

Tasmanian  
Field Naturalists' Club



EASTER CAMP, 1924

"THE NARROWS," MARION BAY,  
FORESTIER'S PENINSULA,  
TASMANIA.

GENERAL ACCOUNT

By CLIVE E. LORD, F.L.S.

BOTANICAL NOTES

By L. RODWAY, C.M.G.  
(Govt. Botanist)

GEOLOGICAL NOTES

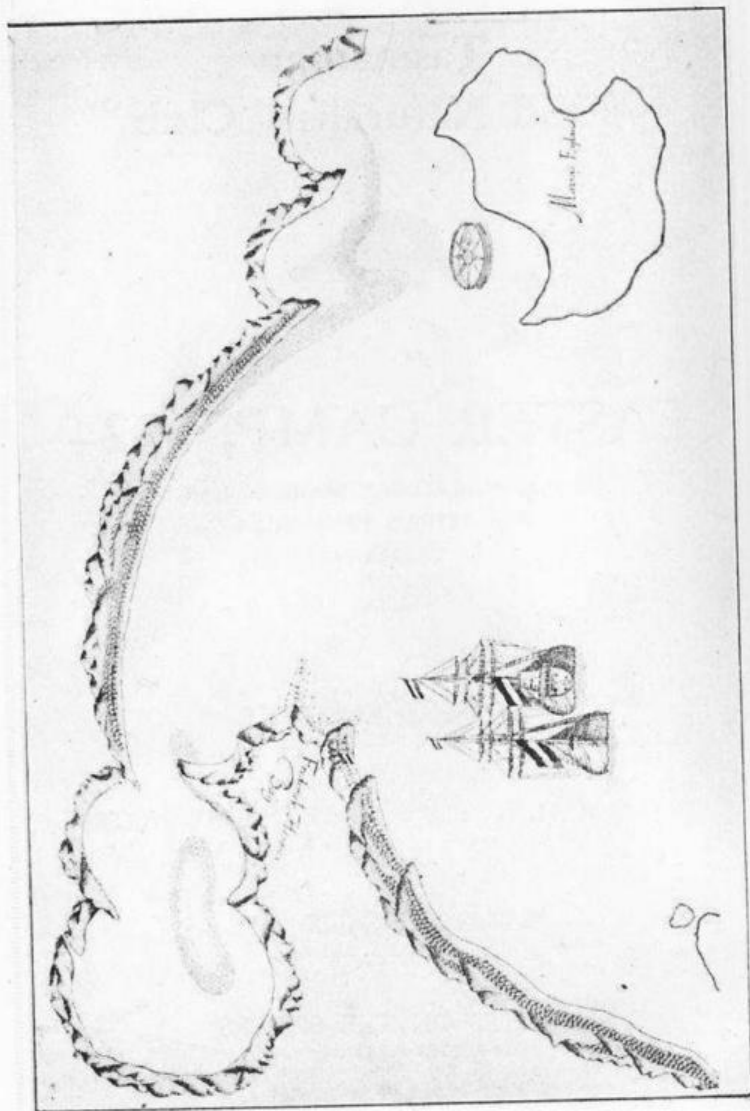
By A. N. LEWIS, M.C., LL.B.

NOTES ON SHELL LIFE

By CHARLES A. PITMAN.

NOTES ON THE SPIDERS

By ROBERT PULLEINE, M.B.  
(President of the Royal Society of South Australia)



From Heere's "Tasman."

TASMAN'S SKETCH, showing his ships at anchor and the flag placed on shore.

## Tasmanian Field Naturalists' Club

### 1924 Easter Camp at "The Narrows," Marion Bay, Forestier's Peninsula.

#### GENERAL ACCOUNT

By CLIVE E. LORD, F.L.S.

The twentieth Easter camp of the Tasmanian Field Naturalists' Club was held at "The Narrows," which are situated at the head of Marion Bay, and which serve to mark the entrance to the East Bay Neck Canal, at the north end of Forestier's Peninsula, so named by Baudin in 1802. Last year our camp was situated in the Western Highlands, but this Easter the lure of the coastal bays again claimed our attention.

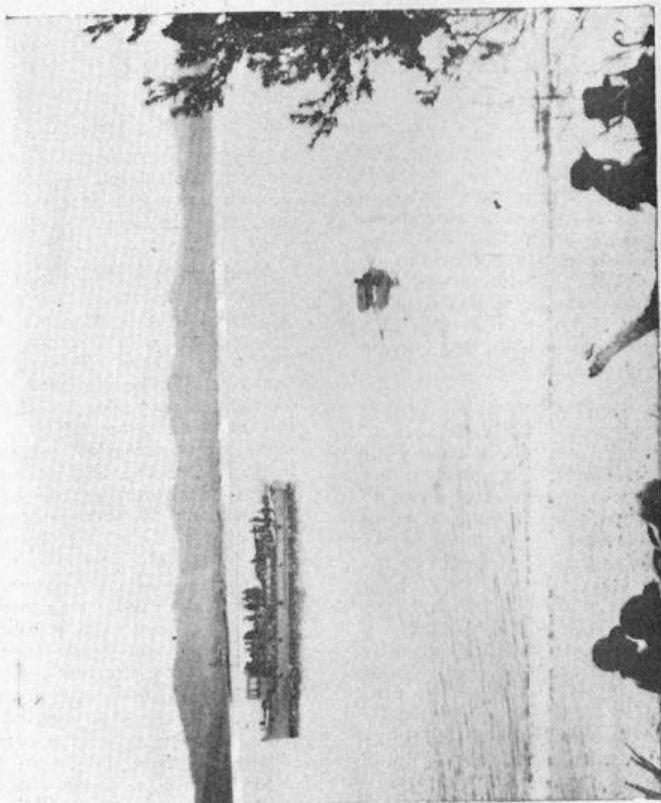
The exact site of the camp was in a sheltered bay on the southern side of "The Narrows." Across a narrow strip of swift running water was Marion Bay (or Bream Creek) beach, at the end of which rose the hills which terminated in the bold outline of Cape Bernier—the "Hell-fire Bill" of the fishermen. To the north-east was Maria Island, whilst to the south stretched the Peninsula with its stretches of forest, broken by lagoons and coastal bays. Many of the latter possess historical interest as well as scenic charm, for it was in close proximity to the camp site that the Dutch sailors under Tasman first set foot on Tasmanian soil in 1642, and a day later the Dutch flag was planted on the shores of a small bay a few miles to the east. The Dutch came in search of trade but found nothing of value. The golden lands and spice islands appeared not to exist in these more southern seas. Lack of trade, inhospitable coasts, and westerly gales discouraged further exploration in the far south. Moreover, the procession of history was advancing through the 17th and 18th centuries. As the Dutch had captured the Spanish eastern trade

so they in turn began to feel the pressure of the French and the English. The former were the first to reach Tasmania, and the name Marion Bay recalls that fact.

