

EIS 154 Vol 3

AB030957

Soils and vegetation along the Moomba-Sydney natural gas  
pipeline in NSW

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**Soil Conservation Service of N.S.W.**



# **SOILS AND VEGETATION OF THE NATURAL GAS PIPELINE**



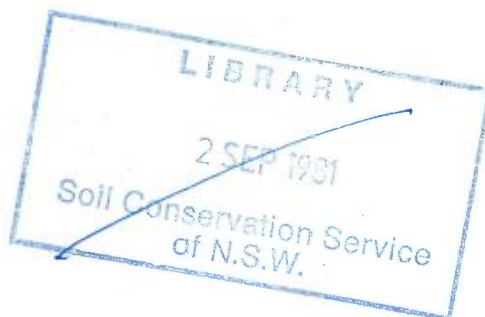
**Section 3**

SOIL CONSERVATION SERVICE OF NEW SOUTH WALES

SOILS AND VEGETATION  
of the  
MOOMBA-SYDNEY NATURAL GAS PIPELINE

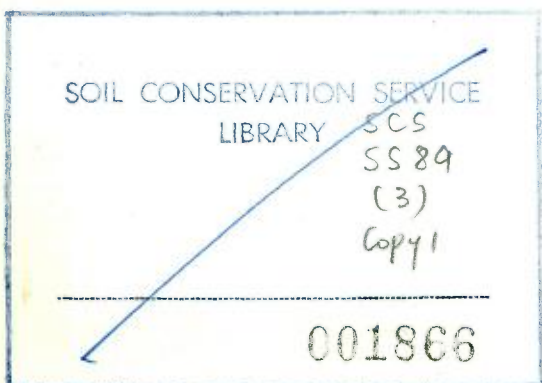
SECTION 3  
"KILPARNEY", MOUNT HOPE to BURCHER

by  
G.M. Cunningham



EIS 154

1980



ISBN 07240 1988 X  
ISBN 07240 1991 X

## INTRODUCTION

Laying of the Moomba-Sydney Natural Gas Pipeline commenced in the vicinity of Rock Holes Tank, to the north of Mount Hope, in June 1974.

From there, trench excavation and pipelaying proceeded south-east towards Sydney and north-west to the Queensland border.

The trench which was excavated during pipelaying operations provided an ideal site for viewing and sampling the variety of soil profiles encountered.

For the purposes of soil sampling, the pipeline transect was divided into the following four sections:

*Section 1 - Queensland border to the Darling River.*

*Section 2 - Darling River to "Kilparney", Mount Hope.*

*Section 3 - "Kilparney", Mount Hope to Burcher.*

*Section 4 - Burcher to Gunning.*

This publication contains profile details for the soil profiles encountered in the 160 km section 3 from "Kilparney", Mount Hope (465 miles from Moomba) to Burcher (564 miles from Moomba). Field work was carried out between June, 1974 and January, 1975.

The pipeline transect crossed areas of the South-West Cobar Peneplain previously soil surveyed by Stannard (1958). Other broad-scale soil surveys of the area have been published by Prescott (1947), Condon (1961) and Northcote (1966) but these have been based for the most part on limited field work in the area.

Excavation of the pipeline trench offered an opportunity to update available soils data for the area and in hindsight was a most valuable exercise.

## PROCEDURES

The pipeline right-of-way was initially stripped of its topsoil for a depth varying from about 5 to 15 cm to assist in revegetation once works were complete. Consequently the profiles exposed by the trench diggers lacked a topsoil. This problem was overcome by sampling adjacent undisturbed sites as the excavation was constructed very close to the edge of the right-of-way. An indication of the depth of topsoil stripping was invariably readily available and this allowed the composite profile to be "reconstructed" from the topsoil and right-of-way sections.

Samples were taken whenever a major change in slope, geology or soil profile was evident. Samples of rock were collected wherever they were exposed in the trench and were sent to Dr. John Hobbs of the Department of Mines for identification.

Each site was identified in terms of *miles and feet* from Moomba using as a basis the survey marks placed along the surveyed line.

At each soil sample site the profile was properly exposed for its whole depth by picking the surface with a geological pick. The various horizons were then delineated on morphological features and any inclusions noted. The boundaries between horizons were described and then a sample of each horizon was collected.

Very limited field testing was carried out on the samples because of the speed with which the operation had to be carried out to keep up with the trench digger and additionally to be finished before pipelaying operations began.

The samples were labelled with profile number and horizon details before being brought back to Condobolin for more detailed examination.

The topography, land use and vegetation were described at each sample site and these details accompany each profile description.

The name of the property as well as the County name are provided for each site while in the Central Land Division, Parish names are given as well.

Overall, some 199 sites were sampled during the survey period. (These are numbered from GP 1 to GP 199 (including GP 92A and GP 92B but omitting GP 33).

In the laboratory, "field" pH measurements (using Raupach indicator) were made and moist and dry (when required) colour determinations using the *Revised Standard Soil Colour Chart* (Anon 1970) were carried out on all samples. In addition all samples were textured by hand manipulation and gravel contents were measured. Where necessary, tests for lime (calcium carbonate) and soluble salts were carried out.

Finally, each soil profile was assigned a Northcote (1971) coding. This provided some problems, since at a number of sites there appeared to be at least two soils present. In such cases, the Northcote coding for the uppermost profile was given and followed by a notation such as "..... overlying clay loam or sandy clay loam material" etc.

#### DATA PRESENTATION

The data obtained during the survey has been presented in the form similar to that used by Stace et al (1968) with details of the pH of each horizon being contained in Appendix I.

Climatic data is included for each site and the closest long term meteorological station records have been used in each case.

Topography descriptions are based on slope classes and the following terms have been used - level (less than 1% slope), slightly undulating (1-3% slope), very gently undulating (3-5% slope) and gently undulating (5-10% slope).

The vegetation descriptions provide an overall perspective of the plant community present at the site. A short description (e.g. *bimble box woodland*) is provided and this is followed by a detailed listing of the species observed in the tree and shrub layers and in the ground flora. Every effort has been made to make these lists as complete as possible for the sampling date.

As well as the species lists, an indication of tree and shrub density is provided by the symbol T followed by numbers - the 'T' representing trees and the number signifying the average distance in metres between the trees. (e.g. *T50 indicates that trees are spaced on average 50 metres apart*).

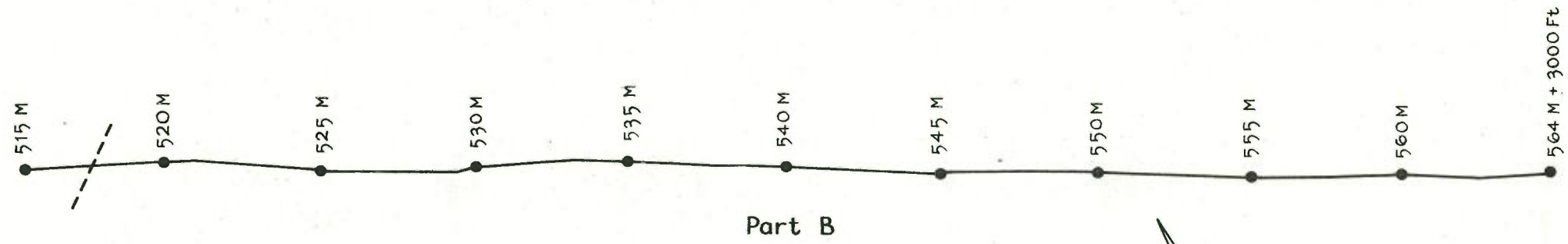
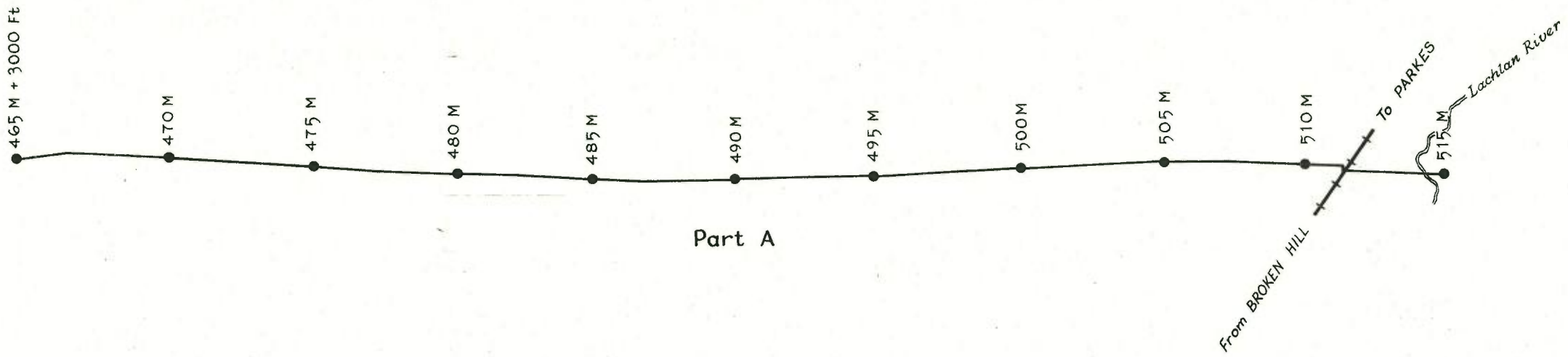
For some sites, a range of spacings (e.g. T10-50 (30)) is given and this is followed by the average spacing in brackets. Treeless or shrubless areas were signified by the symbol T0.

#### ACKNOWLEDGEMENTS

The assistance of Mr. David Cosgrove in the laboratory testing of many of the soil samples described here is gratefully acknowledged. Mr. Cosgrove also assisted in the field on many occasions. Others who helped in field sampling were Messrs Hugh Brownlee, Daryl Green, Lyle Walker and Peter Milthorpe and my wife who assisted on many occasions when others were unavailable.

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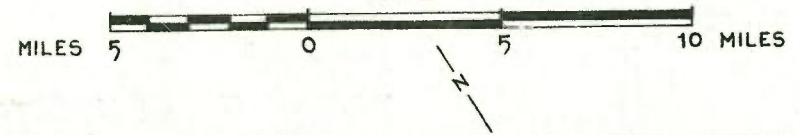


Locality Map

NATURAL GAS PIPELINE

SECTION 3

SCALE



LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 465 miles + 330 ft. from Moomba

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 25/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Drainage flat

LAND USE: Grazing

VEGETATION: White cypress pine community

Trees and Shrubs: T1-20 (5) White cypress pine (*Callitris columellaris*),  
yarran (*Acacia homalophylla*).

Pastures: Purple love grass (*Eragrostis lacunaria*), plantain (*Plantago varia*), variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), saffron thistle (*Carthamus lanatus*), australian bindweed (*Convolvulus erubescens*), kidney weed (*Dichondra repens*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), crowfoot (*Erodium* sp.), purple daisy burr (*Calotis cuneifolia*), rock fern (*Cheilanthes tenuifolia*), native carrot (*Daucus glochidiatus*), desert chinese lanterns (*Abutilon otocarpum*), fuzzweed (*Vittadinia triloba*), panic grass (*Panicum* sp.).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	
	0-10	- Dark reddish brown (2.5YR 3/4); clay loam; massive; Clear to:-
	10-31	- Dark red (2.5YR 3/6); light clay; massive; roots; sand grains and some gravel. Diffuse to:-
	31-51	- Dark red (2.5YR 3/6); light to medium clay; massive; roots. Diffuse to:-
	51-103	- Red (2.5YR 4/6); light medium clay; weak sub-angular blocky (1-2 cm); roots. Diffuse to:-
	103-179	- Red (2.5YR 4/8); light medium clay; hardpan; massive; roots; gravel to 2 cm diam.; carbonate concretions.

LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 466 miles + 2650 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 25/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: 1611 mm.

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: White cypress pine community

Trees and Shrubs: T20 Large white cypress pine (*Callitris columellaris*) with young saplings less than 1 metre apart, budda (*Eremophila mitchellii*).

Pastures: Crowfoot (*Erodium* sp.), corrugated sida (*Sida corrugata*), black crumbweed (*Chenopodium melanocarpum*), small woolly burr medic (*Medicago minima*), variable spear grass (*Stipa variabilis*), *Kochia* sp., climbing saltbush (*Rhagodia nutans*), purple daisy burr (*Calotis cuneifolia*), *Chenopodium* sp., No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), cut leaf goodenia (*Goodenia cycloptera*), panic grass (*Panicum* sp.), desert chinese lanterns (*Abutilon otocarpum*), fuzzweed (*Vittadinia triloba*), cut leaf medic (*Medicago laciniata*), grass cushions (*Isoetopsis graminifolia*), *Crassula* sp.

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	Description
	0-10	- Dark reddish brown (2.5YR 3/3); silty clay loam; massive; surface crust (0.5 cm); roots; organic matter. Clear to:-
	10-23	- Dark red (2.5YR 3/6); sandy clay loam; massive; major root inclusions. Diffuse to:-
	23-61	- Dark red (2.5YR 3/6); clay loam; massive; roots; small gravel; manganese staining. Diffuse to:-
	61-161	- Red (10R 3/6); light clay; medium structure; sub-angular blocky; some small gravel; manganese stainings; some white stainings on ped surfaces; some carbonate concretions. Diffuse to:-
	161-210	- Red (2.5YR 4/8); clay loam; massive; decomposing rock and much small gravel; roots; some gravel to 4 cm diam.; carbonate concretions.

LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 467 miles + 100 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 25/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm.

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5-10 (5) Mallee (*Eucalyptus* spp.), white cypress pine (*Callitris columellaris*), ellangowan poison bush (*Myoporum deserti*), daisy bush (*Olearia pimelioides*), tar bush (*Eremophila glabra*), butterbush (*Pittosporum phylliraeoides*).

Pastures: Box grass (*Paspalidium constrictum*), fuzzweed (*Vittadinia triloba*), wire grasses (*Aristida* spp.), tucker's spear grass (*Stipa tuckeri*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), variable spear grass (*Stipa variabilis*), native carrot (*Daucus glochidiatus*), crimson lamb tails (*Ptilotus atriplicifolius*), australian bindweed (*Convolvulus erubescens*), grey copper burr (*Bassia diacantha*), black crumbweed (*Chenopodium melanocarpum*), cane panic (*Panicum subxerophilum*), rough spear grass (*Stipa scabra*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
	0-42	- Dark red (10R 3/6); sandy clay loam; massive; roots; some small gravel. Clear to:-
	42-54	- Dark red (10R 3/6); sandy clay loam; massive; some roots; stone layer with quartz stones to 3 cm diam. plus some shale. Clear to:-
	54-99	- Dark red (7.5R 3/4); clay loam; weak structure; some roots; small gravel (0.5 cm diam.) inclusions, some to 1 cm diam.; manganese stainings. Clear to:-
	99-139	- Red (10R 4/8); clay loam; moderate to strong structure; subangular blocky peds (0.5-20 cm); some roots; carbonate concretions; manganese stainings. Clear to:-
	139-179	- Mottled light reddish brown (5YR 6/4) with some red (10R 4/8); sandy clay loam; massive; isolated roots; hardpan material like decomposing rock; much manganese staining; layer of carbonate concretions; carbonate coatings on soil; some stones; soil in interspaces.

LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 467 miles + 1050 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 25/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin 1611 mm.

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: Mallee (*Eucalyptus* spp.), pointed fruit mallee (*Eucalyptus socialis*), red box (*Eucalyptus intertexta*), daisy bush (*Olearia pimelioides*), white cypress pine (*Callitris columellaris*), sword bush (*Bossiaea walkeri*), butterbush (*Pittosporum phylliraeoides*), spinebush (*Acacia colletioides*), mallee pine (*Callitris verrucosa*).

Pastures: Porcupine spinifex grass (*Triodia irritans*), scented mat-rush (*Lomandra effusa*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), mulga grass (*Neurachne mitchelliana*), variable spear grass (*Stipa variabilis*), fuzzweed (*Vittadinia triloba*), bluebell (*Wahlenbergia* sp.), climbing saltbush (*Rhagodia nutans*), crimson lambs tails (*Ptilotus atriplicifolius*), fan flower (*Scaevola aemula*), tall copper burr (*Bassia convexula*), *Lomandra glauca* spp. *collina*.

PROFILE DESCRIPTION: Northcote Classification Dr 1.12

Horizon	Depth (cm)	Description
	0-30	Dark red (2.5YR 3/6); clay loam; surface crust present; massive; roots.
	30-56	Dark red (10R 3/6); clay loam; weak structure; roots; some quartz gravel; some manganese staining.
	56-86	Dark red (10R 3/6); medium clay; moderate structure; some roots; some gravel.
	86-128	Dark red (10R 3/6); sandy clay; gritty layer; moderate structure.
	128-141	Dark red (10R 3/6); medium clay; moderate structure; very little manganese staining; isolated roots.
	141-151	Mottled - 80% dark red (2.5YR 3/6); 20% pinkish grey (5YR 6/2); medium clay; massive; isolated roots.
	151-164	Mottled - 80% red to dark red (2.5YR 4/8 - 2.5YR 3/6); 20% pinkish grey (5YR 6/2); medium clay; massive structure; isolated small roots; manganese staining.

LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 467 miles + 1200 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 25/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: Mallee (*Eucalyptus* spp.), pointed fruit mallee (*Eucalyptus socialis*), red box (*Eucalyptus intertexta*), daisy bush (*Olearia pimelioides*), white cypress pine (*Callitris columellaris*), sword bush (*Bossiaea walkeri*), butterbush (*Pittosporum phylliraeoides*), spine bush (*Acacia colletioides*), mallee pine (*Callitris verrucosa*).

Pastures: Porcupine spinifex grass (*Triodia irritans*), scented mat-rush (*Lomandra effusa*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), mulga grass (*Neurachne mitchelliana*), variable spear grass (*Stipa variabilis*), fuzzweed (*Vittadinia triloba*), bluebell (*Wahlenbergia* sp.) climbing saltbush (*Rhagodia nutans*), crimson lamb's tails (*Ptilotus atriplicifolius*), fan flower (*Scaevola aemula*), tall copper burr (*Bassia convexula*), *Lomandra glauca* spp. *collina*.

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
	0-5	- Dark reddish brown (2.5YR 3/4); fine sandy clay loam; massive. Clear to:-
	5-34	- Red (10R 4/8); sandy clay loam; massive; roots. Clear to:-
	34-57	- Dark red (10R 3/6); clay loam; massive; roots; some manganese staining; some gravel and isolated small pockets of decomposing shale. Clear to:-
	57-108	- Mottled dark red (10R 3/6) with some red (10R 4/8); clay loam; moderate structure; some roots; carbonate concretions; some quartz gravel; manganese stainings. Clear to:-
	108-178	- Red (2.5YR 4/8); sandy clay loam; massive; hardpan material; carbonate present; much small gravel and some waterwashed stones to 4 cm diam.

