

THE UNIVERSITY OF ADELAIDE  
DEPARTMENT OF GEOLOGY AND MINERALOGY

GEOLOGY OF THE MT. CHAMBERS GORGE REGION,  
FLINDERS RANGES, SOUTH AUSTRALIA

Report on Geological Investigations  
Submitted in Partial Fulfilment of the  
Course Requirements of  
Honours Geology

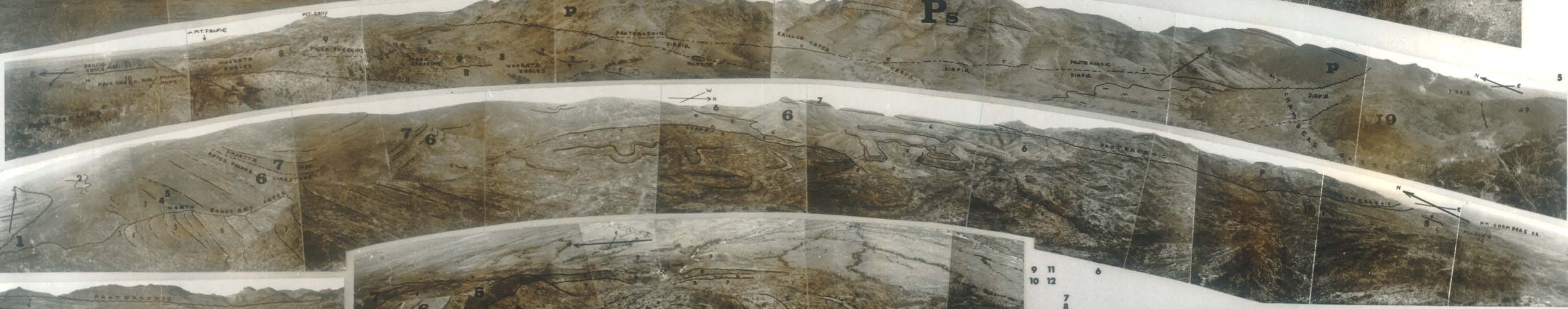
by

Trevor J. Mount, B.Sc.

October, 1970 *l.*

*Read +  
Noted  
T.J.M.*

# PLATE 6



N. CHAMBERS GORGE GEOLOGICAL SURVEY :

# MT. JOHN SYNCLINE GEOLOGICAL MAP

AUGUST, 1970

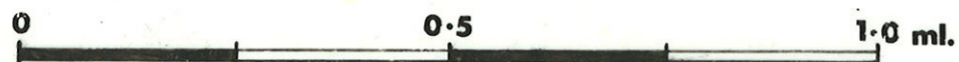
● MT. JOHN



3100'

	QUATERNARY
	LOWER CAMBRIAN
	MARINOAN
	WILLOURAN ?

