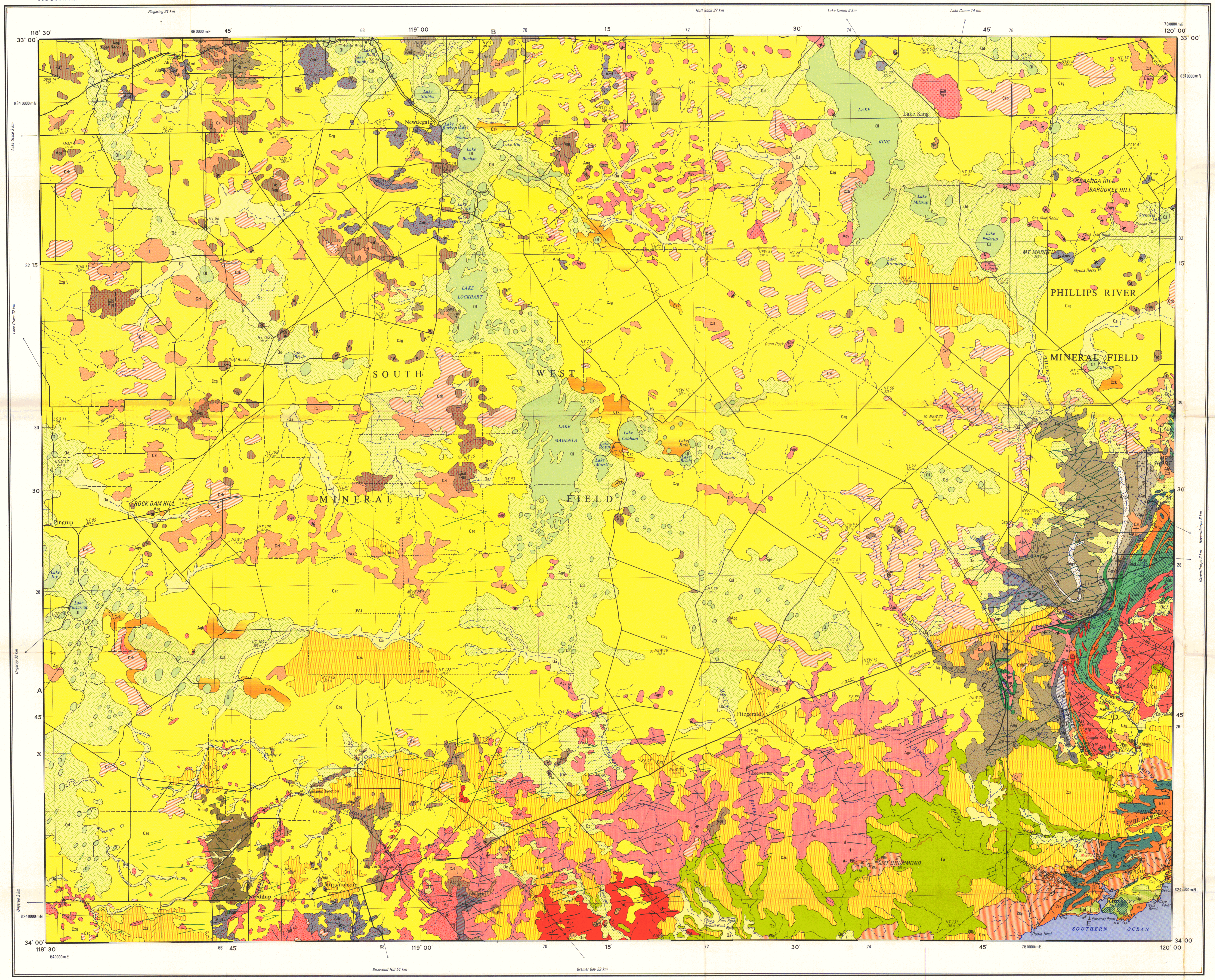
AUSTRALIA 1:250 000 GEOLOGICAL SERIES

NEWDEGATE

GEOLOGICAL SURVEY OF WESTERN AUSTRALIA

SHEET SI 50-8



SYMBOLS

Geological boundary
Fault
Low angle thrust, folded
Shear zone
Strike and dip of strata (facing not inferred)
- inclined
- vertical

Facing
- indicated by cross bedding
- indicated by igneous differentiation

Foliation in metamorphosed sedimentary rocks and fracture cleavage in crystalline rocks
- inclined
- vertical

Alignment of phenocrysts in porphyritic granite
- inclined
- vertical
- undetermined

Metamorphic foliation in crystalline rocks
- inclined
- vertical
- undetermined

Compositional banding in crystalline rock
- inclined
- vertical
- undetermined

Minor fold
Lineation
Sheared and/or strongly foliated granitoid
Trend
Stromatolite

