

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT.
BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS.

CORNISH, W.A. 4-MILE GEOLOGICAL SERIES

Sheet F/52-1, Australian National Grid.

EXPLANATORY NOTES No. 26.

*Issued under the Authority of Senator the Hon. W. H. Spooner,
Minister for National Development.
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DEPARTMENT OF NATIONAL DEVELOPMENT.

Minister: SENATOR THE HON. W. H. SPOONER, M.M.

Secretary: H. G. RAGGATT, C.B.E.

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS.

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Explanatory Notes on the Cornish Geological Sheet

Compiled by A. T. Wells

INTRODUCTION

The Cornish Sheet, in the north-eastern part of the Canning Basin, lies between latitudes 20° and 21° South, and longitudes 126° and 127°30' East. There is no permanent settlement within the Sheet area, although Balgo Mission is only about 18 miles east of the north-eastern corner and Billiluna Station is 56 miles by road from Delivery Camp. The Canning Stock Route crosses the Cornish Sheet and is used by Billiluna Station for driving stock to Carnegie Station, about 500 miles to the south. Access to the area is by way of a vehicle track which follows the Canning Stock Route as far as Well 48, near Godfreys Tank. Godfreys Tank is 107 miles from Billiluna Homestead via this track. There is a subsidiary track from Billiluna Homestead to Werriada Yard at the southern extremity of Gregory Salt Lake.

Annual rainfall in the area is usually less than ten inches, but ample supplies of potable water can be obtained from wells along the Canning Stock Route.

The conditions encountered while carrying out a geological reconnaissance of the north-east Canning Basin are described by Casey & Wells (1956).

Previous Investigations

The earliest explorer in the area was A. C. Gregory (1857), who in 1856 followed Sturt Creek southwards and discovered Gregory Salt Lake.

In 1873 Col. P. E. Warburton (1875) crossed the 'Great Sandy Desert' from Alice Springs to the Oakover River. His exploration route passed about 20 miles south of Gregory Salt Lake at Lady Edith Lagoon.

D. W. Carnegie's exploration route (1898) from the West Australian Goldfields to Halls Creek passed across the western part of the Cornish Sheet and he named many prominent features.

A practicable stock route between Wiluna and Halls Creek was surveyed by Canning in 1906 and 1907. In 1908 H. W. B. Talbot accompanied Canning when the stock route was opened and published (1910) an account of the geology and water supplies. E. Kidson (1921) recorded magnetic observations along the Stock Route. L. J. Jones (1922) travelled along the Canning Stock Route and made a geological investigation of Block 21H (20-22°S, 123°30' — 129°E) for the Locke Oil Development Syndicate and Kimberley Petroleum. He describes a dome $1\frac{3}{4}$ miles east of No. 48 Well and a terrace or monoclinical fold two miles west of No. 50 Well, Canning Stock Route.

In 1925, Terry (1927) travelled from Halls Creek to Godfreys Tank as part of an exploring and prospecting expedition in north-eastern Australia.

W. G. Woolnough (1933) described a flight from Louisa Downs to Gregory Salt Lake, in a report on aerial survey operations in Australia. D. F. Mackay (1934) covered a great deal of the Canning Basin during an aerial survey, but very little of the Cornish Sheet was included.

A preliminary aerial reconnaissance of the desert area was carried out by C. St J. Bremner (1940) for Caltex (Aust.) Oil Development Pty Ltd, mainly to assess transportation difficulties and the distribution of outcrops.

W. H. Maddox (1941) made a geological reconnaissance in the north-eastern part of the Fitzroy Basin, including a traverse to Godfreys Tank. An account of the geology south and south-west of Balgo Mission by H. J. Evans (1948) in an unpublished report to Frome-Broken Hill Co. Pty Ltd includes a small area of the Cornish Sheet.

F. Reeves (1949) carried out extensive aerial and ground geological reconnaissance in the Canning Basin for Vacuum Oil Co. Much of his report covering the north-eastern area is based on work by W. H. Maddox and H. J. Evans.

