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RECORDS:

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Inspection of manganese deposits, Pilbara area, W.A. 1964

by

D. A. White

INSPECTION OF MANGANESE DEPOSITS, PILBARA AREA, W.A. 1964

The purpose of this note is to record observations made during a two-day inspection of some of the manganese deposits on the 30th and 31st August, 1964. The attached figure shows sketches of the manganese deposits.

I was shown over the following five deposits by Mr. L. Delahunty, Senior Geologist, Western Australian Geological Survey.

(i) Skull Springs
(ii) M.C. 269, Woodie Woodie
(iii) M.C. 571, Woodie Woodie
(iv) M.C. 268, Woodie Woodie
(v) M.C. 532, Mt. Sydney.

Delahunty (1964) considers that the manganese deposits of the Pilbara Manganese Province have been formed by the surface enrichment of manganiferous sediments, which are mainly represented in the Pilbara area by the Proterozoic Moreena and Balfour Shales. Also he considers that enrichment has taken place in Tertiary and later times.

The manganese deposits of the Woodie Woodie and Mt. Sydney area are mostly located near the junction of the Permian glacial sediments and the Proterozoic sediments. The shape of the junction is saw-tooth, probably due to faulting. In all deposits I visited the manganese was either resting on top of and/or replacing the gently dipping Proterozoic Carawine Dolomite along fault zones, or filling solution cavities in the dolomite. Also nearby most of the manganese deposits the Carawine Dolomite was unconformably overlain by a flat-lying Proterozoic sequence of pink quartz sandstone, which in turn was unconformably overlain by a transgressive pink dolomitic shale sequence. The Proterozoic sediments contain remnants of a flat-lying chert breccia cover which was either formed in Pre-Permian and/or Tertiary times, or both.

At M.C. 269 and M.C. 571 I saw boulders of manganese contained in the over-lying Permian sediments which implies a Pre-Permian age for some of the manganese deposits at these localities. However, the deposits have obviously been subsequently enriched by supergen processes (circulating groundwaters) acting along the major fault zones, which the manganese deposits now occupy.

During my visit only two deposits were being mined (by open cut); M.C. 269 by Mt. Sydney Manganese Pty. Ltd. and M.C. 571 by Bell Bros. on behalf of B.H.P.

Mt. Sydney Manganese company has been granted a licence to mine 100,000 tons of manganese from the southern ore body, and the company is negotiating with B.H.P. for a 50,000 to 70,000 ton contract for shipment to Bell Bay in 1965. The southern ore body is separated from the main ore body by over-lying Permian glacial sediments. From the excavations seen during my visit I believe there is reasonable chance of the southern ore body linking up in depth (about 100 feet) with the main ore body because the glacial sediments appear to be valley-fill material.

Bell Bros. have begun open cutting M.C. 571 and exposures have revealed a high-grade (50% or better) manganese deposits, which might yield 1,000,000 tons. A sketch of the deposit is shown in the attached figure.

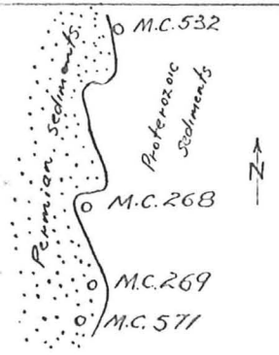
Gravity tests carried out by Mr. Rowston, W.A.G.S. in June this year over M.C. 571 before the deposit was mined revealed an anomaly of 0.9 milligals. At M.C. 269 an anomaly of 0.75 milligals was obtained, and 0.3 milligals at M.C. 532. These tests were carried out with a gravitimeter on loan from B.M.R.

M.C. 268 and M.C. 532 are the two manganese deposits which are programmed for about 800 feet of diamond drilling this year jointly by B.M.R. and W.A. Mines Department. At the end of my visit two holes had been drilled in M.C. 268; one of 250 feet, which intersected a 20 feet southerly extension of the main ore body, and another of 150 feet sited about 100 feet farther south of the first. In the second hole 12 feet of manganese was intersected at a higher level than that intersected in the first hole. The second hole was abandoned when the core barrel was jammed at 150 feet. The drilling has shown the manganese ore body occupies a solution cave in the Dolomite, which at the drill sites is capped with about 50 feet of extremely hard chert breccia. The remainder of the drilling programme consists of five holes about 200 feet each to test the vertical extension of the manganese deposit exposed in the open cut at M.C. 532. The drilling has been very slow and costly due to the hard chert breccia cover, but better conditions should prevail at M.C. 532 where drilling is expected to be entirely in dolomite.

Reference : de la Hunty, L.E., 1964 The geology of manganese occurrence in Western Australia. Paper presented at 1964 A.I.M.M. Conference, Perth, W.A.