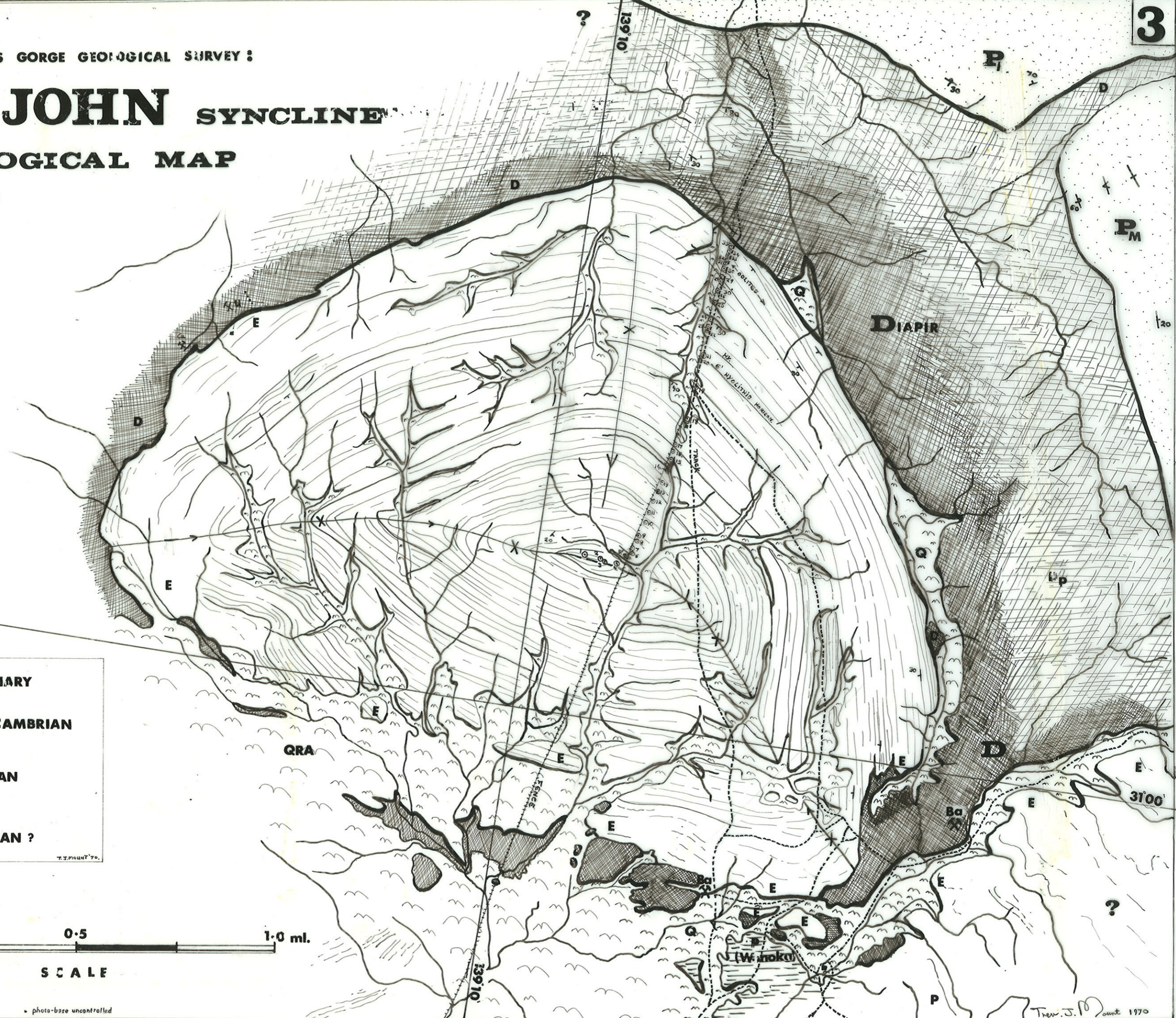
T.S. MOUNT '70.



SCALE

L-1154

• photo-base uncontrolled



Tren. J. B. Mount 1970

MT. CHAMBERS GORGE GEOLOGICAL SURVEY :

# MT. JOHN SYNCLINE GEOLOGICAL MAP

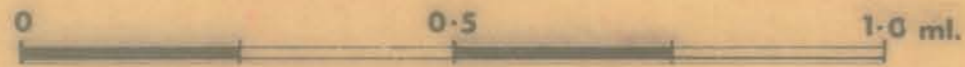
AUGUST, 1970

3

● MT. JOHN



- Q** QUATERNARY
- E** LOWER CAMBRIAN
- Wn** MARINOAN
- Pm** WILLOURAN ?
- D** WILLOURAN ?



SCALE

DIAPIR

(Wanaka)