Members generally appreciated the choice of the locality for the camp, and attended in fair numbers, 40 being the complement of the camp. More than a quarter of these left with the advance party on Wednesday morning, April 16, in the motor yacht *Aradia*. Town was left at 8 a.m., and after a smooth trip Dunally was reached about four hours later. After the bridge was opened we proceeded on our way, and soon arrived at the camp site at the eastern end of Blackman's Bay—the true Frederick Henry Bay of Tasman.

It took some time to convey the camp impedimenta ashore by means of several small boats, and after a welcome cup of tea a start was made to set out the camp and erect the tents.

Darkness arrived all too soon, but the work had been fairly well advanced, and after the evening meal, a camp fire drew together a tired but happy party, who were prepared to rest after their work and make plans for completing the camp the following day. As the Easter moon rose above the eucalyptus on the hills to the east of the camp the scene recalled memories of previous camps, more particularly the camp site at Thomu or Wineglass Bay on the Schoutens, where the camp site was protected, in a similar way, by a low range of hills to the east—occupying the country between the camp and the ocean.



THE ARCADIA ANCHORED OFF THE CAMP SITE.

The Bay in which we were camped was divided by a small creek, on one side of which the ladies' tents were pitched. A handrail built on to a fallen tree served to provide a suitable bridge, and connected up the two main highways of the camp. The large dining tent and cook's galley were erected near the shore, close to the point where the slowly running creek crossed the beach. Opposite this point were "The Narrows," with their rapid tides, which mark the ebb and flow from Blackman's Bay. This bay is generally accepted as the true Frederick Henry Bay of Tasman (although there is some evidence that Tasman intended the name to apply to the outer bay also), and it is unfortunate that, originally owing to Furmeaux's error in 1773, when he anchored in Adventure Bay and thought he was near Tasman's anchorage of 1642, the name Frederick Henry Bay is now generally given to a large bay to the north-east of Storm Bay. It is also unfortunate that, as occurs with other names in so many places in Tasmania, the name Blackman's Bay is given to a bay in the River Derwent, a few miles south of Brown's River. It would be well if Tasman's original designation could be reverted to. In which case the present Frederick Henry Bay could be given the name applied to it by Hayes (1793), namely, Henshaw's Bay. D'Entrecasteaux's title of North Bay would be open to objections, particularly as the bay, on the outer coast of which Tasman anchored, is now generally known as North Bay.

On the opposite side of the Narrows stretched the long sand spit forming on its outer side, the head of Marion Bay. The bay was so named by D'Entrecasteaux after the French explorer Marion du Fresne, who anchored there in 1772, he being the second explorer of whom we have record to reach Tasmania. The French vessels Mascarin and Marquis de Castris anchored off the coast on March 5, 1773, and remained at anchor for several days. Various expeditions were made by boats' crews, and it was during this expedition that Europeans first met the Tasmanian aborigines. Unfortunately, owing to a misunderstanding, a fight ensued, and one at least of the natives was killed.

The name Marion Bay is now usually given to the indentation in the coast between Cape Bernier and Cape Paul Lamanon, which cape was apparently named by Baudin's expedition, as such nomenclature appears for the first time on Freycinet's charts of 1802. And the bay between Cape Paul Lamanon and Frederick Henry is known as North Bay, with Prince of Wales Bay forming a small cove in its north-west corner. The French, however, intended that Marion Bay should comprise the indentation between Cape Bernier and Cape Frederick Henry, and in this connection it may be as well to give a quotation from Peron (the historian of Baudin's expedition), as it clearly sums up the position. The following is a translation of the French account:—"That Marion in this part made no new discovery, for, as well as it would have been impossible for Tasman to have recognised Frederick Bay, and take that survey of it, for which we are indebted to him, without traversing, and consequently discovering Marion Bay, this bay itself, as may be seen by comparing the draught of it by Tasman with our own, is more correctly laid down by Tasman than by Marion. However, as custom has sanctioned these denominations, we shall confine the distinction of Frederick Hendrick Bay to the small port visited by M. H. Freycinet, and that of Marion Bay to the large roadstead in front of the port, comprised, as we have before noticed, between Cape Bernier on the north and Frederick Hendrick Cape southward."

Turning to the account of Marion's voyage, and examining the copies of his charts of the locality, which were used by D'Entrecasteaux and Baudin, we gather some interesting information. It is commonly stated that the first meeting of Europeans and Tasmanian aborigines took place on the Bream Creek, or Marion Bay beach, due probably to the modern restriction of the name, and also to previous lack of research as regards the early charts. From these charts, which show soundings and the routes followed in the main boat expeditions, and the account of the voyage, the following interesting data can be obtained:—

(1) That according to Marion's chart there is a ten-fathom shoal off what is



now known as North Bay. It has over 20 fathoms all round it.

(2) That Marion anchored on the outside of this, a little to the north of Green Island, in 22 fathoms, with a grey sandy bottom.

It is of interest to note that Marion apparently anchored close to where Tasman did although Tasman may have been inside the shoal (if Marion's charts are correct as regards its occurrence). Tasman anchored in 22 fathoms, white and grey fine sand.

(3) That Marion first landed in what is known now as North Bay, and not on the Bream Creek beach, as is usually stated.

(4) That Marion's charts, in addition to the soundings, etc., show the lagoon at the back of the sand dunes of the present North Bay.

Tasman's charts did not show either the lagoon or its outlet, which factor might be used as evidence that Gell was more correct than Walker with regard to the interpretation of the log in connection with the locality examined by Tasman's boat on the morning of December 3, 1642. The natural scenic charms of the locality are therefore interwoven with the romance of the early exploration of our southern isle, and this was an additional interest to the members of the camp.

Thursday was spent by the advance party in completing the camp and preparing for the reception of the main party. The members of the latter section left town at 6.30 p.m. on Thursday, and motored through to Dunalley. Here they transhipped to a motor launch, and continued the journey to the camp. A quiet, still night made the run pleasant, and as the boat neared the hills at the foot of which the camp site was situated one of the original Anzacs aboard remarked that the condition of the weather and the loom of the shore reminded him forcibly of the night of the landing on Gallipoli. After a welcome supper, the new arrivals were duly installed in the various canvas homes; but it was some time before all was silent, except for the dull boom of the waves and the occasional call of the spotted owl, or a sea bird on the nearby sand spit.