Mineral field boundary
Highway with national route marker
Road
Track
Cutline
Railway, 3' 6"
Siding
Townsite, gazetted (population less than 1000) — Pingrup
Locality — Waiiecoollallup
Homestead — Cocanarup
Landing ground
Horizontal control, major, minor
Bench mark, height accurate — HT 95 297 m
Scarp
Watercourse intermittent
Pool
Position approximate — (PA)

Mine, not being worked (gold unless otherwise indicated) — Copper King
Quarry
Prospect
Battery (abandoned)
Mineral occurrence
- Building stone — Bs
- Copper — Cu
- Gold — Au
- Lead — Pb
- Lithium — Li
- Manganese — Mn
- Molybdenum — Mo
- Rock, crushed aggregate — Rc
- Zinc — Zn

REFERENCE

CAINOZOIC — QUATERNARY

Qa Alluvium — silt, sand and gravel in stream channels
Qc Colluvium and minor alluvium — derived mainly from Czs and Czg
Ql Saline and gypsiferous clay and silt in playa lake deposits
Qd Gypsiferous sand and silt in dunes adjacent to playa lakes; ancient drainage flats; commonly contain calcrete nodules
Qrp Clay and silt in brackish claypans and swamps
Qf Mobile sand in unvegetated coastal dunes and beach deposits
Qpl Calcareous shelly sandstone and grit in coastal dunes, sheets and foreshore reefs; "coastal limestone"; commonly with thin sand cover

CAINOZOIC — TERTIARY

Czs Sandplain — yellow to white sand and clay containing scattered limonite nodules derived from underlying gravel and laterite
Czg Reworked sandplain with undulating surface — contains yellow to white sand and clay, gravel and minor laterite outcrop
Czl Laterite — limonite nodules in cemented matrix; grades upwards into Czs and Czb, and downwards into weathered bedrock
Czb Silcrete — subvitreous siliceous rock with angular quartz grains
Czk Calcrete in layers or nodules, adjacent to playa lakes
Czj Siliceous caprock — chalcedonic silica and siliceous limonite deposits over ultramafic rock
Czo Deeply weathered rock — kaolinized, subsequently ferruginized and silicified

EOCENE

Tp **PLANTAGENET GROUP**: yellow to grey siltstone, silty sandstone and spongolite; mainly belongs to PALLINUP SILTSTONE

PROTEROZOIC

PROTEROZOIC METAMORPHISM — Low-grade metamorphism in the north increasing to upper amphibolite facies in the south

Ꝑc Quartzitic breccia — mainly derived from ꝐBk; may include some sedimentary conglomerate
Ꝑg **Cowerdup Sill**: differentiated sill; mainly consists of altered dolerite, with altered ultramafic at the base and granophyre at the top

Mount Barren Group
ꝐBp **KYBULUP SCHIST**: siltstone, shale and minor sandstone; phyllite and schist; includes kyanite- garnet- and staurolite-bearing schists
ꝐBk **KUNDIP QUARTZITE**: quartz arenite and metamorphic quartzite; locally impure, especially chloritic and micaceous
ꝐBs **STEERE FORMATION**: dolomite; locally stromatolitic

q Quartz dyke
d Dolerite and gabbro dykes — greenschist facies metamorphism
Ar Rhyolite and dacite dykes
Ap Pegmatite in sheets and dykes
Ad Amphibolite dyke

ARCHAEAN

ARCHAEAN METAMORPHISM — Amphibolite facies; Granulite facies

POST-TECTONIC GRANITOID

Agl Granite and adamellite — medium to coarse-grained, abundant large microcline phenocrysts; locally seriate in texture and gradational into Agv
Agv Adamellite — variably textured, medium to coarse-grained; commonly seriate; locally porphyritic
Agz Hornblende granodiorite and quartz monzodiorite — medium to coarse-grained
Agt **RAVENSTHORPE QUARTZ DIORITE**: medium to coarse-grained quartz diorite and tonalite; includes some biotite-hornblende granodiorite
Amv Agmatite — granoblastic or gneissic palaeosome of Ang, Agg or Ann, enclosed by allotriomorphic leucosome of Agv
Amw Agmatite — palaeosome dominantly metasedimentary; includes calc-silicate gneiss and cordierite-bearing schist, with allotriomorphic leucosome of Agv