Figure 5.10 August 1970

L-1154

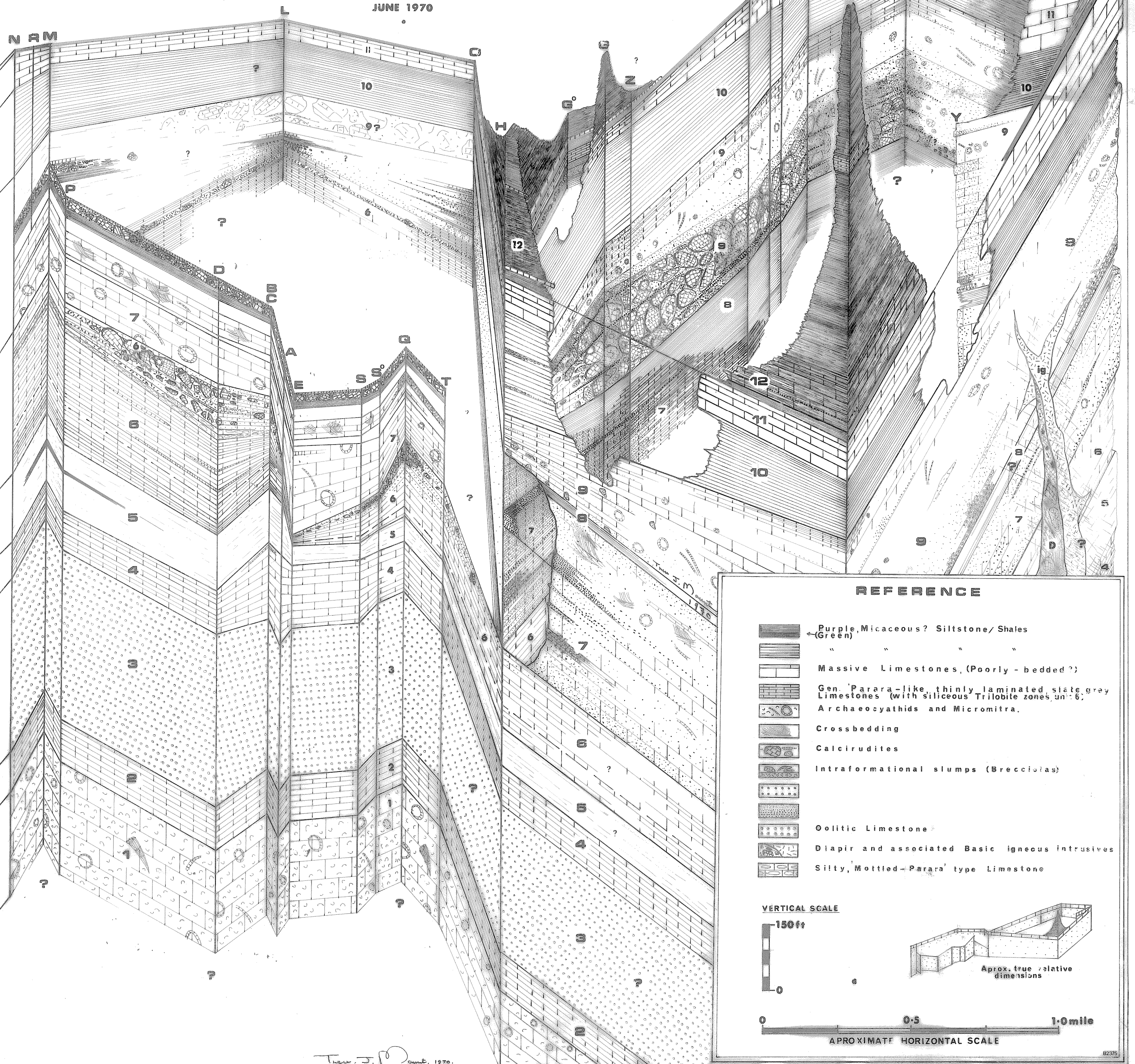
● INTERPRETATION OF VERTICAL AND LATERAL VARIATION IN CAMBRIAN SEDIMENTS AS INFERRED FROM MEASURED STRATIGRAPHIC SECTIONS