Profile Number: GP 6

LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 468 miles + 2150 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 25/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T < 5 Mallee (*Eucalyptus oleosa*), spine bush (*Acacia colletioides*), white cypress pine (*Callitris columellaris*), gooma bush (*Bertya cunninghamii*), fern-leaf hopbush (*Dodonaea boroniifolia*), daisy bush (*Olearia pimelioides*), red box (*Eucalyptus intertexta*), sword bush (*Bossiaea walkeri*), butterbush (*Pittosporum phylliraeoides*), mallee pine (*Callitris verrucosa*).

Pastures: Porcupine spinifex grass (*Triodia irritans*), australian bugle (*Ajuga australis*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), yellow buttons (*Helichrysum apiculatum*), fan flower (*Scaevola aemula*), spreading flax-lily (*Dianella revoluta*), *Lomandra glauca* spp. *collina*.

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over gravel

Horizon	Depth (cm)	
	0-20	- Dark reddish brown (2.5YR 3/4); sandy clay loam; surface crust to 1 cm thick; massive. <i>Clear to:-</i>
	20-53	- Dusky red (10R 3/4) with some strong brown (7.5YR 6/6); sandy clay loam; massive; strong root concentration; some weathering yellow shale. <i>Diffuse to:-</i>
	53-72	- Dark red (10R 3/6) with some 1 cm diam. concentrations of reddish yellow (7.5YR 6/6); sandy clay loam; massive; roots - end of root zone proper; some gravel and decomposing shale. <i>Diffuse to:-</i>
	72-150	- Red (2.5YR 4/8) with some dark red (10R 3/6); sandy clay loam; massive to weak subangular blocky structure; porous; very few roots; some small gravel and decomposing shale. <i>Diffuse to:-</i>
	150-192	- Red (2.5YR 4/8); sandy clay loam; massive; some roots; cemented gravel layer; some solid white carbonate material.

LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 469 miles + 4340 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 26/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall; Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T1-10 (5) Mallee (*Eucalyptus* spp.), red mallee (*Eucalyptus oleosa*), pointed fruit mallee (*Eucalyptus socialis*), white cypress pine (*Callitris columellaris*), tar bush (*Eremophila glabra*), sword bush (*Bossiaea walkeri*), mallee pine (*Callitris verrucosa*).

Pastures: Porcupine spinifex grass (*Triodia irritans*), yellow buttons (*Helichrysum apiculatum*), golden everlastings (*Helichrysum bracteatum*), *Minuria* sp., wire grass (*Aristida* sp.), purple daisy burr (*Calotis cuneifolia*), *Lomandra glauca* spp *collina*, variable spear grass (*Stipa variabilis*).

PROFILE DESCRIPTION: Northcote Classification Not available

Horizon	Depth (cm)	Description
	0-29	- Dark red (2.5YR 3/6); clay loam; massive; major root concentration. Clear to:-
	29-65	- Dark red (10R 3/6); sandy clay; moderate structure; gritty layer (less than layer 86-128 cm in profile GP 4); roots. Clear to:-
	65-98	- Dark red (10R 3/6); medium clay; weak structure; some manganese staining; some white coatings on peds; roots. Clear to:-
	98-153	- Mottled - 80% red to dark red (2.5YR 4/8 - 2.5YR 3/6) 20% pinkish grey (5YR 6/2); medium clay; massive; isolated small roots; manganese staining; a thin layer (line) of carbonate concretions occurs near the top of this horizon.

Nearby variations omit the gritty second layer and substitute one of weak structure.

LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 470 miles + 1700 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 26/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5 - 10 red mallee (*Eucalyptus oleosa*), pointed fruit mallee (*Eucalyptus socialis*), white cypress pine (*Callitris columellaris*), mallee pine (*Callitris verrucosa*), sword bush (*Bossiaea walkeri*), *Acacia rigens/havilandii*, spine bush (*Acacia colletioides*), daisy bush (*Olearia pimelioides*), butterbush (*Pittosporum phylliraeoides*), fern-leaf hopbush (*Dodonaea boroniifolia*), gunderbluey (*Acacia burkittii*).

Pastures: Porcupine spinifex grass (*Triodia irritans*), fan flower (*Scaevola aemula*), variable spear grass (*Stipa variabilis*), *Lomandra glauca* spp. *collina*, fuzzweed (*Vittadinia triloba*), yellow buttons (*Helichrysum apiculatum*), australian bugle (*Ajuga australis*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
	0-6	- Dusky red (10R 3/4); sandy clay loam; massive; 0.5 cm crust. Clear to:-
	6-29	- Dark red (2.5YR 3/6); sandy clay loam; massive; many roots. Diffuse to:-
	29-49	- Dark red (10R 3/6); clay loam; massive to slight subangular blocky structure; many roots. Abrupt to:-
	49-85	- Dark red (10R 3/6); clay loam; moderate subangular block structure; roots; some small gravel; some manganese staining. Diffuse to:-
	85-163	- Dark red (2.5YR 3/6); clay loam; massive hard pan material; isolated stones to 4 cm; few roots; manganese stains; carbonate concretions to 5 cm diam.; carbonate stains.

LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 470 miles + 4700 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 26/6/74

TOPOGRAPHY: Level

Underlying Rock: Biotite medium grained granite

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1<sup>o</sup>C); 18.6<sup>o</sup>C);  
July (14.0<sup>o</sup>C; 4.7<sup>o</sup>C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Drainage line

LAND USE: Grazing

VEGETATION: Bimble box/white cypress pine woodland

Trees and Shrubs: T5-10 Bimble box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), tar bush (*Eremophila glabra*), desert cassia (*Cassia eremophila*), butter bush (*Pittosporum phylliraeoides*).

Pastures: Purple daisy burr (*Calotis cuneifolia*), yellow daisy burr (*Calotis lappulacea*), variable spear grass (*Stipa variabilis*), *Chenopodium* sp., grey copperburr (*Bassia diacantha*), grey germander (*Teucrium racemosum*), bear's ear (*Cymbonotus* sp.), bluebell (*Wahlenbergia* sp.), box grass (*Paspalidium constrictum*), fuzzweed (*Vittadinia triloba*), cotton fireweed (*Senecio quadridentatus*), climbing salt bush (*Rhagodia nutans*), curly windmill grass (*Chloris acicularis*), corrugated sida (*Sida corrugata*), native carrot (*Daucus glochidiatus*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), nardoo (*Marsilea drummondii*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
0-5	-	Dark reddish brown (2.5YR 3/4); clay loam; massive; surface crust (0.5 cm); moss and lichen on surface. Clear to:-
5-60	-	Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; main root zone; some pores; some small gravel. Abrupt to:-
60-74	-	Red (2.5YR 4/6); clayey sand; massive; roots; some pores; gritty - sandy layer. Diffuse to:-
74-84	-	Red (2.5YR 4/6); sandy clay loam; massive; some roots; less sandy - gritty material than the above horizon. Abrupt to:-
84-104	-	Red (2.5YR 4/6); sandy clay loam; massive; small stones to 1 cm diam. cemented in layers; some manganese staining; some carbonate concretions; isolated small pockets of decomposing shale. Abrupt to:-
104-149	-	Mottled - 80% red (2.5YR 4/6), 20% reddish brown (5YR 5/4); sandy clay loam; massive; some pores; few small roots; small gravel; very hard; some carbonate concretions; some surface carbonate coatings on soil blocks. Diffuse to:-
149-189	-	Yellowish red (5YR 5/6 moist); sandy clay loam; massive; layer of gritty small gravel with little soil. Gradual to:-
189-195	-	Mottled - 50% light brownish grey (10YR 6/2), 50% yellowish red (5YR 4/8); sandy clay loam; massive; some small gravel.

LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 471 miles + 2600 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 26/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C):  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain - to slightly undulating

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T < 5-10 pointed fruit mallee (*Eucalyptus socialis*), red mallee (*Eucalyptus oleosa*), mallee pine (*Callitris verrucosa*), red box (*Eucalyptus intertexta*), sugarwood (*Myoporum platycarpum*): S < 5-50 wilhelm's wattle (*Acacia wilhelmiana*), needle wattle (*Acacia rigens*), punty bush (*Cassia eremophila*), tar bush (*Eremophila glabra*), desert jasmine (*Jasminum lineare*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), *Podolepis* sp., yellow buttons (*Helichrysum apiculatum*), fan flower (*Scaevola aemula*), variable spear grass (*Stipa variabilis*), box grass (*Paspalidium constrictum*), *Goodenia* sp., No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), matrush (*Lomandra* sp.), corrugated sida (*Sida corrugata*), mulga grass (*Neurachne mitchelliana*), crimson lamb's tail (*Ptilotus atriplicifolius*).

PROFILE DESCRIPTION: Northcote Classification Not available

Horizon	Depth (cm)	
	0-37	- Surface crust, massive; main root zone; some pores; small gravel. Diffuse to:-
	37-62	- Poor structure; roots; small gravel; manganese staining.
	62-104	- Strong structure; roots; small gravel; much manganese staining.
	104-150	- Poor structure; roots; small gravel; some manganese concretions.
	150-182	- Mottled - 20% grey/80% red clay; massive; large carbonate concretions; many manganese concretions.

LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 472 miles + 900 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 26/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm.

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: Red mallee (*Eucalyptus oleosa*), sword bush (*Bossiaea walkeri*), spinebush (*Acacia colletioides*), white cypress pine (*Callitris columellaris*), mallee pine (*Callitris verrucosa*), tar bush (*Eremophila glabra*), daisy bush (*Olearia pimelioides*), small leaved clematis (*Clematis microphylla*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), fan flower (*Scaevola aemula*), yellow buttons (*Helichrysum apiculatum*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), variable spear grass (*Stipa variabilis*), fuzweed (*Vittadina triloba*), scented matrush (*Lomandra effusa*).

PROFILE DESCRIPTION: Northcote Classification Not available.

Horizon    Depth (cm)

Surface-    Sandy/gritty accumulation and crust.

0-39    -    Massive; roots; some gravel and decomposing shale.  
Diffuse to:-

39-82    -    Poor subangular blocky structure; porous; few roots; some small gravel; small amount of manganese staining; variable and discontinuous carbonate surface coating on peds; Diffuse to:-

82-129    -    Lighter colour; massive; very few roots; more gravel than horizon above; some quartz stones to 1 cm diam.

129-158    -    Mottled - 70% orange/30% grey; massive; very hard layer; roots uncommon.

LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 472 miles + 3830 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 26/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm.

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5 Mallee (*Eucalyptus* spp.), white cypress pine (*Callitris columellaris*), tar bush (*Eremophila glabra*), butterbush (*Pittosporum phylliraeoides*), daisy bush (*Olearia pimelioides*), deane's wattle (*Acacia deanei*), sword bush (*Bossiaea walkeri*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), *Crassula* sp., No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), yellow buttons (*Helichrysum apiculatum*), purple daisy burr (*Calotis cuneifolia*), variable spear grass (*Stipa variabilis*), fuzzweed (*Vittadinia triloba*), panic grass (*Panicum* sp.).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clayey sand and clay loam material.

Horizon	Depth (cm)	Description
	0-26	- Dark red (2.5YR 3/6); sandy clay loam; massive; roots; some gravel and decomposing shale; slight crust; some grit on surface. <i>Abrupt to:-</i>
	26-42	- Dark red (2.5YR 3/6); sandy clay loam; massive to weak subangular blocky structure; many roots; some small gravel. <i>Abrupt to:-</i>
	42-80	- Dark red (2.5YR 3/6); sandy clay loam; massive; some carbonate concretions; carbonate stainings; manganese stainings; some gravel. <i>Diffuse to:-</i>
	80-126	- Dark red (10R 3/6); sandy clay loam; massive; some carbonate concretions; carbonate stainings; manganese stainings; some small stones to 2 cm - smaller gravel predominates. <i>Diffuse to:-</i>
	126-154	- Red (10R 4/8); clayey sand; massive; few roots; some smaller gravel and much grit - softer than above horizon and less soil; some manganese concretions; some decomposing shale; stones with carbonate coatings and stainings. <i>Diffuse to:-</i>
	154-214	- Red (2.5YR 4/8); sandy clay loam; massive; some roots; some gravel and much grit; some smaller stones to 4 cm diam; some decomposing shale. <i>Abrupt to:-</i>
	214-236	- Red (2.5YR 4/8); sandy clay loam; massive; cemented gravel with stones to 3 cm diam; very hard; some small shale material.

LOCATION: "Kilparney", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 472 miles + 3980 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 26/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm.

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5 Mallee (*Eucalyptus* spp.), white cypress pine (*Callitris columellaris*), tar bush (*Eremophila glabra*), butterbush (*Pittosporum phylliraeoides*), daisy bush (*Olearia pimelioides*), deane's wattle (*Acacia deanei*), sword bush (*Bossiaea walkeri*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), *Crassula* sp., No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), yellow buttons (*Helichrysum apiculatum*), purple daisy burr (*Calotis cuneifolia*), variable spear grass (*Stipa variabilis*), fuzzeed (*Vittadinia triloba*), panic grass (*Panicum* sp.).

PROFILE DESCRIPTION: Northcote Classification Not available.

Horizon	Depth (cm)	Description
	0-37	- Massive; roots; small gravel. Diffuse to:-
	37-67	- Massive to weak subangular blocky structure; roots; some pores; manganese staining. Abrupt to:-
	67-117	- Moderate structure; roots; small gravel; carbonate concretions; manganese stainings. Abrupt to:-
	117-167	- Massive; carbonate concretions in lenses; manganese staining. Diffuse to:-
	167-221	- Massive; mainly small gravel to 1 cm diam; some stones to 1 cm diam.
	221-259	- Mottled red/yellow clay; massive; some large lenses of carbonate concretions; manganese staining.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 473 miles + 430 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 26/6/74

TOPOGRAPHY: Level

UNDERLYING ROCK: Pink claystone

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm.

POSITION IN LANDSCAPE: Creek bed.

LAND USE: Grazing

VEGETATION: Bimble box/white cypress pine woodland

Trees and Shrubs: White cypress pine (*Callitris columellaris*), bimble box (*Eucalyptus populnea*).

Pastures: Cotton fireweed (*Senecio quadridentatus*), australian bugle (*Ajuga australis*), kidney weed (*Dichondra repens*), wallaby grass (*Danthonia caespitosa*), yellow daisy burr (*Calotis lappulacea*), purple daisy burr (*Calotis cuneifolia*), panic grass (*Panicum* sp.), variable spear grass (*Stipa variabilis*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), kerosene grass (*Aristida contorta*), golden everlastings (*Helichrysum bracteatum*), goosefoot (*Chenopodium* spp.).

PROFILE DESCRIPTION: Northcote Classification Uc 5.11 over clayey sand material.

Horizon	Depth (cm)	Description
0-4	-	Dark reddish brown (2.5YR 3/3); loamy sand; massive. Clear to:-
4-83	-	Dark reddish brown (2.5YR 3/4); loamy sand; massive; roots; gravel inclusions common. Clear to:-
83-175	-	Red (2.5YR 4/6); clayey sand; massive; roots; much gravel. Clear to:-
175 +	-	Rock with lenses of grey clay.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 473 miles + 440 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 26/6/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm.

POSITION IN LANDSCAPE: Back channel

LAND USE: Grazing

VEGETATION: Bimble box/white cypress pine woodland

Trees and Shrubs: T30 White cypress pine (*Callitris columellaris*),  
bimble box (*Eucalyptus populnea*), rosewood (*Heterodendrum oleifolium*).

Pastures: No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*),  
variable speargrass (*Stipa variabilis*), purple daisy burr (*Calotis  
cuneifolia*), soft roly poly (*Salsola kali*), caustic weed (*Euphorbia  
drummondii*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over alluvium.

Horizon	Depth (cm)	Description
	0-39	- Dark red (2.5YR 3/6); sandy clay loam; massive; roots; Abrupt to:-
	39-109	- Dark red (2.5YR 3/6); sandy clay loam; massive; roots; few pores; some small gravel. Abrupt to:-
	109-141	- Dark red (2.5YR 3/6); clayey sand; massive; roots; gravelly with sand and stones 1-3 cm diam.; defined layer of stones to 3 cm diam. at base of horizon. Abrupt to:-
	141-241	- Dark red (10R 3/6); clay loam; massive; porous; very hard; some decomposing parent material; manganese staining.

The horizon boundaries were wavy along the trench with the depths to the different horizons varying greatly. In some cases the hard layer (141 cm + in this profile) rose to as close as 50 cm from the surface.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 473 miles + 2580 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 26/6/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Ridge crest

LAND USE: Grazing

VEGETATION: Red box/white cypress pine woodland

Trees and Shrubs: T5 Red box (*Eucalyptus intertexta*), white cypress pine (*Callitris columellaris*) (many seedlings (T5) 0.3 to 3.0 m tall), rosewood (*Heterodendrum oleifolium*), hooked needlewood (*Hakea tephrosperma*), punity bush (*Cassia eremophila*), turpentine (*Eremophila sturtii*), budda (*Eremophila mitchellii*).

Pastures: Yellow daisy burr (*Calotis lappulacea*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), grey copper burr (*Bassia diacantha*), crimson lambs tails (*Ptilotus atriplicifolius*), mulga grass (*Neurachne mitchelliana*), variable spear grass (*Stipa variabilis*), tall kerosene grass (*Aristida browniana*), *Blenmodia* sp., panic grass (*Panicum* sp.), cotton fireweed (*Senecio quadridentatus*), native tobacco (*Nicotiana* sp.), box grass (*Paspalidium constrictum*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-10	- Dusky red (10R 3/4); clay loam; massive; weak surface crust; roots; insect holes. <i>Clear to:-</i>
	10-30	- Dusky red (10R 3/4); clay loam; massive; roots; some small gravel. <i>Abrupt to:-</i>
	30-46	- Dusky red (10R 3/4); clay loam; massive; porous; roots; manganese staining. <i>Diffuse to:-</i>
	46-66	- Dusky red (10R 3/4); clay loam; weak subangular blocky structure; some stones to 6-7 cm diam. <i>Abrupt to:-</i>
	66-90	- Dusky red (10R 3/6); clay loam; mixture of soil and yellow and white shaley parent material; weak subangular blocky structure; roots; carbonate concretions; manganese staining. <i>Diffuse to:-</i>
	90-140	- Decomposing parent material with pockets of soil.
	140 +	- Parent material.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 474 miles + 5200 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 26/6/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Slight slope

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5-10 Red mallee (*Eucalyptus oleosa*), red box (*Eucalyptus intertexta*), mallee pine (*Callitris verrucosa*), daisy box (*Olearia pimelioides*), spine bush (*Acacia colletioides*), sword bush (*Bossiaea walkeri*), tar bush (*Eremophila glabra*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), golden everlastings (*Helichrysum bracteatum*), mulga grass (*Neurachne mitchelliana*), *Goodenia* sp., purple daisy burr (*Calotis cuneifolia*), *Lomandra glauca* spp. *collina*, fan flower (*Scaevola aemula*), scented mat-rush (*Lomandra effusa*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-5	Dusky red (10R 3/3); loam fine sandy; massive; weak surface crust (0.5 cm); roots; insect holes. <i>Clear to:-</i>
	5-21	Dusky red (10R 3/4); clay loam; massive; roots; some small gravel. <i>Diffuse to:-</i>
	21-42	Dark red (10R 3/6); sandy clay loam; massive; roots; insect holes; gritty. <i>Abrupt to:-</i>
	42-78	Dark red (10R 3/6); clay loam; massive; some roots; gravel 0.5 to 1.0 cm diam.; carbonate concretions; manganese stainings. <i>Clear to:-</i>
	78-121	Dark red (10R 3/6); clay loam; massive; manganese stains. <i>Clear to:-</i>
	121-153	Mottled - 90% yellowish red (5YR 4/8); 10% pinkish grey (7.5YR 7/2); clay loam; massive; carbonate concretions; manganese concretions. <i>Clear to:-</i>
	153-190	Mottled - 95% brown (7.5YR 5/4); 5% dark red (10R 3/6); clay loam; massive; manganese concretions.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 474 miles + 2400 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 26/6/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Slight slope

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: Red mallee (*Eucalyptus oleosa*), mallee (*Eucalyptus* spp.), mallee pine (*Callitris verrucosa*), sword bush (*Bossiaea walkeri*), tar bush (*Eremophila glabra*), deane's wattle (*Acacia deanei*), daisy bush (*Olearia pimelioides*), spine bush (*Acacia colletioides*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), golden everlastings (*Helichrysum bracteatum*), grey copperburr (*Bassia diacantha*), tall copperburr (*Bassia convexula*), purple daisy burr (*Calotis cuneifolia*), variable spear grass (*Stipa variabilis*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clayey sand material.

