

AN INTRODUCTION
TO
GRANITIZATION AND HYBRIDIZATION
AT ROSETTA HEAD.

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I. INTRODUCTION.

The occurrence of granite in the Encounter Bay Area, has been a subject of interest to all South Australian Geologists. The granite outcrops at Port Elliot, Granite Island, Victor Harbour and also at Rosetta Head (commonly known as 'The Bluff').

A number of unusual rock types (as well as the granite) occurring at Rosetta Head were first described by W. R. Browne in his paper entitled "The Igneous Rocks of Encounter Bay, South Australia." (1) The most prominent of these was his "albite mica syenite" which does not outcrop anywhere else in this area.

Browne's general description of this rock is...."the relative proportions of the main constituents vary considerably from place to place and there are likewise textual variations. Sometimes the rock is porphyritic and at other times phenocrysts are absent. For the most part mica is subordinate, but near the contact with the schists it increases in amount until it predominates over the feldspar and in places the syenite actually appears to merge gradually into the country rock."

This description makes it appear that, the rock is not typically igneous. The outcrop of the "syenite follows the granite - country rock (a hornfels type) contact and this suggests that the rock is not solely of igneous origin, but is due to the mixing of the granite with the country rock.

Browne also described "Impregnation near the Syenite Contact." Here there are tongues and stringers of "syenite" and granite running through very highly altered country rock. The "syenite" itself as well as the country rock becomes very micaceous. Browne considers that "the albite syenite was first injected with accompanying veins and veinlets, the country rock being impregnated with albite and to a less degree, with rutile, zircon and apatite. Subsequently circulating solutions, still magmatic in character attacked the biotite of both igneous rocks and schists, converting it to chlorite."

Also described were a cordierite mica schist and an andalusite mica schist from Petrel Cove. These were described as contact metamorphic features.

The area around Rosetta Head has been mapped, a series of rocks analysed and a number of slides examined. The author feels that these unusual types can be ascribed to segregation and hybridisation. This is the object of the thesis.

*Madden
Bluff
Island
Harbour
The Bluff*

W. R. Browne "The Igneous Rocks of Encounter Bay, South Australia."
(1) Transactions of Royal Society of South Australia, Vol XLV., 1920.