

Source of Information

The information which has been utilised in arriving at the conclusions given in this report is derived from samples obtained by Diver Festing of the Marine Board, Launceston. The fact that even at low water, there is at least 4 feet of water covering the top of the Porpoise Rock has precluded the possibility of personal examination.

In addition, however, to the information obtained from the actual samples gathered by Diver Festing, the knowledge in possession of the Geological Survey of the general geology of the vicinity has been applied to this particular problem.

Geological Composition

The samples obtained by Diver Festing consist of basalt which has partly been decomposed to a soft clay-rock. This decomposition has proceeded from the outside towards the centre and has taken place along the fracture planes to be described below.

It must be realised, however, that the major portion of the rock will consist of the undecomposed material only the outermost part having been wholly decomposed. Decomposition, however, has undoubtedly extended along the fracture planes to appreciable distances, up to 30 feet into the main mass.

The statement that the Porpoise Rock is composed of sandstone is in error and is doubtless due to the clay-rock which represents the outer decomposed portion being mistaken for a soft sandstone.

The opinion also that the Rock consists of conglomerate is also a mistaken one, this being due to the nature of the decomposition and to the fact that as an accompaniment of decomposition has been the formation of rounded decomposed masses which have become detached and rolled towards the foot of the Rock.

The decomposed portion of the Rock is soft and easily dealt with by any system of removal. The fresh unaltered basalt, however, which will constitute the major portion of the mass is hard but relatively brittle. It is this same rock as has been quarried at Burnie for the breakwater. It is of almost equal hardness with diabase which is the rock at the Quarries, Cataract Gorge, Launceston, but is not nearly so tough as that rock and therefore the efficiency of explosives with it will be greater than with diabase.

The basalt overlies soft fire-clay but from the general geological structure of the district it may be accepted that at the Porpoise Rock, the basalt is so thick that this clay will not be encountered in excavating down to the proposed maximum depth.

Geological Structure

The basalt has the characteristic structure known as "organ-pipe structure" being split up into columns having a polygonal cross section by a series of intersecting fracture planes. This is well seen at the Burnie Quarry and it may be taken that the general characteristics of the Porpoise Rock are similar.

The existence of these closely spaced and intersecting "beads" will greatly facilitate the work of removal. Decomposition has proceeded along many of these "beads" and locally will extend far into the rock. This fact will also facilitate the work of removal.

Conclusion

It may be regarded as fortunate that the Porpoise Rock is composed of basalt and not diabase, but any hopes of it being composed of material as soft as sandstone cannot be entertained.