Horizon	Depth (cm)	Description
	0-5	- Dark red (10R 3/6); loam fine sandy; massive; grit on surface. Clear to:-
	5-28	- Dark red (10R 3/6); sandy clay loam; massive; roots; some gravel. Diffuse to:-
	28-53	- Dark red (10R 3/6); clay loam; massive; roots uncommon; gravel to 0.5 cm diam.; isolated pockets of decomposing shale. Diffuse to:-
	53-83	- Slightly mottled dark red (10R 3/6); clay loam; poor structure; some gravel; insect holes; some carbonate concretions. Diffuse to:-
	83-171	- Red (10R 4/8); sandy clay loam; massive; gravel; some stones to 1 cm diam; carbonate concretions; manganese staining. Abrupt to:-
	171-179	- Yellowish red (5YR 5/6); clayey sand; massive; very hard material.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 473 miles + 780 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Lower slope

LAND USE: Grazing

VEGETATION: Red box woodland

Trees and Shrubs: T5-20 Red box (*Eucalyptus intertexta*), yarran (*Acacia homalophylla*), needlewood (*Hakea leucoptera*), mulga (*Acacia aneura*), small white cypress pine (*Callitris columellaris*), wilga (*Geijera parviflora*), punty bush (*Cassia eremophila*), wedge-leaved hopbush (*Dodonaea cuneata*), turpentine (*Eremophila sturtii*).

Pastures: Crowfoot (*Erodium* sp.), purple daisy burr (*Calotis cuneifolia*), variable spear grass (*Stipa variabilis*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), purple love grass (*Eragrostis lacunaria*), crimson lambs tails (*Ptilotus atriplicifolius*), hairy fissure-weed (*Kochia ciliata*), grey copperburr (*Bassia diacantha*), mulga grass (*Neurachne mitchelliana*), purple daisy burr (*Calotis cuneifolia*), cut leaf goodenia (*Goodenia cycloptera*), *Blennodia* sp., fuzzweed (*Vittadinia triloba*), Australian bindweed (*Convolvulus erubescens*), kerosene grass (*Aristida contorta*), tucker's speargrass (*Stipa tuckeri*), cane panic (*Panicum subxerophilum*), native carrot (*Daucus glochidiatus*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13 over sandy clay loam material.

Horizon	Depth (cm)	Description
	0-9	- Dusky red (10R 3/4); fine sandy clay loam; massive; surface crust (0.5 cm); roots. Clear to:-
	9-28	- Dark red (10R 3/6); light clay; massive; fine roots; small gravel to 4 mm diam. Abrupt to:-
	28-66	- Dark red (10R 3/6); light clay; poor structure; roots; some gravel to 0.6 cm diam.; some manganese staining. Gradual to:-
	66-106	- Red (10R 4/6) with yellow flecks; light clay; moderate prismatic to subangular blocky structure; some roots; some small gravel (2-5 mm); carbonate concretions to 2 cm diam.; manganese staining. Gradual to:-
	106-142	- Mottled - 50% red (10R 4/6), 50% light grey/brownish yellow (10YR 7/2-10YR 6/6); light medium clay; poor structure; roots; carbonate concretions to 3 cm and some to 5 cm diam.; some carbonate staining on peds. Gradual to:-

- 142-197 - Mottled - 60% red (10R 4/6); 40% brownish yellow/light grey (10YR 6/6-10YR 7/2); sandy clay loam; massive to poor structure; some roots; porous; small gravel to 2 mm; carbonate concretions to 1 cm diam. throughout, with a layer of carbonate concretions to 5 cm diam. in the horizon. *Gradual to:-*
- 197-236 - Mottled - 40% red (10R 4/6), 60% greyish yellow (7.5Y 7/1) and yellowish brown (10YR 4/6-7.5YR 4/6); sandy clay loam; massive; gravel to 4-5 cm; grit; small carbonate concretions; manganese staining; some yellow decomposing rock. *Abrupt to:-*
- 236 + - Rock and decomposing rock. Some lime coatings on stones to 10 cm diam.; some manganese staining; then bedrock.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 475 miles + 440 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer sominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Slight slope

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5-20 Pointed fruit mallee (*Eucalyptus socialis*), sword bush (*Bossiaea walkeri*), white cypress pine (*Callitris columellaris*), tar bush (*Eremophila glabra*), spine bush (*Acacia colletioides*), daisy bush (*Olearia pimelioides*), wattle (*Acacia* sp.), needlewood (*Hakea leucoptera*), twiggy daisy-bush (*Olearia ramulosa*).

Pastures: Purple daisy burr (*Calotis cuneifolia*), variable spear grass (*Stipa variabilis*), yellow buttons (*Helichrysum apiculatum*), *Goodenia* sp., golden everlastings (*Helichrysum bracteatum*), tall copperburr (*Bassia convexula*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
	0-5	- Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; surface crust; small gravel on surface. Clear to:-
	5-35	- Dark red (10R 3/6); sandy clay loam; massive; major root accumulation; some pores; small quartz gravel to 1 cm diam. Abrupt to:-
	35-64	- Dark red (10R 3/6); clay loam; poor structure; some roots; insect holes; porous; small grit; slight manganese staining. Gradual to:-
	64-102	- Dark red (10R 3/6); clay loam; moderate subangular blocky structure; some root growth (roots to 1 cm diam.); insect holes; carbonate concretions to 3 cm diam.; manganese stains. Abrupt to:-
	102-179	- Dark red (10R 3/6); clay loam; massive; some root growth (roots to 1 cm diam.); major zone of carbonate concretions to 4 cm diam.; manganese stains. Clear to:-
	179 +	- Mottled red (2.5YR 4/8) with red/dark reddish brown (10R 3/6 - 2.5YR 2/4); clay loam; massive to poorly structured; few roots; some grit; some carbonate concretions to 2 cm diam.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 475 miles + 2550 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm.

POSITION IN LANDSCAPE: Lower slope

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T10 Pointed fruit mallee (*Eucalyptus socialis*), white cypress pine (*Callitris columellaris*), deane's wattle (*Acacia deanei*), narrow leaved hopbush (*Dodonaea attenuata*), spine bush (*Acacia colletioides*), gooma bush (*Bertya cunninghami*).

Pastures: Variable spear grass (*Stipa variabilis*), fuzzweed (*Vittadinia triloba*), goosefoot (*Chenopodium* sp.), purple daisy burr (*Calotis cuneifolia*), corrugated sida (*Sida corrugata*), grey copper burr (*Bassia diacantha*), tucker's spear grass (*Stipa tuckeri*), box grass (*Paspalidium constrictum*), desert chinese lanterns (*Abutilon otocarpum*), *Solanum* sp., *Zygophyllum glaucum*, *Blennodia* sp.

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
0-10	-	Dusky red (10R 3/4); sandy clay loam; massive; slight crust. Clear to:-
10-68	-	Dark red (2.5YR 3/6); sandy clay loam; massive; insect holes; roots; small gravel to 0.5 cm. Abrupt to:-
68-78	-	Dark red (50% 2.5YR 3/6 - 50% 10R 3/6); sandy clay loam; massive to poor structure; some roots; insect holes; small gravel; some stones to 3 cm diam; slight manganese staining. Clear to:-
78-115	-	Dark red (10R 3/6); sandy clay loam; massive; hard pan material; few roots; heavy gravel deposit with stones to 4 cm diam; carbonate concretions to 1 cm diam. Clear to:-
115-188	-	Mottled red (2.5YR 4/8) with dark red (10R 5/6); sandy clay loam; massive; hard pan material; stones to 4 cm diam.; some carbonate concretions.

In an adjacent variation the following horizons occur

- 0-55 - Horizons 1 and 2 above (0-68 cm).
- 55-123 - Massive to weak sub angular blocky structure; small gravel; carbonate concretions.
- 123-176 - Mottled red grey clay; massive; some manganese staining; carbonate concretions to 3 cm diam.; some roots. Abrupt to:-
- 176 + - Hard pan material as for horizon 5 above.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 475 miles + 4040 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Plain

LAND USE: Grazing

VEGETATION: White cypress pine woodland

Trees and Shrubs: T5-100 White cypress pine (*Callitris columellaris*), yarran (*Acacia homalophylla*), kurrajong (*Brachychiton populneus*), needlewood (*Hakea leucoptera*), hooked needlewood (*Hakea tephrosperma*), wilga (*Geijera parviflora*), rosewood (*Heterodendrum oleifolium*).

Pastures: Variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), native tobacco (*Nicotiana suaveolens*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), purple daisy burr (*Calotis cuneifolia*), yellow wood sorrel (*Oxalis corniculata*), *Sida* sp., soft roly poly (*Salsola kali*), rock fern (*Cheilanthes tenuifolia*), fuzzweed (*Vittadinia triloba*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clay material

Horizon	Depth (cm)	
	0-10	- Dusky red (10R 3/3); sandy clay loam; massive; slight surface crust to 0.5 cm; gritty surface accumulation. Clear to:-
	10-66	- Dark reddish brown (2.5YR 3/4); fine sandy clay loam to clay loam; massive; major root zone; insect holes; large sand; some small gravel. Abrupt to:-
	66-86	- Dark red (2.5YR 3/6); clay loam; poor angular blocky structure; sand grains evident; carbonate staining on peds. Abrupt to:-
	86-109	- Dark red (2.5YR 3/6); sandy clay loam; very poor structure; porous; some root growth; less carbonate staining than in above horizon; some carbonate concretions. Abrupt to:-
	109-167	- Mottled red/dark red (10R 4/8 - 10R 3/6); light clay; moderate prismatic to angular blocky structure; roots; small gravel to 0.5 cm diam; isolated carbonate concretions. Abrupt to:-
	167-187	- Red (2.5YR 5/6); light clay; massive; manganese staining; probably the top of a non-gritty hard pan; carbonate concretions to 2 cm diam.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 475 miles + 3300 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Plain

LAND USE: Grazing

VEGETATION: White cypress pine woodland

Trees and Shrubs: T5-100 White cypress pine (*Callitris columellaris*), yarran (*Acacia homalophylla*), kurrajong (*Brachyehiton populneus*), needlewood (*Hakea leucoptera*), hooked needlewood (*Hakea tephrosperma*), wilga (*Geijera parviflora*), rosewood (*Heterodendrum oleifolium*).

Pastures: Variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), native tobacco (*Nicotiana suaveolens*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), purple daisy burr (*Calotis cuneifolia*), yellow wood sorrel (*Oxalis corniculatus*), *Sida* sp., soft roly poly (*Salsola kali*), rock fern (*Cheilanthes tenuifolia*), fuzzweed (*Vittadinia triloba*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-10	- Dusky red (10R 3/3); sandy clay loam; massive; slight surface crust to 0.5 cm; gritty surface accumulation. Clear to:-
	10-64	- Dark red (10R 3/6); sandy clay loam; massive; roots; insect holes; gravel to 1 cm diam. in layer near base of horizon. Abrupt to:-
	64-78	- Dark red (2.5 YR 3/6); sandy clay loam; massive; small gravel; hard layer. Abrupt to:-
	78-151	- Dark red (2.5YR 3/6); sandy clay loam; massive to poor structure; roots; insect holes; some pores. Gradual to:-
	151-201	- Dark red (10R 3/6 - 2.5YR 3/6); sandy clay loam; massive; gritty layer - probably hard pan material.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 476 miles + 1500 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Level to slightly undulating

UNDERLYING ROCK: Quartzose sandstone (Recent)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope

LAND USE: Grazing

VEGETATION: Red box woodland

Trees and Shrubs: T10 Red box (*Eucalyptus intertexta*), white cypress pine (*Callitris columellaris*), yarran (*Acacia homalophylla*), hooked needlewood (*Hakea tephrosperma*), budda (*Eremophila mitchellii*), turpentine (*Eremophila sturtii*).

Pastures: Variable spear grass (*Stipa variabilis*), purple daisy burr (*Calotis cuneifolia*), mulga grass (*Neurachne mitchelliana*), grey copper burr (*Bassia diacantha*), No. 9 wire grass (*Aristida jerichoensis subspinulifera*).

PROFILE DESCRIPTION: Northcote Classification Not available

Horizon	Depth (cm)	
	0-32	- Massive; roots; porous; large sand/small gravel present. <i>Gradual to:-</i>
	32-51	- Massive to very poor structure; roots; insect holes; large sand/small gravel present. <i>Gradual to:-</i>
	51-74	- Massive; roots; porous; gravel to 1 cm diam.; some small carbonate concretions. <i>Diffuse to:-</i>
	74-134	- Red with some grey mottling; massive; hard pan material - cemented gravelly grit; slight manganese staining; some gravel to 2 cm diam.; carbonate concretions to 2 cm diam. <i>Abrupt to:-</i>
	134-186	- Decomposing rock.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 476 miles + 1500 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January ( $33.1^{\circ}\text{C}$ ;  $18.6^{\circ}\text{C}$ );  
July ( $14.0^{\circ}\text{C}$ ;  $4.7^{\circ}\text{C}$ )

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope

LAND USE: Grazing

VEGETATION: Red box woodland

PROFILE DESCRIPTION: Northcote Classification Not available

Horizon	Depth (cm)
	0-35 - Massive; roots; insect holes; porous. <i>Abrupt to:-</i>
	35-56 - Poor subangular blocky structure; insect holes; slight manganese staining. <i>Gradual to:-</i>
	56-98 - Subangular blocky structure; some roots; manganese staining; some carbonate staining on ped surface.
	98-178 - Very poor structure; isolated roots; small gravel; manganese concretions; carbonate concretions to 3 cm diam.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 476 miles + 3630 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope.

LAND USE: Grazing

VEGETATION: Transition between red box woodland and mallee

Trees and Shrubs: T5-20 (10) Pointed fruit mallee (*Eucalyptus socialis*), red box (*Eucalyptus intertexta*), yarran (*Acacia homalophylla*), tarbush (*Eremophila glabra*), turpentine (*Eremophila sturtii*), ellangowan poison bush (*Myoporum deserti*), punity bush (*Cassia eremophila*), miljee (*Acacia oswaldii*), gooma bush (*Bertya cunninghamii*).

Pastures: Variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), grey copper burr (*Bassia diacantha*), box grass (*Paspalidium constrictum*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), mulga grass (*Neurachne mitchelliana*), cut leaf goodenia (*Goodenia cycloptera*), crowfoot (*Erodium* sp.), purple daisy burr (*Calotis cuneifolia*), soft roly poly (*Salsola kali*), climbing saltbush (*Rhagodia nutans*), native carrot (*Daucus glochidiatus*), desert chinese lanterns (*Abutilon otocarpum*).

PROFILE DESCRIPTION: Northcote Classification Not available.

Horizon      Depth (cm)

- 0-34 - Massive; roots; wormy appearance; small gravel.  
Abrupt to:-
- 34-60 - Poor to moderate angular blocky to subangular blocky blocky structure; manganese concretions and staining; slight carbonate staining of peds. Gradual to:-
- 60-80 - Massive; some seams of gravel; seams of carbonate concretions; manganese staining. Gradual to:-
- 80-147 - Massive to poor structure; small gravel; manganese staining; many carbonate concretions to 3 cm diam.  
Gradual to:-
- 147-172 - Red/yellow mottled clay; massive; manganese concretions.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 476 miles + 3630 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid to upper slope

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5-20 (10) Pointed fruit mallee (*Eucalyptus socialis*), red box (*Eucalyptus intertexta*), yarran (*Acacia homalophylla*), tarbush (*Eremophila glabra*), turpentine (*Eremophila sturtii*), ellangowan poison bush (*Myoporum deserti*), punty bush (*Cassia eremophila*), miljee (*Acacia oswaldii*), gooma bush (*Bertya cunninghamii*).

Pastures: Variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), grey copper burr (*Bassia diacantha*), box grass (*Paspalidium constrictum*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), mulga grass (*Neurachne mitchelliana*), cut leaf goodenia (*Goodenia cycloptera*), crowfoot (*Erodium* sp.), purple daisy burr (*Calotis cuneifolia*), soft roly poly (*Salsola kali*), climbing saltbush (*Rhagodia nutans*), native carrot (*Daucus glochidiatus*), desert chinese lanterns (*Abutilon otocarpum*).

PROFILE DESCRIPTION: Not available.

LOCATION: "Bundure", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 476 miles + 5200 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Ridge crest

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5 Red mallee (*Eucalyptus oleosa*), pointed fruit mallee (*Eucalyptus socialis*), sword bush (*Bossiaea walkeri*), punty bush (*Cassia eremophila*), emubush (*Eremophila longifolia*), budda (*Eremophila mitchellii*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), variable spear grass (*Stipa variabilis*), *Minuria* sp., rough spear grass (*Stipa scabra*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), box grass (*Paspalidium constrictum*), fuzzweed (*Vittadinia triloba*), purple daisy burr (*Calotis cuneifolia*), tall copper burr (*Bassia convexula*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clayey sand material

Horizon	Depth (cm)	Description
0-1	-	Dusky red (10R 3/4); sandy clay loam; massive; surface crust 1 cm thick. Abrupt to:-
1-27	-	Dark red (2.5YR 3/6); clay loam; massive; roots; small gravel. Abrupt to:-
27-43	-	Dark red (10R 3/6); clay loam; massive to poor structure; charcoal; very small carbonate concretions. Abrupt in terms of carbonate concretions to:-
43-105	-	Dark red (10R 3/6); clay loam; weak subangular blocky structure; some manganese staining; many small carbonate concretions; zone of many large carbonate concretions to 8-9 cm diam. Gradual to:-
105-156	-	Mottled pale red/light reddish brown (10YR 6/2 - 5YR 6/4); clay loam; massive; pockets of grey clay; manganese staining obvious; many small carbonate concretions and some larger to 8-9 cm diam. Gradual to:
156-171	-	Red (2.5YR 5/6); clayey sand; massive; decomposing rock material.