The Sheet was photographed by the R.A.A.F. in 1953 at a scale of 1:50,000, and a four-mile photomosaic was compiled by the National Mapping Division. In 1954, the Bureau of Mineral Resources, Geophysical Section, carried out an aeromagnetic reconnaissance of the Canning Basin; portions of three flight lines from Halls Creek cross the Sheet.

A geological reconnaissance of the area was made by the Bureau of Mineral Resources in 1955, and gravity readings were taken by a geologist of West Australian Petroleum Pty Ltd, who accompanied the party. Astrofixes were taken by the Western Australian Lands and Survey Department the same year. In 1956 surveyors from the Department of the Interior observed astrofixes and instrument-levelled heights along the Canning Stock Route as far south as Well 48. In 1957, as part of the Bureau of Mineral Resources helicopter survey of the Canning Basin, gravity observations were made in the south-western sector of the Cornish Sheet.

Terry (1957) summarizes some of the exploratory work in the Canning Basin.

The results of astrofixes on this Sheet are tabulated below. Those with prefix N were observed by the W.A. State Lands & Surveys Department, and those with prefix KBS by the Department of the Interior.

Astro-Station	Latitude	Longitude
N.10	20°21' 14.58"	126°46' 35.7"
N.11	20°44' 35. 2"	126°39' 45.0"
N.12 (Approx.)	20°58' 10. 0"	127°27' 46.0"
N.13	20°35' 05. 3"	127°19' 11.8"
KBS 1	20°16' 13. 2"	126°33' 04.3"
KBS 2	20°13' 0. 6"	126°56' 37.3"
KBS 3	20°00' 46. 2"	127°18' 42.9"

PHYSIOGRAPHY

The main land-forms in the area are dissected hills, sand plains, and alkali or clay flats. The largest areas of dissected hills are the Minnie Range, Bishop Range, Southesk Tablelands, and the hills near Godfreys Tank. The higher peaks are mostly about 350 feet above the level of the surrounding sand plain, and 1,300 feet or less above sea level. Mesas and buttes are common in the dissected hills, especially where the sediments are flat-lying. In places where the sediments are folded, mesas and buttes are formed only where a well developed duricrust or laterite cap has formed and has been subsequently deeply dissected.

The sand plain of the desert ranges from about 800 to 950 feet above sea level. The sand plain on the western margin of the Sheet and the depression in which Gregory Salt Lake is situated are topographically the lowest. Gregory Salt Lake and adjacent smaller lakes are alkali flats formed by internal drainage; the surface of the lakes consists of alluvium with some gypsum and salt deposits.

The largest drainage channel on the sheet is Sturt Creek, which flows into Gregory Salt Lake. A smaller stream, Djaluwon Creek, flows into the southern end of the lake. Any streams draining the dissected hills are very short, and on reaching the sand plains mostly terminate in claypans with associated alluvial deposits. Examples of this type of stream are those north of the Roberts Range and a short creek emptying on the flat on which Well 50 is situated.

The area was probably uplifted uniformly, and the initial surface (Cotton, 1945) was probably a plain modified only by the more prominent structural elements. After a period of lateritization, which apparently affected only some parts of the area, the land surface was subjected to desert weathering, and the present landform is the result of an arid erosion cycle. Stream erosion was probably the most potent factor in reducing the upland areas. Redistribution of pediments gave a plain of arid erosion. Gregory Salt Lake is a local base level for stream alluvium brought into the lake by Sturt Creek.

STRATIGRAPHY *

No Palaeozoic rocks older than Permian are exposed on the Sheet and no basement rocks crop out. Outcrops are generally poor except in areas of mesa and butte topography or in folded sediments adjacent to prominent fault-lines. The rocks are generally deeply weathered and a laterite cap is still preserved on much of the quartz greywacke and the finer-grained clayey sediments.

PERMIAN

Permian rocks cover the largest surface area, and are represented by both marine and estuarine or freshwater sediments. Permian rocks are well exposed in the dissected sediments in the Southesk Tablelands and Bishop Range, where the sediments are folded. No Permian formations older than the Noonkanbah

* Specimen Numbers (e.g. C.23) refer to samples collected during 1955 and housed in the Bureau of Mineral Resources Museum, Canberra.