D. A. White
25/9/64.

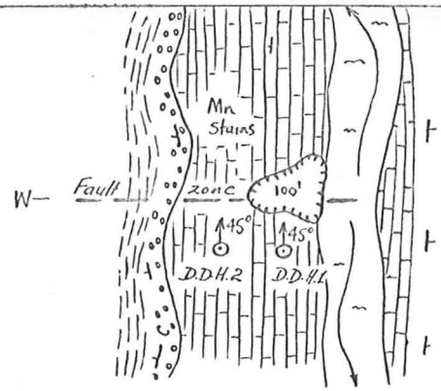
GENERAL LOCALITY



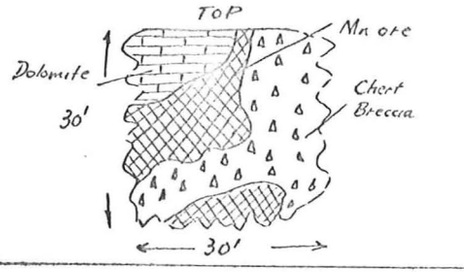
Scale: 1" to 5 mls.

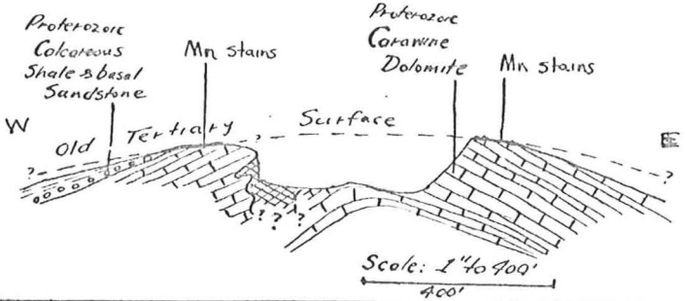
5 mls.

M.C. 532

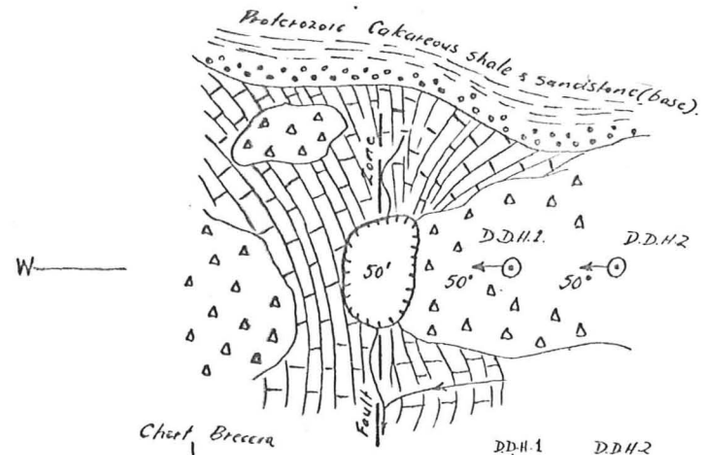


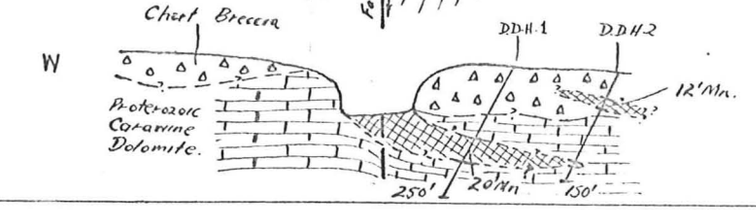
SECTION WESTERN END OF CUT





M.C. 268.

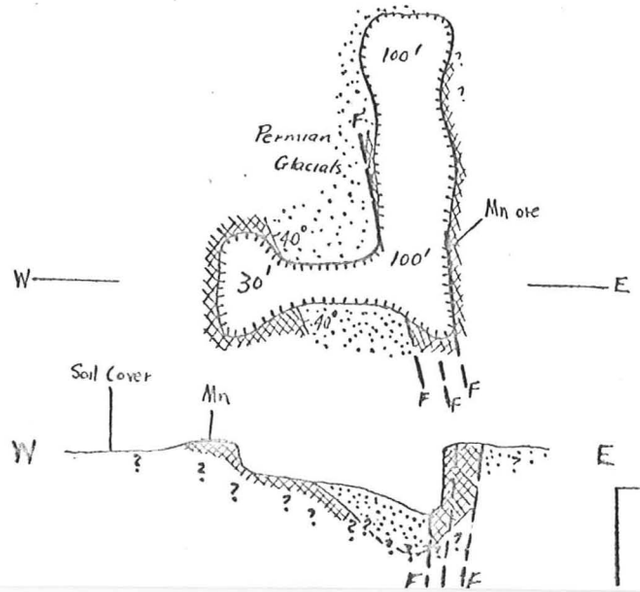




Scale: 1" to 200' approx.

200'

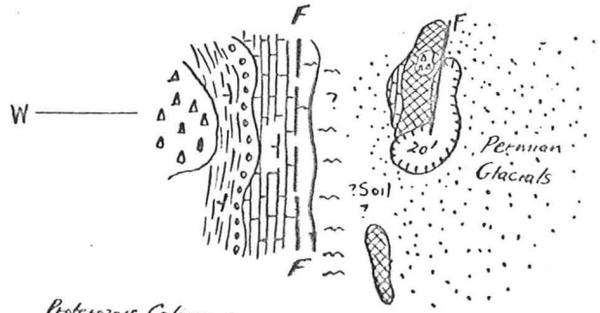
M.C. 269.