Profile Number: GP 29

*LOCATION:* "Pineridge", Mt. Hope

*COUNTY:* Blaxland

*FOOTAGE (APPROX):* 477 miles + 1870 ft.

*COLLECTED AND DESCRIBED BY:* G.M. Cunningham

*DATE SAMPLED:* 3/7/74

*TOPOGRAPHY:* Slightly undulating

*CLIMATE:* Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1<sup>o</sup>C; 18.6<sup>o</sup>C);  
July (14.0<sup>o</sup>C; 4.7<sup>o</sup>C)

Evaporation: Condobolin - 1611 mm

*POSITION IN LANDSCAPE:* Mid slope

*LAND USE:* Grazing

*VEGETATION:* Mallee

*PROFILE DESCRIPTION:* Northcote Classification Um 5.52

Similar to GP 28

LOCATION: "Pineridge", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 477 miles + 3350 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Lower slope

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5 Pointed fruit mallee (*Eucalyptus socialis*), congo mallee (*Eucalyptus dumosa*), sword bush (*Bossiaea walkeri*), punty bush (*Cassia eremophila*), *Helichrysum diotophyllum*, western rosemary (*Westringia rigida*), spine bush (*Acacia colletioides*), tar bush (*Eremophila glabra*), small leaved clematis (*Clematis microphylla*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *larispicata*), fuzweed (*Vittadinia triloba*), tall copper burr (*Bassia convexula*), crimson lamb's tails (*Ptilotus atriplicifolius*), *Minuria* sp., scented mat rush (*Lomandra effusa*), variable speargrass (*Stipa variabilis*), tucker's spear grass (*Stipa tuckeri*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over sandy clay loam and clayey sand layers.

Horizon	Depth (cm)	Description
	0-5	- Dark reddish brown (2.5YR 3/4); clay loam; massive. Clear to:-
	5-30	- Dusky red (10R 3/4); clay loam; massive; some root material; little insect activity; Abrupt to:-
	30-65	- Dark red (10R 3/6); clay loam; moderate angular blocky to subangular blocky structure; some roots; insect holes; small gravel; manganese staining. Abrupt to:-
	65-92	- Red/yellowish red (10R 4/8-5YR 5/6); sandy clay loam; massive to very poor structure; some roots; manganese staining and concretions; carbonate concretions to 2 cm diam. Abrupt to:-
	92-192	- Red (2.5YR 5/6) predominantly with some dark greyish brown (2.5YR 3/1); clayey sand; massive to poor crumb structure; manganese staining of peds common - stain increases with depth until it becomes very prominent; zone of carbonate accumulation.

LOCATION: "Pineridge", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 477 miles + 4680 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Drainage line

LAND USE: Grazing

VEGETATION: Mallee

*Trees and Shrubs:* Pointed fruit mallee (*Eucalyptus socialis*), spine bush (*Acacia colletioides*), red box (*Eucalyptus intertexta*), western rosemary (*Westringia rigida*), white cypress pine (*Callitris columellaris*), (seedlings), gooma bush (*Bertya cunninghami*), tar bush (*Eremophila glabra*), daisy bush (*Olearia pimelioides*), punty bush (*Cassia eremophila*), emu hush (*Eremophila longifolia*), wedge leaved hopbush (*Dodonaea cuneata*).

*Pastures:* Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), *Goodenia* sp., purple daisy burr (*Calotis cuneifolia*), fuzzweed (*Vittadinia triloba*), native carrot (*Daucus glochidiatus*), variable spear grass (*Stipa variabilis*), grey copper burr (*Bassia diacantha*), goosefoot (*Chenopodium* sp.).

PROFILE DESCRIPTION: Similar to GP 30 but with the upper three horizons compressed into a shallower depth.

LOCATION: "Pineridge", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 478 miles + 3900 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Upper slope

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5 - Congoo mallee (*Eucalyptus dumosa*), red mallee (*Eucalyptus oleosa*), gooma bush (*Bertya cunninghamii*), punty bush (*Cassia eremophila*), tar bush (*Eremophila glabra*), white cypress pine (*Callitris columellaris*), emu bush (*Eremophila longifolia*).

Pastures: *Minuria* sp., panic grass (*Panicum* sp.), box grass (*Paspalidium constrictum*), purple daisy burr (*Calotis cuneifolia*), grey copper burr (*Bassia diacantha*), variable spear grass (*Stipa variabilis*), fuzzweed (*Vittadinia triloba*), crimson lamb's tails (*Ptilotus atriplicifolius*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13 over loamy sand material.

Horizon	Depth (cm)	Description
	0-10	- Dark reddish brown (2.5YR 3/4); fine sandy clay loam; massive; surface crust 0.5 cm; buckshot gravel 0.2 cm to 1.0 cm diam. common on surface. Clear to:-
	10-33	- Dark red (10R 3/6); sandy clay loam; massive; roots; charcoal; some insect holes. Abrupt to:-
	33-51	- Dark red (10R 3/6); clay loam; moderate sub-angular blocky structure; layer of stones to 2 cm diam. on top of horizon and much buckshot gravel 0.5 cm to 1 cm diam. through horizon; many roots; insect holes. Gradual to:-
	51-86	- Dark red (10R 3/6 to 2.5YR 3/6); clay loam; prismatic to subangular blocky structure; some manganese staining; isolated carbonate concretions. Gradual to:-
	86-110	- Red (2.5YR 4/8); clay loam; massive to poor structure; manganese staining and concretions; some carbonate concretions to 2 cm diam. Abrupt to:-
	110-139	- Dark red (2.5YR 3/6); light clay; massive; some scattered gravel to 2 cm diam.; carbonate concretions to 3 cm diam.; generally in definite layers. Abrupt to:-
	139-178	- Red (2.5YR 4/8) with gravelly dark greyish brown (7.5 YR 3/3) material; loamy sand; massive; bedded stones to 7 cm diam. prominent. Gradual to:-
	178-221	- Bedrock - greyish yellow (10Y 8/1 - 2.5Y 7/3).

Profile Number: G F 33

Date Sampled:

LOCATION:

COUNTY:

LAND SYSTEM:

COLLECTED AND DESCRIBED BY:

TOPOGRAPHY:

CLIMATE:

POSITION IN LANDSCAPE:

LAND USE:

VEGETATION:

Trees Spacing:

Shrubs Spacing:

Pastures:

PROFILE DESCRIPTION:

LOCATION: "Pineridge", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 479 miles + 100 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Ridge top

LAND USE: Grazing

VEGETATION: Red box/mallee cypress pine woodland

Trees and Shrubs: T10-20 Red box (*Eucalyptus intertexta*), white cypress pine (*Callitris columellaris*), mulga (*Acacia aneura*), needlewood (*Hakea leucoptera*), hooked needlewood (*Hakea tephrosperma*), gooma bush (*Bertya cunninghamii*), wedge leaved hopbush (*Dodonaea cuneata*), punty bush (*Cassia eremophila*), clustered everlasting (*Helichrysum semipapposum*), budda (*Eremophila mitchellii*), tar bush (*Eremophila glabra*), emu bush (*Eremophila longifolia*), daisy bush (*Olearia pimelioides*), spine bush (*Acacia colletioides*).

Pastures: No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), grey copper burr (*Bassia diacantha*), fuzzweed (*Vittadinia triloba*), box grass (*Paspalidium constrictum*), crimson lamb's tails (*Ptilotus atriplicifolius*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon Depth (cm)

- 0-14 - Dusky red (10R 3/4); sandy clay loam; vesicular crust 1 cm thick; massive; roots; insect holes; buckshot gravel on surface. *Gradual to:-*
- 14-38 - Dark red (10R 3/6); clay loam; massive; porous; roots; some insect holes; some yellow shaley gravel to 1 cm diam. *Abrupt to:-*
- 38-58 - Dark red (2.5YR 3/6); clay loam; poor structure; roots; some insect holes; some gravel to 3 cm diam.; carbonate stains on peds. *Abrupt to:-*
- 58-81 - Dark red (10R 3/6); clay loam; very poor structure in soil between floaters to 4-5 cm diam.; heavy manganese staining. *Gradual to:-*
- 81-117 - Decomposing rock. *Gradual to:-*
- 117-187 - Bedrock.

LOCATION: "Pineridge", Mt. Hope COUNTY: Blaxland

FOOTAGE (APPROX): 478 miles + 4900 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating Underlying Rock: Light purple siltstone (Cobar Group)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Upper slope (western)

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T10 Red box (*Eucalyptus intertexta*), pointed fruit mallee (*Eucalyptus socialis*), wilga (*Geijera parviflora*), gooma bush (*Bertya cunninghamii*), butter bush (*Pittosporum phylliraeoides*), budda (*Eremophila mitchellii*), wedge leaved hopbush (*Dodonaea cuneata*), punty bush (*Cassia eremophila*), tar bush (*Eremophila glabra*), turpentine (*Eremophila sturtii*), daisy bush (*Olearia pimelioides*).

Pastures: No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), grey copper burr (*Bassia diacantha*), variable spear grass (*Stipa variabilis*), purple daisy burr (*Calotis cuneifolia*), box grass (*Paspalidium constrictum*), crimson lamb's tails (*Ptilotus atriplicifolius*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)
	0-5 - Dusky red (10R 3/3); clay loam; massive; weak crust; silty appearance; buckshot gravel to 0.5 cm diam. on surface. Clear to:-
	5-27 - Dark red (10R 3/6); clay loam; massive; major root accumulation; insect holes; some large gravel. Gradual to:-
	27-53 - Dark red (10R 3/6); clay loam; weak subangular blocky structure; some roots; some insect holes; gravel to 2 cm diam. increasing with depth. Abrupt to:-
	53-103 - Dark red (mainly 10R 3/6 with some 2.5YR 3/6); clay loam to fine sandy clay loam; moderate prismatic to subangular blocky structure; buckshot gravel to 1.5 cm diam.; manganese staining; some carbonate concretions to 2 cm diam. Abrupt to:-
	103-203 - Mainly bedrock with small concentrations of light red (2.5YR 6/8) soil.

LOCATION: "Pineridge", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 479 miles + 480 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1<sup>o</sup>C; 18.6<sup>o</sup>C);  
July (14.0<sup>o</sup>C; 4.7<sup>o</sup>C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Upper slope (eastern)

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: Pointed fruit mallee (*Eucalyptus socialis*), mallee (*Eucalyptus* spp.), needlewattle (*Acacia rigens/havilandii*), tar bush (*Eremophila glabra*), western rosemary (*Westringia rigida*), gooma bush (*Bertya cunninghamii*), wedge leaved hopbush (*Dodonaea cuneata*), daisy bush (*Olearia pimelioides*), punty bush (*Cassia eremophila*), spine bush (*Acacia colletioides*), wilga (*Geijera parviflora*), ellangowan poison bush (*Myoporum deserti*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *lawispicata*), grey copperburr (*Bassia diacantha*), goosefoot (*Chenopodium* sp.), fuzzweed (*Vittadinia triloba*), purple daisy burr (*Calotis cuneifolia*), box grass (*Paspalidium constrictum*), *Rhyncharrhena quinquepartita*.

PROFILE DESCRIPTION: Northcote Classification Gn 2.12

Horizon	Depth (cm)	Description
	0-12	- Dusky red (10R 3/4); fine sandy clay loam; massive; slight surface crust; roots; some buckshot gravel on surface; layer of gravel under crust. <i>Gradual to:-</i>
	12-32	- Dark red (10R 3/6); fine sandy clay loam; massive; few roots; few insect holes; small buckshot gravel to 0.5 cm diam. <i>Abrupt to:-</i>
	32-46	- Dark red (10R 3/6); clay loam; massive to very poor structure; some stones to 7 cm diam. scattered through horizon. <i>Abrupt to:-</i>
	46-63	- Dark red (10R 3/6); clay loam; poor to moderate crumb to angular blocky structure; smooth stones to 7 cm diam; few roots; well developed clay skins on peds. <i>Gradual to:-</i>
	63-94	- Dark red (10R 3/6); light clay; moderate crumb to prismatic and angular blocky structure; clay skins on peds well developed; some roots; some carbonate concretions. <i>Gradual to:-</i>
	94-132	- Dark red (2.5YR 3/6); clay loam; moderate prismatic to angular blocky structure; well developed clay skins; carbonate concretions to 4 cm diam. <i>Gradual to:-</i>
	132-152	- Mottled red (2.5YR 5/8) to dark red (10R 3/6); sandy clay loam; massive; pockets of gritty indurated material; beginning of strong manganese staining. <i>Abrupt to:-</i>

- 152-170 - Red (10R 4/8 - 5/8) with some greyish yellow (7.5Y 7/2) clayey sand; massive; some manganese staining; horizon contains decomposing rock. *Abrupt to:-*
- 170-195 - Cemented sand with round and angular gravel to 4 cm diam.; manganese staining.

LOCATION: "Pineridge", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 479 miles + 1100 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid Slope

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: Pointed fruit mallee (*Eucalyptus socialis*), mallee (*Eucalyptus* spp.), needlewattle (*Acacia rigens/havilandii*), tar bush (*Eremophila glabra*), western rosemary (*Westringia rigida*), gooma bush (*Bertya cunninghamii*), wedge leaved hopbush (*Dodonaea cuneata*), daisy bush (*Olearia pimelioides*), punty bush (*Cassia eremophila*), spine bush (*Acacia colletioides*), wilga (*Geijera parviflora*), ellangowan poison bush (*Myoporum deserti*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), grey copperburr (*Bassia diacantha*), goosefoot (*Chenopodium* sp.), fuzzweed (*Vittadinia triloba*), purple daisy burr (*Calotis cuneifolia*), box grass (*Paspalidium constrictum*), *Rhyncharrhena quinquepartita*.

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon    Depth (cm)

- 0-10 - Dusky red (10R 3/4) to dark red (10R 3/6); fine sandy clay loam; massive; roots; some insect holes; gravel to 2 cm diam. *Abrupt to:-*
- 10-73 - Dusky red (10R 3/6); clay loam; poor to moderate subangular blocky structure; gravel to 1.5 cm; roots; manganese staining increasing with depth. *Abrupt to:-*
- 73-183 - Pale red (10R 6/2); clayey sand; massive to poor structure; zone of grey and red clayey material interspersed with bands of carbonate to 2 cm wide in a layered pattern; carbonate concretions to 5 cm diam.; carbonate staining on soil surfaces; manganese staining and concretions.

LOCATION: "Pineridge", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 479 miles + 2280 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 3/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1<sup>o</sup>C; 18.6<sup>o</sup>C);  
July (14.0<sup>o</sup>C; 4.7<sup>o</sup>C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope

LAND USE: Grazing

VEGETATION: Mallee

*Trees and Shrubs:* Pointed fruit mallee (*Eucalyptus socialis*), mallee (*Eucalyptus* spp), needlewattle (*Acacia rigens/havilandi*), tar bush (*Eremophila glabra*), western rosemary (*Westringia rigida*), gooma bush (*Bertya cunninghamii*), wedge leaved hopbush (*Dodonaea cuneata*), daisy bush (*Olearia pimelioides*), punty bush (*Cassia eremophila*), spine bush (*Acacia colletioides*), wilga (*Geijera parviflora*), ellangowan poison bush (*Myoporum deserti*).

*Pastures:* Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), grey copper burr (*Bassia diacantha*), goosefoot (*Chenopodium* sp.), fuzzweed (*Vittadinia triloba*), purple daisy burr (*Calotis cuneifolia*), box grass (*Paspalidium constrictum*), *Rhyncharrhena quinquepartita*.

*PROFILE DESCRIPTION:* Similar profile to those sampled in the nearby mallee. At least 2 metres deep with the top of the carbonate layer 60 cm below the surface. Includes layers of gravelly material.

LOCATION: "Pineridge", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 479 miles + 4120 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 4/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Crest of sand ridge

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5 Red mallee (*Eucalyptus oleosa*), mallee pine (*Callitris verrucosa*), sword bush (*Bossiaea walkeri*), pointed fruit mallee (*Eucalyptus socialis*), needlewattle (*Acacia havilandii/rigens*), daisy bush (*Olearia pimelioides*), *Templetonia aculeata*.

Pastures: *Lomandra glauca* spp *collina*, No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), mat rush (*Lomandra leucocephala*).

PROFILE DESCRIPTION: Northcote Classification Uc 5.0r Dr 4.63

Horizon Depth (cm)

- 0-21 - Dark red (2.5YR 3/6); clayey sand; 3 mm thick surface crust; massive; some sand accumulation on surface; major root development. *Abrupt to:-*
- 21-27 - Red (2.5YR 4/6) to (2.5YR 5/6 dry) with some yellow mottling; clayey sand; bleached horizon; slight to massive structure; isolated stones to 2 cm; major root development. *Abrupt to:-*
- 27-62 - Dark red (10R 3/6) with some yellow mottling; sandy clay loam; massive to poor structure; some pores; some roots. *Gradual to:-*
- 62-140 - Dark red (2.5YR 3/6); sandy clay loam; massive to poor structure; layer of carbonate concretions to 3 to 5 cm diam.; isolated water worn stones to 10 cm some others to 2 cm; some roots. *Gradual to:-*
- 140-181 - Dark red (2.5YR 3/6); fine sandy clay loam to clay loam; massive; strong manganese staining; small carbonate concretions.

\*root growth in this profile is concentrated in the top 27 cm.

\*the bleached layer (21-27 cm) comes to the surface on either side of the sand ridge.

\*soil structure in the 27-62 cm and 62-140 cm layers improves in nearby swale profiles.

\*mallee pine (*Callitris verrucosa*) continues from the ridge tops down slope approximately 300-400 metres. At this point the normal mallee vegetation recommences.

At times, layers of 1 to 3 cm gravel occur below the sandy material on the dunes where mallee pine occurs. This layer may be 5 to 10 cm wide and at times reaches to within 30 to 40 cm of the soil surface.

\*in a nearby variant the bleached layer was encountered at 47 cm below the surface. It was 5 cm wide.

LOCATION: "Pineridge", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 480 miles + 2270 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 4/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope of sand ridge

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5 Mallee pine (*Callitris verrucosa*), pointed fruit mallee (*Eucalyptus socialis*), wilhelm's wattle (*Acacia wilhelmiana*), daisy bush (*Olearia pimelioides*).

Pastures: Scented mat rush (*Lomandra effusa*), yellow buttons (*Helichrysum apiculatum*), rock fern (*Cheilanthes tenuifolia*), variable spear grass (*Stipa variabilis*), *Lomandra glauca* spp. *collina*.

