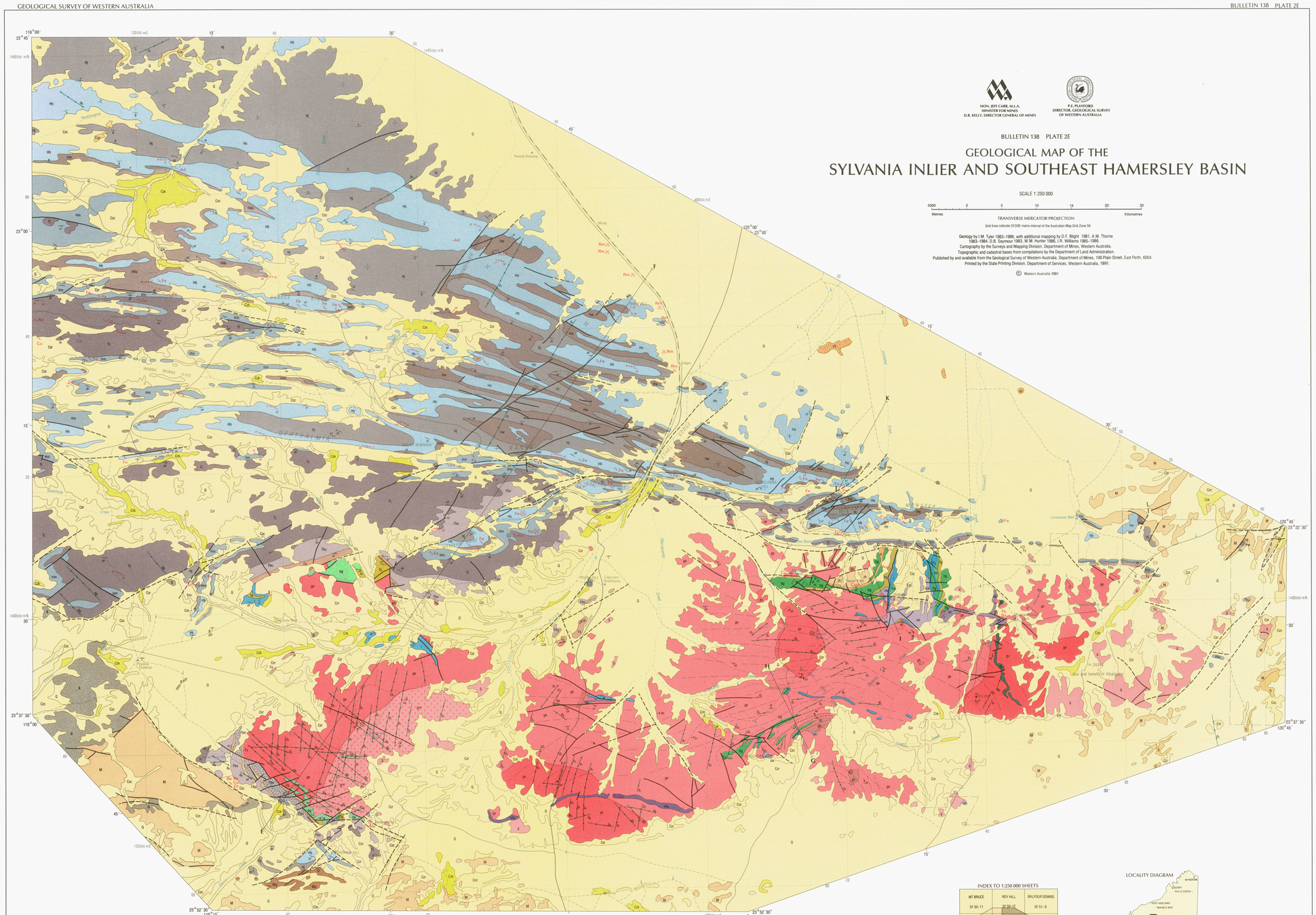

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BULLETIN 138 PLATE 2E

GEOLOGICAL MAP OF THE SYLVANIA INLIER AND SOUTHEAST HAMERSLEY BASIN

SCALE 1: 250 000

5000 0 5 10 15 20 25
Metres Kilometres

TRANSVERSE MERCATOR PROJECTION

Grid lines indicate 20 000 metre interval of the Australian Map Grid Zone 50

Geology by I.M. Tyler 1983–1986, with additional mapping by D.F. Blight 1981, A.M. Thorne 1983–1984, D.B. Seymour 1983, W.M. Hunter 1986, I.R. Williams 1985–1986.
Cartography by the Surveys and Mapping Division, Department of Mines, Western Australia.
Topographic and cadastral bases from compilations by the Department of Land Administration.
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INDEX TO 1:250 000 SHEETS

