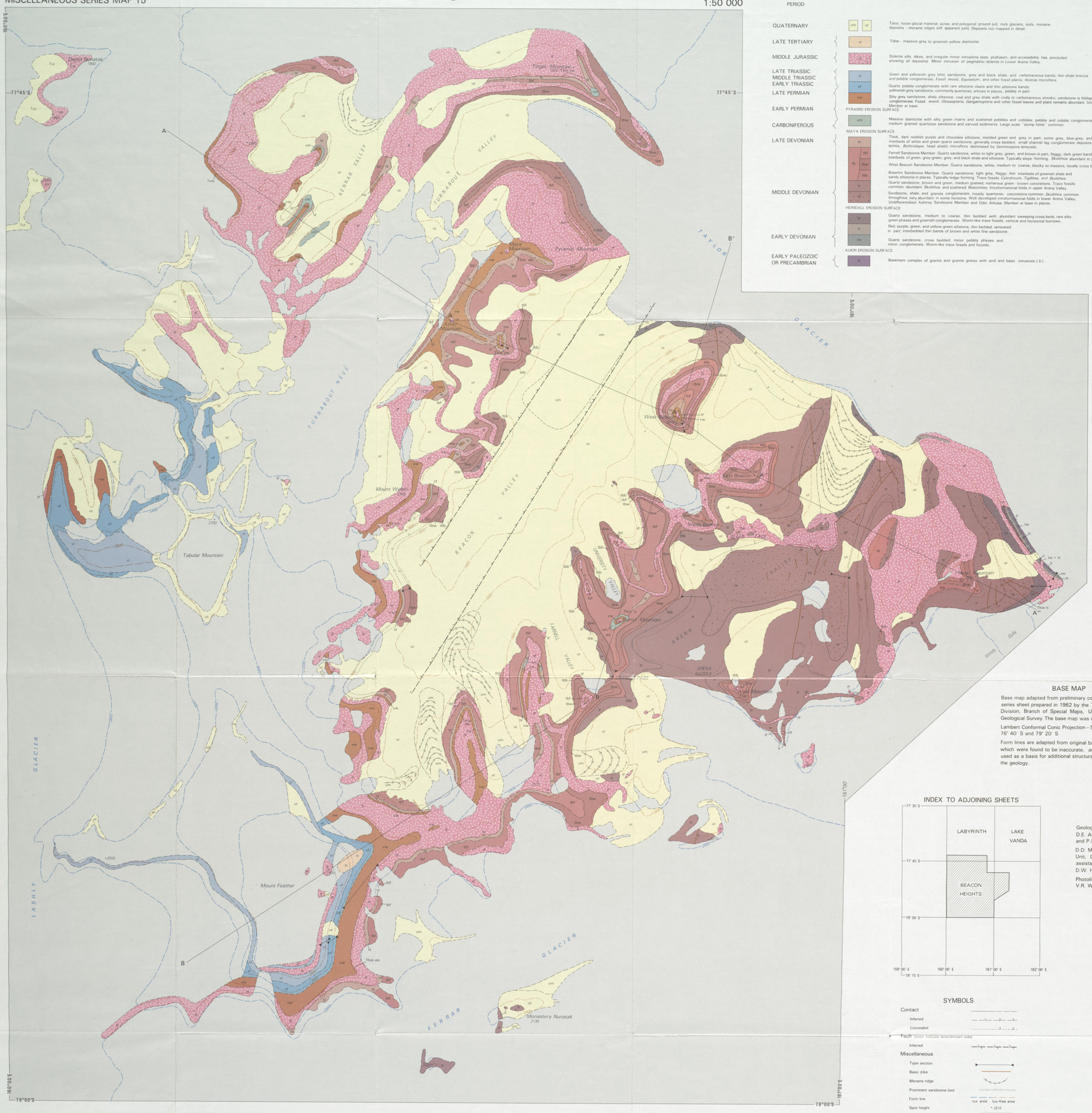
NEW ZEALAND GEOLOGICAL SURVEY
MISCELLANEOUS SERIES MAP 15

BEACON HEIGHTS

1:50 000

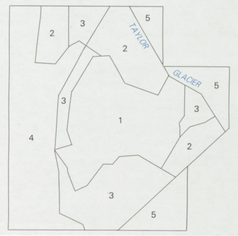


GEOLOGICAL LEGEND

PERIOD		FORMATION	GROUP
QUATERNARY	um, ut: Talus, loose glacial material, scree, and polygonal ground (ut); rock glaciers, soils, moraine deposits - moraine ridges still apparent (um). Deposits not mapped in detail.		
LATE TERTIARY	si: Tillite - massive grey to greenish yellow diamictite.	Sirius (si)	
MIDDLE JURASSIC	Ferrar Dolerite (ff): Dolerite sills, dikes, and irregular minor intrusions (size, profusion, and accessibility has precluded showing all deposits). Minor intrusion of pegmatitic dolerite in Lower Arena Valley.	Ferrar Dolerite (ff)	Ferrar
LATE TRIASSIC MIDDLE TRIASSIC EARLY TRIASSIC	vl, vf: Green and yellowish grey lithic sandstone, grey and black shale, and carbonaceous bands; thin shale breccia and pebble conglomerate. Fossil wood, *Equisetum*; and other fossil plants; diverse microflora.	Lashly (vl); Feather Conglomerate (vf)	Victoria
LATE PERMIAN	vw: Quartz pebble conglomerate with rare siltstone clasts and thin siltstone bands; yellowish grey sandstone, commonly quartzose, arkosic in places, pebbly in part. Silty grey sandstone, shaly siltstone, coal and grey shale with coaly or carbonaceous streaks; sandstone is feldspathic or arkosic in part; thin conglomerate. Fossil wood, *Glossopteris*, *Gangamopteris* and other fossil leaves and plant remains abundant. Undifferentiated Maya Arkose Member at base.	Weller Coal Measures (vw)	
PYRAMID EROSION SURFACE			
EARLY PERMIAN	vm: Massive diamictite with silty green matrix and scattered pebbles and cobbles; pebble and cobble conglomerate; medium grained quartzose sandstone and varvoid sediments. Large scale "slump folds" common.	Metschel Tillite (vm)	
MAYA EROSION SURFACE			
CARBONIFEROUS	tz: Thick, dark reddish purple and chocolate siltstone, mottled green and grey in part; some grey, blue-grey, and red siltstone and claystone; interbeds of white and green quartz sandstone, generally cross bedded; small channel lag conglomerate deposits locally. Fossil fish plates and spines, *Bothriolepis* head shield; microflora dominated by *Gemmospora lemuratz*.	Aztec Siltstone (tz)	Beacon Supergroup
