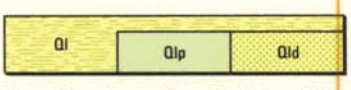
REFERENCE

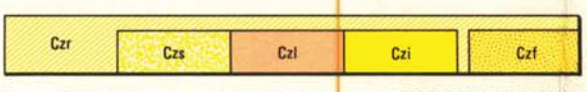
PHANEROZOIC

? CAINOZOIC



Ql Lacustrine deposits – mixed playa and dune association, peat, silt, sand deposits; fresh and saline water
Qlp Playas – clay, silt, peat; saline or fresh water
Qld Dunes – sand at lake margins includes kopi marked as gypsum (Gp) mineral occurrence

Czc Alluvial and colluvial deposits – transported clay, sand, lithic fragments; may be indurated
Czg Lateritic gravel, sand, includes minor clay
Cze Thin locally derived sand and clay, usually over granitoid rocks; characterized by dark tonal lines on aerial photographs
Czk Valley calcrete where low in topography, may be residual over Proterozoic dolomite [Poci]
Cza Sand and clay deposited in channels and adjacent flood plains



Czr Residual deposits – sand, clay, duricrust; may overlie VICTORIA PLATEAU SANDSTONE locally in the Perth Basin
Czs Sandplain – red to yellow sand; commonly eolian reworked; includes dune fields
Czl Laterite – commonly on top of breakaways, may include consolidated grit on a stripped surface
Czi Silcrete – siliceous duricrust
Czf Lithic fragments, sand and clay; may include colluvial material

MESOZOIC

JKy **YARRAGADEE FORMATION** : sandstone, siltstone, shale, conglomerate; continental with minor marine

PALAEOZOIC

Pw **WAGINA SANDSTONE** : fine to medium-grained clayey sandstone with thin conglomerate, shale, siltstone and coal units; continental to paralic

Pc **CARYNGINIA FORMATION** : black to grey micaceous siltstone and shale, interbedded sandstone, minor conglomerate; marine

Pi **IRWIN RIVER COAL MEASURES** : fine to coarse-grained quartzsandstone, conglomerate, siltstone, carbonaceous claystone with minor coal; continental

Ph **HIGH CLIFF SANDSTONE** : fine to coarse-grained quartz sandstone with thin siltstone, coarse-grained sandstone and conglomerate lenses; marine

Phh **HOLMWOOD SHALE** : green to grey shale and siltstone with thin limestone beds, sporadic glacial erratics and cannonball concretions; marine

Phf **Fossil Cliff Member** : richly fossiliferous limestone; dark siltstone, sandy siltstone shale; discontinuous; marine

Phb **Beckett Member** : shale with beds of brown limestone, includes concretions containing *Juresanites jacksoni;* marine

Pn **NANGETTY FORMATION** : tillite, shale, tillitic sandstone, conglomerate; continental to marine

d: Mafic dykes – includes dolerite dykes of various ages and metamorphic grades; generally cross-cutting, but may form sills in Proterozoic supracrustal units
di: Leucocratic gabbro or metagabbro; includes quartz diorite

PROTEROZOIC

Yandanooka Group

PYs(s) **MOUNT SCRATCH SILTSTONE:**
Siltstone – purple-coloured, abundant volcanic fragments; massive to laminated with scours, cross-lamination

PYs(w) Wacke – laminated, ripple marks, normal grading, cross-lamination common; includes minor conglomerate and scour infilling

PYs(a) **ENOKURRA SANDSTONE** : quartz and feldspathic arenite with minor arkose; well cross-laminated; typically contains conglomeratic layers, some with volcanic clasts; grades downward into Beaconsfield Conglomerate

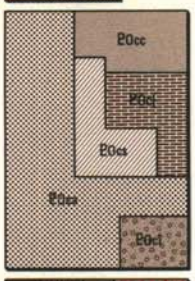
PYf(r) **BEACONSFIELD CONGLOMERATE** : epiclastic deposit of andesitic pebbles; matrix fine siltstone and wacke, or coarse-grained quartz sandstone

PYn(s) **ARRINO SILTSTONE** : purple-coloured, abundant volcanic fragments; commonly massive; includes minor sandstone

PYa(k) **ARROWSMITH SANDSTONE** : well-bedded feldspathic quartz sandstone to arkose; contains minor volcanic fragments; includes minor conglomerate toward the base

Moora Group

Coomberdale Subgroup



NOONDINE CHERT : generally white, cream or grey, also red, brown, black; laminated, brecciated, stromatolitic, oolitic fabrics; silicified dolomite in part; includes quartz arenite and siltstone