On Friday morning several excursions were arranged, the main one going to the Tasman Memorial which was recently erected. Leaving the camp, the party proceeded in an easterly direction for about a mile, gradually climbing, until the summit of the hill was reached overlooking the ocean. From here a fine vista of the coast could be obtained. Away in the distance to the north-east of Cape Bernier The Schoutens could be seen, whilst much closer Maria Island loomed up and reminded us of the Easter camps which we had held in that locality in the past.

To the south-east the peculiar shape of Green Island rose from the sea beyond the extremity of Cape Frederick Henry. This is the original cape of that name as far as Tasmanian nomenclature is concerned, but by no means the original Green Island, for there are many islands bearing a similar designation around the coasts of Tasmania. The original Green Island of Tasmanian waters is the small island in the Channel opposite Woodbridge, as this was named "Ile Verte" (Green Island) by D'Entrecasteaux in 1792.

Following the slope of the ridge down towards the sea, we came to the base of Cape Paul Lamanon, to the south of which is situated Prince of Wales Bay, the site of the Tasman Memorial. The bay is quite a small inlet, and towards its head there exists a bar of stone, upon which, from both sides of the bay, there jut out reefs of stones which serve to form an inner cove to the bay. In rough weather the sea breaks upon this with relentless force, but at the time of our visit on this occasion the sea was calm and the tide exceptionally low, which gave a good opportunity for an examination of the reef and allowed us to note the solid nature of its foundation and the massive boulders of its superstructure. It has been said that the reef was formed by the bay whalers in order to make a boat harbour, but there can be no doubt as to its natural formation, although the bay whalers may have added to it in some degree. It would need an immense amount of labour to make any material difference to the reef, and in the absence of any direct proof the

legend that the bay whalers built the reef must be viewed with grave doubts. The main part of it is most certainly of natural origin, and it is only a small portion of the superstructure which admits of discussion on this point. A change of structure in the rocks is very noticeable here, and may be largely responsible for the shelf-like reef. A fault can be plainly seen at the base of Cape Paul Lamanon, particularly on the exposed cliff section on the northern face.

The Tasman Memorial is situated at the head of this inner cove, and in view of the discussions which have taken place in regard to its location (see Papers and Proceedings of the Royal Society of Tasmania, 1923), particular attention was paid to this aspect of the case.

Personally, after an exhaustive examination of all available documents, obtaining opinions from authorities in Europe as to charts, etc., and two extended visits to the site, I am of the opinion that the party who made the original selection for the site of the monument (vide press reports 22/1/1923) failed to locate the correct position of the landing place of Tasman's carpenter.

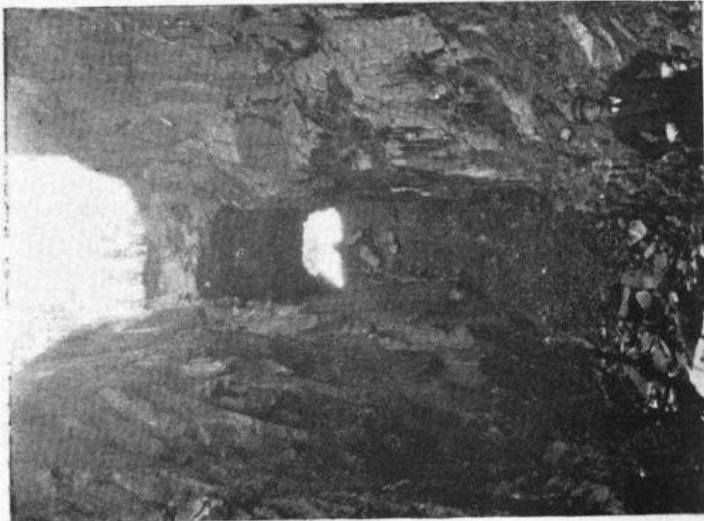
Considering that the wind was blowing strongly from the north (not from the east as some authorities have stated), there would be a great break on the reef, as the tide was low, and Tasman particularly refers to the surf, so that it is extremely unlikely that his boats would have crossed the bar, especially as the northern shore of the bay would be more sheltered. Moreover, the sketch in Tasman's journal definitely shows the flag on the northern shores of the bay, and the description of the sloping ground agrees far better with this position than with that at the head of the inner cove. It is questionable if there are any traces left of the original trees noted by Tasman, but it is easy to find four stumps in either position. A comparison of a recent survey of the bay with one made over half a century ago shows a fair amount of erosion on the inner northern shore of the bay and down among the shingle on the beach, just outside the reef, remains the enormous stump of a very old eucalypt. It

any tree might have a claim as being Tasman's tree, I think that this one might well be considered, for as far as I can gather from the available evidence it occurs just at the spot where the carpenter apparently swam ashore.

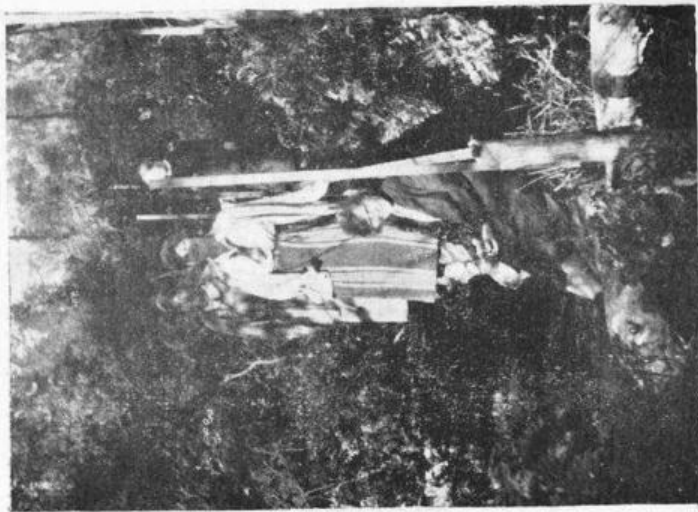
In dealing with the landing it is well to remember that the Dutch adopted the Gregorian system of chronology in 1583, whereas England did not change from the Julian system until two centuries later. Mr. G. H. Halligan has kindly worked out the dates, etc., in order to compute the state of the tides, etc., and his calculations show that Tasman's December 3, 1642, was a Wednesday, it being full moon two days later.