PRE- AND SYN-TECTONIC GRANITOID

Anb Quartzo-feldspathic gneiss — banded, in part leucocratic, siliceous and flaggy; may be paragneiss derived from psammatic sediments
Ang Granodioritic granofels or gneiss — banded, weakly to strongly foliated; commonly contains amphibolite xenoliths
Angx used where xenoliths constitute about half of the rock
Anf Granoblastic gneiss or granofels — granitic (rarely adamellitic) composition; fine to medium-grained
Ann Leucocratic gneiss — medium to coarse-grained; granodioritic composition and granoblastic texture
An Granitoid — possibly derived from other granitoids by tectonism at greenstone belt margin
Agg Adamellite and granodiorite — granoblastic texture, strongly foliated; foliation defined by entrainment and alignment of biotite (rarely hornblende)
Amf Metamorphosed agmatite — granoblastic or gneissic palaeosome consisting of Agg, minor paragneiss and/or amphibolite, enclosed by granoblastic leucocratic granite and adamellite Anf

Aaa Anthophyllite-cordierite-biotite-quartz rock — may be derived from ultramafic tuff or komatiitic peridotite
Aab Metamorphosed basalt — granoblastic to lepidoblastic; vesicles, amygdales and pillow structures locally preserved
Aad Metadolerite and metagabbro — medium to coarse-grained; commonly with relict ophitic texture
Aah Amphibolite — foliated, lineated or granoblastic; of uncertain origin
Aak Basaltic pyroclastics — fine-grained tuff and agglomerate with minor lapilli tuff; includes pyroclastic rocks with angular fragments of felsic and intermediate lava in a recrystallized basaltic groundmass

Aur Chlorite-tremolite and talc-chlorite schist, anthophyllite-tremolite-talc rock
Aup Serpentinized peridotite

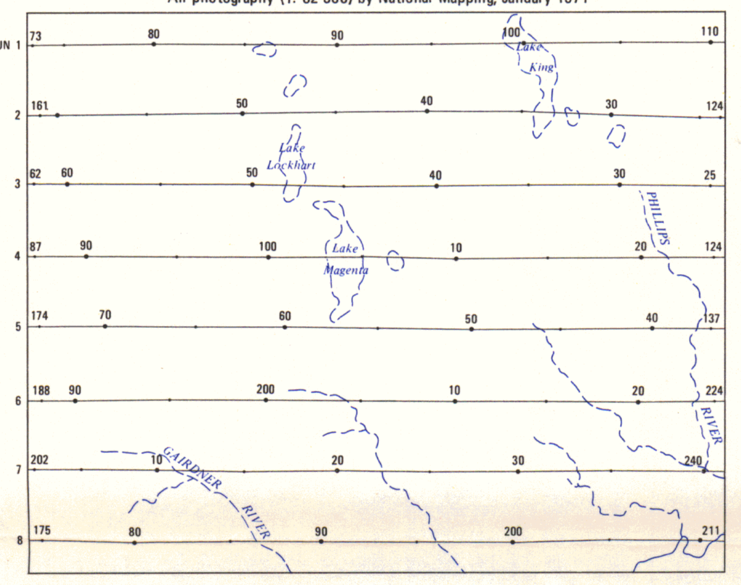
Aic Ferruginous chert — banded; gossanous appearance at surface, pyritic and pyrrhotitic black shale at depth
Alp Pelitic and psammopelitic metasediments — includes garnet-and andalusite-bearing schist
Alq Quartzite — thinly bedded; includes sillimanite-bearing quartzite
Alm Muscovite-biotite-feldspar-quartz schist — perhaps derived from siltstone and sandstone; includes flaggy metasediments

Af Felsic metavolcanic rocks unassigned
Afp Porphyritic metadacite
Afx Metadacitic tuff

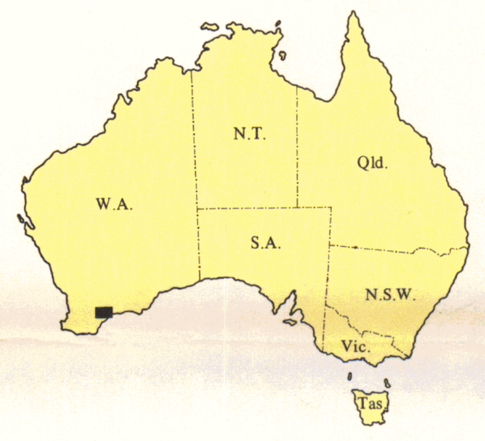
Ahi Metamorphosed banded iron-formation — contains quartz, magnetite, hypersthene and garnet
Ahf Mafic and ultramafic granulite, hornblende-hypersthene (-plagioclase) rocks — includes banded amphibolite and conglomerate with amphibolitic matrix
Ahs Metasediments unassigned