● M<sub>T</sub> CHAMBERS GORGE

GEOLOGICAL MAPPING

JUNE 1970

		GENERAL DESCRIPTION	AV. THICKNESS	
L D P W A R K E O A M B R I A N	BILLY CREEK FORMATION	Red brown micaceous sandstones and shales with Halite pseudomorphs and Trilobite tracks. Thin interbedded Dolostones, and flaggy limestones at the base. Green basal interbeds.	> 960 Ft.	
		(BOOK LIMESTONE) <sup>1</sup> ~2mm. grey Ls./ green Sh. laminae	~ 23 Ft.	
	MOORWIE FORMATION	BRILLIG CATCH MEMBER (11)	Medium bedded, flaggy, medium grey, Limestone. Clean, homogeneous and without obvious fossils.	~ 110 Ft.
		PACK CREEK MEMBER	Purple siltstones, often shaley or friable in outcrop. Basal zone with thin grey Limestone interbeds. Locally 10ft polymict Conglomerate lenses of clean grey Archaeo. Ls. large cobbles and brown granule Limestone pebbles in a purple-red matrix.	~ 150 Ft.
		(UPPER UNIT)	Massive Archaeocyathid - Limestones, grey to buff with silty beds.	~ 105 Ft.
		(MEGA BRECCIA HORIZON)	Very massive, Quartz granule rich Pelletal Limestones in the East with basal (?) Oolite beds. Grey-buff to pink at top. Rare Archaeocyathids ● Megabreccias or Calcirudites in the West. Clean, grey Archaeo. Limestone boulders in silty, granule rich, Ls. matrix. Granule lenses and blocks	~ 160 Ft.
		WOOKATA SHALE MEMBER (6)	Purple (Nth), green (Sth.)? Shales Thin basal Ls., Trilobites	~ 75 Ft.
		PINYATTA MEMBER	Massive, thick bedded silty to sandy Limestones, granule lenses. Abundant Archaeocyathids, crossbedding and asymmetric ripple marks. Colour is buff to light grey and brown.	~ 150 Ft.
		UPPER PARARA LIMESTONE	Dark grey, 2-3 inch laminated (flaggy) limestone with silty interbeds, 2ft. max., esp. near top. Breccias (slump in 40ft. zone at top. Minor Limonitic mottling near base Occasional 2 inch Chert nodule beds. Distinctive, 1ft. Epidore-green shale marker bed near base Abundant silicified Trilobites, Hyolithids; Archaeos (few), Annelid traces.	~ 200 Ft.
		MIDDLE LENS	Dolomitized (?) mottled (silty) Para a type Limestone; massive, silty, sandy, authigenic Quartz, Stylolites, Brachs. and a black Ls. lens with Trilobites at top.	~ 110 Ft.
LOWER PARARA LIMESTONE	Dark, slate grey, 2-3 inch flaggy limestones with shaley partings. Fossils include rare Archaeocyathids, Hyolithids, Brachiopods (esp. in top bed) and siliceous Trilobites.	~ 140 Ft.		
LIMESTONE	BENDIEUTA MEMBER (3)	Massive, bedded, (15ft), Pelletal or clastic limestones: buff, grey, pink to brown; silty beds and abundant 2mm, Quartz granules. Allochthonous (?) Archaeocyathids and Brachiopods near base (?) Authigenic Quartz.	~ 380 Ft.	
	LOWER PARARA LIMESTONE (2)	Dark, slate grey, 3 inch laminae Limestone with thin, 1cm, shaley partings. Silicified Trilobite fragments, Hyolithids.	~ 100 Ft.	
LIMESTONE	WILKAWILLINA LIMESTONE	Massive, silty, buff to yellowish Limestones, with sandy and oolitic beds, Archaeocyathids and Micromitra.	> 260 Ft.	



**REFERENCE**

- Purple, Micaceous? Siltstone/Shales (Green)
- Massive Limestones, (Poorly-bedded?)
- Gen. Parara-like, thinly laminated, slate grey Limestones (with siliceous Trilobite zones, un-8, Archaeocyathids and Micromitra.)
- Crossbedding
- Calcirudites
- Intraformational slumps (Breccias)
- Oolitic Limestone
- Diapir and associated Basic igneous intrusives
- Silty, Mottled-Parara type Limestone