PROFILE DESCRIPTION: Northcote Classification Uc 1.23 over clay loam material.

Horizon	Depth (cm)	
	0-15	- Dark red (2.5YR 3/6); sandy loam; massive; surface crust 4 mm thick - not vesicular. <i>Clear to:-</i>
	15-65	- Dark red (2.5YR 3/6); sandy loam; massive; roots; gravel to 1 cm. <i>Gradual to:-</i>
	65-75	- Red to dark red (10R 4/8-10R 3/6) with some yellowish mottling; bleached sandy loam; massive; gravel mainly to 5 mm but some to 3 cm. <i>Abrupt to:-</i>
	75-203	- Dark red (10R 3/6); clay loam; massive to poor structure; porous; buckshot gravel to 5 mm; gravel to 2 cm; small carbonate concretions; some carbonate staining on clay; manganese staining increases below 90 cm depth; some roots to base of profile.
		*surrounding variants show manganese staining higher in the profile and weak to medium angular blocky to prismatic structure.
		*in some variants, stones into 3 cm diam. occur in a layer 5 to 10 cm wide below the sandy material at the top of the profile.
		*the bleached layer is discontinuous in places and has an undulating boundary.

LOCATION: "Pineridge", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 481 miles + 950 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 4/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope of sand ridge

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: Red mallee (*Eucalyptus oleosa*), mallee pine (*Callitris verrucosa*), tar bush (*Eremophila glabra*), native jasmine (*Jasminum lineare*), *Acacia brachybotrya*, daisy bush (*Olearia pimelioides*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), tucker's spear grass (*Stipa tuckeri*), spreading flax lily (*Dianella revoluta*), yellow buttons (*Helichrysum apiculatum*), variable spear grass (*Stipa variabilis*), scented mat rush (*Lomandra effusa*), golden everlastings (*Helichrysum bracteatum*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon Depth (cm)

- Surface crust dusky red (10R 3/4); loamy sand texture; some sand accumulated on surface.
- 0-52 - Dark red (2.5YR 3/6); sandy clay loam; massive; roots; Abrupt to:-
- 52-65 - Reddish brown to dark red (7.5R 3/6 - 10R 3/6); sandy clay loam; slightly developed structure; roots; Gradual to:-
- 65-92 - Dark red (10R 3/6); sandy clay loam; massive to poor structure; porous; isolated carbonate concretions. Gradual to:-
- 92-134 - Dark red (10R 3/6); sandy clay loam; massive to poor structure; porous; some carbonate concretions to 2 cm mainly in cleavages and in old root lines; carbonate staining on peds; manganese staining increasing with depth; small manganese concretions. Gradual to:-
- 134-164 - Dark red (2.5YR 3/6); sandy clay loam; massive; carbonate concretions to 4 cm; manganese staining.

\* no stones were present in this profile.

\* the bleached layer was discontinuous and not evident in this profile but was present a further 10 m along the trench at about 50 cm depth.

LOCATION: "Pineridge", Mt. Hope

COUNTY: Blaxland

FOOTAGE (APPROX): 481 miles + 4350 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 4/7/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Lower slope of sand ridge

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5 Red mallee (*Eucalyptus oleosa*), broombush (*Melaleuca uncinata*), sword bush (*Bossiaea walkeri*), daisy bush (*Olearia pimelioides*), punty bush (*Cassia eremophila*), cough bush (*Cassinia laevis*), wilhelm's wattle (*Acacia wilhelmiana*), tar bush (*Eremophila glabra*).

Pastures: No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), *Lomandra glauca* spp. *collina*, scented mat rush (*Lomandra effusa*), porcupine spinifex grass (*Triodia irritans* var *laxispicata*), purple daisy burr (*Calotis cuneifolia*), variable spear grass (*Stipa variabilis*), fuzzweed (*Vittadinia triloba*), grey beard grass (*Amphipogon caricinus*), *Stackhousia monogyna*, *Goodenia* sp. (undescribed).

PROFILE DESCRIPTION: Northcote Classification Uc 5.11 over clay loam material

Horizon	Depth (cm)	
	0-50	- Dark red (2.5YR 3/6); sandy loam; massive; roots; some insect holes. <i>Gradual to:-</i>
	50-60	- Dark red to red (10R 4/8-10R 3/6) with yellow mottling; massive; sandy loam; some roots. <i>Abrupt to:-</i>
	60-93	- Dark red (10R 3/6); clay loam; moderate subangular blocky structure; some small carbonate concretions; carbonate stains on peds; manganese staining on peds. <i>Gradual to:-</i>
	93-148	- 95% dark red (10R 3/6) and 5% light brown (7.5YR 6/4); poor to moderate structure; gravel to 1 cm; clay loam; some small carbonate concretions with a basal layer of carbonate concretions to 4 cm; manganese staining and concretions. <i>Gradual to:-</i>
	148-190	- Mainly dark red (10R 3/6) with some light brown (7.5 YR 6/4); clay loam; massive; few roots; gravel to 5 mm; manganese staining and concretions.

LOCATION: "Illawong", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 482 miles + 120 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 4/7/74

TOPOGRAPHY: Slightly undulating

Underlying Rock: Yellow siltstone  
(Cobar Group)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Centre of drainage line in dune corridor

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T10 Red mallee (*Eucalyptus oleosa*), red box (*Eucalyptus intertexta*), congoo mallee (*Eucalyptus dumosa*), kurrajong (*Brachychiton populneus*), butter bush (*Pittosporum phylliraeoides*), needle wattle (*Acacia rigens/havilandii*), western rosemary (*Westringie rigida*), punty bush (*Cassia eremophila*), wilhelm's wattle (*Acacia wilhelmiana*), cough bush (*Cassinia leavis*), sword bush (*Bossiaea walkeri*), *Eriostemon difformis*, broombush (*Melaleuca uncinata*), wedge leaved hopbush (*Dodonaea cuneata*), devil's twine (*Cassytha melantha*).

Pastures: Variable spear grass (*Stipa variabilis*), scented mat rush (*Lomandra effusa*), purple daisy burr (*Calotis cuneifolia*), golden everlastings (*Helichrysum bracteatum*), woolly minuria (*Minuria denticulata*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-8	- Dusky red (10R 3/4); clay loam; massive; ironstone (buckshot) gravel on surface and isolated stones; crust to 3 mm; Gradual to:-
	8-18	- Dark red (10R 3/6); sandy clay loam; massive; Gradual to:-
	18-29	- Dark red (10R 3/6); sandy clay loam; massive. Gradual to:-
	29-73	- Dark red (10R 3/6 - 2.5YR 3/6); clay loam; poor structure; red and yellow shale and quartz gravel to 5 cm diam. give mottled appearance. Gradual to:-
	73-88	- Red (10R 4/8); clay loam; massive; soil mixed with yellow shale; greyish clay material on rock surface.
	88 +	- Rock.

LOCATION: "Illawong", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 482 miles + 750 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 4/7/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C)  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Lower slopes of rocky ridge with sandy accumulation (western)

LAND USE: Grazing

VEGETATION: Broombush community in mallee

Trees and Shrubs: T5 Red mallee (*Eucalyptus oleosa*), white cypress pine (*Callitris columellaris*), broombush (*Melaleuca uncinata*), daisy bush (*Olearia pimelioides*), punty bush (*Cassia eremophila*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), yellow buttons (*Helichrysum apiculatum*), crowfoot (*Erodium* sp.), rock fern (*Cheilanthes tenuifolia*), fuzzweed (*Vittadinia triloba*), variable spear grass (*Stipa variabilis*), pink fingers (*Caladenia carnea*), midget greenhood (*Pterostylis mutica*), waukeroo daisy (*Stuartina muelleri*).

PROFILE DESCRIPTION: Northcote Classification Buried Um 5.52.

Horizon	Depth (cm)	Description
	0-10	- Dusky red (10R 3/4); sandy loam; massive; surface crust 3 mm thick. <i>Clear to:-</i>
	10-43	- Dark red (10R 3/5); sandy clay loam; massive; roots; charcoal; some insect holes; some small gravel to 4 mm. <i>Abrupt to:-</i>
	43-63	- Dark red (10R 3/6); clay loam; moderate angular blocky to subangular blocky structure; roots; some charcoal. <i>Gradual to:-</i>
	63-78	- Dark red (10R 3/6-2.5YR 3/6); clay loam; moderate structure; stones to 15 cm but mainly 1 to 3 cm - often rounded and with water-washed appearance. <i>Gradual to:-</i>
	78-96	- Dark red (10R 3/6); clay loam; poor structure; some roots; shale fragments to 2 cm; some manganese staining. <i>Gradual to:-</i>
	96-153	- Dark red (10R 3/6- 2.5YR 3/6); clay loam; poor structure; clay skins; some roots; shale floaters and quartz stones to 5 to 6 cm ; manganese staining increasing to heavy at the base.
	153-175-	Bedrock with a carbonate capping.

Profile Number: GP 45

*LOCATION:* "Illawong", Euabalong West

*COUNTY:* Blaxland

*FOOTAGE (APPROX):* 482 miles + 1800 ft.

*COLLECTED AND DESCRIBED BY:* G.M. Cunningham

*DATE SAMPLED:* 4/7/74

*TOPOGRAPHY:* Undulating

*CLIMATE:* Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1<sup>o</sup>C; 18.6<sup>o</sup>C)  
July (14.0<sup>o</sup>C; 4.7<sup>o</sup>C)

Evaporation: Condobolin - 1611 mm

*POSITION IN LANDSCAPE:* Lower mid slope of rocky ridge

*LAND USE:* Grazing

*VEGETATION:* Mallee

*PROFILE DESCRIPTION:* Not available.

Profile Number: GP 46

*LOCATION:* "Illawong", Euabalong West

*COUNTY:* Blaxland

*FOOTAGE (APPROX):* 482 miles + 2600 ft.

*COLLECTED AND DESCRIBED BY:* G.M. Cunningham

*DATE SAMPLED:* 4/7/74

*TOPOGRAPHY:* Undulating

*CLIMATE:* Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

*POSITION IN LANDSCAPE:* Mid slope of rocky ridge (western side)

*LAND USE:* Grazing

*VEGETATION:* Mallee

*PROFILE DESCRIPTION:* Similar to GP 44

LOCATION: "Illawong", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 482 miles + 3400 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 4/7/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C):  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Upper slope of rocky ridge (western side)

LAND USE: Grazing

VEGETATION: Broombush community in mallee

Trees and Shrubs: T10-40 Mallee (*Eucalyptus* spp.), currawang (*Acacia doratoxylon*), white cypress pine (*Callitris columellaris*), broom bush (*Melaleuca uncinata*), fringed heath myrtle (*Micromyrtus ciliata*);  
On side of sample site - red box (*Eucalyptus intertexta*), kurrajong (*Brachychiton populneus*), green mallee (*Eucalyptus viridis*).

Pastures: Purple daisy burr (*Calotis cuneifolia*), variable spear grass (*Stipa variabilis*), native tobacco (*Nicotiana suaveolens*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), raspwort (*Haloragis* sp.).

PROFILE DESCRIPTION: Northcote Classification Uc 5.11 over clay loam material

Horizon	Depth (cm)
0-8	- Dark reddish brown (5YR 3/4); loamy sand; slight surface crust (2 mm thick); massive; roots; some stone to 1 to 2 cm; Gradual to:-
8-50*	- Reddish brown (5YR 4/4); sandy loam; massive; major root zone; large stones to 15 cm. Gradual to:-
50-110	- Pale brown (10YR 6/3); massive; clay loam; mainly large stones with soil in interspaces; soil proportion lessens with depth. Gradual to:-
110+	- Bedrock.

\*A nearby variant showed this layer with a low gravel content (5.65%) and a slightly different colour (5YR 3/6) but similar sandy loam texture.

Profile Number: GP 48

*LOCATION:* "Illawong", Euabalong West

*COUNTY:* Blaxland

*FOOTAGE (APPROX):* 482 miles + 4000 ft.

*COLLECTED AND DESCRIBED BY:* G.M. Cunningham

*DATE SAMPLED:* 4/7/74

*TOPOGRAPHY:* Undulating

*CLIMATE:* Rainfall: Mt. Hope -384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1<sup>o</sup>C; 18.6<sup>o</sup>C);  
July (14.0<sup>o</sup>C; 4.7<sup>o</sup>C)

Evaporation: Condobolin - 1611 mm

*POSITION IN LANDSCAPE:* Upper slope rocky ridge (western side)

*LAND USE:* Grazing

*VEGETATION:* Mallee

*PROFILE DESCRIPTION:* Not Available

LOCATION: "Illawong", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 482 miles + 4520 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 4/7/74

TOPOGRAPHY: Undulating UNDERLYING ROCK: Quartzose sandstone.

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Crest of rocky ridge.

LAND USE: Grazing

VEGETATION: White cypress pine/belah community

Trees and Shrubs: White cypress pine (*Callitris columellaris*), belah (*Casuarina cristata*), pointed fruit mallee (*Eucalyptus socialis*), wilga (*Geijera parviflora*), currawang (*Acacia doratoxylon*), hooked needlewood (*Hakea tephrosperma*), needlewood (*Hakea leucoptera*), red box (*Eucalyptus intertexta*), small-leaf wax flower (*Eriostemon difformis*), shrubby rice-flower (*Pumelia microcephala*), broad-leaf hopbush (*Dodonaea viscosa*), budda (*Eremophila mitchellii*).

Pastures: Box grass (*Paspalidium constrictum*), paper glumes (*Ptilotus gaudichaudii*), purple daisy burr (*Calotis cuneifolia*), No. 9 wire grass (*Aristida jerichoensis* var. *subspinulifera*), ruby saltbush (*Enchylaena tomentosa*), grey copperburr (*Bassia diacantha*), variable speargrass (*Stipa variabilis*), smooth sunray (*Helipterum laeve*).

PROFILE DESCRIPTION: Northcote Classification Buried Um 5.52

Horizon	Depth (cm)
	0-45 - Dusky red (10R 3/4); some patches of lighter brown; sandy loam; massive; slight sandy surface crust to 1 cm thick; insect holes; major root zone. <i>Abrupt to:-</i>
	45-54 - Dark red (10R 3/6); sandy clay loam; slight structure; some stones 5 mm to 2 cm diameter; some surface carbonate staining. <i>Gradual to:-</i>
	54-113 - Dark red (10R 3/6); clay loam; moderate prismatic to subangular blocky structure; roots; manganese staining; some stones to 6cm diameter. <i>Gradual to:-</i>
	113-139- Red (2.5YR 4/6) with some greyish material; clay loam; massive; some roots.
	139+ - Bedrock material with some carbonate capping.

LOCATION: "Illawong", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 484 miles + 1460 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 26/7/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Grey box/red box woodland

Trees and Shrubs: T5-20 Grey box (*Eucalyptus woollsiana*), red box (*Eucalyptus intertexta*), isolated pointed fruit mallee (*Eucalyptus socialis*), sugarwood (*Myoporum platycarpum*), *Eriostemon difformis*, budda (*Eremophila mitchellii*), gooma bush (*Bertya cunninghamii*), emu bush (*Eremophila longifolia*), tar bush (*Eremophila glabra*).

Pastures: Variable spear grass (*Stipa variabilis*), native tobacco (*Nicotiana suaveolens*), fuzzweed (*Vittadinia triloba*), purple daisy burr (*Calotis cuneifolia*), australian bugle (*Ajuga australis*), *Goodenia* sp., isolated porcupine spinifex grass (*Triodia irritans* var *laxispicata*), ruby salt bush (*Enchylaena tomentosa*), grey copper burr (*Bassia diacantha*), soft roly poly (*Salsola kali*), yellow wood sorrel (*Oxalis corniculatus*), crimson lamb's tails (*Ptilotus atriplicifolius*), goosefoot (*Chenopodium* sp.), cut leaf goodenia (*Goodenia cycloptera*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	Description
	0-33	- Dark red (2.5YR 3/6); clay loam; massive; porous; roots; small gravel to 3 mm. <i>Abrupt to:-</i>
	33-50	- Dark red (2.5YR 3/6) to red (2.5YR 5/6); sandy clay loam; bleached; massive; porous; quartz gravel to 1.5 cm diam.; some roots; insect holes. <i>Abrupt to:-</i>
	50-64	- Dark red (10R 3/6); clay loam; poor structure - crumb to SABL*; few pieces of gravel to 1 cm diam. <i>Abrupt to:-</i>
	64-103	- Dark red (10R 3/6); sandy clay loam; massive; porous; few roots; ironstone gravel in small amounts; other gravel to 1.5 cm diam.; some manganese staining and concretions near lower boundary; few carbonate concretions to 1.5 cm near lower boundary. <i>Diffuse to:-</i>
	103-133	- Dark red (10R 3/6); fine sandy clay loam; massive - but some semblance of structure; isolated roots; some gravel to 5 mm diam.; manganese stainings and concretions; carbonate concretions to 4 cm diam. <i>Gradual to:-</i>
	133-164	- Dark red (10R 3/6); fine sandy clay loam; massive; porous; appears to be a hardpan type material; gravel to 5 mm but mostly 1-2 mm diam.; cemented appearance; some manganese stainings; small carbonate concretions 1 cm diam. <i>Clear to:-</i>
	164-190	- Reddish brown (7.5R 3/4); massive; porous; fine sandy clay loam; gravel to 3 mm; manganese staining and small concretions; isolated carbonate concretions.

\* subangular blocky

LOCATION: "Illawong", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 484 miles + 1460 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 26/7/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Grey box/red box woodland

Trees and Shrubs: T5-20 Grey box (*Eucalyptus woollsiana*), red box (*Eucalyptus intertexta*), isolated pointed fruit mallee (*Eucalyptus socialis*), sugarwood (*Myoporum platycarpum*), *Eriostemon difformis*, budda (*Eremophila mitchellii*), gooma bush (*Bertya cunninghamii*), emu bush (*Eremophila longifolia*), tar bush (*Eremophila glabra*).

Pastures: Variable spear grass (*Stipa variabilis*), native tobacco (*Nicotiana suaveolens*), fuzzweed (*Vittadinia triloba*), purple daisy burr (*Calotis cuneifolia*), australian bugle (*Ajuga australis*), *Goodenia* sp., isolated porcupine spinifex grass (*Triodia irritans* var *laxispicata*), ruby salt bush (*Enchylaena tomentosa*), grey copper burr (*Bassia dicantha*), soft roly poly (*Salsola kali*), yellow wood sorrel (*Oxalis corniculatus*), crimson lamb's tails (*Ptilotus atriplicifolius*), goosefoot (*Chenopodium* sp.), cut leaf goodenia (*Goodenia cycloptera*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-33	- Dark red (10R 3/4); clay loam; massive. Clear to:-
	33-53	- Dark red (10R 3/6); sandy clay loam; massive; small gravel to 3 mm; some roots; insect holes. Abrupt to:-
	53-89	- Dark red (10R 3/6); clay loam; massive to slight structure; gravel to 5 mm diam.; main root zone. Clear to:-
	89-130	- Dark red (10R 3/6); clay loam; poor structure; gravel to 1 cm diam. mainly but some to 3-4 cm diam.; roots; very isolated carbonate concretions; few manganese stainings. Clear to:-
	130-174	- Dark red (10R 3/6); sandy clay loam; massive; porous cemented hardpan-like material; shale and ironstone gravel present, shale to 2 cm diam. and some to 4 cm; manganese concretions and stainings. Gradual to:-
	174-193	- Dark red (10R 3/6); sandy loam; massive; porous; gravel to 6 mm diam.; manganese stainings and concretions.