On the occasion of our present visit we were at the bay practically at the same state of the tide as Tasman, namely, soon after midday two days before the full moon. It was then an exceptionally low tide, a large extent of the reef being exposed. There was this difference, however, that the sea was calm, whereas Tasman had a very strong northerly breeze, which would make a large break upon the reef, and at low tide make it impossible for a boat (particularly if it were the boat's crew's first visit to the bay) to attempt to come through the breakers. To use Tasman's own words, "The surf ran so high that we could not get near the shore without running the risk of having our pinnace dashed to pieces."

As our party had lunch on the shores of the bay, the deeds of the hardy Dutch explorers were naturally recalled to mind, and one attempted to visualise the scene that took place when the first explorers of our southern isle planted their flag "as a memorial to posterity." Other incidents of Tasman's visits were recalled to mind, for on the day previous to the planting of the flag boats from the ships had passed through the Narrows, and the site of our camp was probably within a few yards of where the first white people set foot on Tasmanian soil. The explorers returned to the ships, and among other matters reported that the land was inhabited, probably by giants, owing to the distance apart certain climbing notches were which were cut in some of the trees. They had also seen smoke from fires in the distance, and



THE BRIDGE OF STONE.



CROSSING THE BRIDGE.

heard a sound "like a trumpet or small gong." This latter sound was probably the note of the black bell magpie (*Strepera fuliginosa*), which occurs in this locality, and whose note has been likened by Gould to the sound of a hammer on an anvil, and by Littler to that of a tramway gong. As regards the giants, there was a fixed idea, antedating even the voyage of Quiros, that the great unknown lands of the south were inhabited by giants.

To the south of Prince of Wales Bay is North Bay, or Two-Mile Beach, behind the sandhills, of which there is a large lagoon, which breaks through the beach at its south-east end. J. B. Walker, in his paper on the discovery of Tasmania (1899), considered that this was the spot where Tasman's men landed in search of water on the morning of December 3, but the Rev. J. P. Gell, in his paper (1845) on the same subject, considered that the south-east side of the bay referred to was the south-east side of the present so-called Blackman's Bay.

The campers had therefore many points of interest to discuss as they stood on the hillsides, viewed the scene from different aspects, or wandered along the shore in search of specimens. Upon return to camp, and after the evening meal, there were naturally many items of interest to discuss as the members gathered round the camp fire.

On the following day there were excursions to various localities. Some members boated across "The Narrows" and spent some time on Marion Bay beach; others went to the lagoons, or further south to Wilmot Harbour. The original name of Wilmot Harbour, was Lagoon Bay. This latter name occurs on the charts attached to the old bay whaling leases. The name still survives to a certain extent among local residents, but it is also applied to the present North Bay (Two Mile Beach), and in the latter position the name appears on some modern maps. There are lagoons at the back of the sandhills in both bays, but the one at Two Mile Beach is the larger. The botanists searched the gullies for fungi, whilst the geological section found much of interest in the formation of the cliffs to the east of the camp.

Next day a large party followed the shore along the cliffs south of the Narrows, and a fine view of the coast was obtained. The sight of the bold outline of Cape Bernier recalled the fact that it was so named by the French expedition under Admiral Baudin in 1802. This expedition carried out numerous surveys in the southern and eastern parts of Tasmania. At the time the exact position of Tasman's Frederick Henry Bay was still in doubt, and M. Faure, a hydrographer of Baudin's expedition, satisfactorily settled it by means of a boat expedition which was organised whilst the ships were still at anchor in the Channel.

On February 17, 1802, the French ships, after a stay of 36 days in the channel, sailed into Storm Bay, and gradually worked round the coast until on the evening of the following day they anchored in the strait between Maria Island and the mainland.

As usual, boat expeditions were sent out, and one, under the command of M. Maunard, circumnavigated Maria Island, naming many of the prominent bays and headlands during the course of his voyage. Other parties had been sent out, one under the command of M. Freycinet, sen., who was away eight days, during the course of which he thoroughly examined Marion Bay, the Frederick Henry Bay of Tasman (now unfortunately known as Blackman's Bay), and other points of interest on the south-east coast.

Freycinet the younger was away a much shorter time, but carried out excellent work. He explored the coast northward of Cape Bernier (which was named by this expedition), and worked up the coast until abreast of Cape Bourgainville. From here the survey was taken up by a boat under the command of M. Faure, who steered for the Schouten Islands of Tasman, and in due course discovered the Isle du Phoques (Isle of Seals, now known as White Rock), and comments upon the numbers of seals seen upon it. M. Faure found that the five islands shown on Tasman's charts really consisted of a mountainous peninsula and one large island. The strait separating the two was called Geographic Strait, after their



vessel, and the large bay between the mainland and the peninsula Fleurieu Bay.

Quickly following the several French expeditions, and undoubtedly as a direct result thereof, came the first settlement of our island by the British in 1803. For many years the east coast remained unsettled, and some of the first white inhabitants were probably sealers and whalers. With the advent of "bay whaling" on a large scale several large stations were formed, and certain of these were in the immediate vicinity of the camp site.

As we followed the cliffs southward of "The Narrows" we came to a small bay, into which a creek ran. It was in this bay that Gardener's whaling station was situated nearly a century ago, whilst in the next bay, within the shelter of Cape Paul Lamanon, there was another station (Watson's?), the ruins of which were still visible when the Rev. J. P. Gell visited the locality in 1845, and he refers to the shore as "being thickly strewn with the bones of many hundred whales whitening in the sun."

It was on the shores of this bay that our party assembled for lunch, after which members visited Cape Paul Lamanon, noting certain peculiar geological characteristics and also the remains of aboriginal kitchen middens on the Point. Another visit was also paid to Prince of Wales Bay in order to give further attention to the site of the landing and the geological structure of the reef.

As the shades of evening advanced various parties returned to camp, all being quite ready to greet with a cheer the welcome notes of the cornet which announced the evening meal.

The following days were spent in a similar manner, parties being formed to visit different sections of the coast or the more inland gullies and hills, for the locality offered a variety of scenery and conditions of country, and the thanks of the club are due to Mr. Murphy for so kindly allowing us to camp upon his property.

At one of the gatherings attention was drawn to the fact that the next Easter would mark the 21st successive

Easter camp of the club, and there appeared to be a general feeling among the members that the occasion should be marked in a fitting manner, and the hope was expressed that the club would arrange a "coming of age" camp to Freycinet Peninsula ("The Schoutens").

The suggestion has been received with such enthusiasm that the club will doubtless have to make every endeavour to give effect to it. Freycinet Peninsula and Schouten Island afford splendid camping sites, as reference to earlier camp reports will show. The area is also of interest owing to the surveys carried out by members of Baudin's expedition, so that the historical and geographical observations made during this year's camp can be profitably continued in the more northern area.

