

Copy 3

COMMONWEALTH OF AUSTRALIA.

**DEPARTMENT OF NATIONAL DEVELOPMENT.  
BUREAU OF MINERAL RESOURCES  
GEOLOGY AND GEOPHYSICS.**

**RECORDS.**

1956/16.

**ANNUAL SUMMARY OF ACTIVITIES**

**CANNING BASIN PARTY during 1955.**

by

J.N. Casey

A.T. Wells

CANBERRA.

February, 1956.

## ANNUAL SUMMARY OF ACTIVITIES

### CANNING BASIN PARTY *during 1955*

by

J.N. Casey

A.T. Wells

### RECORDS 1956/16.

Manganese deposits at Woody Woody, Gregory Range, Western Australia were sampled in May 1955, and total reserves of metallurgical grade ore were estimated at 106,000 tons. This includes some ore which may be suitable for battery manufacture. The deposits are situated 260 miles by road south east of Pt. Hedland. Chip samples were taken from deposits and these were submitted to Metals and Ores Pty. Ltd., Alexandria, N.S.W. for analysis and testing to determine whether the ore could be used in dry cell batteries. The preliminary testing shows that some deposits warranted further investigation using a 10-ton sample for experiment; the Company is arranging to procure such a sample of ore preferably from Northern Minerals Syndicate's Claim MC271. B.M.R. Record 1956/8 covers this manganese investigation; it is accompanied by a 1 inch = 2 mile map prepared from air photographs. The map shows the position of each deposit and the regional geology of the area.

The investigation of the Canning Basin continued during the year; the country lying between latitude 19° and 22° south, and longitude 126° and 129° east and covered by the Four Mile Military Sheets of Mt. Bannerman, Billiluna, Cornish, Lucas, Helena and Stansmore Range was traversed. The survey is designed to establish the limits of the sedimentary basin and to resolve the Palaeozoic and Mesozoic stratigraphy therein.

The basin margin passes south of the Cummins Range to the Wolf-Sturt Creek Junction then east of Balgo Hill Mission to the east side of the Stansmore Range. Upper Proterozoic quartzitic sandstone unconformably overlies Lower Proterozoic granite, quartzite and schist around the margin of the Basin. Contact between the quartzitic sandstone and the schist was observed in the Gardiner Range, and between cross bedded sandstones and granite in the Lewis Range and Tent Hill area.

Near Lake Lucas fontainebleau sandstone and interbedded shale crops out; these sediments are separated from the Canning Basin by Upper Proterozoic rocks and dip east at 5°. No microfossils or macrofossils were found in these sediments but a lower Palaeozoic age is inferred and they may represent an extension of rocks of this age from the Northern Territory.

Fresh water Upper Devonian or Lower Carboniferous sandstone, about 200 feet thick crops out on the Basin margin east of Balgo Hills, at Knobby Hills (where Lepidophloeum was identified) and at Mt. Bannerman (where Lepidophloeos was identified).

About 2000 feet of Permian marine and freshwater sandstone, conglomerate, shale and calcareous sandstone have been mapped. Numerous fossil localities were found viz. Permian marine (Noonkanbah) at Christmas Creek near Tula yard, in the Balgo Hill Valley, south of Mt. Mueller; Permian marine (lower Liveringa) at Balgo Hill Mission, Wattle Spring (Christmas Creek area), Stansmore Range, lower Southesk Tableland, French Hills; Permian marine (upper Liveringa) at Boundary Hill (south of Christmas Creek); Permian fresh water plants, near Mt. Bannerman, Mt. Erskine, 12 miles south of Mt. Erskine, Stansmore Range.