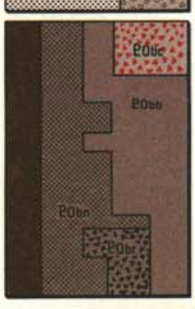
JINGEMIA DOLOMITE : grey; fine to medium-grained; massive, breccia, stromatolites, rudimentary layering fabrics common. Minor calcite veins and vugs. Altered to talc and chlorite near dolerite dykes

NOINGARA SILTSTONE : massive to poorly bedded; includes minor sandstone in fining-upward sequences; micaceous layers common, generally purple-coloured; quartz sericite composition

CAMPBELL SANDSTONE : white, cream; cross-lamination, scours, ripples common; dominantly quartz arenite but conglomeratic and feldspathic near base; typically at base of fining-upward sequence; marine

MOKADINE FORMATION : white, cross-lamination, scours; quartz arenite and pebble conglomerate (typically with red chert clasts); commonly upward-fining

Billeranga Subgroup



OXLEY CHERT . red; laminated, brecciated chert and banded or massive purple tuff. Only found immediately overlying Morawa Lava

MORAWA LAVA : dark green or purple; altered in part; jasper veins and jasper-filled amygdaloids common; mostly basalt, minor dacitic flows, includes purple tuffaceous siltstone and tuff; principally subaerial flows

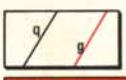
DALAROO SILTSTONE : purple volcanogenic and lithic siltstone and wacke; well laminated, low-angle cross-lamination, mostly upward-fining sequences; includes purple and green conglomeratic siltstone and wacke, shale; commonly slump-folded, with debris flow and proximal turbiditic features near Neereno Hill

NEERENO FORMATION : purple; laminated, cross-laminated feldspathic fluviatile sandstone at Neereno Hill

Breccia, megabreccia; compact angular gneiss clasts of local derivation; little sandstone or mudstone matrix; includes fanglomerate debris flows at Neereno Hill; minor sandstone and shale; continental mass-transport origin

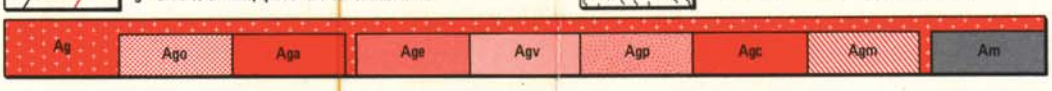
P(s) Siltstone – massive to poorly bedded; includes minor sandstone in fining-upward sequences, micaceous layers common, generally purple-coloured; quartz-sericite composition
P(a) Quartz arenite – cross-lamination, scours, ripples common; typically at base of fining-upward sequence; marine and continental
P(r) Conglomerate, breccia – includes debris-flow rocks, fanglomerate, minor sandstone and shale; continental

GRANITOID ROCKS



q: Quartz veins, contains minor feldspar
g: Granitoid veins, quartz diorite to adamellite

Overprint indicating granitoid rocks strongly foliated, lineated and/or recrystallized



Ag Granitoid rocks unassigned – most is variably recrystallized and some is deformed
Ago Granite, quartz-biotite phyric; largely unrecrystallized and massive; structurally high level; includes **Koolanooka Porphyry**
Aga **MULGINE GRANITE** : medium to coarse-grained leucogranite stock, includes porphyritic and even-grained phases, foliated and lineated, with local greisen
Age Adamellite-granodiorite – medium even-grained; includes minor xenoliths
Agv Adamellite – medium-grained with less than 10 per cent feldspar megacrysts; includes megacrysts of quartz
Agp Granite-adamellite – porphyritic; megacrysts both idiomorphic and corroded
Agc Granodiorite – medium to coarse even-grained; commonly contains biotite and hornblende concentrations
Agm Granite to granodiorite – even-grained and porphyritic; intimate mixtures of Age, Agp, Agv, and Agc
Am Contact migmatite – includes supracrustal remnants associated with various textural granitoid types; typically developed marginal to supracrustal belts

GNEISSIC ROCKS

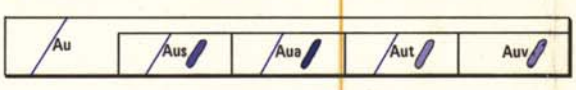
AM **MULLINGARA GNEISS** : quartzo-feldspathic, semi-pelitic and pelitic gneiss; granoblastic texture common; minor pegmatitic and granitoid segregation; includes lenses quartzite and amphibolite
AMq Orthoquartzite – recrystallized, includes minor lenses quartz-feldspar-muscovite gneiss
AMa Amphibolite – lepidoblastic, hornblende-plagioclase rock, contains accessory sphene, ilmenite