LATE DEVONIAN	tbf: Farrell Sandstone Member. Quartz sandstone, white to light grey, green, and brown in part, flaggy; dark green bands of silty sandstone; interbeds of green, grey-green, grey, and black shale and siltstone. Typically slope-forming. *Skolithos* abundant in places.		
MIDDLE DEVONIAN	tbw: West Beacon Sandstone Member. Quartz sandstone, white, medium to coarse, blocky to massive, locally cross bedded. Typically cliff-forming.	Beacon Heights Orthoquartzite (tb)	
	tbb: Brawhm Sandstone Member. Quartz sandstone, light grey, flaggy; thin interbeds of greenish shale and sandy siltstone in places. Typically ledge-forming. Trace fossils *Cylindricum*, *Tigillites*, and *Skolithos*.		
	tr: Quartz sandstone, brown and green, medium grained; numerous green - brown concretions. Trace fossils common; abundant *Skolithos* and scattered *Beaconites*. Intraformational folds in upper Arena Valley.	Arena Sandstone (tr)	Taylor
	ta: Sandstone, shale, and granule conglomerate, mostly quartzose; concretions common. *Skolithos* common throughout, very abundant in some horizons. Well developed intraformational folds in lower Arena Valley. Undifferentiated Ashtray Sandstone Member and Odin Arkose Member at base in places.	Altar Mountain (ta)	
HEIMDALL EROSION SURFACE			
EARLY DEVONIAN	tn: Quartz sandstone, medium to coarse, thin bedded with abundant sweeping cross beds; rare silty green phases and greenish conglomerate. Worm-like trace fossils, vertical and horizontal burrows.	New Mountain Sandstone (tn)	
	tt: Red, purple, green, and yellow-green siltstone, thin bedded, laminated in part; interbedded thin bands of brown and white fine sandstone.	Terra Cotta Siltstone (tt)	
	tw: Quartz sandstone, cross bedded; minor pebbly phases and minor conglomerate. Worm-like trace fossils and fucoids.	Windy Gully Sandstone (tw)	
KUKRI EROSION SURFACE			
EARLY PALEOZOIC OR PRECAMBRIAN	b: Basement complex of granite and granite gneiss with acid and basic intrusives (*b*).		

