Wanderer River Area
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REPORT ON EXAMINATION OF
WANDERER RIVER AREA

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REPORT ON EXAMINATION
OF
WANDERER RIVER AREA

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To: Mr. G.F. Hudspeth. 22nd April, 1958.

REPORT ON EXAMINATION OF WANDERER RIVER AREA

Dates of examination: 5th to 14th March, 1958.

Geologist: R.G. Elms.

Bushman: R. Martin.

Man days in field: 20

Location of Camps: Wanderer River & Little Colin River.

Means of Transport and Supply: Helicopter.

General Topography:

Well dissected peneplain of Tertiary gravels, characterised by steep sided valleys due to the rapid erosion, the sides of which are prone to landslips owing to the unconsolidated nature of the sediments. In the major valleys numerous flat benches were observed which may, in part at least, be erosional features.

Geological Investigation and Findings

Cambrian: An occurrence of a Dundas Group volcanic was noted in the valley of the Wanderer River about ½ mile south of the Wanderer River camp, at an approximate elevation of 140' above sea level.

This hard dense rock (LE 1090) is composed of a fine grained dark grey matrix with occasional clear quartz phenocrysts and numerous rounded felspar phenocrysts. It is poorly bedded and poorly banded, and is presumably a tuff.

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Ordovician: An area of Owen sediments was traversed some 1½ miles ESE of the Little Colin River. Here the beds are striking and dipping to the west at 55° - 60°.

Pink sandstones and siliceous pebble conglomerates were noted with patches of iron and manganese staining occuring along the strike. Sometimes limonite was concentrated in layers parallel to the bedding (LE 1091).

A very strongly manganiferous sandstone (LE 1092) was encountered which produced a manganese staining over a slope width of some 50 yards.

Tertiary: The generalised Tertiary sedimentary sequence, deduced from a study of six different sections in the area is as follows, oldest to youngest:

An unknown thickness of basal cobble (6-8") gravel unconformable overlies the Ordovician and Cambrian basement, which was observed at an elevation of 148'. The quartzose cobbles have a sandy dark grey ferruginous cement. Possibly this cobble gravel carries up the stratigraphical sequence with only minor interruptions, such as an occasional bed of dark grey slightly micaceous clay with plant fragments, to an elevation of approximately 250', where a well sorted pebble (maximum 1") bed occurs, some 35+ feet thick.

Immediately above this, at an elevation of 284' occurs some 20' of poorly sorted pebble gravel with occasional cobbles. Towards the bottom of this bed the particle size diminishes appreciable.

Extending above this to an elevation of 350' is a moderately well sorted pebble (maximum 2") bed in which the pebble content diminishes down the sequence, so that just above 304' sand results.

Between 364' and 350' a bedd of buff coloured pebbly sand occurs, the pebbles (maximum 1") being in occasional bands 3" thick. In the Wanderer River area this bed is represented by a sandy dark grey clay containing abundant large fragments of vitrainous fossil wood.

Above this to 398' occurs a poorly sorted quartzose pebble bed with some cobbles (maximum 6"). In the places the occasional occurrence of thin clay bands and an overall smaller particle size characterises this bed.

Between 402' and 398' occurs a four foot band of buff coloured well sorted apparently unfossiliferous micaceous sand.

Above this to 418' is a moderately well sorted pebble (maximum 2") bed with a very occasional larger cobble.

From 422' to 418' is a bed of light brown sand with two thin poorly defined bands of small pebbles.

Above this occurs a one foot bed of pebbles (maximum 2½") followed by a two foot bed of buff coloured unfossiliferous pebbly sand.

From 506' to 425' is a poorly sorted quartzose cobble (maximum 9-10") bed which has occasional sandy beds several inches thick. The only real breaks in this bed are at 472' to 469' where an unfossiliferous iron stained bandof fine pebbles occurs, and at 450' where a one foot band of unfossiliferous buff coloured sand occurs.

The bulk of pebbles found were of a quartzose nature - light grey to brown quartz sandstones or quartzite with a few of micaceous or hematitic quartz sandstone, chert, dark shale or mica schist.

It was found that since a given bed usually lenses out very rapidly, close correlation between the sections is not possible, even where these may be separated by a matter of only a few hundred yards.

The problem of correlation is further complicated by the lack of distinctive marker beds in the monotonous lithology.

Summary

The lithology of the Tertiary sequence in the Wanderer River area varies through very poorly sorted cobble gravels, well sorted pebble beds with minor sand, well sorted fine pebble beds with considerable but subordinate sand, pebbly beds of sand, beds of cream-grey sand with very occasional pebbles, sand beds, sand lenses with considerable clay, relatively pure clay, and lignitic clay.