\*note no bleached horizon in this profile.

LOCATION: "Illawong", Euabalong West. COUNTY: Blaxland

FOOTAGE (APPROX): 483 miles + 3220 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/7/74

TOPOGRAPHY: Undulating UNDERLYING ROCK: Light pink recently consolidated sandstone.

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance.

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope (eastern) of rocky ridge

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T1-5 Pointed fruit mallee (*Eucalyptus socialis*), *Spyridium* sp., gooma bush (*Bertya cunninghamii*), tar bush (*Eremophila glabra*), needlewattle (*Acacia rigens/havilandii*), sword bush (*Bossiaea walkeri*), spine bush (*Acacia colletioides*), white cypress pine (*Callitris columellaris*), daisy bush (*Olearia pimelioides*), *Olearia ramulosa*, small leaf clematis (*Clematis microphylla*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var. *laxispicata*), ruby salt bush (*Enchylaena tomentosa*), *Helichrysum semipapposum*), fan flower (*Scaevola aemula*), *Zygophyllum* sp., purple daisy burr (*Calotis cuneifolia*), variable spear grass (*Stipa variabilis*), fuzzweed (*Vittadinia triloba*), golden everlastings (*Helichrysum bracteatum*).

PROFILE DESCRIPTION: Northcote Classification Um 5.51

Horizon	Depth (cm)	Description
0-10	-	Dusky red (10R 3/4) at surface changing to dark red (10R 3/6 moist); sandy clay loam; massive; some roots; isolated gravel to 3 cm diam. Gradual to:-
10-30	-	Dark red (10R 3/6 moist); sandy clay loam; slight SABL*structure; roots; white ant and other insect holes; isolated quartz gravel to 3 cm diam. Gradual to:-
30-55	-	Dark red (10R 4/8 moist); clay loam; slight SABL* structure; sandstone inclusions to 4 cm diam. and some large floaters to 30 cm diam.; carbonate coatings on floaters; manganese stainings and small concretions begin just above bedrock.
55-117	-	Bedrock (trench only 117 cm deep at time of sampling). Nearby the profiles were deeper with bedrock encountered at 120 cm depth.

\* subangular blocky

Profile Number: GP 53

LOCATION: "Illawong", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 483 miles + 2250 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/7/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Banded yellow cleaved siltstone (Cobar Group)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Minor depression between crests on eastern slope of rocky ridge

LAND USE: Grazing

VEGETATION: Dense white cypress pine community

Trees and Shrubs: T2-5 White cypress pine (*Callitris columellaris*), budda (*Eremophila mitchellii*), wedge leaved hopbush (*Dodonaea cuneata*), *Olearia ramulosa*, broad leaved hopbush (*Dodonaea viscosa*), needlewood (*Hakea leucoptera*), *Pimelia microcephala*, devil's twine (*Cassutha melantha*), mealy saltbush (*Rhagodia parabolica*).

Pastures: Climbing saltbush (*Rhagodia nutans*), grey copperburr (*Bassia diacantha*), *Zygophyllum* sp..

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
	0-20	- Dusky red to dark red (10R 3/4 - 10R 3/6 moist); clay loam; weak surface crust; massive; main root concentration; insect holes; burned material. <i>Abrupt to:-</i>
	20-43	- Dark red (10R 3/6 moist); clay loam; slight SABL* structure - isolated gravel to 2 cm diam. <i>Clear to:-</i>
	43-74	- Dark red (10R 3/6 moist); clay loam; poor to medium crumb structure; clay skins; small gravel to 3 mm diam.; manganese stainings. <i>Gradual to:-</i>
	74-125	- Dark red (10R 3/6 moist); clay loam; massive; stone layer of flat shale to 3 cm at the top, stones larger towards base.
	125+	- Bedrock (in nearby profile bedrock encountered at 80 cm depth).

\* subangular blocky

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 511 miles + 2520 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level Plain

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Formerly bumble box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), wilga (*Geijera parviflora*), yarran (*Acacia homalophylla*), kurrajong (*Brachyhiton populneus*), needlewood (*Hakea leucoptera*).

Pastures: Sown to wheat and lucerne.

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clayey sand material.

Horizon	Depth (cm)	Description
0-17	-	Dusky red on surface to dark red lower in horizon (10R 3/4 - 10R 3/6 moist); clay loam on surface to sandy clay loam deeper; plough layer; small amounts of charcoal; some small roots; massive; <i>Abrupt to:-</i>
17-47	-	Dark red (10R 3/6 moist); sandy clay loam; massive; charcoal; small roots. <i>Clear to:-</i>
47-64	-	Mottled red (85%) to reddish brown (15%) (10R 4/8 - 7.5R 3/4 moist); sandy clay loam; massive with a tendency to poor structure; gritty layer; small roots; insect holes; some clay skins; gravel to 3-4 cm diam.; <i>Gradual to:-</i>
64-88	-	Dark red (10R 3/6 moist); clay loam; massive to poor structure; tendency to platiness; small roots; insect holes; <i>Clear to:-</i>
88-120	-	Mottled red (85%) with dark greyish brown (15%) (10R 4/8 - 7.5R 3/1 moist); clay loam; manganese stainings; massive, small carbonate concretions; <i>Gradual to:-</i>
120-180	-	Mottled red (75%) to dark greyish brown (25%) (2.5YR 4/8 - 7.5YR 3/1 moist); clayey sand; slight platy structure; carbonate concretions.

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 511 miles + 1250 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Formerly bimple box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), wilga (*Geijera parviflora*), yarran (*Acacia homalophylla*), kurrajong (*Brachyachiton populneus*), needlewood (*Hakea leucoptera*).

Pastures: Variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), *Crassula* sp., panic grass (*Panicum* sp.), saffron thistle (*Carthamus lanatus*), galvanised burr (*Bassia birchii*), grass cushions (*Isoetopsis graminifolia*), small woolly burr medic (*Medicago minima*), fuzzweed (*Vittadinia triloba*), flannel cudweed (*Gnaphalodes uliginosum*), *Sida* sp., paterson's curse (*Echium lycopsis*), rock fern (*Cheilanthes tenuifolia*), cotton fireweed (*Senecio quadridentatus*), *Plantago varia*.

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clayey sand material.

Horizon	Depth (cm)	Description
0-14	-	Dusky red (10R 3/3 on surface to 10R 3/4 lower in horizon moist.); sandy clay loam; hard surface with thin crust; plough layer; massive; roots; some insect holes; some gritty material to 2 mm; charcoal; Abrupt to:-
14-54	-	Dusky red (10R 3/4 moist); sandy clay loam; massive; charcoal; insect holes. Abrupt to:-
54-87	-	Dark red (10R 3/6 moist); sandy clay loam; moderate structure; clay skins; insect holes; charcoal; roots; manganese staining; carbonate concretions. Clear to:-
87-100	-	Red (10R 4/8 moist); sandy clay loam; massive to poor structure; porous; roots; insect holes; manganese staining and concretions. Abrupt to:-
100-155	-	Dark red (10R 3/6 moist); clayey sand; blocky structure with individual blocks 10 cm x 10 cm; carbonate coatings on blocks; porous; manganese concretions and some stains. Clear to:-
155-195	-	Red (2.5 YR 4/8 moist) with dark red (2.5YR 3/6 moist); clayey sand; hardpan appearance; some manganese staining; massive; layers of carbonate concretions separated by layers of poor to moderate SABL*structured soil material.

\* subangular blocky

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 511 miles + 0000 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Formerly bimple box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), wilga (*Geijera parviflora*), yarran (*Acacia homalophylla*), kurrajong (*Brachychiton populneus*), needlewood (*Hakea leucoptera*).

Pastures: Sown to wheat and lucerne.

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
	0-15	- Dusky red (10R 3/3 - 10R 3/4 moist); clay loam; massive; porous; charcoal; roots; small grit; <i>Clear to:-</i>
	15-49	- Dusky red (10R 3/4 moist); clay loam; massive; roots; small charcoal. <i>Gradual to:-</i>
	49-77	- Dark red (10R 3/6 moist); clay loam; SABL*structure; small gravel to 4 mm diam. <i>Clear to:-</i>
	77-110	- Red (10R 4/8 moist); clay loam; prismatic structure; well developed clay skins; moderate carbonate coatings on peds; roots; some insect holes. <i>Abrupt to:-</i>
	110-155	- Mottled red (10R 4/8 moist) with slight grey inclusions; clay loam; poor to moderate prismatic structure; roots; some carbonate coatings between peds; well developed clay skins; some carbonate concretions. <i>Abrupt to:-</i>
	155-179	- Red (10R 4/6 moist); clay loam; massive to poor structure; moderate to strong manganese staining; some carbonate concretions.

\* subangular blocky

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 511 miles + 2520 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Formerly bimple box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), wilga (*Geijera parviflora*), yarran (*Acacia homalophylla*), kurrajong (*Brachychiton populneus*), needlewood (*Hakea leucoptera*).

Pastures: Sown to wheat and lucerne.

PROFILE DESCRIPTION:

- Similar upper profile to GP 56 in all respects but with SABL\*structure continuing from where first encountered at 49 cm to 140 cm depth and the prismatic structured horizon being omitted. The layer from 140 cm to 185 cm depth is a dark red (10R 3/6 moist) sandy clay loam with very strong manganese staining. Visible carbonate concretions were absent entirely.

\* subangular blocky

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 510 miles + 4320 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Edge of slight drainage depression

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Formerly pointed-fruit mallee (*Eucalyptus socialis*), grey box (*Eucalyptus woollsiana*), butterbush (*Pittosporum phylliraeoides*), wilga (*Geijera parviflora*), bimble box (*Eucalyptus populnea*).

Pastures: Wheat crop with lucerne - formerly No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), *Plantago varia*, small woolly burr medic (*Medicago minima*), soft roly poly (*Salsola kali*), barley grass (*Hordeum leporinum*), *Papaver* sp., fuzzweed (*Vittadinia triloba*), catsear (*Hypochaeris radicata*), *Sisymbrium* sp., sow thistle (*Sonchus oleraceus*), cotton fire weed (*Senecio quadridentatus*), native tobacco (*Nicotiana suaveolens*), galvanised burr (*Bassia birchii*), curly windmill grass (*Chloris acicularis*), spear thistle (*Cirsium vulgare*), mallee saltbush (*Atriplex stipitata*), bathurst burr (*Xanthium spinosum*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clayey sand material.

Horizon	Depth (cm)	Description
	0-20	- Dusky red (10R 3/4 moist); sandy clay loam; massive; roots; insect holes; small gravel to 2 mm. Clear to:-
	20-54	- Dark red (10R 3/6 moist); clay loam; massive; some roots; insect holes; gravel to 3 mm. Clear to:-
	54-88	- Dark red (10R 3/6 moist); sandy clay loam; massive to poor structure; very gritty layer with isolated gravel to 2 cm diam. Clear to:-
	88-104	- Dark red (10R 3/6 moist); sandy clay loam; moderate structure; less gritty than horizon above; some manganese staining; Abrupt wavy boundary to:-
	104-144	- Mottled greyish pink (50%) (10R 7/1 moist) and red (50%) (2.5YR 4/6); clayey sand; gritty hardpan material with gravel to 2 cm diam.; small carbonate concretion. Abrupt wavy boundary to:-
	144-177	- Mottled light grey (10YR 7/2 moist) and dark red (2.5YR 3/6 moist); clayey sand; massive to platy structured bedded material; strong manganese staining; carbonate material between peds.

LOCATION: "Bogolo", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 484 miles + 2400 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Level

UNDERLYING ROCK: Cleaved white  
-yellow shaley siltstone.

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance.

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Grey box - bimble box woodland

Trees and Shrubs: T20-100 Grey box (*Eucalyptus woollsiana*), bimble box (*Eucalyptus populnea*), gooma bush (*Bertya cunninghamii*), sugarwood (*Myoporum platycarpum*), *Eriostemon difformis*.

Pastures: Variable spear grass (*Stipa variabilis*), purple daisy burr (*Calotis cuneifolia*), fuzzweed (*Vittadinia triloba*), crimson lamb's tails (*Ptilotus atriplicifolius*), rough spear grass (*Stipa scabra*), *Goodenia hederacea*, soft roly-poly (*Salsola kali*), box grass (*Paspalidium constrictum*), cut leaf goodenia (*Goodenia cycloptera*), grey copper burr (*Bassia diacantha*), *Sida cunninghamii*, *Helipterum diffusum*.

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clayey sand material.

Horizon	Depth (cm)	Description
0-12	-	Dark reddish brown at the surface to dark red lower in horizon (2.5 YR 3/4 - 2.5YR 3/6 moist); slight surface crust; clay loam; massive; roots; small gravel to 1 cm. <i>Gradual to:-</i>
12-61	-	Dark red (2.5YR 3/6 moist); fine sandy clay loam; massive; roots; small gravel to 3 mm. <i>Abrupt to:-</i>
61-87	-	Dark red (10R 3/6 moist); sandy clay loam; moderate SABL*structure; roots; some insect holes; isolated manganese staining. <i>Abrupt to:-</i>
87-106	-	Red (2.5YR 4/6 moist) with slight yellowish mottle; sandy clay loam; massive; isolated gravel to 2 cm diam.; manganese staining; <i>Clear to:-</i>
106-160	-	Dark red (2.5YR 3/6 moist); sandy clay loam; massive; gravelly to stony layer with stones to 5-10 cm diam.; stones include shale and quartz (mainly 1-2 cm diam. rounded or angular); some pockets of greyish structured clay material and pockets of sandstone-like rock. <i>Gradual to:-</i>
160-177	-	Mottled red (70%) (10R 4/8 moist) and light orange (30%) (7.5 YR 8/8); clayey sand; massive to some structure; carbonate coatings in cracks between peds and on ped surfaces; strong manganese staining.

\* subangular blocky

LOCATION: "Illawong", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 484 miles + 4720 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Level

UNDERLYING ROCK: Weathered  
granite

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Open grey box woodland

Trees and Shrubs: T10-30 Grey box (*Eucalyptus woollsiana*), red box (*Eucalyptus intertexta*), tar bush (*Eremophila glabra*), gooma bush (*Bertya cunninghamii*).

Pastures: Bluebell (*Wahlenbergia* sp.), variable spear grass (*Stipa variabilis*), cut leaf goodenia (*Goodenia cycloptera*), rough spear grass (*Stipa scabra*), grey copper burr (*Bassia diacantha*), purple daisy burr (*Calotis cuneifolia*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), native leek (*Bulbinopsis semibarbata*), flannel cudweed (*Gnaphalodes uliginosum*), desert chinese lanterns (*Abutilon otocarpum*), yellow wood sorrel (*Oxalis corniculata*), *Goodenia* sp., goosefoot (*Chenopodium* sp.), *Helipterum* sp..

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over sandy clay loam material.

Horizon	Depth (cm)	
	0-16	- Dusky red (10R 3/4 moist); sandy clay loam; massive; surface crust with small grit (2-4 mm) on surface; roots. Abrupt to:-
	16-31	- Dark red (10R 3/6 moist); clay loam; massive; roots; small gravel to 1 cm diam. (mostly 5 mm or less in diam.). Abrupt to:-
	31-48	- Dark red (10R 3/6 moist); clay loam; poor to medium structure; some manganese concretions. Clear to:-
	48-90	- Dark red (10R 3/6 moist); clay loam; poor structure; manganese stains and concretions; carbonate stains increasing to the base. Clear to:-
	90-118	- Mottled mainly red (10R 4/6 moist) with some light reddish brown (5YR 6/4 moist); sandy clay loam; massive; gritty appearance; gravelly layer with smooth and angular stones; manganese stains on stones.
	118-149	- Mainly red (10R 4/8 moist) with some light reddish brown (5YR 6/4 moist); sandy clay loam; massive; strong manganese staining; some carbonate concretions to 5cm diam. Abrupt to:-
	149-174	- Light reddish brown (5YR 6/4 moist); sandy clay loam; gritty; similar to horizon above.

LOCATION: "Illawong", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 485 miles + 4520 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Level

UNDERLYING ROCK: Coarse  
grained recent sandstone  
(Tertiary)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Bimble box - white cypress pine woodland

Trees and Shrubs: T10-40 Bimble box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), turpentine (*Eremophila sturtii*), pumty bush (*Cassia eremophila*), yarran (*Acacia homalophylla*), deane's wattle (*Acacia deanei*).

Pastures: Desert chinese lanterns (*Abutilon otocarpum*), sow thistle (*Sonchus oleraceus*), australian bindweed (*Convolvulus erubescens*), *Blennodia* sp., purple lovegrass (*Eragrostis lacunaria*), variable spear grass (*Stipa variabilis*), curly windmill grass (*Chloris acicularis*), purple daisy burr (*Calotis cuneifolia*), yellow daisy burr (*Calotis lappulacea*), grey copper burr (*Bassia diacantha*), yellow buttons (*Helichrysum apiculatum*), goosefoot (*Chenopodium* sp.), bluebells (*Wahlenbergia* sp.), native carrot (*Daucus glochidiatus*), mulga grass (*Neurachne mitchelliana*), flannel cudweed (*Gnapholodes uliginosum*), cut leaf goodenia (*Goodenia cycloptera*), blue crowfoot (*Erodium crinitum*), *Crassula* sp.

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon Depth (cm)

- 0-26 - Dusky red (10R 3/4 moist) at surface grading to red (10R 4/6 moist) lower in horizon; sandy clay loam; massive; roots; insect holes; small gravel to 4 mm diam. generally and occasionally to 1.5 cm diam.  
Clear to:-
- 26-45 - Dark red (10R 3/6 moist); sandy clay loam; massive to poor structure; roots; insect holes; manganese staining. Clear to:-
- 45-67 - Dark red (10R 3/6 moist); light clay; moderate SABL\* structure; carbonate concretions to 1.5 cm diam.  
Gradual to:-
- 67-95 - Red (10R 4/8 moist); light clay; poor to moderate SABL to prismatic structure; carbonate coatings - beginning of accumulation zone; manganese staining  
Clear to:-
- 95-130 - Dark red (2.5YR 3/6 moist) with red (2.5YR 5/6 moist); clay loam; massive to poor SABL\* structure; carbonate concretions to 4-5 cm diam.; increased manganese staining. Abrupt to:-
- 130-178 - Red (2.5YR 4/8 moist) with some reddish yellow (5YR 6/6 moist); sandy clay loam; massive; gritty layer mixed with soil from horizon above; grit increases towards the base; strong manganese staining.