LOCALITY DIAGRAM

RELIABILITY DIAGRAM



1. Detailed ground observations; mapping at 1:25 000.
2. Very close helicopter observations supported by limited ground observations; mapping at 1:25 000.
3. Interpolation and detailed interpretation of photographs supported by limited ground observations and contributions from published and unpublished work.
4. Extrapolation at 1:50 000 supported by published and unpublished work and interpretation of photographs. Boundaries conjectural in places.
5. Not mapped.

BASE MAP

Base map adapted from preliminary copy of a standard series sheet prepared in 1962 by the Topographic Division, Branch of Special Maps, United States Geological Survey. The base map was not field checked.

Lambert Conformal Conic Projection – Standard Parallels 76° 40′ S and 79° 20′ S

Form lines are adapted from original base map contours which were found to be inaccurate, and should not be used as a basis for additional structural interpretation of the geology.

INDEX TO ADJOINING SHEETS

SYMBOLS

Contact
- Inferred
- Concealed

Fault (ticks indicate down-thrown side)
- Inferred

Miscellaneous
- Type section
- Basic dike
- Moraine ridge
- Prominent sandstone bed
- Form line — Ice area — Ice-free area
- Spot height — × 2816
- Permanent ice

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D.W. Heron, Scientific Editor, Geological Survey.

Photolithography by C.A. Kitto.
V.R. Ward, Government Printer, Wellington, New Zealand.

BIBLIOGRAPHIC REFERENCE

McElroy, C.T.; Rose, G. 1987: Geology of Beacon Heights, Southern Victoria Land, Antarctica, 1:50 000.

New Zealand Geological Survey miscellaneous series map 15 (1 sheet) and notes.

Wellington, New Zealand.
Department of Scientific and Industrial Research.

SCALE

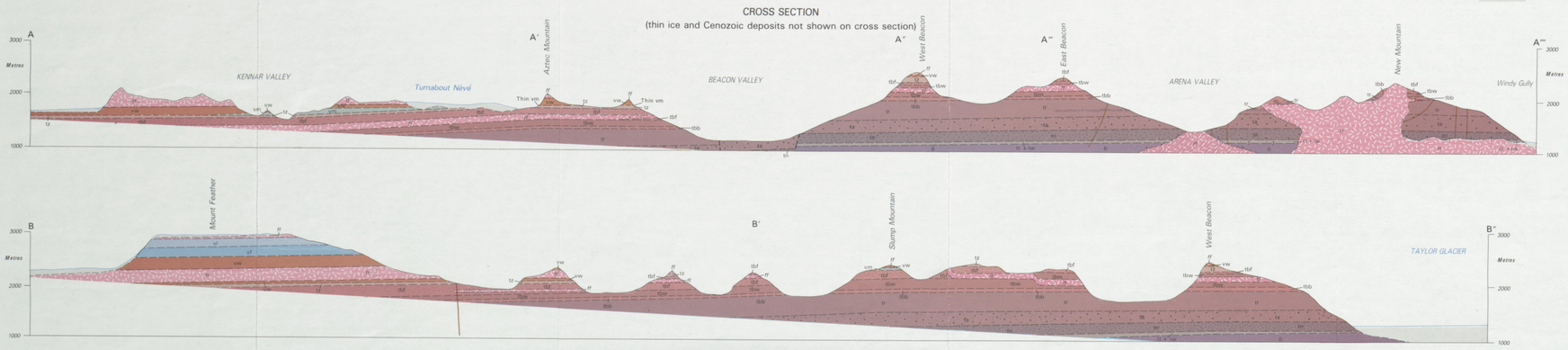
1:50 000

1 0 1 2 3 4 5 6 Kilometres

Ian Speden
Director

CROSS SECTION

(thin ice and Cenozoic deposits not shown on cross section)



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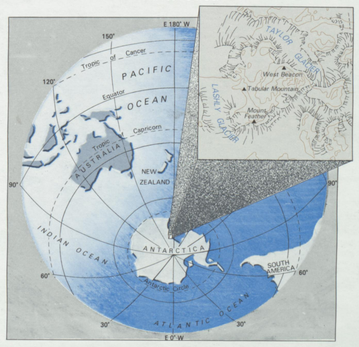
MISCELLANEOUS SERIES MAP 15
1:50 000

Geology of

Beacon Heights

Southern Victoria Land
Antarctica



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Department of Scientific and Industrial Research, 1987.