TABLE I. — STRATIGRAPHY OF THE CORNISH SHEET.

Age	Map Symbol	Formation	Minimum Thickness in feet	Lithology	Fossils	Correlation
QUATERNARY	Qa		20	Alluvial silt & sand Aeolian sand Travertine Caliche Evaporites — gypsum and halite		
	Qs		0-120			
	Ql		10			
	Qc		5			
	Qt		1			
CRETACEOUS	Kg	Godfrey Beds	300	Coarse and fine quartz sandstone, thin bedded, some siltstone	<i>Rhizocorallium</i> and ? <i>Etea</i> sp.	Anketell Sandstone of southwest Canning Basin. (Traves, Casey, & Wells, 1956).
TRIASSIC OR JURASSIC	M	Culvida	30	Well bedded sandstone and shale	<i>Isaura</i> sp.	
	Mc	Sandstone	100	Coarse current - bedded sandstone and inter - bedded fine white shale	Numerous plants.	Erskine Sandstone of Fitzroy Basin. (Brunnschweiler, 1954).
TRIASSIC	Rb	Blina Shale	100	Medium micaceous shale and sandstone, well bedded	<i>Isaura</i> sp., <i>Lingula</i> sp. <i>Pseudomonotis</i> sp.	Blina Shale of Fitzroy Basin, (Reeves, 1951).
PERMIAN	Pr	Liveringa Formation { Condren Sandstone Member Balgo Member Lightjack Member Noonkanbah Formation	DISCONFORMITY 250	Massive jointed sandstone and interbedded laminated sandstone	Plants	Middle plant-bearing beds of Liveringa Formation.
	Po		200	Quartz greywacke, medium sandstone, some shale	<i>Stutchburia</i> cf. <i>muderongensis</i> , <i>Atomodesma</i> sp. ind.	Lightjack Member of Liveringa Formation. (Guppy et al., 1958).
	Pn		50 +	Calclutite and fine quartz greywacke with concretionary sandstone and shale	Marine macrofossils.	

Formation have been recognised : they may be concealed by the younger formations or may be part of the undifferentiated Permian sections not visited, though, as neither the Poole Sandstone nor the Grant Formation could be recognised by photo-pattern, most of the sediments probably belong to the Noonkanbah or Liveringa Formation.

The *Noonkanbah Formation* has very poor outcrops and for the most part is obscured by deposits of alluvium and sand. The formation was mapped by its lithology, photo-pattern, and type of outcrop, especially where the fine sandstone and shale crop out sporadically on clay flats and are overlain by the fossiliferous Balgo Member. The Noonkanbah Formation is made up chiefly of calcilutite and fine quartz greywacke, with some concretionary sandstone and shale.

Outcrops of the *Balgo Member* of the *Liveringa Formation* are usually well exposed, but in some places it is hard to distinguish the Balgo Member from the Noonkanbah Formation in photo-pattern, especially where relief is not great. As a consequence many of the Permian sediments in the Southesk Tablelands and Bishop Range cannot be identified and are mapped as undifferentiated Noonkanbah Formation and Balgo Member. Fossiliferous Balgo Member crops out at C47, but no other localities with well preserved fossils were found. At C47 the sediments are fine silicified sandstone and fine micaceous ripple-marked sandstone overlying concretionary micaceous quartz-greywacke; the greywacke contains the numerous marine fossils.

In contrast to the Balgo Member and the Noonkanbah Formation the *Condren Sandstone Member* of the *Liveringa Formation* usually crops out as mesas and buttes, breakaways, and dissected rounded hills, which produce a distinctive photo-pattern. The outcrops are mostly light-coloured and form prominent topographic features with good exposures. The member has a well developed joint-pattern, and erosion along the joints often produces an echelon arrangement of conical hills, notably in some parts of the Southesk Tablelands and in the Roberts Range. A contact of the Condren Sandstone Member with a conglomerate possibly of the overlying Cretaceous Godfrey Beds was observed at C59, 13 miles north-north-west of Godfreys Tank. The contact surface dips at 10° - 20° east. The underlying sandstone is a micaceous shaly medium-grained current-bedded and ripple-marked sandstone with some inter-bedded shale. The lithology is similar to that of other outcrops of Condren Sandstone in the north-east part of the Canning Basin. The sandstone was laid down in an estuarine or possibly near-shore shallow-water marine environment. The contact with the Balgo Member is probably conformable.

