COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF SUPPLY AND SHIPPING.

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NOTES ON QUARTZ CRYSTALS NEAR TUROSS, NEW SOUTH WALES.

- By -

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CANBERRA. 11th May, 1944.

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Mineral Resources Survey Branch.

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Quartz crystals occur in the county of Dampier near the head of Tuross River 13 miles east-southeast from Countegany and about 5 miles east-southeast from Tuross Post Office. The locality may be reached by road from Cooma to about 1½ miles south of Tuross and thence on foot. The total distance from Cooma is about 36 miles.

The presence of small quartz crystals in this locality has been known to Mr. L. W. Schaeffer of Tuross for many years, but only recently has he found larger crystals and undertaken more systematic prospecting.

The general geology is indicated in the very generalised sketch section shown in the accompanying plate.

Presumably the slate, which is more extensively developed to the east of the section, is Silurian or Ordovician and the other sediments and the granite are Upper Devonian.

The crystals occur in quartz veins in quartzite and felspathic sandstone with a dip not exceeding about 12° to the south and southwest. The sandstones are interbedded with red mudstone beds with a thickness of up to 40 feet or more. The quartz veins are confined to the coarser beds and are not present in the mudstone.

The sandstone and quartzite contain numerous water-worn pebbles of dense fine-grained quartzite and flint. The pebbles, although rather scattered are generally confined within bands a foot wide, but may occur as well defined lenticular beds a few inches thick by a few feet long. The sandstones are crossed by joints normal to the bedding, one strongly developed system trends northwest with a weaker set approximately at right angles.

The quartz veins lie in the bedding or are slightly oblique to it in a few instances. The veins are lenticular and small. Of about fifty such veins seen, the largest had a thickness of 7 inches and many others ranged from less than 1 inch to 4 inches in maximum thickness. The veins, where exposed, show a fairly constant ratio between length and thickness of about 12:1, that is a foot of length (diameter of lens) to each inch of thickness.

The veins consist of white "buck" quartz with vughs lined with glassy quartz from which crystals protrude towards the centre of the cavity in the usual way. The narrowness of the veins necessarily limits the size of the crystals. There is no apparent alteration to the country in the vein walls.

No quartz was seen in the joints which traverse the sandstone.

There is much detrital quartz on the slopes of the hill and all fragments are small. Many show parallel flat faces indicating their derivation from narrow veins. No large boulders of quartz were seen.

Visual examination suggests that the quality of the crystal is high, but all so far found are too small for use. The average diameter of the crystals is about ⅜ inch. Some deep twinning can be recognised and 'double' crystals of the type shown on the plate are common.

The prospect of obtaining larger crystals in the small area examined is considered to be poor. Very much larger veins than those so far found would have to be discovered and there are no indications that such veins exist.

CANBERRA, A.C.T.
11th May, 1944.

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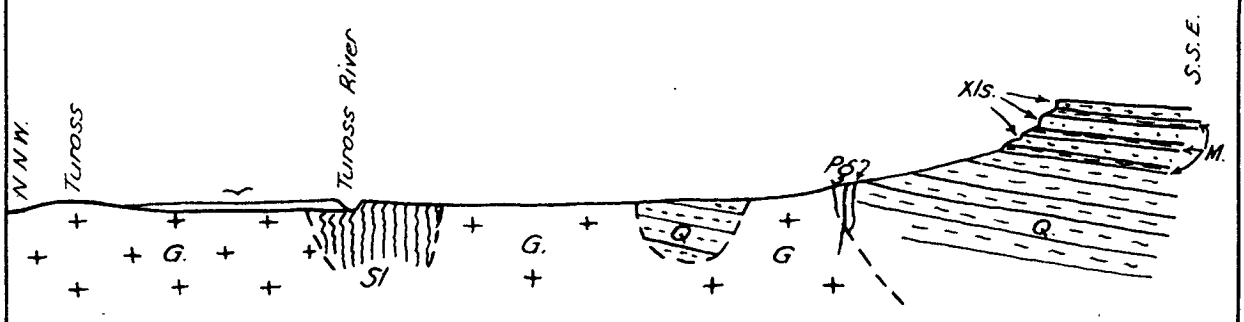
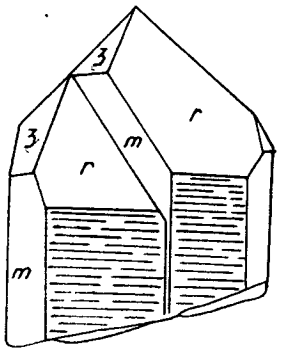
Fig. 1.



Geological Sketch Section near Tuross, N.S.W.
Approx. Hor Scale 1" = 1 Mile

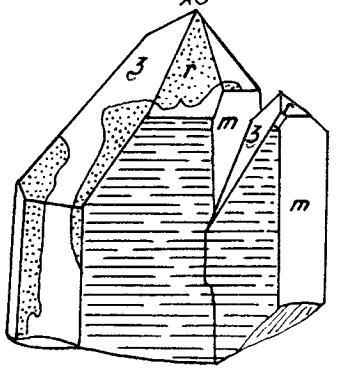
Sl. = Slate; Q = Quartzite & sandstone; M. = Red mudstone; Pg = Pegmatite;
G. = Biotite Granite; Xls = Quartz crystal deposits.

Fig. 2
x 5.



Two simple forms

Fig. 3
x 3



Right-handed crystal attached to simple form which shows deep twinning.

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