With the advent of Tuesday morning the campers realised that it was time to strike camp and return to routine ways once more. Gradually the tents disappeared as they were taken down and folded away. A pile of camp impedimenta began to accumulate on the beach, and shortly after noon the siren of the Arcadia announced her approach. Members gathered round for lunch, after which the camp impedimenta was boated on board the motor yacht, and final preparations were made to leave.

About 2 p.m. the anchor was raised and the return journey commenced. Soon the sandy shores of our camping ground were left behind, and members settled down in preparation for the journey. After they had passed through the canal a slight roll was experienced crossing Storm Bay, but the lusty, if not strictly musical, singing of popular camp songs served to combat the effects of mal-de-mer which might have been felt by some members of the party. Hobart was reached at 7 o'clock, thus bringing to an end another Easter outing. Looking back, the encampment may well be regarded as successful, for it gave members an opportunity of studying nature's ways in the open and collecting such specimens as they sought for, as well as providing a means of members gathering together in a social manner.

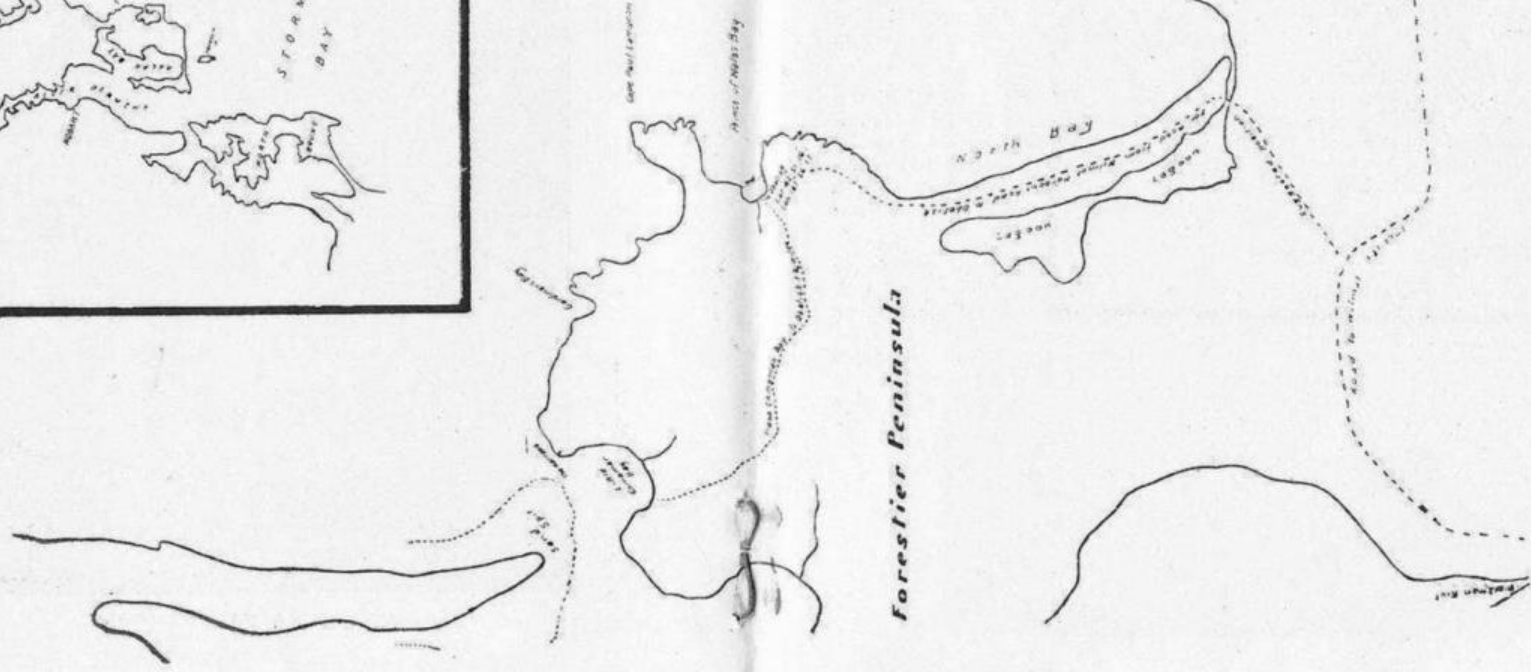
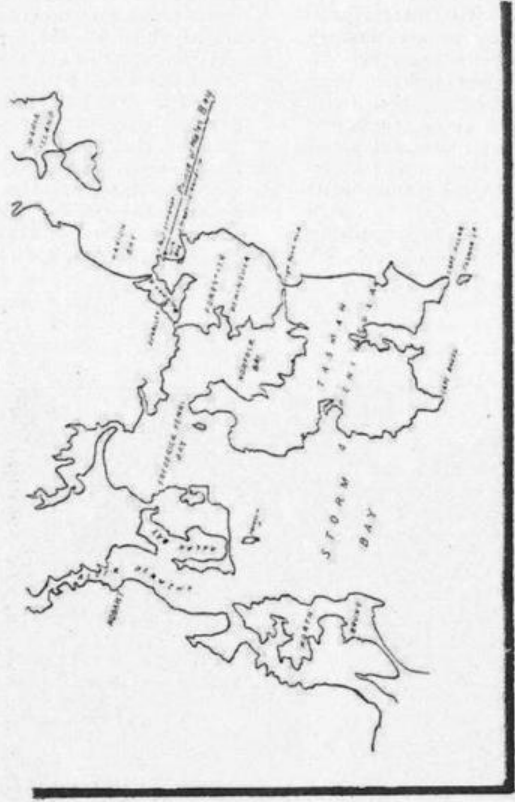
We were glad to have with us Dr. R. Pulleine, president of the Royal Society of South Australia, who, together with his two daughters, came across especially for the camp. The interest and support of such leading natural history workers as Dr. Pulleine goes far to show that the work the club is doing is appreciated even beyond the limits of our own state, and gives encouragement to those who have been entrusted with the control of the club's affairs to carry on. The general management as regards meetings, etc., together with the special work entailed in organising the camps, necessitates considerable ef-

fort by the executive; but when the results are examined, and the club's past history and present position reviewed, it gives encouragement to continue in the attempt to make the future history of the club even better than the past.

All being well next Easter we will celebrate our twenty-first annual camp, and although the Easter camps constitute but one item of the club's annual programme, they are by no means the least. It is hoped, therefore, that next Easter many familiar faces will be grouped around the campfire which may be built in one or other of the coastal bays of Freycinet Peninsula.



AT THE TASMAN MEMORIAL.