TRIASSIC-JURASSIC

Several small outcrops of micaceous shale and fine sandstone contain abundant *Isaura* sp., *Lingula* sp., and a lamellibranch form aff. *Pseudomonotis* (R. O. Brunnschweiler, pers. comm.). In the Bishop Range (C13, C14) this shale overlies Noonkanbah and other Permian sediments without apparent unconformity; but at M29 and C31 in the Minnie Range a similar *Isaura*-bearing shale overlies a plant-bearing sandstone and siltstone of Upper Triassic or Lower Jurassic age

which has been named the *Culvida Sandstone* and may be the equivalent of the Erskine Sandstone of the Fitzroy Basin (Brunnschweiler, 1954). The shale in the Bishop Range has been identified with the *Blina Shale* (Reeves, 1951) of the Fitzroy Basin, and that which overlies the Culvida Sandstone has been mapped as undifferentiated Mesozoic; but the two are indistinguishable.

The Blina Shale has no characteristic topographic expression and may either cap isolated peaks or form low dissected hills of moderately dipping strata.

The *Culvida Sandstone** (Casey & Wells, 1961) is only exposed in the Minnie Range near Well 50 on the Canning Stock Route. The best exposures are on the banks of a small watercourse that drains eastward on to the claypan on which Well 50 is situated. White (1957) has described the plants collected from C8 and C62. The minimum thickness of the formation, estimated from several sections in isolated breakaways, is probably less than 200 feet. The lithology of this formation is much more variable than that of the Blina Shale: sandstone, with abundant clay pellets probably derived from the interbedded siltstone. The Culvida Sandstone mostly forms low hills, and some isolated peaks such as those at Chilpada Chara. The slopes of the peaks give a characteristic smooth pattern on the air photographs.

CRETACEOUS

The *Godfrey Beds* (Elliott, Casey, & Wells, in McWhae et al., 1958) crop out near Godfreys Tank, predominantly as massive quartz sandstone, with a minimum thickness of 300 feet. The type area is C3a, 3.2 miles north-northeast of Well 48 on the Canning Stock Route, where the Beds crop out as prominent breakaways and many promontories and prominent peaks. They also crop out at Mount Cornish and Mount Elgin. Sleep-sided narrow valleys have been eroded in the sediments near Godfreys Tank, and some of them terminate in large pot-holes that have been excavated by small waterfalls: two such holes are Godfreys Tank and Breadens Pool. The breakaways are capped by a very massive sandstone up to 20 feet thick which is underlain by a well bedded comparatively softer sandstone. In several places the worm trail *Rhizocorallium* and ? *Etea* sp. indicate a probable Lower Cretaceous age for the Godfrey Beds. At the type section, which is 179 feet thick, *Rhizocorallium* was found in a quartz sandstone about 45 feet from the base of the breakaway.

At C59 the Condren Sandstone Member is overlain by a coarse conglomerate with boulders of sedimentary rocks up to two feet across, which is probably the basal conglomerate of the Godfrey Beds. In the Minnie Range two photo-interpreted outcrops of the Godfrey Beds overlie the Culvida Sandstone and at C23 an outlier of sandstone with *Rhizocorallium* overlies Noonkanbah Formation or Balgo Member. In both areas the nature of the contact is not known. The Godfrey Beds are nowhere in contact with younger formations.

The closest outcrops of Cretaceous rocks to these on the Cornish Sheet are at Brookman Waters on the Stansmore Sheet (F/52-6), where siltstone and claystone with indeterminate radiolaria (cf. *Cenosphaera*, identified by Dr I. Crespin) crop out.

*Called *Culvida Formation* on the accompanying map.