**VERTICAL SCALE**  
150ft

**APPROXIMATE HORIZONTAL SCALE**  
0 0.5 1.0mile

Aprox. true relative dimensions

Ther. J. P. 1970



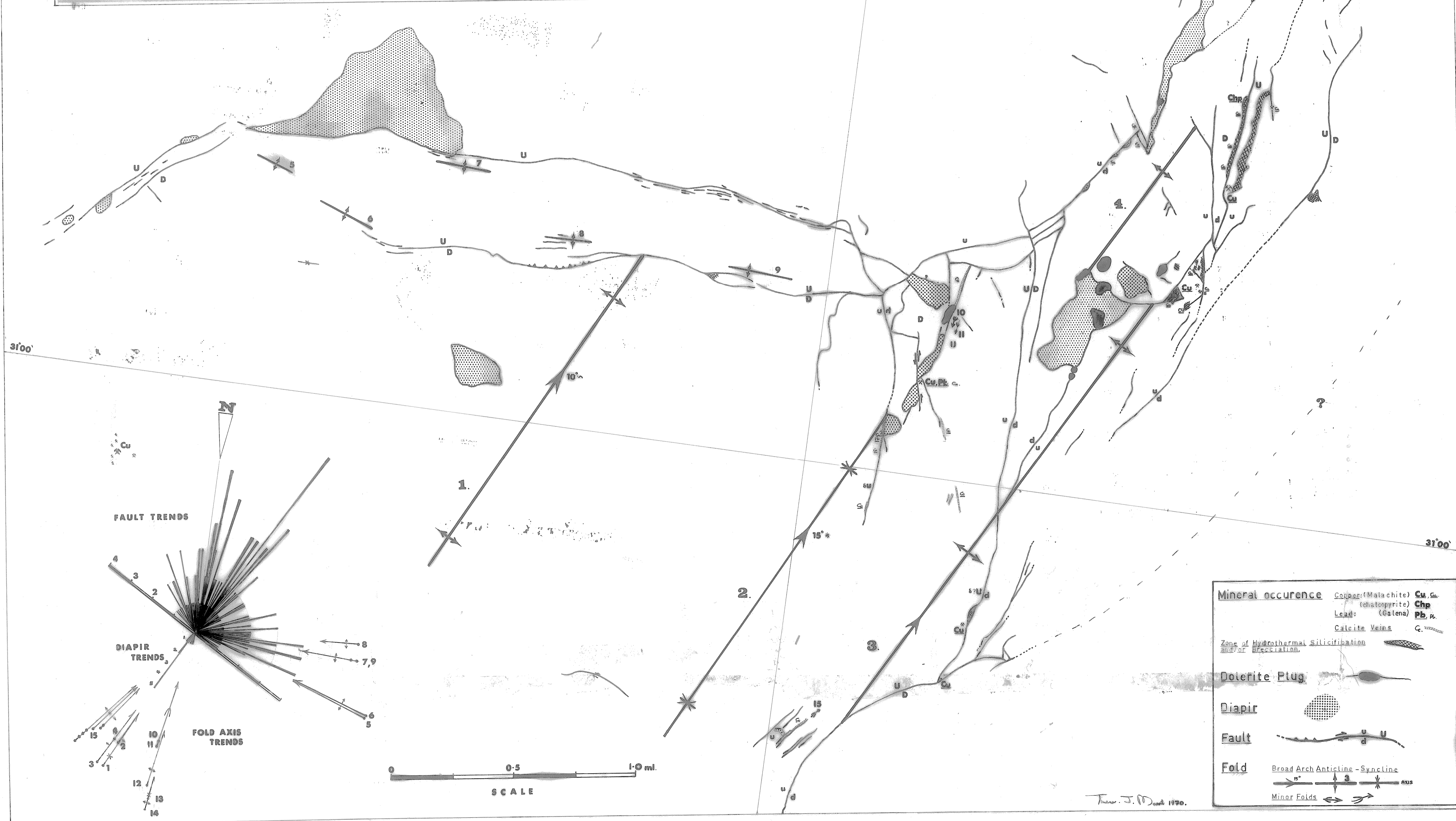
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# MT. CHAMBERS GORGE

GEOLOGICAL SURVEY

JUNE 1970

- : MINERALIZATION
- : DOLERITES
- : DIAPIRS
- : FAULTS
- : FOLDS



Mineral occurrence	Copper: (Malachite)	Cu, Cu
	(Chalcopyrite)	Chp
	Lead: (Galena)	Pb, Pl
	Calcite Veins	C
Zone of Hydrothermal Silicification and/or Precipitation		
Dolerite Plug		
Diapir		
Fault		
Fold		
Broad Arch Anticline - Syncline		
Minor Folds		

Thomas J. D. 1970.