LOCALITY SKETCH OF VICINITY OF CAMP.  
Inset: Sketch of S.E. Tasmania.

## BOTANICAL NOTES

By L. RODWAY, C.M.G.

Autumn is not a good time of the year to go plant-hunting. The botanical students, however, did very well. The prevailing eucalypts about the camp were peppermint and blue gum, and occasionally messmate, oreate, and white gum. None of these assumed milling proportions, but old stumps bore evidence that in days gone by some large trees had been gathered. Gum trees belong to the myrtle family, which is widely spread about the earth, and is correspondingly varied in structure.

Two other members of the family were met with, namely, Yellow Bottle-brush, which formed a dense scrub in the bed of the creek, and a small heath-like shrub with white flowers, commonly called native broom. This popular name is objectionable, but we have no other. The name given it by botanists is *Calythrix tetragona*, which does not appeal to people generally. *Calythrix* does not look at all like a near relation to the mighty eucalypt. However, when you come to examine its structure the similarity of essential details becomes apparent. The wild heath was well out in white and all shades of pink.

Though it was late in the season, six different orchids were found. These

included two green hoods. There was one, *Pterostylis jedoglossa*, a form we used to include in *P. obtusa*, but Fitzgerald considered it distinct, and named it as above. It differs chiefly in having a rosette of leaves at the base of the stem, which does not occur in *P. obtusa*, and the labellum is shorter and more obtuse. The other *Pterostylis* was *P. aphylla*, a singular little plant, commonly bearing two flowers, so placed that they appear to be facing one another. Next we gathered *Prasophyllum brachystachyum*, with many small flowers on a tall stalk, and of so uninteresting a form to the general student as to have not obtained a common name.

The lesser ant-orchid, *Chiloglottis diphylla*, was flowering freely, which is unusual. The autumn orchid, *Eriochilus autumnalis*, was here, but not abundant. The only other form met with was the little Fly orchid, *Acianthus exsertus*.

Amongst ferns, maidenhair was fairly common, and that useless, persistent pest, bracken, was everywhere and in quantity. Some interesting fungi were gathered, including a broad, distorted *Clavaria* of a bright crimson-scarlet colour, which appears to be in want of a name.



ALONG THE SHORE.



## NOTES ON THE SPIDERS

By ROBERT PULLEINE, M.B.

(President of the Royal Society of South Australia)

The spider fauna of Blackman's Bay proved to be very rich and interesting.

At Tasman's Memorial the strange-tailed spider, *Arachnura Higginisi*, was found. This spider is often gregarious, and is distinguished, apart from its bizarre form, by being able to spin three distinct colours of silk for various purposes.

The handsome black and white *Aranus Bradleyi* was taken, and *Singotypa Wagneri* was very abundant. Both these species are found in Southern Australia.

The *Singotypa* invariably suspends a curled-up leaf in the centre of its orb web, and uses the tube so formed as its lair and retreat. At Bream Creek, besides the *Singotypa*, two beautiful species of *Araneus* or orb web weavers were abundant.

Along the cliffs one found sheet web weavers (*Agelacinae*) of several kinds, while the hackled web weavers of the genus *Amanobius* were in evidence everywhere. Under bark the great *Delena cancerides* was plentiful, often with its numerous brood of young, over which the mother keeps watchful care. This spider cannot be confounded with any other. Its great size and uniform coloration distinguish it, as well as the remarkable coiled "watch spring" capillary tube in the palp of the male.

*Delena Cancerides* has a wide distribution in Australia, the one thing it requires being eucalypti, with large sheets of loose bark.

Other bark-loving species in evidence were *Clubiona robusta* and *Cheiracanthium gilvum*, both familiar to collec-

tors on the mainland, besides a number of new and probably undescribed species.

Beating tea tree and eucalyptus saplings over an umbrella gave by far the richest harvest. Beautiful *Artidae* or jumping spiders abounded, some of them of strange forms and brilliant coloration. This group seems to be especially abundant in Tasmania, and I can recommend it as an interesting and fruitful field to anyone wishing to take up descriptive zoology.

The *Thomisidae* or crab spiders were hardly less abundant, and one with a porcelain white abdomen and pale green cephalo-thorax left little to be desired in the way of decorative coloration.

Then there was the host of microspiders which live in the spiny acacias, mostly minute forms of the genus *Araneus*.

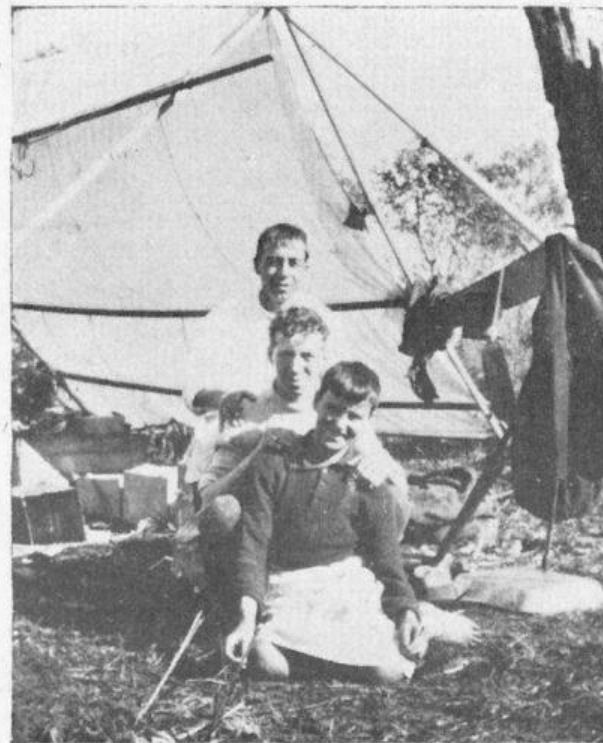
One of the most interesting finds was a single specimen of the genus *Minetus* (the mimic), so called because it builds an orb web, although outside the family which habitually forms this variety of snare. It is distinguished by its spherical body and long legs, beset with comb-like spines, quite unlike any other form. It often eats other spiders and occupies their webs instead of building one of its own. This specimen had ousted *Singotypa Wagneri*.

It was, however, at Mole Creek Caves that we collected Tasmania's most aristocratic spider. Amongst the hackled web spinners there is a small family, the *Hypochilidae*, only containing three members—one in North America, one in China, and one in Tasmania. This family differs from all known true spiders

in having four lungs instead of two (all the trapdoor spiders have four, but they are not included in the true spiders—*Arasene verae*). The *Hypochilids* live in the entrance to caves, and this is where we found them at Mole Creek. We went there especially to find them, and as soon as the guide opened the door of Baldock's Cave I saw a large hackled web, and knew the *hypochilid* was there, and true enough it was an immense creature, all legs, resting at the further end of the web.

