TR4-90-91

PALAEOZOIC ROCKS NORTH OF GRANVILLE HARBOUR, WEST COAST

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PRELIMINARY ACCOUNT

Ordovician and Silurian rocks are preserved in a sheared and faulted syncline whose axis lies near Duck Creek, about three miles north of Granville Harbour on the West Coast. The formations are exposed on the coast over a distance of about one and a half miles in the form of reefs separated by stretches of sandy beach which obscure part of the succession. Inland, the beds are covered by Quaternary sands and peaty clays, with only rare outcrops of solid rock, and about one mile from the coast, there is a capping of Tertiary basalt and sands on the low plateau being cleared and developed by the Granville Estate. About four to five miles inland, Palaeozoic rocks are again exposed, although much obscured by button-grass, along the line of the old Zeehan-Corinna track where it runs northwards from the Granville tram.

STRATIGRAPHY

Immediately south of the mouth of Duck Creek, many fossils were found in cleaved and sheared greenish-grey siltstones and fine quartzites. They include *Notoconchidium*, *Rhinidictya* and abundant crinoid ossicles, which resemble those in the Florence Quartzite. This horizon appears to be near the top of the succession in the Duck Creek area, and is probably of Lower Devonian age.

Southwards, on the southern limb of the syncline, the Devonian and Silurian formations range down to the equivalent of the Crotty Quartzite, with a total thickness of about 3000 feet, assuming the absence of extensive strike faulting blanketed by beach deposits.

The Crotty Quartzite rests, apparently conformably, on about 300 feet of dark calcareous quartzite, and impure limestone in which a few poor specimens of bryozoa (?) were found. This formation is probably the equivalent of the Gordon Limestone (Ordovician).

The beds are underlain conformably by about 120 feet of arenaceous and rudaceous rocks which resemble the Owen Conglomerate. The upper half comprises coarse cream and pink quartzites, often

false-bedded, with bands of grit and conglomerate. The lower part consists of grey conglomerate passing down into purplish quartz-conglomerates and breccias, with a band of dark purple grit.

The Palaeozoic rocks rest on crenulated green mica schists, quartz-mica schists, and pale grey quartzites which may be the equivalent of the Davey Group (i.e., older Precambrian).

STRUCTURE

On the coast, the axis of the syncline strikes north-east, with a plunge of about 15° in this direction. However, on a small scale, there are reversals of pitch due to cross-folding.

The northern limb is intensely sheared and faulted, and much of the succession has been cut out. The Palaeozoic rocks are faulted against Precambrian and minor anticlines near the contact are highly cleaved with axial planes overturned to the north.

The southern limb is less disturbed, and although there may be a fault contact with the Precambrian, the junction could be an unconformity.

Inland, structures on aerial photographs suggest faulted Palaeozoic synclines, with axial planes trending north-west, across which Duck Creek flows. On the old Zeehan-Corinna track which crosses the headwaters of Duck Creek, about five miles inland, the formations are intensely weathered and outcrops are rare. However, a few poor fragments of crinoid ossicles were found, as well as outcrops of what could be the Amber Slate. Mapping carried out so far indicates that here Crotty Quartzite, Amber Slate, Keel Quartzite and Florence Quartzite may be present.

Southwards, on the buttongrass flat east of the Granville Estate, a number of scattered outcrops of coarse conglomerate occur. they probably represent the Owen Conglomerate, and preliminary mapping to date leads to the conclusion that here, the formation may be thicker than it is south of Duck Creek.

Further mapping of the Duck Creek-Pieman district will be carried out by the Mines Department in late 1959.