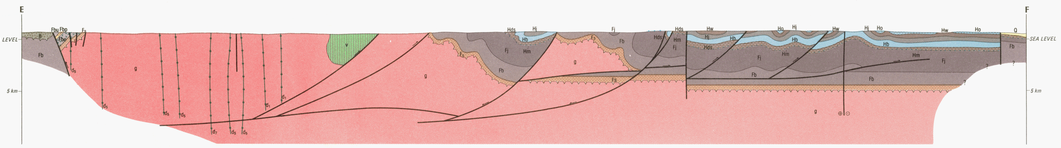
MT BRUCE SF 50–11	ROY HILL SF 50–12	BALFOUR DOWNS SF 51–9
TUREE CREEK SG 50–15	2W	2E
	NEWMAN SG 50–16	ROBERTSON SF 51–13
MT EGERTON SG 50–3	COLLIER SG 50–4	BULLEN SG 51–1

LOCALITY DIAGRAM

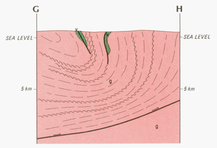
REPRESENTATIVE DIAGRAMMATIC CROSS-SECTIONS

NATURAL SCALE

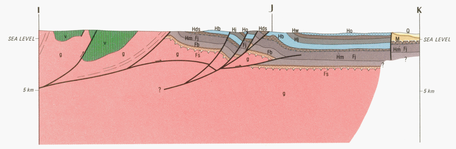
SECTION E – F



SECTION G – H



SECTION I – J – K



REFERENCE

PHANEROZOIC — CAINOZOIC — QUATERNARY

- Q — Colluvium, alluvium and eolian sand

TERTIARY

- Czc — Colluvium — partly consolidated valley-fill deposits
- Czr — Laterite and siliceous duricrust; includes surficial hematite-goethite deposits over banded iron-formation; forms the Hamersley Surface
- Czk — Calcrete; includes massive opaline silica
- Czp — **ROBE PISOLITE:** pisolitic limonite

PROTEROZOIC

- q — Quartz veins
- d_{1-3} — Dolerite and metadolerite dykes. Numbers identify different suites, lowest number earliest

SAVORY BASIN

c. 750 Ma — Savory Group
- S — Shale, siltstone, sandstone

BASIN SEQUENCE — ANKEMA BASIN

c. 1500—1050 Ma — Bangemall Group
- M — Sandstone, siltstone, shale, conglomerate, dolomite, chert. Intruded by dolerite sills

BASIN SEQUENCE — BLACK RIDGE BASIN

c. 1600 Ma — Bresnahan Group
- B — Conglomerate, conglomeratic sandstone, sandstone, mudstone. Intruded by dolerite sills
- B — **CAPRICORN FORMATION:** sandstone, siltstone, mudstone

ASHBURTON BASIN

c. 2000 Ma — Wyloo Group
- W — Undifferentiated
- Wa — **ASHBURTON FORMATION:** sandstone, mudstone, dolomite. Intruded by dolerite sills
- Wd — **DUCK CREEK DOLOMITE:** dolomite, locally stromatolitic, chert, mudstone
- Wm — **MOUNT McGRATH FORMATION:** mudstone, sandstone, conglomerate, dolomite
- Wc — **CHEELA SPRINGS BASALT:** vesicular and amygdaloidal basalt
- Wb — **BEASLEY RIVER QUARTZITE:** fine to coarse sandstone, may be silicified. Intruded by dolerite sills

HAMERSLEY BASIN

- Pj — **PINJIAN CHERT BRECCIA:** chert breccia, poorly banded chert

Turee Creek Group
- TU — Mudstone, sandstone, carbonate. Intruded by metadolerite sills

2500 Ma — Hamersley Group
- H — Undifferentiated
- Ho — **BOOLGEEDA IRON FORMATION:** fine-grained, flaggy iron-formation, chert, jaspilite and shale
- Hw — **WOONGARRA VOLCANICS:** quartz- or feldspar-phyric rhyolite and rhyodacite as sills or flows, jaspilitic banded iron-formation
- Hi — **WEELI WOLLI FORMATION:** interlayered banded iron-formation, often jaspilitic, and metadolerite sills
- Hb — **BROCKMAN IRON FORMATION:** banded iron-formation, chert, shale
- Hdc — **MOUNT McRAE SHALE – MOUNT SYLVIA FORMATION – WITTENOOM DOLOMITE:** dolomite, chert, banded iron-formation, shale
- Hm — **MARRA MAMBA IRON FORMATION:** chert, ferruginous chert, banded iron-formation, shale. Shown as a line on cross-sections