An Biotite-quartz-feldspar gneiss unassigned – adamellite to granodiorite composition, some quartz diorite; strongly deformed, narrow mylonitic zones; several stages recrystallization; minor leucocratic equigranular granoblastic phases overprint or disrupt gneissosity; foliated and recrystallized pegmatite, aplite, and quartz veins
Anl Leucocratic equigranular ortho-and para-gneiss – fine to medium-grained; minor supracrustal remnants common; uniform to banded, folded fabric; some flaser texture
Ana Augen gneiss – biotite adamellite to quartz-hornblende diorite composition; uniform fabric
Anh Mesocratic, blastomylonitic, microaugen orthogneiss – medium to coarse-grained; mostly biotite ± hornblende composition; fabric uniform to banded by minor phases
Ang Mixed granitic orthogneiss – complex variety of cross-cutting phases with great range in texture and composition

SUPRACRUSTAL ROCKS

Af Felsic (quartzo-feldspathic) volcanic and sedimentary rocks unassigned
Afc Felsic volcanic rocks – fine to medium-grained with pyroclastic texture
Afv Felsic volcanic rocks – banded to massive fine to medium-grained with tuffaceous and agglomeratic layers; rhyolite to dacite composition; includes minor sedimentary rocks
Afs Felsic sedimentary rocks – fine to medium-grained laminated to massive; includes minor Asp units; contains felsic volcanic rocks
Afq Quartz-muscovite schist – fine to medium-grained; occurs mainly in contact zones adjacent to granitoids
Afo Quartz-plagioclase porphyry – includes fine-grained massive dacitic rocks

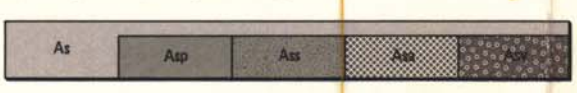
Ab Mafic rocks unassigned – includes minor felsic and ultramafic rocks
Abg Gabbro – medium to coarse-grained actinolite-plagioclase rocks, some with minor quartz; may contain minor ultramafic differentiates
Abd Dolerite – fine to medium-grained actinolite-plagioclase rocks, may contain minor ultramafic differentiates
Abx Differentiated flow and sill rocks with pyroxenitic bases
Abl Basalt – includes massive, variolitic, vesicular and pillowed varieties; fine-grained to aphanitic plagioclase; pale amphibole rocks
Abv Mafic volcanic rocks – intermixed layers of felsic and ultramafic volcanic rocks common
Abc Basaltic agglomerates and minor tuffaceous rocks, includes minor felsic volcanic rocks
Aba Amphibolite – pale and dark amphibole-plagioclase rocks; commonly in supracrustal remnants; developed in zones of high strain
Ahg Mafic granulite – one or two pyroxene-amphibole-plagioclase rock



Au Ultramafic rocks unassigned – includes minor mafic rocks
Aus Serpentinite – serpentine-talc rocks often with relict texture preserved; after peridotite or dunite
Aua Pale magnesian amphibole-chlorite-talc rocks – some with minor serpentinite; commonly schistose; some peridotite composition
Aut Talc schist – includes minor chlorite and pale magnesian amphibole; some mafic rocks included
Auv Ultramafic volcanic rocks – commonly with spinifex texture, vesicles, or agglomeratic textures; includes pyroclastic varieties; pale amphibole-chlorite dominate

Ai Unassigned – includes banded chert
Ail Goethite-quartz
Aih Hematite, magnetite-quartz
Aia Magnetite (hematite) - amphibole-quartz; amphibole may be pale magnesian type or grunerite
Aic Chert
Aig Magnetite-amphibole-garnet-orthopyroxene

Banded iron-formations



As Sedimentary rocks unassigned – includes quartz-muscovite semi-pelitic rock in the vicinity of Dalgooka Hill
Asp Pelitic to semi-pelitic quartz-sericite-kaolin rocks – includes siltstone, shale, phyllite and schist; can be laminated, graded or massive; andalusite present locally
Ass Semi-pelitic rocks – includes quartz wacke; commonly graded with pebbly bands; andalusite and almandine present locally; volcanogenic component present
Asa Psammitic rocks – includes minor quartzite; cross-laminated, pebbly or graded; generally granular textured, but may be well foliated
Asy Polymictic conglomerate – cobble to boulder framework fabric; clasts include vein quartz, banded iron-formation, cleaved sandstone, chert, and pelitic rock

ARCHAEAN

Regional metamorphism may attain either greenschist or amphibolite facies

Overprint indicating deeply weathered or soil covered rock