THE UNIVERSITY OF ADELAIDE
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A STUDY, MAINLY OF HEMATITE QUARTZITES FROM THE MIDDLEBACK RANGES, WITH SOME REMARKS ON THEIR MAGNETIC PROPERTIES.

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C O N T E N T S

SUMMARY

Some sort of study of the rocks of the Middleback Ranges has been attempted. This has been rather limited to the hematite quartzites, the most prominent rocks in the ranges proper. These were examined in polished section - the specimens used came mainly from DDH20. They were both surface and subsurface specimens. In tying this mineragraphic approach in with the later study of the magnetic properties (again mainly of the hematite quartzites) note was taken of the magnetite content of the rocks. This it was estimated was limited to only about 1-2% of the total minerals present - the predominant ones being hematite and quartz. This small amount of magnetite, it was found, did not vary much with depth (over about 800'), and it was also nearly the same as the amount present in those specimens taken at the surface at DDH20. This would suggest that the amount of magnetite present in the hematite quartzites need not be dependent on the present erosion level, thus indicating that the conversion of the original magnetite of the hematite quartzites to hematite, is perhaps not dependent on supergene processes as much as others (for instance hypogene).

The hematite quartzites from DDH20 possess consistently high magnetic properties: this even in view of the fact that they contain relatively little magnetite compared with others found in the range area. This suggests the fact, which has been obvious anyway, that large magnetic anomalies will be more so associated with these rocks than any others.

The 1 mile aeromagnetic sheets are good for large scale reconnaissance investigation, and when used in conjunction with lower level maps, and ground gravimetric plots, become distinctly useful.

The anomaly north of the race course area, in the vicinity of the Corunna Hills, and those southern elongated types on the Wilton sheet would bear further investigation on the surface.

The large anomalies to the side of the ranges warrant

thought too. They could be put down to basement highs (this outcrops in many such places), or concentrations of magnetic material in the same. Sometimes the basement where it outcrops seems to be associated with magnetic highs, other times, for instance on the Koopens sheet, the outcropping basement does not bear any such relation to marked magnetic highs.