FLIGHT DIAGRAM

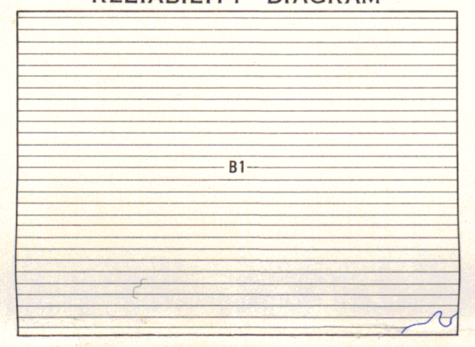
Air photography (1: 82 300) by National Mapping, January 1971



Compiled and published by the Geological Survey of Western Australia. Cartography by the Geological Mapping Section, Department of Mines. Topographic base from compilations by the Department of Lands and Surveys.
Copies of this map may be obtained from the Geological Survey of Western Australia, 66 Adelaide Tce., Perth.
Printed by the Government Printing Office, Perth.



RELIABILITY DIAGRAM



B1 Numerous traverses with air photo interpretation

HON. DAVID PARKER, M.L.A.
MINISTER FOR MINERALS AND ENERGY
A. F. TRENDALL, DIRECTOR, GEOLOGICAL SURVEY DIVISION

SCALE 1 : 250 000

5 0 5 10 15 20 25 30 Kilometres

TRANSVERSE MERCATOR PROJECTION
ZONE 50 AUSTRALIAN MAP GRID

INDEX TO ADJOINING SHEETS

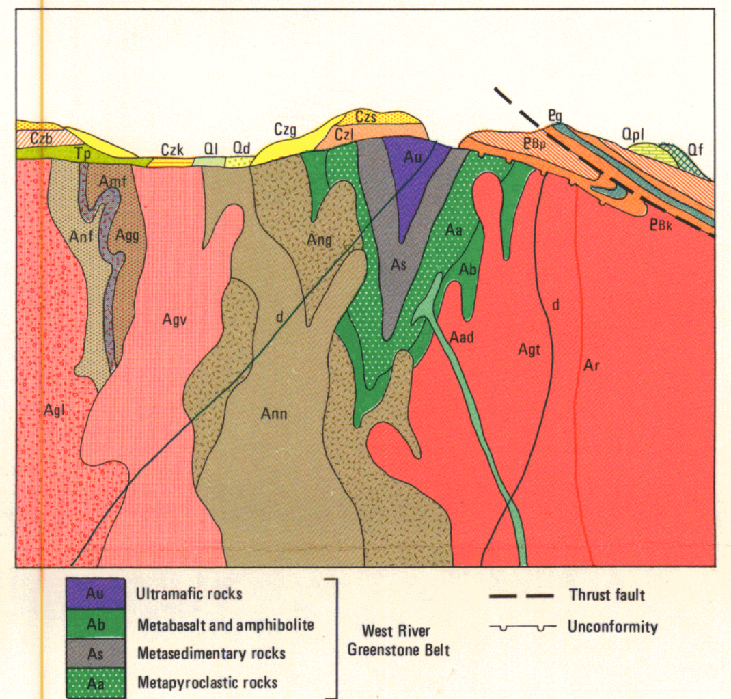
CORRIGIN SI 50-3	HYDEN SI 50-4	LAKE JOHNSTON SI 51-1
DUMBLEYUNG SI 50-7	NEWDEGATE SI 50-8	RAVENSTHORPE SI 51-5
MT BARKER SI 50-11	BREMER BAY SI 50-12	SOUTHERN OCEAN

Geology by R. Thom, A.H. Hickman and R.J. Chin, 1978

DECLINATION DIAGRAM

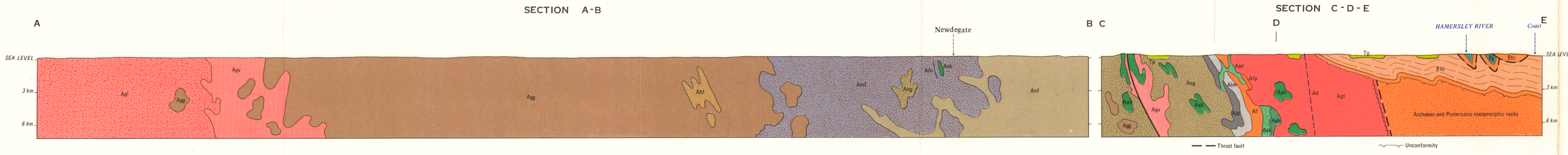
The lines indicate magnetic declination, 1980. means declination is east and correction must be added to compass bearing to give true bearing; means declination is west and correction must be subtracted from compass bearing to give true bearing.
Annual change is negligible

DIAGRAMMATIC RELATIONSHIP OF PRINCIPAL ROCK UNITS



DIAGRAMMATIC SECTIONS

NATURAL SCALE



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