REPORT ON ROCKY BOAT HARBOUR DISTRICT.

Location and Access:

This area is situated inland from the north-eastern portion of Prion Bay on the south coast of Tasmania.

Access may be gained from the nearest settlement of Cockle Creek, in Recherche Bay, by means of small shallow draft vessels to the little rock-bound inlet of Rocky Harbour during easterly weather.

The district is not connected by road but a track 21½ miles in length from Cockle Creek to New River passes Rocky Boat Harbour in 20 miles and is now in the process of being re-cut to make the district again accessible by land. The first 12 miles of the present track was originally graded as a pack track in 1924 and a hut built near the end for the use of travellers. The remaining 9½ miles were cut in 1930 as a foot track only.

The area examined extends from the valley of Surprise Creek north-westerly to New River, and from the coast north-easterly to Pinders Peak and Precipitous Bluff.

Topography:

From the sea-coast the land surface rises sharply to a height of approximately 200 feet and then extends for some two miles inland in the form of low ridges and plains to the foothills of Pinder's Peaks and Precipitous Bluff, both attaining about 4,000 feet above sea level.

Precipitous Bluff is an outstanding northerly trending mountain range, most appropriately named. It rises steeply with tree covered slopes from narrow plains on the east side of New River Lagoon for some 2,000 feet, after which the sides are distincly precipitous, bare and jagged to the top.

Pinder's Peaks are a combination of three to four distinct peaks standing above a high range trending north-westerly and connecting to the west with Precipitous Bluff by way of slightly lower ranges.

A long composite spur from the south-east end of Pinder's Peaks extends to Shoemaker Point and Fluted Point on the coastline.

With the exception of New River the streams are comparatively small and have rapid descents to the coastal plains, or the seacoast, where the latter are absent.

New River is the largest stream and enters the sea by way of New River Lagoon on the eastern side of Prion Bay. It takes its rise on the north-east side of Precipitous Bluff and after flowing north-north-westerly over numerous falls turns westerly and southerly round north end of the range before reaching the lagoon. Milford Creek drains the north-western slopes of Pinder's Peak and runs westerly over New River Plains to join New River near its mouth.

Surprise Creek rises on the south-western slopes of Pinder's Peaks in the form of several large branches and after combining flows south-westerly to Surprise Bay between Shoemaker and Pretty's Points.

New River Lagoon represents an inlet extending in a northerly direction. It is isolated from the sea by a sand spit rising to 40 feet in height, over a distance of 3½ miles in length, and has a maximum width at the north-western end of half a mile. Towards the eastern end a break occurs through which the New River waters pass over the beach to the sea. The lagoon extends inland for approximately 3½ miles and attains a maximum width of 1½ miles. With the exception of a comparatively narrow channel the seaward half is extremely shallow.

Geology:

Cambro-Ordovician - The oldest rocks which occur in the district are those of the Cambro-Ordovician Period. These rocks consist of slates, cherts, quartzites, conglomerates, dolomites and limestones.

The slates are massive types of dark grey to grey-green and brownish colours. Cleavage is not prominent but where present appears to be parallel to the bedding planes. When weathered they break into small pieces with conchoidal fracture similar to certain varieties of the Dundas Series as developed in other parts of the State. These slates are most conspicuous along portions of the rocky foreshore between Rocky Boat Plains beach and Pretty's Point, and can be traced along the ridge dividing Rocky Plains from Surprise Creek valley in association with black cherts and light coloured quartzites.

The conglomerates vary in character from coarse to fine grained types in all of which the particles are cemented in a silicous matrix.

The coarser varieties contain a majority of large well worn pebbles of quartzite, quartz and siliceous schists, while a small porportion of the pebbles are angular. In the medium grained types the greater number of the pebbles are angular to slightly waterworn and may be classified as breccia conglomerates, while the finer varieties grade into true breccias containing fine angular aggregates. The pebbles are generally variegated and, besides white, a large number of pink and reddish colours are present, together with smaller numbers of green, black, purple, yellow, and various shades of grey and brown. These rocks outcrop round the shores of Rocky Boat Harbour, Point Cecil, Point Vivian, and extend inland with poor exposures on the low ridges on the western side of Rocky Boat Plains. They also occur around the western shores of New River Lagoon and extend along the point from western end of New River beach.

Small thicknesses of fine grained argillaceous quartzites occur as narrow beds alternating with breccia conglomerates on Point Vivian. Quartzites are also interbedded with conglomerates on Point Cecil, west end New River beach and south side of Rocky boat Plains Bay.

On the Point Cecil side of Rocky Boat Harbour finely crystalline, grey dolomites occur, interbedded with conglomerate beds over a small area.

Small exposures of dark blue-grey limestones with included narrow bands of black slate, outcrop on extreme eastern end of New River beach in association with quartzites,

and in faulted relation with adjacent conglomerates and quartzites.