\* subangular blocky

LOCATION: "Illawong", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 486 miles + 2220 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Level

UNDERLYING ROCK: Weathered  
granite

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Centre of shallow drainage channel

LAND USE: Grazing

VEGETATION: Ringbarked bimple box forest.

Trees and Shrubs: T5-10 Bimple box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), grey box (*Eucalyptus woollsiana*), yarran (*Acacia homalophylla*).

Pastures: No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), windmill grass (*Chloris truncoata*), curly windmill grass (*Chloris acicularis*), native carrot (*Daucus glochidiatus*), small woolly burr medic (*Medicago minima*), blue crowfoot (*Erodium crinitum*), purple love grass (*Eragrostis lacunaria*), purple daisy burr (*Calotis cuneifolia*), variable spear grass (*Stipa variabilis*), australian bindweed (*Convolvulus erubescens*), *Helipterum australe*, horehound (*Marrubium vulgare*), golden everlastings (*Helichrysum bracteatum*), saffron thistle (*Carthamus lanatus*), cut leaf medic (*Medicago laciniata*), cut leaf goodenia (*Goodenia cycloptera*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon Depth (cm)

- 0-20 - Dark reddish brown (2.5YR 3/4 moist); fine sandy clay loam at surface changing to sandy clay loam lower in horizon; massive; slight surface crust; roots; insect holes; Clear to:-
- 20-35 - Dark red (2.5YR 3/6 moist); sandy clay loam; massive; roots; gravel mainly less than 4 mm diam. but some to 1 cm diam.; Abrupt to:-
- 35-57 - Dark red (2.5YR 3/6 moist); sandy clay loam; poor structure; roots; insect holes. Abrupt to:-
- 57-78 - Red (2.5YR 4/6 moist); sandy clay loam; porous; massive; angular blocky structure; very hard layer; shiny appearance; manganese stains. Abrupt to:-
- 78-139 - Dark red (10R 3/6 moist); sandy clay loam; massive; porous; roots; strong manganese staining. Gradual to:-
- 139-189 - Red (2.5YR 5/8 moist); sandy clay loam; poor to moderate structure; clay skins; manganese staining.

LOCATION: "Bogolo", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 487 miles + 3280 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Slightly undulating

UNDERLYING ROCK: White  
siliceous sandstone  
(Tertiary?)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Ridge crest

LAND USE: Grazing

VEGETATION: White cypress pine woodland

Trees and Shrubs: T5-100 White cypress pine (*Callitris columellaris*) (much white cypress pine regeneration), kurrajong (*Brachychiton populneus*), budda (*Eremophila mitchellii*).

Pastures: Variable spear grass (*Stipa variabilis*), grey copper burr (*Bassia diacantha*), blue crowfoot (*Erodium cicutarium*), kerosene grass (*Aristida contorta*), goosefoot (*Chenopodium* sp.), *Kochia* sp., cut leaf goodenia (*Goodenia cycloptera*), *Solanum* sp., cotton fireweed (*Senecio quadridentatus*), mother of misery (*Cuphonotus humistratus*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over sandy clay loam material.

Horizon Depth (cm)

- 0-30 - Dusky red (10R 3/4 moist) at surface to dark red (10R3/6 moist) lower in horizon; loam fine sandy at surface grading to sandy clay loam; slight surface crust with some small gravel (< 1 cm diam.) and 2 mm diam. grit on surface; massive; porous; roots; insect holes; some gravel to 1.5 cm diam. *Abrupt to:-*
- 30-58 - Dark red (10R 3/6 moist); clay loam; poor SABL structure; roots; insect holes. *Gradual to:-*
- 58-109 - Red (10R 4/8 moist); clay loam; massive to slight structure; stones (yellow shale) to 2 cm; developing a slight yellow mottling towards base. *Clear to:-*
- 109-149 - Dark red (10R 3/6 moist); sandy clay loam; massive; yellow (10YR 7/8 moist) and white (10YR 8/1 moist) rock inclusion; carbonate concretions and carbonate staining; some roots; strong manganese staining. *Gradual to:-*
- 149+ - Massive; porous in parts; appears to be decomposed rock.

\* subangular blocky

Profile Number: GP 64

*LOCATION:* "Bogolo", Euabalong West

*COUNTY:* Blaxland

*FOOTAGE (APPROX):* 487 miles + 3980 ft.

*COLLECTED AND DESCRIBED BY:* G.M. Cunningham *DATE SAMPLED:* 19/9/74

*TOPOGRAPHY:* Undulating

*UNDERLYING ROCK:* Dark-grey  
cleaved shaley siltstone  
(Cobar Group)

*CLIMATE:* Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

*POSITION IN LANDSCAPE:* Upper slope of ridge

*LAND USE:* Grazing

*PROFILE DESCRIPTION:* Not available. Rock sample taken from 180 cm depth.

LOCATION: "Bogolo", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 488 miles + 1250 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Weathered granite

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance.

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Drainage depression between ridge crests on generally elevated land

LAND USE: Grazing.

VEGETATION: White cypress pine woodland with many seedlings.

Trees and Shrubs: T3-100 White cypress pine (*Callitris columellaris*), red box (*Eucalyptus intertexta*), rosewood (*Heterodendrum oleifolium*).

Pastures: Wallaby grass (*Danthonia caespitosa*), fuzzweed (*Vittadinia triloba*), variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), *Helipterum australe*, flannel cudweed (*Gnapholodes uliginosum*), fan flower (*Scaevola aemula*), blue crowfoot (*Erodium crinitum*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
	0-23	- Dusky red (10R 3/4 moist) at surface grading to dark red (2.5YR 3/6 moist) lower in horizon; silty clay loam at surface changing to clay loam; massive; slight surface crust with gravel to 4 mm diam. scattered on surface; roots; insect holes; <i>Clear to:-</i>
	23-37	- Dark red (10R 3/6 moist); clay loam; massive to poor structure; roots; gravel to 1 cm diam.; some manganese stainings. <i>Clear to:-</i>
	37-56	- Dark red (10R 3/6 moist); sandy clay loam; poor to moderate structure; roots; manganese stainings. <i>Clear to:-</i>
	56-123	- Red (10R 4/6 - 2.5YR 5/8 moist); clay loam; massive to slight prismatic structure; roots; tendency to greyish mottling in lower section; carbonate concretions to 2.5 cm diam. <i>Abrupt to:-</i>
	123-166	- Red (10R 4/8 moist); light sandy clay loam; massive; evidence of bedding with bedded carbonate coated material alternating with red material; manganese staining. <i>Abrupt to:-</i>
	166-194	- Mottled red (10R 4/8 moist) and pinkish white (5YR 8/2 moist); clayey sand; massive; horizon consists of layers of carbonate concretions to 5 cm diam. alternating with soil material as in the horizon above.

Profile Number: GP 66

*LOCATION:* "Bogolo", Euabalong West

*COUNTY:* Blaxland

*FOOTAGE (APPROX):* 488 miles + 3700 ft.

*COLLECTED AND DESCRIBED BY:* G.M. Cunningham *DATE SAMPLED:* 19/9/74

*TOPOGRAPHY:* Undulating

*UNDERLYING ROCK:* Weathered  
granite

*CLIMATE:* Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1<sup>o</sup>C; 18.6<sup>o</sup>C);  
July (14.0<sup>o</sup>C; 4.7<sup>o</sup>C)

Evaporation: Condobolin - 1611 mm

*POSITION IN LANDSCAPE:* , Ridge crest

*LAND USE:* Grazing

*PROFILE DESCRIPTION:* Similar to GP 63

Profile Number: GP 67

LOCATION: "Bogolo", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 488 miles + 4760 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Yellow siltstone and sandstone (Cobar group)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Upper slope of ridge (eastern)

LAND USE: Grazing

VEGETATION: White cypress pine stand with T1 seedling regeneration

Trees and Shrubs: T5-20 White cypress pine (*Callitris columellaris*).

Pastures: Variable spear grass (*Stipa variabilis*), native carrot (*Daucus glochidiatus*), wallaby grass (*Danthonia caespitosa*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), bluebells (*Wahlenbergia* sp.), waukeroo daisy (*Stuartina muelleri*), flannel cudweed (*Gnaphalodes uliginosum*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
	0-14	- Dusky red (10R 3/4 moist); sandy clay loam at surface grading to clay loam lower in horizon; massive; roots; insect holes; gravel to 1.5 cm diam. <i>Abrupt to:-</i>
	14-31	- Dark red (10R 3/6 moist); clay loam; poor structure; some small shale stones. <i>Clear to:-</i>
	31-52	- Dark red (10R 3/6 moist); clay loam; poor structure; roots; insect holes; gravel. <i>Clear to:-</i>
	52-79	- Dark red (10R 3/6 moist) with slight mottle; clay loam; poor structure developed over decomposed rock; roots. <i>Clear to:-</i>
	79+	Rock with carbonate capping.

LOCATION: "Bogolo", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 489 miles + 0030 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Level

UNDERLYING ROCK: Yellow, pink  
coloured siltstone (Cobar  
Group)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Open pine woodland

Trees and Shrubs: T1-100 White cypress pine (*Callitris columellaris*),  
wilga (*Geijera parviflora*), bimbale box (*Eucalyptus populnea*).

Pastures: Variable spear grass (*Stipa variabilis*), *Plantago varia*,  
bluebell (*Wahlenbergia* sp.), horehound (*Marrubium vulgare*), *Helipterum*  
*australe*, blue crowfoot (*Erodium crinitum*), purple daisy burr (*Calotis*  
*cuneifolia*), fuzzeed (*Vittadinia triloba*), *Helipterum* sp.

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
	0-28	- Dusky red (10R 3/4 moist); fine sandy clay loam at surface grading into a silty clay loam lower in horizon; slight surface crust; massive; roots; insect holes; charcoal. Clear to:-
	28-40	- Red (10R 3/4 moist); clay loam; poor to moderate SABL* structure; roots. Abrupt to:-
	40-66	- Red (10R 4/8 moist); clay loam; poor to moderate structure; roots; carbonate concretions. Clear to:-
	66-101	- Mottled red (10R 4/8 moist) with some light red (2.5 YR 6/8 moist); clay loam; massive to poor structure; stones with carbonate coatings - stones similar to bedrock material.
	101+	- Bedrock.

\* subangular blocky

LOCATION: "Penshurst", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 490 miles + 860 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/9/74

TOPOGRAPHY: Level

UNDERLYING ROCK: Yellow,  
pink cleaved siltstone  
(Cobar Group)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Open bimble box woodland

Trees and Shrubs: T40-100 Bimble box (*Eucalyptus populnea*).

Pastures: No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), kerosene grass (*Aristida contorta*), catsear (*Hypochaeris radicata*), fuzzweed (*Vittadinia triloba*), flannel cudweed (*Gnapholodes uliginosum*), saffron thistle (*Carthamus lanatus*), waukeroo daisy (*Stuartina muelleri*), cotton panic (*Digitaria brownii*), cotton fireweed (*Senecio quadridentatus*), rock fern (*Cheilanthes tenuifolia*), variable spear grass (*Stipa variabilis*), blue crowfoot (*Erodium crinitum*), purple daisy burr (*Calotis cuneifolia*), *Crassula* sp.

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over a sandy clay loam material.

Horizon	Depth (cm)	
	0-16	- Dusky red (10R 3/4 moist); sandy clay loam; roots; massive; <i>Gradual to:-</i>
	16-40	- Red (10R 4/6 moist); sandy clay loam; massive; roots; small gravel to 5 mm. <i>Clear to:-</i>
	40-79	- Dark red (10R 3/6 moist); clay loam; poor structure; roots; insect holes. <i>Clear to:-</i>
	79-116	- Dark red (10R 3/6 moist); clay loam; massive; roots; carbonate coatings and concretions; <i>Abrupt to:-</i>
	116-136*	- Yellowish red (5YR 5/6 moist); sandy clay loam; massive gritty layer with gravel to 1.5 cm diam. near boundary. <i>Abrupt to:-</i>
	136-196	- Red (10R 4/8 moist); sandy clay loam; moderate SABL <sup>+</sup> structure with small peds; structure decreases with depth; few roots; some carbonate coatings and concretions; strong manganese staining.

\*horizon varies in width up to 40-45 cm and at times is absent altogether.

+ subangular blocky

LOCATION: "Penshurst", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 490 miles + 1580 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 22/9/74

TOPOGRAPHY: Level

UNDERLYING ROCK: Weathered  
granite (Erimeran granite)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Centre of shallow drainage line.

LAND USE: Grazing

VEGETATION: Clearing surrounded by bimble box woodland.

Trees and Shrubs: Bimble box (*Eucalyptus populnea*).

Pastures: Soft roly poly (*Salsola kali*), yellow buttons (*Helichrysum apiculatum*), fuzzweed (*Vittadinia triloba*), cut leaf goodenia (*Goodenia cycloptera*), windmill grass (*Chloris truncata*), kerosene grass (*Aristida contorta*), catsear (*Hypochaeris radicata*), common sunray (*Helipterum australe*), cotton panic (*Digitaria brownii*), blue crowfoot (*Erodium crinitum*), bluebell (*Wahlenbergia* sp.), flannel cudweed (*Gnaphalodes uliginosum*), bottlewashers (*Erneapogon* sp.).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
	0-24	- Dark red (2.5YR 3/6 moist); sandy clay loam; slight surface crust; massive; major root zone; insect holes. Clear to:-
	24-33	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive; roots; insect holes; small gravel to 4 mm diam. Abrupt to:-
	33-40	- Dark red (2.5YR 3/6 moist) to red (2.5YR 4/6-5/6 dry); bleached horizon; sandy clay loam; massive; small gravel to 4 mm - occasionally to 1.5 cm; roots; insect holes. Abrupt to:-
	40-67	- Dark red (10R 3/6 moist); sandy clay loam; poor prismatic structure; small gravel to 4 mm diam. Abrupt to:-
	67-88	- Dark red (2.5YR 3/6 moist); clay loam; moderate SABL* to prismatic structure; small gravel to 4 mm diam.; manganese staining. Clear to:-
	88-111	- Dark red (2.5YR 3/6 moist) with some red (2.5YR 4/8 moist) mottling; clay loam; massive to slight structure; stronger manganese staining than in horizon above; small gravel to 5 mm. Clear to:-
	111-134	- Red (70%) (2.5YR 5/6 moist) with dark red (30%) (2.5YR 3/6 moist); sandy clay loam; massive; some roots; porous; gritty layer; slight carbonate accumulation; gravel to 1.5 cm; pockets of soil from above horizon occur intermixed. Clear to:-

- 134-178 - Red (2.5YR 5/8 moist); sandy clay loam; massive; porous; hard gritty layer with stones to 8 cm diam. with a rounded water-washed appearance.
- 178-196 - Pinkish grey (7.5YR 6/2 moist) to red (2.5YR 5/8 moist) with some dark red (10R 3/6 moist); sandy clay loam; massive; porous; some pockets of soil similar to that in the 88-111 cm horizon.

(Variations nearby included profiles in which the gritty layer (111-134 cm in this profile) was encountered at 190 cm.

In other situations lens shaped carbonate accumulations 30 cm deep and 10 cm wide (vertical oval shape) occur.)

\* subangular blocky

LOCATION: "Penshurst", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 490 miles + 4630 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 22/9/74

TOPOGRAPHY: Level

UNDERLYING ROCK: Weathered granite (Erimeran Granite)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Wide shallow drainage line

LAND USE: Grazing

VEGETATION: Bimble box woodland

Trees and Shrubs: T40 Bimble box (*Eucalyptus populnea*)

Pastures: Wire grass (*Aristida echinata*), blue crowfoot (*Erodium crinitum*), sowthistle (*Sonchus oleraceus*), variable spear grass (*Stipa variabilis*), bluebell (*Wahlenbergia* sp.), native carrot (*Daucus glochidiatus*), maltese cockspur (*Centaurea melitensis*), windmill grass (*Chloris truncata*), curly windmill grass (*Chloris acicularis*), saffron thistle (*Carthamus lanatus*), catsear (*Hypochaeris radicata*), jersey cudweed (*Gnaphalium japonicum*), purple love grass (*Eragrostis lacunaria*), waukeroo daisy (*Stuartina muelleri*), small woolly burr medic (*Medicago minima*), cotton panic (*Digitaria brownii*), fuzweed (*Vittadinia triloba*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	Description
	0-32	- Dark reddish brown (2.5YR 3/4 moist) on surface to dark red (2.5YR 3/6 moist) lower in horizon; sandy clay loam; slight surface crust; massive; roots; insect holes. Clear to:-
	32-40	- Dark red (2.5YR 3/6 moist); sandy clay loam; slightly bleached horizon; massive; roots; insect holes; gravel to 4 mm diam. Abrupt to:-
	40-57	- Dark red (2.5YR 3/6 moist (50%) - 10R 3/6 moist (50%)); sandy clay loam; massive; slightly porous; gravel to 4 mm but mainly 2 mm diam. Clear to:-
	57-74	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive; gravelly layer with gravel to 2-4 mm diam. and some stones to 3 cm diam. Abrupt to:-
	74-100	- Mottled red (95%) (2.5YR 4/6 moist) with reddish yellow (5%) (7.5YR 7/6 moist); clay loam; poor to moderate prismatic structure; roots; wavy boundary. Clear to:-
	100-119	- Mottled red (2.5YR 4/6 - 2.5YR 5/6 moist) and light grey (2.5YR 7/2 moist) all in equal amounts; massive; sandy clay loam; hard gritty layer with some gravel to 2 cm. Clear to:-
	119-161	- Mottled red (2.5YR 4/8 moist) and reddish yellow (5YR 6/6 moist); fine sandy clay loam; massive; many carbonate concretions; manganese staining. Gradual to:-

161-194 - Reddish yellow (5YR 6/6 moist) with some light grey (2.5 Y 7/2 moist); fine sandy clay loam; massive; sandy horizon with bedded carbonate material; carbonate concretions to 3 cm diam.; manganese staining.

(In nearby variants large carbonate concretions were evident at 1 metre depth.)

LOCATION: "Penshurst", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 491 miles + 2030 ft

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 22/9/74

TOPOGRAPHY: Level

UNDERLYING ROCK: Weathered  
granite (Erimeran Granite)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Open bumble box woodland

Trees and Shrubs: Bumble box (*Eucalyptus populnea*), rosewood (*Heterodendrum oleifolium*).

