinctly dangerous. One does not notice this yawning cavity until close to its edge, and there is not the slightest



A Group of Fair Campers.



Breakfast.

protection against falling down it. To the westward of the Blowhole, the Remarkable Cave is situated. The Tourist Department has recently opened up the track to this cave, and it is easily accessible. Following along the track one comes to a bowl-shaped opening in the earth, down the sides of which a ladder has been provided. Descending the ladder, you are able to examine the cave, but the tide must be low if you wish to do so thoroughly. At low tide you can walk right through to the ocean beach. At high tide even the sandy floor of the opening is awash. At the time of our visit the tide was fairly low, and we were able to explore the cave thoroughly. After descending the ladder, we found ourselves in a large, well-shaped hole, and in the shore side of this the opening of the Remarkable Cave immediately attracted attention. As we entered the cave, we found that about half-way to the sea it forked, and became Y-shaped, two distinct tunnels leading to the beach. We were able to go right through both of these. The best part of the day was spent in the vicinity of the cave, and camp was reached on return about 5 p.m.

On Saturday most of the campers went to Carnarvon, three miles away, in order to inspect the old convict buildings there. Others arranged collecting excursions, or spent the day sketching some of the charming scenery by which we were surrounded. The settlement of Port Arthur has been so much written about that there is no need for further mention here, except this: To my mind the best way to see the settlement is to visit Scorpion Rock, the knoll immediately behind the old church. From here the old buildings are set out as a map. Looking at it, as we did on this beautiful autumn day, one could not but recall the past, and regret to think that such a beautiful spot, as Carnarvon appears from Scorpion Rock, or any other viewpoint, should be associated with such a very dark page in history. The next day a large party visited Brown Mountain, and amused themselves while there by dropping stones over the vertical cliffs straight into the water many hundreds of feet below. The view from Brown Mountain is very pretty, embracing the coast from The Friars to Tasman Island, while Port Arthur was set out at our feet, backed by range

upon range of mountains, extending into the northern distance. A return to camp was made by way of Half Moon Bay, and some exciting scenes were witnessed in the way of "go as you please" races down the immense sand hills that line the back of this beach. Here another party from the camp were met with, busy photographing the shore life in the rock pools at the end of the beach, while on a jutting point the camp artist could be observed as busily engaged in plying his brush as his confrere the cartoonist had been shortly before with his pencil. Monday was spent in further excursions to places of interest, each party telling the others of places that should not be missed, and all endeavouring to see as much as possible in the short time that remained at our disposal.

Mention should be made of the evenings in camp. We were fortunate in possessing considerable musical talent, and in the evenings it was usual to build a large camp fire, around which the whole camp would gather. In addition to songs and choruses, there were also two zophonones to supply additional music when required. One evening Mr. J. W. Tardleton told of his experiences with the Kelly gang of bush-rangers, when he was a bank manager on the mainland. These camp fire socials were much enjoyed, and greatly assisted the success of the camp from a social point of view. Mention must also be made of the fancy dress dinner party held on the last evening in camp. Although the event was quite an impromptu one, it was very successful, and some splendid decorative effects were seen, from Turkish ladies to Maoris, and from wild men of the woods to a bride and bridegroom, the latter's top hat, by the way, being made from a cardboard rim and an inverted "billy."

Then there was the fishing. We were fortunate in having an expert among the campers, who so played his nets among the kelp that fringed the shore that trumpeter could nearly always be had for breakfast. But, "tempus fugit," and Tuesday morning arrived all too soon. Some of the members who had to be in town early were up at daylight, and walked to Port Arthur, from whence a motor-car whisked them back to Hobart. The rest set to work and struck camp, and when most of the work had been done the majority, de-



At Carnarvon.



Coast Scene, with Brown Mountain in the Distance.

terminated to have another day's picnic, set off to walk across to Wedge Bay, it being arranged that the steamer would call there for them. A few members stayed around the camp, and the s.s. Reemere arrived early in the afternoon, and the camp gear was soon placed on board. We bade farewell to Mr. and Mrs. R. M. Tanner, upon whose property we had been camped, and soon were "all aboard." With regret, we steamed away from the shores of Safety Cove, and fond memories of

the pleasant days we spent there will linger for a long time to come.