Scale 1" to 300' approx.

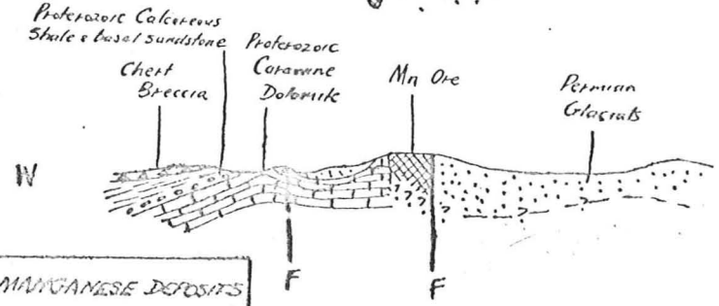
300'

M.C. 571



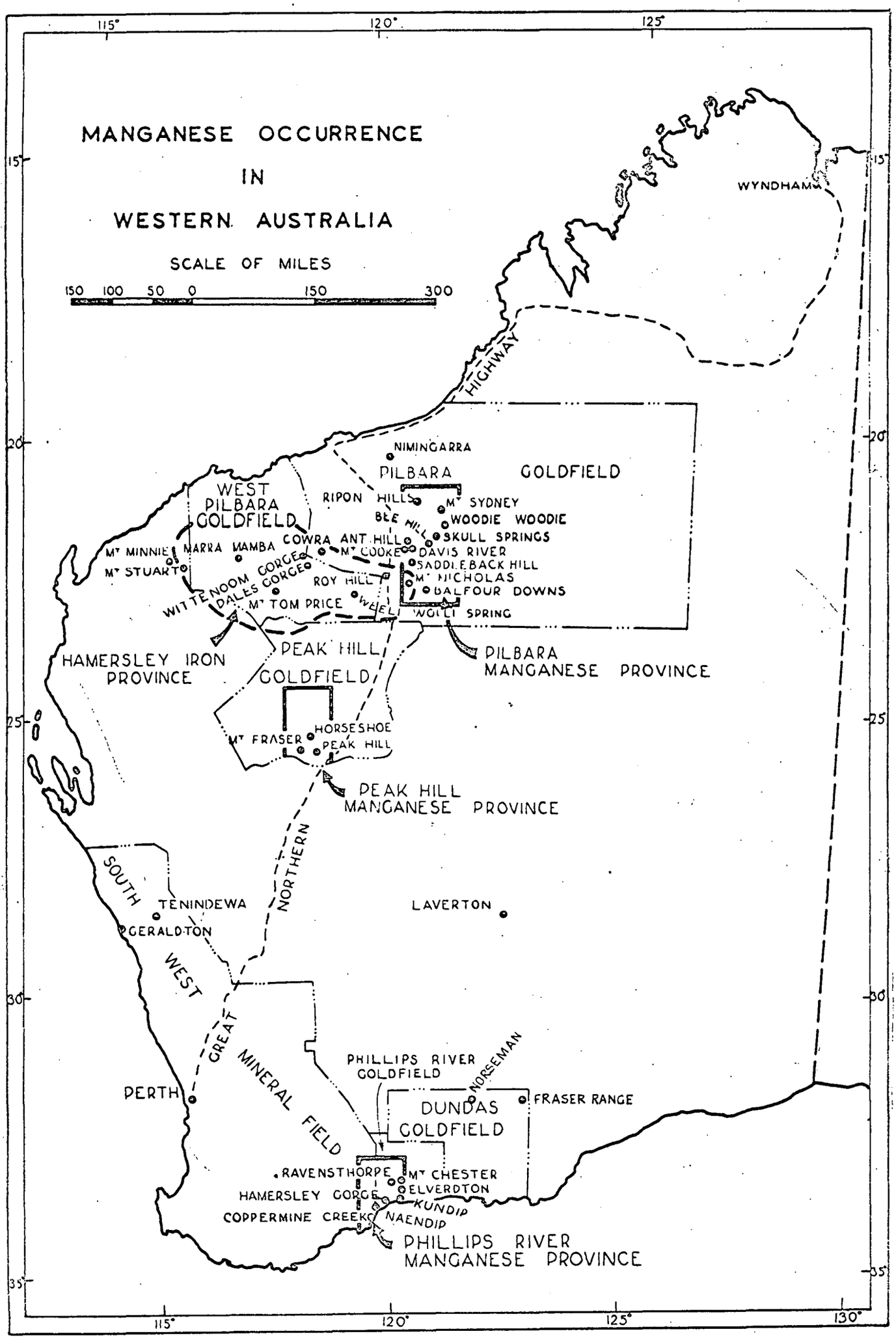
Scale 1" to 300' approx.

300'



WOODIE WOODIE / MT. SYDNEY MANGANESE DEPOSITS
PILBARA PROVINCE, W.A.

FIG. 1.



MINERAL 4

Fig. 1 Map showing localities mentioned in text.