QUATERNARY

Salt deposits are not widespread; they are found as a thin crust on the surface of Gregory Salt Lake and on some of the smaller claypans and salt pans on the Sheet. Thin deposits of evaporite have been reported in several of the smaller streams that drain into the Salt Lake. *Caliche* and *travertine* are common near the groups of claypans and salt lakes at the north-eastern corner of the Sheet. A very large area of travertine stretches southwards from Well 50 on the Canning Stock Route as far as Lady Edith Lagoon and thence north-westwards to Well 49 on the Canning Stock Route. Large masses of travertine occur in the sand plain area south of Fisher Bluff and between Wells 45 and 46 on the Canning Stock Route. These large deposits probably lie on low ground, where ground water evaporates very close to the surface. A coquinite with numerous small turretted gastropods occurs in the travertine at C11.

Alluvium occurs either as small fans and outwash plains where small streams draining the dissected hills empty their load onto the sand plain, or as comparatively larger areas in the north-east corner of the Sheet area, derived from the transported load in Sturt Creek. The surface of Gregory Salt Lake is predominantly alluvium with some salt and caliche. A notable feature of the alluvium is that it is light grey or almost white.

Aeolian sand covers extensive plains and is heaped into numerous seif chains trending east-west. A thin coating of hematite on the sand-grain surfaces gives the sand its red or orange colour. The sand is generally medium to fine-grained and subangular to subrounded.

STRUCTURE

The Cornish Sheet area forms part of the very large intracratonic Canning Basin. No basement rocks are exposed and the thickness of sediments can only be estimated approximately from the scant geophysical data.

The sediments of the Canning Basin are cut by numerous faults trending north-north-west. They are nearly parallel to the trend of the Fenton and Pinnacle Faults to the north-west, but do not appear clearly to define shelf and trough areas. The available reconnaissance gravity data indicate a trough whose deepest part passes south-south-east from Godfreys Tank and then south-east through into the Southesk Tablelands. To the north-east and south-west of this trough gravity values are relatively high, and the sediments therefore probably much thinner. Another gravity high trends east-north-east in the north-west corner of the Sheet: it may indicate a basement ridge at the south-eastern end of the Fitzroy Basin. The faults on this Sheet therefore may not be continuations of the Pinnacle and Fenton systems, although they may have a similar origin. Variation in the thickness of the Upper Proterozoic rocks may greatly influence the gravity values on the Sheet. Faults are generally parallel to the trend of the steep gradient, but not close to it.

Faulted monoclinal folds, asymmetrical folds, and dome-and-basin structures are present in the Minnie and Bishop Ranges and the Southesk Tablelands. These structures are common in hinge-line areas affected by mass slumping and differential compaction in the thicker section of sediments in the adjacent troughs.

The structure of the Godfrey Beds at Godfreys Tank is not clear. The numerous dips measured in the area suggest several small folds with gently dipping limbs. The most prominent appears to be a south-pitching syncline with its axis roughly coinciding with the trend of Breaden Valley.

Two unusual structures occur on the Sheet. One is an almost circular dome about two miles in diameter near C23 in the Southesk Tablelands. The second is a basin about $2\frac{1}{2}$ miles in diameter, four miles south-east of C41. The beds in the basin dip east-north-east in its south-western quadrant. No dips were measured in the dome. These structures are unusual in being almost perfectly symmetrical, but they may be, like the other structures referred to above, the concomitants of slump movement in an unstable area. The size and symmetry of the dome are not inconsistent with the dimensions of domes produced by salt intrusions. (A large salt mass was recently discovered south of the Fenton Fault in WAPET's Frome Rocks No. 1.) There is no evidence of the presence of salt or associated rocks at this dome, but a large mass of salt may nevertheless be present at depth.

Gregory Salt Lake lies in a topographic depression, but there is no evidence from the surrounding sediments of the structural origin of the lake. Any up-lifting of the sediments along the prominent fault-lines to the south may have been instrumental in damming back the lake.