A good trip, despite a slight roll, was experienced to Wedge Bay, where the remainder of the party greeted us. Wedge Bay was left as darkness was falling, and the whole company assembled on the upper deck, where the camp songs were once again called into commission. To the tune of "Auld Lang Syne" we steamed into the Hobart wharf at 10 p.m.

BOTANICAL NOTES

By L. Rodway, C.M.G., Government Botanist

The study of plant life received a considerable stimulus when, but a few years ago, it was directed into a comparatively new channel. Something almost amounting to an inspiration seized upon the minds of botanists, and awakened them to the fact that though the study of botany had been pushed almost to exhaustion along most lines, yet there was one, and that of the utmost importance, which had been almost completely neglected. This line of study is that of the response of plants to their environment, and has received the name of ecology. Ecology is something more than a branch of physiology; it is even something more than a single science. It contains three clearly distinguished lines of research, namely:—

Plant Geography, which treats of the distribution of plants upon the globe, deals with migration, the limiting effect of climatic factors, and influence of general conditions.

Plant Society, which deals with plant distribution under local conditions; why certain plants associate in similar localities; why one area supports woodland, another heath; why a distinctive vegetation always appears on sand dunes, on shores, on swamps, and in water.

Plant Conformity, which treats of changes of form in individual plants due to differences in local conditions, such as copious or sparse rainfall, constitution of soil, temperature, intensity and incidence of light, and effects produced by prevailing winds.

Besides being a great place for general plant hunting, Safety Cove, with its surroundings, is an ideal place for the study of this new science of ecology. Under the first section we may inquire why the prevailing trees are eucalypts, and where did they come from? Why are there no pines nor palms? Also the *Hakeas*. There are two or three species present here. The genus is a very old one. Where did it originate, and how has it migrated? Why has it died out in some places and spread in others?

Under Plant Society we may inquire why, on the flat, and immediately about the camp, there were trees, and why, from camp to the caves, it was mostly heath? Certain plants only live on dunes, others on shores, others, again, in marshes. Why is this? Plants of no relationship will often, under similar conditions, assume similar shape. Thus in water, near the camp, a member of the *Gentian* family had leaves exactly like those of a water lily.

Plant conformity is very interesting. Many plants growing in salt locality acquire a fleshy structure. This was illustrated in some herbs along Point Puer, also Half Moon Bay. The different structure of leaves of the same species grown in shade and bright light afforded numerous examples. Perhaps a more interesting response to local conditions was the dwarfing and crooked growth of shrubs and trees on Brown Mountain, where the constant southerly winds have full play.



On Scorpion Rock.
The Cairn on Brown Mountain.



Land Slides.

GEOLOGICAL NOTES

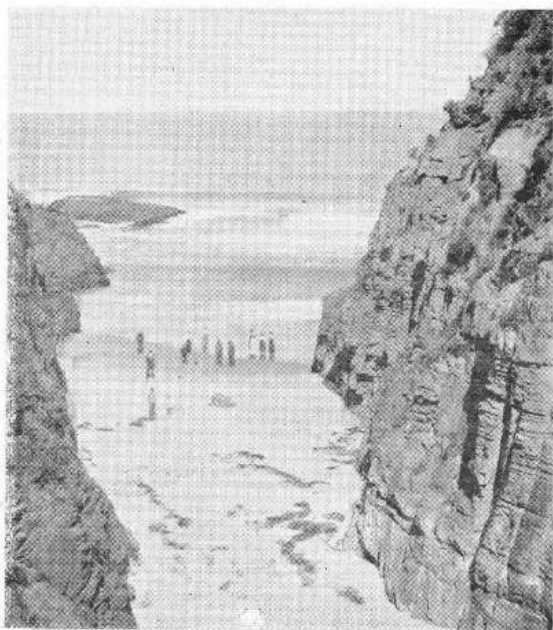
By W. H. Clemes, B.A., B.Sc.