Limestones are also prominent along the lower western slopes of Precipitous Bluff, in which numerous caves are developed. This rock type is generally light to dark grey in colour and contains much distributed crystalline calcite. The colour is very similar to certain limestones of Permo-Carbonfierous age as developed in the State but no fossils were observed, and the following analysis shows a much greater purity than any limestone of that age.

LIMESTONE ANALYSIS:

Registered Number	Constituents	Per Cent
264	Moisture at 105 degrees C	0.08
	Loss on ignition	43.02
	Alumina	0.59
	Iron Oxide	0.09
	Manganese Oxide	Trace
	Phosphorous P.Oxide	Trace
	Titanium Oxide	Not done
	Lime	55.38
	Magnesia	0.39
	Sulphur	0.19
	Silica	0.06

The limestone is, therefore, provisionally correlated with the other Cambro-Ordovician rocks of the district. This series of rocks is much folded, and faulting is prominently illustrated in the excellent exposures along the shore line. The strike varies from north-west to north-east and dips at angles from 25° to 70o, usually towards the east, but occasionally to the west.

From their general lithological resemblance to the Dundas Series of slates, cherts, breccias, dolomites etc., these rocks can be correlated with that series as occurring at Dundas, Magnet, Smithton and elsewhere.

Devonian:- The rocks of this system exposed in the area consist of the igneous types, serpentine and pyroxenite.

The serpentine occurs in the form of a narrow dyke intruding Cambro-Ordovician slates, cherts and conglomerates. The dyke trends north-easterly for approximately ¾ of a mile and varies from 5 to 10 chains in width. It is situated 100 chains north-east of Rocky Boat Plains beach and occurs in the vicinity of a small divide separating headwaters of the most western branch of Surprise Creek from a small branch of Milford Creek which flows to the mouth of New River. The fresh rock is dark green to almost black in colour but weathers in the surface outcrops to light brown or pink. It is generally massive and appears to be completely serpentinised, while no trace of the original unaltered ultrabasic rock is visible. Abundant chromite in the form of small grains is distributed through the serpentine.

A small exposure of foliated serpentine and partly altered pyroxenite occurs towards the south-east end of Rocky Boat Plains beach but there is no evidence that this is connected with the larger occurrence inland.

Permo-Carboniferous:- The rocks of this period consist of conglomerates, sandstones and mudstones.

The conglomerates represent glacial till of the Lower Marine Series and are composed of an unstratified mass of pebbles and boulders, generally bound together by argillaceous material. The pebbles are much rounded and consist of red talcose serpentine, gabbro, pyroxenite, peridotite, slate, quartzite etc. In places the rock is consistuted of boulders of red talcose serpentine to the almost total exclusion of other material and is there conspicuous by its red colouration. Veins of calcite are numerous throughout the rocks. These conglomerates fringe the shore line and are well exposed in low cliff faces along the south-east side of Rocky Boat Plains beach, and again to the north of Pretty's promontory.

In these localities they are in contact with, and unconformably overlie Cambro-Ordovician slates and quartzites.

Red talcose conglomerate pits at the gravels is also exposed over a small area in prospecting pits at the north eastern extremity of Rocky Boat Plains, but no outcrops are visible.

The sandstone is coloured light brown and is composed of medium to small sized siliceous grains with small amounts of fine mica. Large numbers of small water-worn pebbles are distributed through the rock, which in places, assumes the character of sandstone conglomerate. It outcrops along the south-western slopes of Pinder's Peaks and the ranges connecting westerly with Precipitous Bluff to a height of at least 2,000 feet above sea level.

Mudstones are in evidence on the lower western fall of the long spur leading from Pinder's Peak to Pretty's Point. They are composed of fine dark grey argillaceous material and show flecks of white mica. Numerous fossil impressions are present in the rock, the chief form being the typical fenestella of the period.

Upper Mesozoic: Dolerite (diabase) of Upper Mesozoic age caps the greater part of the higher country to the east of New River and rises in conspicuous masses of columnar form on Precipitous Bluff and Pinder's Peak. It also occurs along the top of the intervening range between those two mountains and along the northern part of the spur from Pinder's Peaks towards Pretty's Point.

A dyke of the same rock appears to extend west south-west from the larger mass on Precipitous Bluff, across the upper portion of New River Lagoon where it is exposed on either shore of the latter.

Recent to Pleistocene: Recent sand dunes are accumulating along the coast line in several places. They are very pronounced along New River beach and are less marked at Rocky Boat Plains Bay. These dunes formations are due to the prevailing westerly and south westerly winds. Towards the eastern end of New River beach and at the mouth of Strong's Creek in Rocky Boat Plains Bay the sands overlie brown lignite and sands stained almost black by the action of vegetable matter and iron oxide.

Gravels, sands and alluvium cover the plain on east side of New River Lagoon and portions of Rocky Boat Plains.

Gravels and alluvium are forming along the lower valley of Surprise Creek, New River and many of the smaller streams in the district.