ECONOMIC GEOLOGY

Petroleum Potentialities

The area must be considered to have some possibility of petroleum accumulations. Permian and Mesozoic rocks crop out and Palaeozoic sedimentary rocks older than Permian may be present in the basin sediments. An appreciable thickness of sediments is indicated by the large relatively low gravity anomalies, but whether this reflects a thickness of Phanerozoic rocks or reflects a change in basement density is not known.

The Mesozoic rocks have little potential for petroleum: they are relatively thin and in most places deeply dissected.

Source beds for petroleum may be present in Palaeozoic rocks in the trough area. If so, then drainage from these beds may give petroleum accumulation in reservoir rocks, which could well develop near hinge-line areas of sedimentation. The shale, siltstone, and calcareous beds in the Noonkanbah Formation would be suitable as cap and source rock. The Permian formations could possibly act as

reservoir beds in the northern half of the Sheet, where they are overlain by Mesozoic rocks.

Apart from the small dome near C23, there are no well defined closed anticlines in the Permian rocks, and most folding is monoclinal, near faults.

Water Resources

Surface water is limited to rock-holes, water-holes, and water that may accumulate in any of the salt lakes and claypans. Sturt Creek has many water-holes and several are present in the short streams interconnecting the numerous lakes and claypans in the north-eastern part of the Sheet. Most of them are used for watering cattle. Two of the largest rock-holes in the area are Godfreys Tank and Breadens Pool. Godfreys Tank holds about 40,000 gallons, but is inaccessible to stock. Breadens Pool could be used for watering a few head of stock at a time, and when full holds about 20,000 gallons.

Wells on the Canning Stock Route are on the average 15 miles apart; the northernmost is Well 51 near Delivery Camp Plain. The wells have struck good supplies of water, generally at depths from 20 to 70 feet, mostly in Permian sediments. The supply from these wells as shown on the Canning Stock Route map is given in the Table below.

Well No.	Depth (feet)	Storage (gallons)	Supply (gallons per hour)	Quality of water
45	28	2,250	1,000	Excellent
46	27	1,300	2,000	"
47	25	1,500	1,260	"
48	66	7,650	130	(Now caved in)
49	50	4,800	500	Excellent
50	62	3,300	500	"
51 (Weriaddo)	22	900	1,750	Poor

The spoil from Well 51 is hard sandy clay with large amounts of gypsum. These materials may be connected with the evaporite deposits in Gregory Salt Lake.