The rocks in the vicinity of Port Arthur are more interesting from a stratigraphical rather than from a paleontological point of view, and are worthy of a more extended examination than was possible in the limited time at our disposal.

The oldest rocks in the vicinity belong to the lower Permo-Carboniferous series, and comprise the usual gritty marine mudstones, so common in the south-east of our island. They occur in nearly horizontal beds at Point Puer, and probably underlie the sandstones of the hills to the west of the settlement. The lower beds are barren argillaceous sandstones, with iron-filled joints. Above occur the mudstones, and more or less pure limestones, containing the commoner Permo-Carboniferous marine fauna. In the middle of the beach at Half Moon Bay is an outcrop of highly metamorphic mudstone, nodular in structure, and weathered into curious and fantastic shapes.

The hills to the west of Safety Cove are formed of Mesozoic sandstone of the usual type, resting conformably on the mudstones mentioned above. Quite one thousand feet of this rock is visible, barren of all fossil remains, and approximating in age and texture to the Knocklofty series. I understand that at Long Bay traces of shale are to be found, containing *Phyllothea* and *Zeugophyllites*, and merging into the coal seams of the Tasman Peninsula Basin. The most interesting structural features of the neighbourhood are due to the intrusion of diabase in the later Mesozoic. This igneous rock-material has forced its way up into and between the beds of the other strata, forming the whole of the mountains to the east of the bay, and capping the mountains to the west. The flatness of the plains is due to the moulding of the overlying strata, between the layers of which it has forced its way. Most of the overlying sedimentary rock has been worn away; only one small portion can be seen between Arthur's Peak and the Pillar. The rock on the whole is massive in type, as at Brown Mountain, but at the edge of the sill fine examples of columnar structure are

noticeable, formed by the more rapid rate of cooling at that point. The columns of the Raoul and the Pillar are familiar to all, and the same structure may be seen right round the outer fringes of the coast, the massive type only being found further in. To the north of Cape Raoul, the diabase can be seen resting, conformably on the earlier sandstones. The deep Port Arthur bay has been formed along the junction between the diabase and the mudstones and sandstones. When the diabase was forced into the older strata at a temperature of about 2,000 deg. F., it produced great changes in the rocks with which it came into contact. It was responsible for the metamorphism in the mudstones at Half-Moon Bay, and numerous examples of its action on the sandstones could be seen, the best being near to the Remarkable Cave, Mr. Arndell Lewis has described it before, and I cannot do better than quote his words:—"In one place the following structure can be easily seen. There is a small cliff of sandstones, with conglomerates on the top, underneath which can be seen the first effects of the enormous heating from below. For a foot or so, the change is hardly noticeable, and is confined to a hardening of the rock, but after that it changes with increasing rapidity. Soon the rock becomes a dull brown, and very much harder, and large specks of mica appear. Very soon the rock is so hard as to be unaffected by a hammer blow, but still preserves its stratified form. Up through cracks has welled thin sheets of diabase, as miniature dykes, telling of the sill not far below. Great masses of entirely changed matter are seen mixed up with the other rock, which soon loses all resemblance to any stratified rock, and becomes purely a mass of quartzite. The whole rock is now changed in colour. Some of it is a pale green, some blue, other parts are a shining black; some again are like polished marble, and all of it is much harder than the ordinary diabase which comes just below it." Considerable deformation has also taken place near the intrusion. Many caves have been hollowed out in the diabase by the action of the waves, the best known



Near the Remarkable Cave.

being the Remarkable Cave and the blowholes on Brown Mountain and at Half-Moon Bay.

Coming to more recent times, nothing of interest is to be seen, except, perhaps, the immense sand dunes at Half-

Moon Bay, formed from the debris of the surrounding sandstone cliffs, aided, perhaps, by the material brought by the westerly drift. Few shell mounds were to be seen, telling of unsuitable conditions for aboriginal life.



In the Remarkable Cave,



"Beside the Billabong."

18/5378 Mercury, Hobart
