

NOTES ON A. CHWALCZYK'S URANIUM PROSPECT
- STOREYS CREEK:

This prospect is situated on the banks of Storeys Creek about one and a half miles south, south west of the bridge on the Rossarden Road. Access is best gained by following an old water race which starts from Storeys Creek a few chains below the bridge and closely parallels the Creek as far as the prospect.

The country although very broken and falling steeply on both sides of the Creek is practically free of undergrowth and easily traversed.

The country rock is granite. Well to the north of the prospect, the intruded meta sediments, slates and quartzites of the Mathinna Group, outcrop; while on the tops of hills, in this general locality, remnants of Permian (post-mineral) sediments remain.

In hand specimen the granites near the prospect are coarse-grained pinkish rocks showing abundant pink orthoclase crystals and both light and dark quartz. However in this general coarse-grained rock are areas of very fine grained material containing apparently the same minerals. In the prospect itself the rock is of similar appearance but appears to have undergone some sort of alteration due to shearing. Shear planes are well developed in a general horizontal direction and in some of these may be seen incrustations of torbernite and a yellowish powdery substance that may be carnotite.

A thin section of the rock (48U5) has been examined by G. Everard who reports :-

" Medium to coarse grained weathered rock with large grains of black and colourless quartz. There are also large altered crystals of felspar. The rock shows a coarse foliation.

In thin section the feldspars are seen to have undergone extensive alteration and the quartz grains are cracked, corroded and embayed.

Perthite is the most prominent mineral. Crystals are about 1 centimetre long and show simple twinning as well as the perthitic structure. The potash felspar is the more altered, being nearly opaque. Small groups of rounded and irregular quartz grains, with simultaneous extinction, occur enclosed in the felspar. These appear to be due to subsequent alteration.

Albite is common in smaller oblong crystals showing lamellar and some penicline twinning. It is partly sericitised.

Biotite and biotite-muscovite intergrowths are present but not in great amount.

Some pleochroic haloes may be seen in the biotite.

Many minute inclusions among which are zircon and monazite occur in the quartz.

The rock is a granite which has undergone alteration and possibly contact metamorphism. "

A small hole has been put in on this altered zone but so far its dimensions are quite small - a few feet either way and the extent of the zone cannot yet be determined.

Several samples have been taken of this material. A sample sent to the Bureau of Mineral Resources showed on radiometric assay an equivalent U_3O_8 percentage of 0.17 with a ratio between U_p and U_g of 0.81. Absorption tests indicate that activity is not entirely due to uranium and that some thorium may be present. Further details of fluorimetric assay etc. are now awaited from the Bureau.

During a recent visit of Mr. L. Noakes of the Bureau, further samples were taken and field assays by him showed :-

	<u>Uranium</u> <u>Beta.</u>	<u>Uranium</u> <u>Gamma</u>	<u>Ratio</u>
1. Large samples	0.129	0.16	0.81
2. Selected piece	0.16	0.20	0.84

Further tests will be made on these samples by officers of the Bureau.

Now it may be that the further opening up of the material in this fractured and sheared zone will reveal radio-active minerals in appreciable amount but at this stage a note of warning should be given and another possibility considered. That is, that the formation of torbernite and possibly other uranium minerals on the fracture planes is due to precipitation from ground waters and that the radio-active material disseminated in minute quantities through out the granite mass has been first dissolved by ground waters and later precipitated in more concentrated form in the channel ways of the shear zone. If this has been so then the uranium content of the material will diminish rather than increase away from the surface.

It is difficult to recommend any extensive development at this stage and even a boring campaign seems rather premature. It may be that further tests of the material by the Bureau will add to our knowledge of the problem. At this stage, however, all that I would recommend is the extension of the small pit on the Creek bank. Unfortunately it is so close to the Creek that water may be a problem and some sort of pump may have to be installed.

Sgd. Terence D. Hughes

GEOLOGIST

Department of Mines,
HOBART

26th July, 1955.