Soon we had half a dozen in separate boxes, four females and two males, to be taken back alive to the mainland for breeding and study.

The *Ectatostica* (*Hypochilidae*), described by Petterd years ago in the proceedings of the Royal Society of Tasmania, is in expanse of legs Tasmania's largest spider. The body, black and globose, has the two pairs of bright yellow spots on the ventral surface of the abdomen. The presence of four yellow spots instead of two is its great distinction. We may look on this spider as ranking with the mountain shrimp, the platypus and echidna, in belonging to an unbelievable antiquity, and it has probably lived in the cave entrances since the dawn of time. The type specimens described by Petterd and Higgin's years ago are in the Tasmanian Museum at Hobart.



THE CHEFS.

## NOTES ON SHELL LIFE

By CHARLES A. PITMAN.

The annual Easter camp of the Field Naturalists' Club held at Little Chinaman's Bay this year afforded students of conchology excellent opportunities of visiting many of the beaches on the eastern shores of Forestier's Peninsula, the chief of these being North Bay and Wilmot Harbour. One would naturally assume that these beaches would afford plenty of scope and interest to the student, and yet very few specimens were found. This was surprising, in view of the fact that good specimens of the Helmet shell (*Phalium pyrum*) were taken in Little Chinaman's Bay, and also a large number of *Cymatidae* (*Cymatium splengleri*), more or less damaged, were observed on rocky portions of the same Bay.

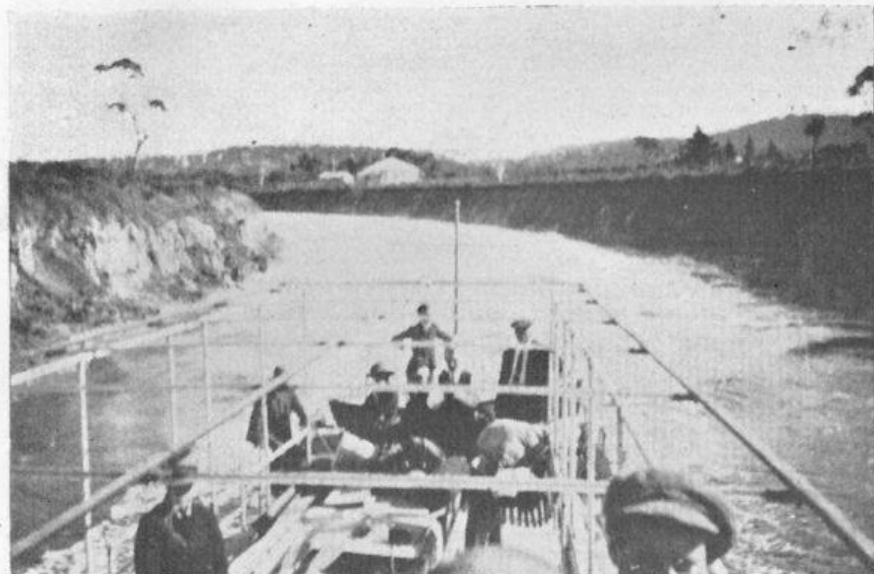
Marine specimens found in close proximity to the camp were as follows:—*Fasciolaria australasia*, *Phalium pyrum*, *P. semigranosum*, *Patella ustulata*, *P. mixta*, *P. inradiata*, *Emarginula candida*, *Nerita melanotragus*, *Scaphella undulata*, *Monodonta constricta*, *M. obtusa*, *M. adelaidae*, *Brachyodontes erosus*, *Bembicium melanostoma*, *Margarella formicula*, *Haliotis noevosa*.

One good specimen of the *Siliquaria weldii* was taken at the southern extremity of North Bay, and single valves of the *Solen vaginoides*, *Divaricella cumingi*, were observed.

At Wilmot Harbour the following specimens were obtained:—*Thais succincta* (among the rocks), *Turritella gunnii*, *Cantharidus fasciatus*, and *Sigapatella calyptraeformis*.

In the vicinity of the Tasman Memorial a large number of specimens of the tree snail (*Bothriembryon gunnii*) were taken. This gregarious mollusc is very plentiful on the trees near the sea coast, extending from the memorial to Wilmot Harbour. *Caroydes dufrenoi*, and *Helicarion cuvieri* were also taken on various parts of the peninsula.

In conclusion, I would like to place on record and to bring under the notice of students of conchology that excellent book of Mr. W. L. May's, entitled "Illustrated Index of Tasmanian Shells." Apart from its instructive qualities as to the complete list of all known specimens, it is of incalculable assistance as an index and guide to their classification.



GOING THROUGH EAST BAY NECK CANAL.



ON THE MOTOR YACHT ARCADIA.



## GEOLOGICAL NOTES

By A. N. LEWIS, M.C., LL.B.

The camp site for Easter, 1924, near the "Narrows," at the entrance to Blackman's Bay, provided sufficient points of interest to occupy fully the time of all the members interested in this branch of the club's activities.

The East Coast of Tasmania, in conformity with the whole eastern littoral of the Australian continent, has been given its general outline by a series of great earth movements in comparatively recent times. Owing to an adjustment in the earth's interior, generally ascribed to the settling towards the centre of rock and mineral mass having a higher specific gravity than the average, a considerable sinking of the floor of the sea off the East Coast of Australia, accompanied by the elevation of the mountain ranges further inland, occurred during early Pleistocene times. This sinking drew with it portion of the coastline, which broke in successive lines of faults running parallel to the coast. Great blocks of land were submerged to different depths, the farthest seaward naturally dropping the deepest. And our present coast rises in step after step, now indicated by broken lines of hills to the ranges nowhere far inland.

These faults seldom run in a straight line, but, as is to be expected when it is remembered that they are simply a break across a rock mass, they present a ragged edge, the lines of the break often running at an angle of 45 degrees from the general line of the fault, and intersecting each other at various points. Our East Coast follows in succession lines formed in this way. Further variation is given by the pre-fault valleys, which have been submerged as the coast fell away. Wilmot Harbour is a good example of this, and also it must be remembered that during the recent ice

age the level of the ocean was at least 150 feet lower than it now is. During that time streams wore out valleys down to the then sea level. As the water rose with the disappearance of the great ice sheets these valleys were flooded, or as the technical term goes, "drowned."