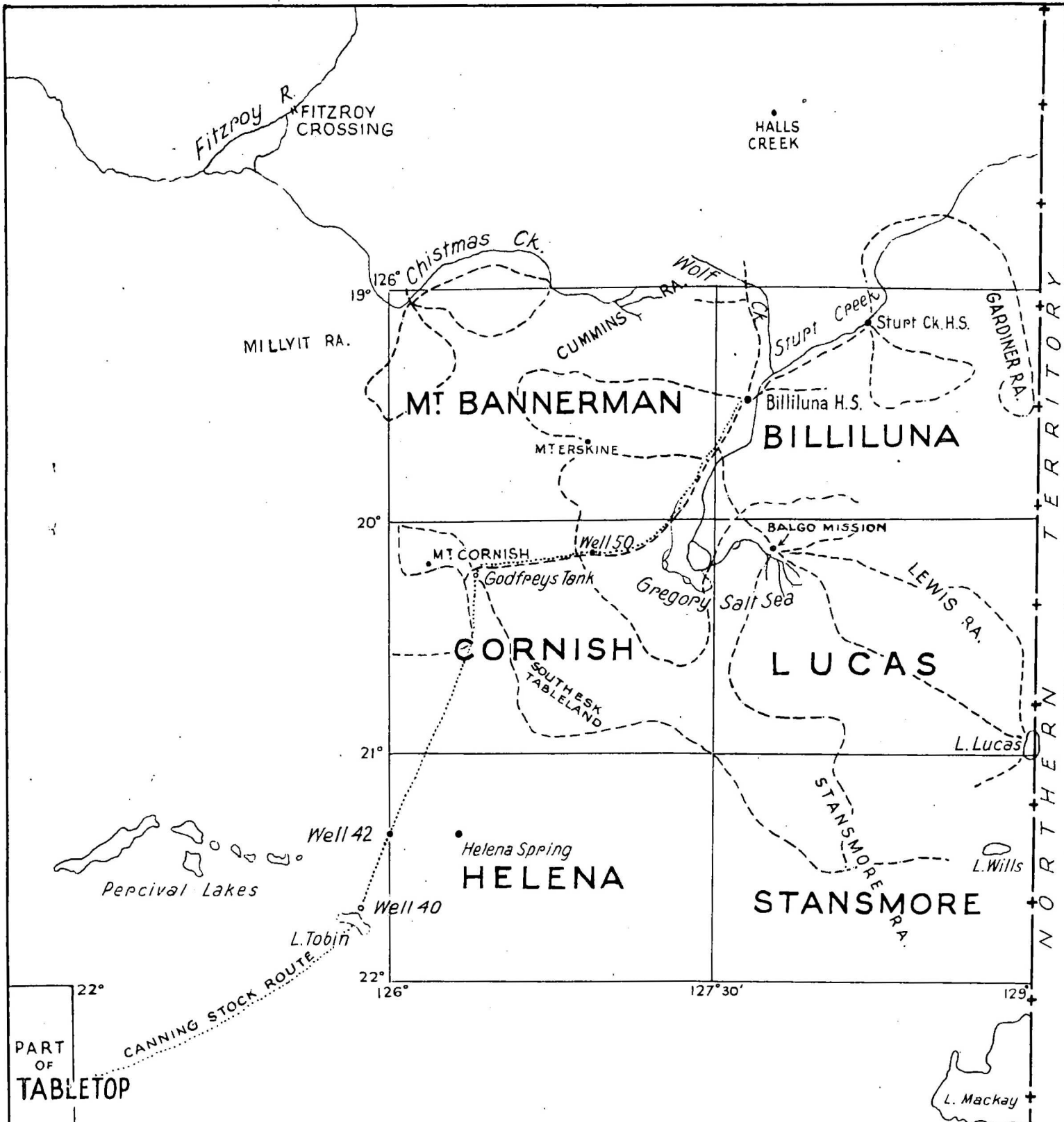
Long sinuous north-west trending monocline-like structures have been traced from the Stansmore Range, past well 50 and south

west of Mt. Erskine to the theoretical continuation of the Pinnacle Fault line in the Fitzroy Basin; a second broken line of monocline-like structures extends from west of the Stanmore Range past Godfreys Tank to the theoretical continuation of the Fenton Fault line in the Fitzroy Basin.

At least 200 feet of brackish water Triassic Isaura and Diplocraterion bearing shales and sandstone and 150 feet of fresh-water plant sandstone (equivalent to the Blina Shale and Erskine Sandstone of the Fitzroy Basin) were mapped; the outcrop of these Mesozoic rocks is practically confined to the area between the two monocline-like structures. About 150 feet of Cretaceous Rhinocorallium bearing sandstone was mapped at Godfreys Tank.

A gravity meter traverse was run in conjunction with some geological traverses; a Worden-type instrument was used and the results will be plotted and corrected by W.A.P.E.T., Perth.

Thirty astrofixes were taken by surveyors from the Lands and Survey department, Perth, who were working with the party.



# CANNING BASIN

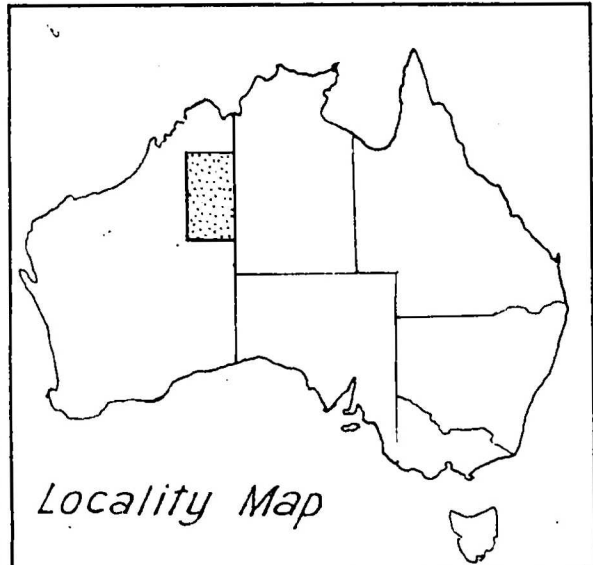
## Geological Survey

### 1955



----- Traverses

MAGNETIC  $+3\frac{1}{2}^{\circ}$



Locality Map