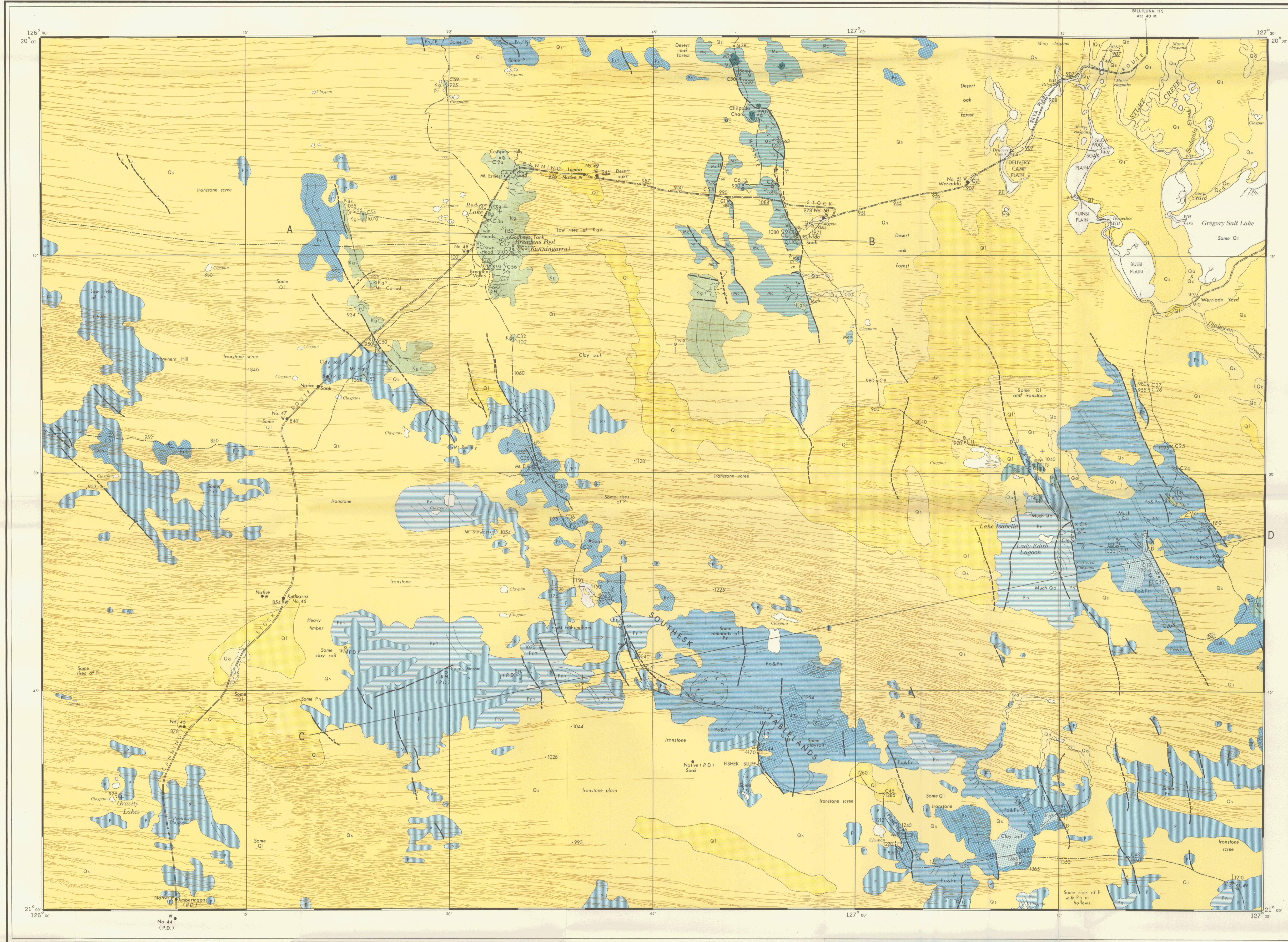
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CORNISH
WESTERN AUSTRALIA

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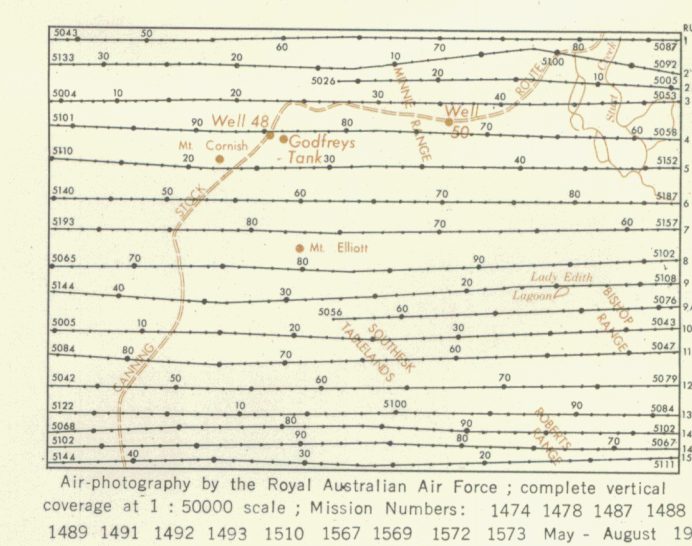