A fine cliff section is exposed between Cape Paul Lamanon and the "Narrows," and small cliffs occur at the points of the south coast of Blackman's Bay. The rocks exposed on both sides of the camp site were the common glacial conglomerates of the permo-carboniferous period. These are the results of a very severe ice age in the distant past, during which, it is surmised, an ice sheet crept up from the South Pole and covered Tasmania, reaching to at least the centre of Victoria and the vicinity of Adelaide, with glaciers at Maitland, in New South Wales, and right up in the tropics in latitude 15deg. S. in the north of West Australia. (This ice invasion, of course, preceded the one the effects of which we see on our mountain plateaux by millions of years, and was not in any way connected with this recent one.)

We can tell that these rocks are of glacial origin by the way the component pebbles and boulders are distributed through them. A stream washes pebbles down its bed, but in doing so rolls them over and wears them smooth. When its flow is checked it drops the heaviest first, and carries the lightest far farther on. Thus it sorts its load. Also, as a stream usually cuts only through a limited number of kinds of rock, and as each kind has a different weight, you usually find in streams formed conglomerate only one size of pebble, and of one type of rock in one place. It is very different with ice, which may

scratch and polish one or two sides of stones, but cannot roll them, and which can carry the biggest blocks with the same ease as the smallest, and which cannot sort its load, but drops everything indiscriminately when and where it melts.

The boulders in this conglomerate were of all sizes. In places they were few; in other places they were so many that they made up the bulk of the rock, thus forming what is known as "tillite." They consisted of various granites, red and grey, porphyries, slates, quartzites, mica schists, and conglomerates. In many places it was evident that they had been dropped from floating ice into soft mud, and the compressing of the mud as they dumped into it can be seen in the solid rock to-day. These rocks form the series of ridges between the camp site and Tasmania's memorial, and evidently extend some distance inland.

They dip to the west, and at the eastern end of the cliffs can be seen some beds of limestone underlying the glacial conglomerates. This is largely made up of the remains of shells and other marine life, much of which is preserved as excellent fossils. Most prominent of these is the common spirifera, a shell resembling a moth with outspread wings. There are many species and many sizes. The ancestors of our scallops, the aviculapectens, are common, and the large euredesmare forbears of our oyster. Both of these genus can be easily distinguished by their resemblance to their living descendants. The productus is another common form—a small, round shell, with its outside covered with fine spines, like a modern sea urchin. These are seldom preserved, but the stumps can always be seen. The stropholonia, with its interior like the inside of a haxia seed; also many fine specimens of small, coral-like colonies of minute animals are preserved. Some with branching arms, sometimes a foot long, and resembling a plant, are the stenopera. Another kind are the ancestors of the so-called "sea mats," common on the rocks to-day. Some specimens of these (*Fenestella crinitia*) were seen 12 inches in diameter, and resembling a piece of fossil wood. These are really remarkable specimens.

At Dunalley the canal has been cut through a bed of clay of Tertiary age. Much of this contains a high percentage of iron—haematite—evidently carried up by percolating water from the decomposing diabase not far below. The aborigines used the "red ochre" for ornamenting their bodies. The iron often collects round grains of sand, and this in turn attracts more, until a small round pebble is formed, consisting of a high percentage of haematite, and known as "buckshot gravel." It is a common feature of these tertiary deposits, and can be seen covering the ground all round Dunalley. It makes excellent road material, and is so used round Dunalley, as also on the main road in Epping Forest.

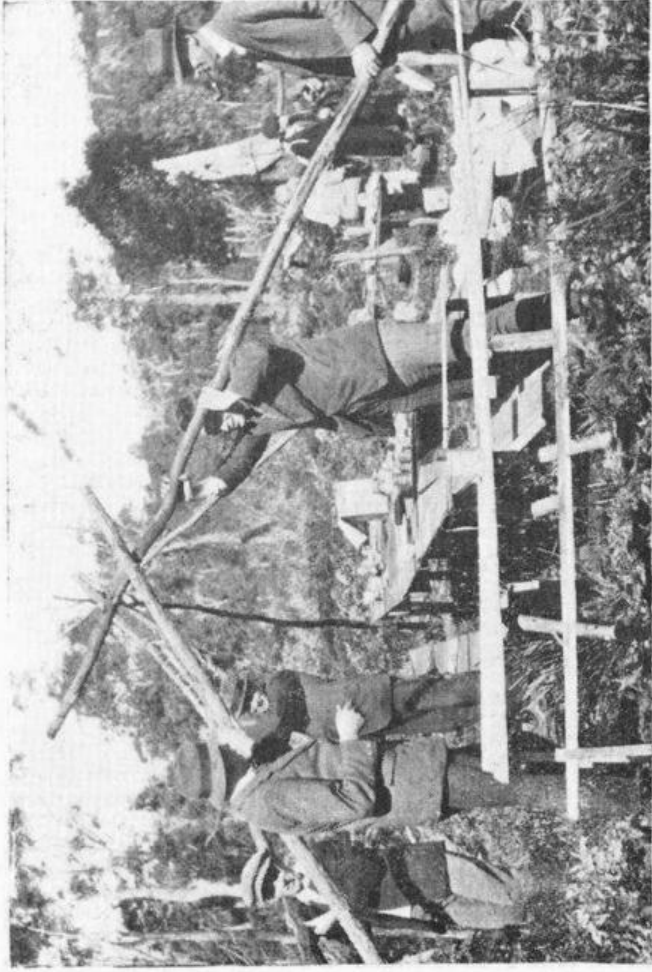
The fertile hills at the back of Bream Creek are a pleasant sight from the camp. These are the remains of ancient (Pliocene) volcanoes, and the fertility of that district is due to the basalt which poured out as lava, and which is rich in plant foods, and also is very easily weathered.

Recent deposits are in evidence in the long sandy beaches backed by dunes, and in the swamps behind them. The tide carries the rock particles from the cliffs along the coast. When it reaches a deep, calm bay its pace is reduced, and thus its carrying power is checked, and it drops some of these grains of sand.

The ocean rollers work these to the beach, and the seabreezes blow them inland. In time this sand makes a bar right across the bay, and raises its head above the water as a sand spit, as we saw at the entrance to Blackman's Bay. Sometimes it dams across the bay, and so the old arm of the sea gradually fills up, forming a lagoon in the process, as we saw at North Bay. It was in such places that most of the world's supplies of coal were formed, and the constant blowing of the dune sand inland formed those layers of sandstone between the bands of coal that spoil so many of our seams.

Readers are referred to a note the writer has given the Royal Society of Tasmania on the most important geological discovery made during the camp, and which space forbids to reproduce here.





BREAKING UP THE HAPPY HOME.