c. 2750 Ma — Fortescue Group
- Fj — **JEERINAH FORMATION:** mudstone, siltstone, chert, sandstone, dolomite, felsic tuff, pillowed metabasalt. Intruded by metadolerite sills
- Ff — Mafic and felsic volcanic rocks — undifferentiated. Intruded by metadolerite sills
- Fbu — Upper mafic volcanic unit: metabasalt, pyroxene spinifex—textured basalt, serpentinite. Intruded by metadolerite sills
- Fsp — Felsic pyroclastic unit: felsic metatuff, chert
- Fbl — Lower mafic volcanic unit: interbedded metabasalt and mafic metatuff
- Fh — **HARDEY SANDSTONE:** sandstone, siltstone, mudstone, chert; tuff, basalt. Intruded by metadolerite sills
- Fs — Basal metasedimentary unit: phyllite, quartz—muscovite schist, metasandstone, metaconglomerate, carbonate rock
- Fr — **MOUNT ROE BASALT – BELLARY FORMATION:** vesicular basalt and basaltic agglomerate, pelite, feldspathic sandstone and conglomerate, pillowed metabasalt, metatuff

BASEMENT ROCKS OF THE SYLVANIA INLIER

- Ms — Serpentinite
- d_{1-2} — Metadolerite and amphibolite dykes

ARCHAEAN

- g — Granitoid rocks — undifferentiated
- ge — Medium-, even-grained metagranite to metagranodiorite
- gv — Medium-grained metagranite to metagranodiorite, sparse feldspar phenocrysts
- gh — Medium-grained metagranite to metagranodiorite, with hornblende and relict clinopyroxene
- gm — Mixed granitoid unit: extensive veins and patches of ge and gv into foliated and/or banded metagranite to metagranodiorite
- gc — Mesocratic to melanocratic metamonzogranite to meta-quartz-diorite
- v — Greenstone belt rocks, mafic intrusive rocks — undifferentiated. Shown only on cross-sections
- sq — Interbedded chert, fuchsitic quartzite, quartzofeldspathic schist, calc-silicate schist, minor pelitic and semi-pelitic schist
- > 2750 Ma — Banded iron-formation, chert
- zc — Quartz-chlorite-amphibole-feldspar (-garnet) schist after tuff
- zh — "Hybrid" intermediate rock
- ba — Amphibolitic schist
- bg — Metagabbro; includes serpentinite, metaperidotite, metapyroxenite, metaleucogabbro and anorthosite
- ua — Ultramafic rocks; includes tremolite-chlorite-talc schist, serpentinite, metapyroxenite
- uc — Coobina ultramafic intrusion: serpentine, metapyroxenite, chromite

SYMBOLS

- Geological boundary
- Unconformity/disconformity on cross-sections
  - angular unconformity
  - disconformity
- Fault
  - exposed
  - concealed
  - on cross-sections, showing sense of movement, thrust or normal fault
  - vertical
    - wrench fault, movement towards viewer
    - away from viewer
  - shear zone
- Small-scale folds showing orientation of axial surface, direction of plunge and nature of vergence (Z, S or M)
  - Capricorn Orogeny $D1_2$
  - Capricorn Orogeny $D2_2$ inclined, vertical
  - Late, post-orogenic fold inclined, vertical
- Bedding
  - inclined
  - vertical
  - overturned
  - horizontal
  - dip estimated from aerial photography
    - horizontal
    - 0 – 15°
    - 15 – 45°
    - 45 – 90°
- Highway
- Formed road
- Track
- Railway
- Homestead or building
- Yard
- Airfield
- Major watercourse, intermittent
- Bore or well, with windpump
- Mine with recorded production
- Open-cut or pit
  - Major
  - Minor
- Cleavage, slaty or spaced
  - Pre-Capricorn Orogeny
    - inclined
    - vertical
  - Capricorn Orogeny
    - Ophthalmia Fold Belt
      - inclined
      - vertical
    - Ashburton Fold Belt
      - inclined
      - vertical
- Cleavage, parallel to bedding
  - Ashburton Fold Belt
    - inclined
    - vertical
- Foliation
  - Gneissic banding
    - inclined
  - Pre-Capricorn Orogeny
    - inclined
  - Capricorn Orogeny
    - inclined
    - vertical
    - trend of foliation
- Lineation
  - plunge of stretching lineation
  - fold hinge orientation
  - axis of crenulation hinge
  - Ashburton Fold Belt
    - fold hinge orientation showing vergence
- Isotopic age determination site
- Mineral prospect
- Mineral occurrence
  - Barite — Ba
  - Chromite — Cr
  - Chrysoprase — Ce
  - Copper — Cu
  - Crocidolite — Ad
  - Gold — Au
  - Iron — Fe
  - Lead — Pb
  - Ochre — Oc
  - Road metal — Rm
  - Uranium — U
  - Zinc — Zn