Reference

CENOZOIC	QUATERNARY		Qa	Alluvium	
			Qs	Sand	
			Ql	Hard travertine, tufa	
			Qc	Caliche	
			Q1	Evaporites	
MESOZOIC	CRETACEOUS	Godfrey Beds	Kg	Coarse and fine, thin-bedded quartz sandstone, some siltstone	
	TRIASSIC – JURASSIC		M	Thin-bedded sandstone and shale	
		Culvida Formation	Mc	Coarse, current-bedded sandstone and interbedded fine white shale	
	TRIASSIC	Blina Shale	Bl	Micaceous shale and medium-grained, thin-bedded sandstone	
	PALAEOZOIC	PERMIAN	Liversidge Formation	Disconformity	
Condren Sandstone Member				Pr	Massive jointed sandstone and interbedded laminated sandstone
Balgoo Member				Po	Quartz greywacke, medium-grained sandstone and some shale
Lightjack Member or Noonkanbah Formation				Pn/Pj	Undifferentiated
Balgoo Member & Noonkanbah Formation				Pc&Pn	Undifferentiated
Noonkanbah Formation			Undifferentiated		
			Undifferentiated	Pa	Calcilutite and fine quartz greywacke with minor sandstone and shale
			Undifferentiated	P	Sandstone and shale
Unconformity					
AMBIAN	UNDIFFERENTIATED		pc	Metamorphic rocks with granite intrusions and sediments (in section only)	

- Established geological boundary, position approximate
- Established fault, position approximate, relative movement and dip indicated where known
- Established fault, concealed
- Inferred fault
- Inferred fault, concealed
- Strike and dip of strata
- Horizontal strata
- Dip < 15°
- Dip 15° - 45°
- Trend of bedding
- Joint pattern
- Marine macrofossil locality
- Plant fossil locality
- Test reference to specimen locality
- Route of geological party's traverse
- Geological party's traverse along vehicle track
- Sand dunes
- W.H. O. Waterhole
- R.H. O. Rockhole
- W. Well
- Stock route
- 1265. Height in feet, instrument levelled
- 1190. Height in feet, barometric
- 1200. Astro station
- (P.D.) Position doubtful

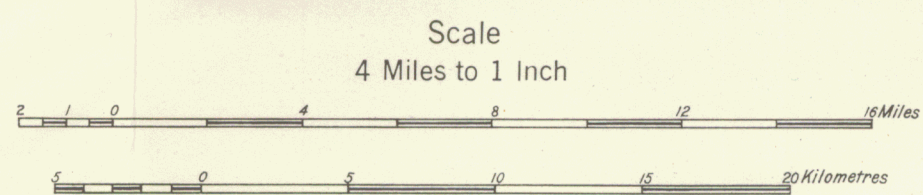
AIR-PHOTOGRAPH FLIGHT DIAGRAM



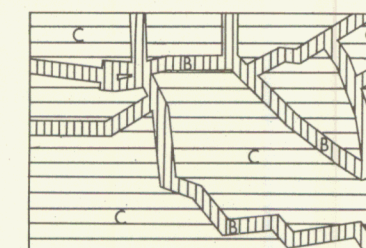
INDEX TO ADJOINING SHEETS

CROSSLAND	MT BANNERMAN	BILLILUNA
DUMMER	CORNISH	LUCAS
PERCIVAL	HELENA	STANMORE

ANNUAL CHANGE 30° E



GEOLOGICAL RELIABILITY DIAGRAM

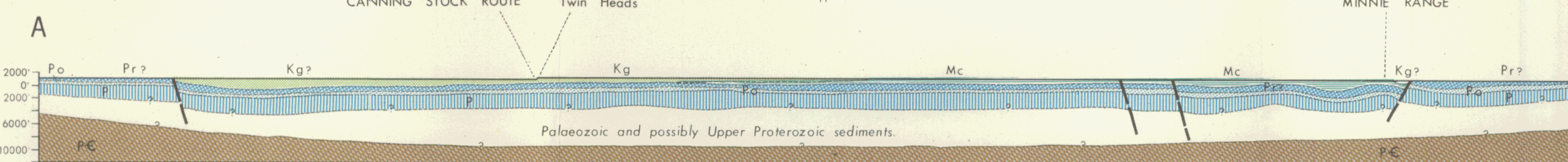


Geology by: J. N. Casey, A. T. Wells.
Compiled 1959 by: J. N. Casey, A. T. Wells.
Drawn by: Adastral Airways Pty. Ltd.



Section A-B

SCALE 1/4" = 1 MILE



Section C-D

SCALE 1/4" = 1 MILE