Economic Geology:

General - The only minerals of economic value located in Rocky Boat Harbour district are osmiridium and gold. These metals have been obtained from secondary deposits, and primary deposits have not been discovered.

The source of the minerals is, undoubtedly, the small dyke of serpentine situated on and adjacent to the saddle dividing Green's Creek, a western tributary of Surprise Creek, from small branches of Milford Creek, flowing to New River beach.

Alluvial osmiridium in small amounts, and in some instances gold, occurs in the two streams systems draining the serpentine belt. To the west of the latter, on the low open hills north of Rocky Boat Plains, traces of osmiridium have been located.

Osmiridium and gold are both present in Strong's Creek, near the mouth, and in the sands along Rocky Boat Plains beach, where the minerals appear to have been concentrated to a slight degree after liberation by marine erosion from Permo-Carboniferous galcial conglomerates fringing the shore line.

At the mouth of the creek running to Rocky Boat Harbour small amounts of osmiridium are also found. The quantities of osmiridium are proportionately greater than that of gold and both generally of extremely fine grain size, although isolated coarse grains of the former do occur, particularly in Green's Creek.

Fine chromite is always associated with these minerals.

History:

It is reported that gold was first seen by F. Robinson in the vicinity of Strong's Creek when he was marking out the original foot track through the area in 1915.

In 1924 a party of six prospectors, comprising three Staceys, F.& G. Robinson, and E. Noye, landed by boat at Rocky Boat Harbour and soon located osmiridium in the sands of Rocky Boat Plains beach to the east of Strong's Creek, which they proceeded to work by dishing and boxing. Shortly afterwards 30 men were on the field and much prospecting was undertaken. The original claim was abandoned after approximately 30 oz. were recovered but was later worked by Ramsey Bros. and Manning, who produced 20 oz. of osmiridium. Strong attempted to recover the metal found towards the mouth of the creek flowing to the beach but was unsuccssful owing to depth of wash and lack of fall for tailings disposal.

Green traversed the western tributary of Surprise Creek upstream from Recherche track crossing, and eventually discovered osmiridium near the headwaters adjacent to the serpentine belt. He left the field to obtain provisions but was drowned, together with two others on return when attempting to enter Rocky Boat Harbour in stormy weather.

Green's Creek was later sluiced by Manning, Wolfe, Robinson, Gibbins and Kirwin.

In less than 12 months the field was abandoned owing to the unpayable nature of the deposits and also to the reported discovery of rich osmiridium deposits at Adamsfield.

In later years several parties have prospected the area without success. In 1932 S. Edwardson and F. Goring sluiced the small eastern lead of Green's Creek but only recovered 5 dwt. of osmiridium.

The Deposits:

(1) Rocky Boat Plains Beach - This deposit consists of beach sand containing colours of osmiridium and gold in association with chromite, in a fine state of division.

It is situated several chains east of the mouth of Strong's Creek near the base of low cliffs, consisting of Permo-Carboniferous conglomerates, from which the metals have evidently been liberated by erosion.

The gravels and sands in the lower portion of Strong's Creek, near the beach, also contain a little fine osmiridium and gold.

Water supplies are scarce and proved to be insufficient for the effective working of the deposit.

(2) Green's Creek:

Osmiridium and fine colours of gold were obtained in the shallow gravels of the two small head-branches of this stream. The osmiridium was generally of fine grain size but some coarse metal and small nuggets were obtained when the creeks were worked by the various parties.

The metal in this area appears to have been almost completely recovered.

In Green's Creek, on north side of Recherche track, a small paddock of creek gravels was sluiced by Robinson and others but only 1 dwt. of fine osmiridium was obtained.

(3) Rocky Boat Plains:

Numerous prospecting shafts and pits have been sunk on a shallow alluvial flat north of Rocky Boat Plains, in the valley of Milford Creek.

Some fine osmiridium was located but in small quantities. In several of the pits Permo-Carboniferous conglomerates containing pebbles of red serpentine are exposed at two to three feet below the surface.

In a small west flowing branch of Strong's Creek, on the hills north of Rocky Boat Plains and ¾ of a mile from the beach, small amounts of osmiridium were recovered from a prospecting cut. The deposit consists of 2'6" of gritty peat overlying 6" of small quartz and quartzite gravels, which bottom on hard conglomerates of Cambro-Ordovician age. The osmiridium recovered at this point was chiefly fine in grain but some coarse metal was also found.

(4) Rocky Boat Harbour:

At the mouth of the small creek entering Rocky Boat Harbour a little coarse and fine osmiridium occurs in the gravels and around boulders on the beach.

The metal does not appear to be present in the bed of the creek.

CONCLUSIONS:

The area contains several small alluvial deposits of osmiridium in association with traces of gold, which were originally shed from a narrow serpentine dyke exposed in the locality.

Much prospecting has been undertaken and the deposits worked to a slight extent, but results have been unsatisfactory with few exceptions.

The osmiridium produced amounted to less than 100 ounces obtained in small parcels.

There appears to be no indications for further extensions of this field.

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