A similar variation of sediment type occurs in the Little Colin River area, except that the lignitic clays are absent in the sections examined.

The sediments dip in a northerly direction at 15° - 20° in the Wanderer River area, and to the east at 10° in the vicinity of the headwaters of the Little Colin River possible indicating that the centre of the depositional basin lay in the general vicinity of Thirkell Hill.

R. G. Elms.

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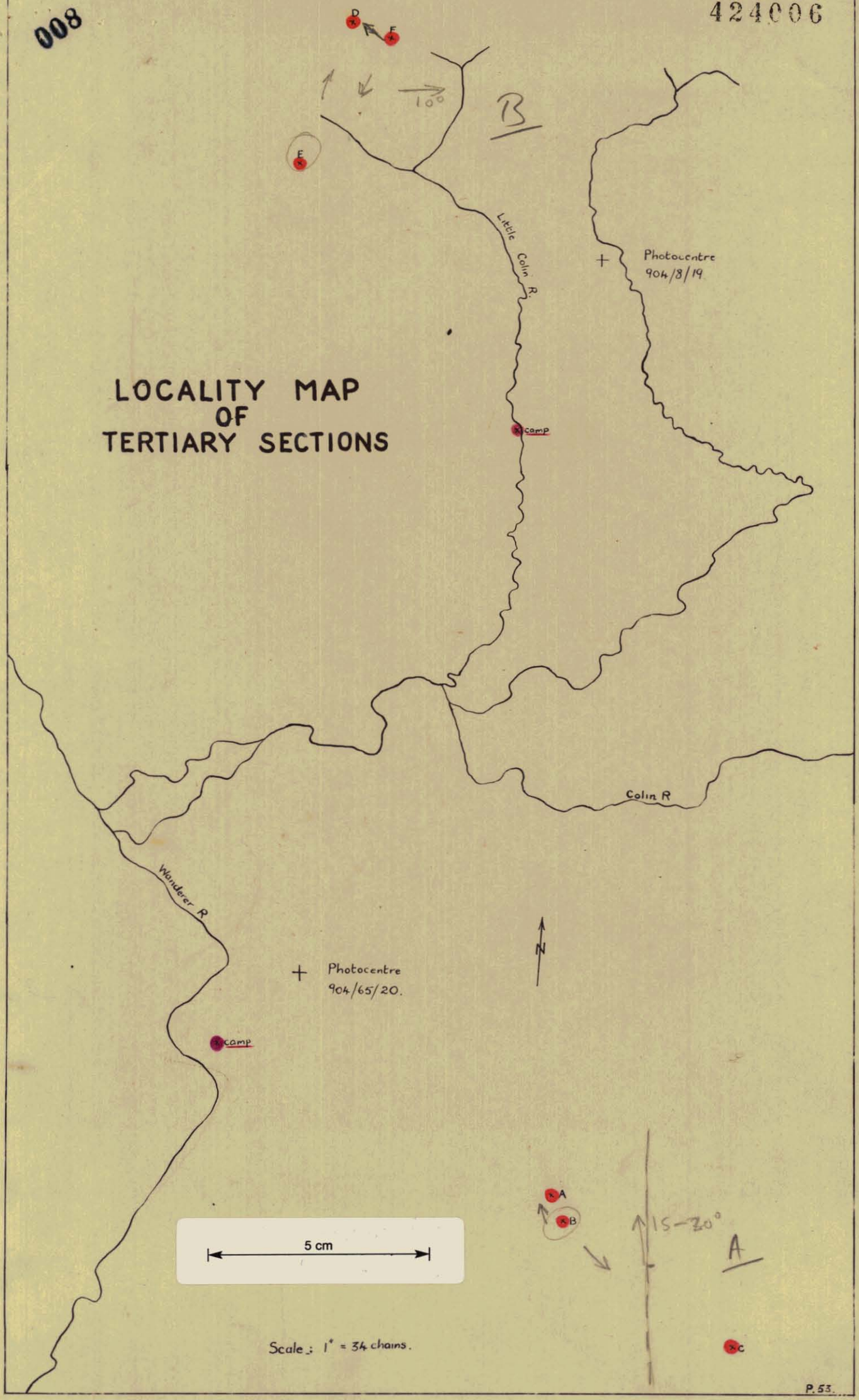
LOCALITY MAP OF TERTIARY SECTIONS



Scale: 1" = 34 chains.

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TERTIARY SEQUENCE WANDERER RIVER

Vertical Scale : 1 inch = 50 feet. Horizontally not to scale.

Key

Cobble gravel

Pebble gravel

Pebbly sand

Sand

Lignitic clay

Clay