Pastures: Blue crowfoot (*Erodium cicutarium*), *Crassula* sp., bluebell (*Wahlenbergia* sp.), variable spear grass (*Stipa variabilis*), curly windmill grass (*Chloris acicularis*), large white paper daisy (*Helipterum floribundum*), soft roly poly (*Salsola kali*), catsear (*Hypochaeris radicata*), flannel cudweed (*Gnaphalodes uliginosum*), purple lovegrass (*Eragrostis lacunaria*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over gravelly  
sandy clay loam material

Horison	Depth (cm)	
	0-31	- Dark reddish brown (2.5YR 3/4 moist); sandy clay loam at surface grading into fine sandy clay loam; massive; roots. <i>Abrupt to:-</i>
	31-38	- Dark red (2.5YR 3/6 moist) to red (2.5YR 5/6 dry); sandy clay loam; narrow bleached layer; massive; roots; insect holes. <i>Abrupt to:-</i>
	38-56	- Dark red (10R 3/6 moist); clay loam; poor to moderate SABL* structure; roots; insect holes; some small gravel to 4 mm diam. <i>Clear to:-</i>
	56-85	- Red (2.5YR 4/6 moist); silty clay loam; poor structure; roots; insect holes; manganese staining. <i>Abrupt to:-</i>
	85-187	- Red (2.5YR 4/8 moist) with some dark red (10R 3/6 moist) mottle; sandy clay loam; massive; porous in parts; some bedded appearance; roots; many carbonate concretions to 7 cm diam.; strong manganese staining. <i>Gradual to:-</i>
	187-195	- Red (2.5YR 5/6 moist); sandy clay loam; similar to above horizon but <b>no roots</b> evident.

\* subangular blocky

LOCATION: "Penshurst", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 491 miles + 2820 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level

UNDERLYING ROCK: Weathered  
granite (Erimeran Granite)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Old back channel of watercourse

LAND USE: Grazing

VEGETATION: Open bimble box woodland

Trees and Shrubs: T100 Bimble box (*Eucalyptus populnea*), kurrajong (*Brachychiton populneus*), rosewood (*Heterodendrum oleifolium*), red box (*Eucalyptus intertexta*).

Pastures: Saffron thistle (*Carthamus lanatus*), blue crowfoot (*Erodium crinitum*), variable spear grass (*Stipa variabilis*), windmill grass (*Chloris truncata*), red grass (*Bothriochloa* sp.), *Vulpia* sp., maltese cockspur (*Centaurea melitensis*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), cotton panic (*Digitaria brownii*), kidney weed (*Dichondra repens*), cotton fireweed (*Senecio quadridentatus*), wild sage (*Salvia verbenaca*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	
	0-45	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive; roots. Clear to:-
	45-76	- Dark red (2.5YR 3/6 moist); sandy clay loam; poor to moderate structure; insect holes. Gradual to:-
	76-135	- Reddish brown (2.5YR 4/4 moist); fine sandy clay loam; massive to poor structure; some carbonate concretions to 1.5 cm diam.; some manganese concretions. Clear to:-
	135-174	- Mottled yellowish red (5YR 4/6 moist) and light brownish grey (2.5Y 6/2 moist); sandy clay loam; horizon with discontinuous gritty layer* about 10 cm wide - the grit not bonded; white ant holes near upper boundary; massive; manganese concretions to 6 mm diam. Abrupt to:-
	174-198	- Yellowish red (5YR 4/6 moist); clayey sand; gravel bed with water washed stones to 5-7 cm diam.

\*gritty layer was a yellowish red (5YR 4/6 moist) clayey sand.

LOCATION: "Penshurst", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 491 miles + 3010 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level

UNDERLYING ROCK: Weathered  
granite (Erimeran Granite)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Bank of back channel

LAND USE: Grazing

VEGETATION: Open bimble box woodland

Trees and Shrubs: T100 Bimble box (*Eucalyptus populnea*), kurrajong (*Brachychiton populneus*), rosewood (*Heterodendrum oleifolium*), red box (*Eucalyptus intertexta*).

Pastures: Saffron thistle (*Carthamus lanatus*), blue crowfoot (*Erodium crinitum*), variable spear grass (*Stipa variabilis*), windmill grass (*Chloris truncata*), red grass (*Bothriochloa* sp.), *Vulpia* sp., maltese cockspur (*Centaurea melitensis*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), cotton panic (*Digitaria brownii*), kidney weed (*Dichondra repens*), cotton fireweed (*Senecio quadridentatus*), wild sage (*Salvia verbenaca*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over sand and  
clay loam material

Horizon	Depth (cm)	
	0-15	- Dark reddish brown (2.5YR 3/4 moist); sandy clay loam; massive; roots; insect holes. <i>Gradual to:-</i>
	15-41	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive; roots; insect holes. <i>Gradual to:-</i>
	41-61	- Red (2.5YR 4/8 moist); sandy clay loam; massive; porous; roots; insect holes; small gravel to 4 mm diam. <i>Clear to:-</i>
	61-196	- Red (2.5YR 4/8 moist); sand; layer of unbonded grit. <i>Abrupt to:-</i>
	196-214	- Reddish brown (2.5YR 4/4 moist); sandy clay loam; massive; horizon appears to be a clayey gravel with pockets of grey clay.
	214+	- Yellowish red (5YR 4/6 moist); clayey sand; gravel bed with waterwashed stones to 5-7 cm diam.

LOCATION: "Arnott's Block", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 492 miles + 2330 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level

UNDERLYING ROCK: Weathered granite (Erimeran granite)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Open bimble box woodland

Trees and Shrubs: T100 Bimble box (*Eucalyptus populnea*).

Pastures: Waukeroo daisy (*Stuartina muelleri*), *Crassula* sp., purple daisy burr (*Calotis cuneifolia*), fuzzweed (*Vittadinia triloba*), variable spear grass (*Stipa variabilis*), red grass (*Bothriochloa* sp.), blue crowfoot (*Erodium crinitum*), bottlewashers (*Enneapogon* sp.), windmill grass (*Chloris truncata*), native carrot (*Daucus glochidiatus*), small woolly burr medic (*Medicago minima*), *Vulpia* sp., panic grass (*Panicum* sp.), maltese cockspur (*Centaurea melitensis*), *Helipterum australe*, sow thistle (*Sonchus oleraceus*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13 over clay loam and clayey sand material

Horizon	Depth (cm)	
	0-22	- Dark reddish brown (2.5YR 3/4 moist) at surface grading to dark red (2.5YR 3/6 moist) lower in horizon; fine sandy clay loam at the surface - sandy clay loam with increasing depth; massive; roots.
	22-30	- Dark red (2.5YR 3/6 moist) to red (2.5YR 5/6 dry); sandy clay loam; slightly bleached horizon; massive; roots; some gravel to 2 cm diam.
	30-61	- Red (2.5YR 4/8 moist); clay loam; moderate SABL structure; roots; insect holes.
	61-96	- Red (2.5YR 4/8 moist); light clay; massive; some manganese concretions. <i>Clear to:-</i>
	96-115	- Red (2.5YR 4/8 moist); clay loam; moderate SABL to prismatic structure grading to poor; carbonate concretions to 3 cm diam. commence in this horizon; manganese stainings. <i>Abrupt to:-</i>
	115-151	- Mottled red (2.5YR 4/8 moist) and light brownish grey (2.5YR 6/2 moist); fine sandy clay loam; massive to poor structure; porous in parts; lenses of carbonate between bedded material; moderate to strong manganese staining. <i>Abrupt to:-</i>
	151-214	- Mottled red (2.5YR 5/8 moist) and pale olive (5Y 6/3 moist); clayey sand; massive; hard gritty layer composed mainly of grit 2-3 mm diam or less; some stones to 5 cm diam.increasing towards the base of horizon; some carbonate concretions; some manganese staining.

LOCATION: "Arnott's Block", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 492 miles + 3680 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level

UNDERLYING ROCK: Light mauve  
cleaved siltstone (contact  
metamorphosed-Cobar Group)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Centre of tributary to major drainage line

LAND USE:

VEGETATION: Open bumble box woodland

Trees and Shrubs: T50 Bumble box (*Eucalyptus populnea*), red box  
(*Eucalyptus intertexta*).

Pastures: Variable spear grass (*Stipa variabilis*), rough spear grass  
(*Stipa scabra*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*),  
soft roly poly (*Salsola kali*), purple daisy burr (*Calotis cuneifolia*),  
grass cushions (*Isoetopsis graminifolia*), cut leaf goodenia (*Goodenia  
cycloptera*), *Crassula* sp., blue crowfoot (*Erodium cicutarium*), fuzweed  
(*Vittadinia triloba*), large white paper daisy (*Helipterum floribundum*),  
bluebell (*Wahlenbergia* sp.), bottlewashers (*Enneapogon* sp.).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clayey  
sand material.

Horizon	Depth (cm)	
	0-30	- Dark reddish brown (2.5YR 3/4 moist) at surface grading to dark red (2.5YR 3/6 moist) lower in horizon; slight surface crust; sandy clay loam; massive; some grit to 2 mm diam. Abrupt to:-
	30-58	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive; roots; insect holes; grit to 4 mm diam. Abrupt to:-
	58-74	- Dark red (2.5YR 3/6 moist); clay loam; poor to moderate SABL structure; roots; some insect holes; manganese concretions. Clear to:-
	74-100	- Red (2.5YR 5/6 moist); sandy clay loam; massive; roots; some carbonate concretions to 3 cm diam.; small manganese concretions. Clear to:-
	100-130	- Yellowish red (5YR 5/6 moist) to red (2.5YR 4/8 moist); sandy clay loam; massive; porous; moderate manganese staining. Abrupt to:-
	130-170	- Yellowish red (5YR 5/6 moist) to red (2.5YR 4/8 moist); sandy clay loam; massive; carbonate capped hard gritty layer interspersed with layers of soil material; carbonate concretions mainly to 3 cm diam with some to 7 cm; manganese staining. Clear to:-
	170-230	- Mottled yellowish red (60%) (5YR 5/6 moist) and red (40%) (10R 4/8 moist); clayey sand; hard gritty layer; massive.

LOCATION: "Arnott's Block", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 493 miles + 800 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope of ridge

LAND USE: Grazing

VEGETATION: White cypress pine forest

Trees and Shrubs: T5-10 White cypress pine (*Callitris columellaris*),  
(*Eucalyptus intertexta*).

Pastures: Variable spear grass (*Stipa variabilis*), bogan flea (*Calotis hispidula*), wallaby grass (*Danthonia caespitosa*), rough spear grass (*Stipa seabra*), *Crassula* sp., japanese cudweed (*Gnaphalium japonicum*), curly windmill grass (*Chloris acicularis*), cotton firewood (*Senecio quadridentatus*), native tobacco (*Nicotiana suaveolens*), sow thistle (*Sonchus oleraceus*), soft roly poly (*Salsola kali*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
	0-25	- Dark reddish brown (2.5YR 3/4 moist); silty clay loam at surface to clay loam lower in horizon; surface crust; massive; roots. <i>Abrupt to:-</i>
	25-39	- Dark red (2.5YR 3/6 moist); clay loam; massive; roots; shale stones to 4 cm present. <i>Clear to:-</i>
	39-57	- Dark red (2.5YR 3/6 moist); clay loam; massive with pockets of poor structure; plentiful root development; mixed layer of soil and decomposing rock; layer of stones to 7 cm diam.; manganese staining. <i>Gradual to:-</i>
	57-97	- Red (2.5YR 4/6 moist); clay loam; moderate crumb structured soil mixed with decomposing rock; manganese staining. <i>Abrupt to:-</i>
	97+	- Bedrock*

\*Depth to bedrock varies from 50 to 150 cm in this area.

Profile Number: GP 78

*LOCATION:* "Arnott's Block", Euabalong West *COUNTY:* Blaxland

*FOOTAGE (APPROX):* 493 miles + 2750 ft.

*COLLECTED AND DESCRIBED BY:* G.M. Cunningham

*TOPOGRAPHY:* Undulating

*UNDERLYING ROCK:* Grey flat-bedded siltstone (Cobar Group) with darker grey ellipsoidal blebs.

*CLIMATE:* Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January ( $33.1^{\circ}\text{C}$ ;  $18.6^{\circ}\text{C}$ );  
July ( $14.0^{\circ}\text{C}$ ;  $4.7^{\circ}\text{C}$ )

Evaporation; Condobolin - 1611 mm

*POSITION IN LANDSCAPE:* Ridge crest

*LAND USE:* Grazing

*VEGETATION:* Red box-white cypress pine forest

*Trees and Shrubs:* White cypress pine (*Callitris columellaris*), red box (*Eucalyptus intertexta*).

*PROFILE DESCRIPTION:* Not available. Rock sample obtained.

LOCATION: "Arnotts's Block", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 493 miles + 4030 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Light grey  
cleaved slaty siltstone  
(Cobar Group)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope of ridge (eastern)

LAND USE: Grazing and cropping

VEGETATION: Largely cleared

Trees and Shrubs: Scattered white cypress pine (*Callitris columellaris*),  
kurrajong (*Brachychiton populneus*), bimbale box (*Eucalyptus populneus*).

Pastures: Wheat crop with some lucerne, bluebells (*Wahlenbergia* sp.),  
*Sisymbrium* sp.

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-20	- Dark reddish brown (2.5YR 3/4 moist); silty clay loam; massive; roots; charcoal. Clear to:-
	20-41	- Dark red (2.5YR 3/6 moist); fine sandy clay loam; massive; roots; some carbonate coated gravel to 2 cm diam. Abrupt to:-
	41-62	- Dark red (2.5YR 3/6 moist); clay loam; moderate crumb structure; roots; carbonate staining on peds; water-washed stones to 5 cm diam. - stones have a carbonate coating. Clear to:-
	62-112	- Red (2.5YR 4/8 moist); clay loam; moderate SABL to prismatic structure - degree of structure decreasing to the base; roots; some stones to 3 cm diam. Clear to:-
	112-143	- Mottled dark red (2.5YR 3/6) with light brown (7.5YR 6/4); clay loam to light clay; massive; grey/red coloured stones increasing with depth; strong manganese staining.
	143-176	- Decomposing bedrock - carbonate capped.

LOCATION: "Arnott's Block", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 494 miles + 2520 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Lower slope

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs:

Pastures: Wheat crop and some medic (*Medicago* sp.)

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
	0-14	- Dark reddish brown (2.5YR 3/4 moist) at the surface to reddish brown (2.5YR 4/4 moist) lower in horizon; fine sandy clay loam at surface grading to clay loam; massive; many roots; insect holes; charcoal. <i>Abrupt to:-</i>
	14-29	- Dark red (2.5YR 4/4 moist); clay loam; massive; some small grit and gravel to 1 cm diam. <i>Abrupt to:-</i>
	29-65	- Dark red (2.5YR 3/6 moist); clay loam; moderate crumb to SABL structure; small grit; some manganese staining. <i>Clear to:-</i>
	65-146	- Red (2.5YR 4/8 moist); clay loam; moderate prismatic structure; carbonate stainings and concretions to 4 cm diam.; manganese stainings and small concretions. <i>Gradual to:-</i>
	146-167	- Red (2.5YR 4/8 moist); clay loam; massive; some carbonate concretions; small manganese concretions.

LOCATION: "Arnott's Block", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 494 miles + 4620 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level

UNDERLYING ROCK: Light-purple, quartz-rich, fine grained sandstone with siltstone fragments (Cobar Group)

CLIMATE: Rainfall: Mt. Hope - 384 mm; 7% summer dominance

Temperature: Mt. Hope - January (33.1°C; 18.6°C);  
July (14.0°C; 4.7°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Centre of drainage line

LAND USE: Grazing

VEGETATION: Bimble box-red box-white cypress pine woodland

Trees and Shrubs: T10-20 Bimble box (*Eucalyptus populnea*), red box (*Eucalyptus intertexta*), white cypress pine (*Callitris columellaris*).

Pastures: Variable spear grass (*Stipa variabilis*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), native tobacco (*Nicotiana suaveolens*), cut leaf goodenia (*Goodenia cycloptera*), australian bindweed (*Convolvulus erubescens*), golden everlastings (*Helichrysum bracteatum*), purple daisy burr (*Calotis cuneifolia*), rough spear grass (*Stipa scabra*), black crumbweed (*Chenopodium melanocarpum*), fuzzweed (*Vittadinia triloba*), catsear (*Hypochaeris radicata*), large white paper daisy (*Helipterum floribundum*), mother of misery (*Cuphonotus lumistratus*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clay loam and sandy clay loam material.

Horizon	Depth (cm)	
	0-29	- Reddish brown (2.5YR 4/4 moist) on surface to dark reddish brown (2.5YR 3/4 moist) lower in horizon; fine sandy clay loam at the surface grading into sandy clay loam; surface crust; massive; roots; insect holes. Clear to:-
	29-50	- Dark red (2.5YR 3/6 moist); clay loam; massive; roots. Gradual to:-
	50-72	- Dark red (2.5YR 3/6 moist); clay loam (light); poor to moderate structure. Clear to:-
	72-97	- Red (2.5YR 4/8 moist); clay loam; moderate to good prismatic structure; some rounded stones to 5 cm diam.; some small carbonate concretions; some manganese staining. Abrupt to:-
	97-122	- Red (2.5YR 4/8 moist) with yellowish mottled appearance; clay loam; massive; roots; plentiful carbonate concretions to 3 cm diam.; carbonate coatings on stones to 10 cm diam.; manganese staining and concretions. Gradual to:-
	122-160	- Mottled red (2.5YR 5/6 moist) to light red (2.5YR 6/8 moist); clay loam; massive; roots; more rocks than above horizon - rocks separated by yellowish material.
	160-180	- Bedrock material.

LOCATION: "Donohill", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 496 miles + 1030 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level

UNDERLYING ROCK: Weathered granite

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Slight ridge

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: Mallee (*Eucalyptus* spp.), pointed fruit mallee (*Eucalyptus socialis*), tar bush (*Eremophila glabra*), daisy bush (*Olearia Pimelioides*), white cypress pine (*Callitris columellaris*), congoo mallee (*Eucalyptus dumosa*), gooma bush (*Bertya cunninghamii*), yarran (*Acacia homalophylla*), sword bush (*Bossiaea walkeri*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), scented mat rush (*Lomandra effusa*), grass cushions (*Isoetopsis graminifolia*), kidney weed (*Dichondra repens*), box grass (*Paspalidium constrictum*), variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), purple daisy burr (*Calotis cuneifolia*), fuzzweed (*Vittadinia triloba*), australian bugle (*Ajuga australis*), native carrot (*Daucus glochidiatus*), bluebells (*Wahlenbergia* sp.), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-18	- Dusky red (10R 3/4 moist); sandy clay loam; surface crust; scattered small gravel to 3 mm diam. on surface; massive; roots. <i>Abrupt to:-</i>
	18-32	- Dark red (10R 3/6 moist); sandy clay loam; massive; roots; insect holes; small gravel to 3 mm diam. <i>Abrupt to:-</i>
	32-64	- Dark red (10R 3/6 moist); clay loam; poor structure improving with depth; roots; small gravel to 4 mm diam. <i>Clear to:-</i>
	64-113	- Dark red (10R 3/6 moist); clay loam; moderate to good prismatic structure; small carbonate concretions increasing in size to 1 cm diam. with depth; some manganese staining. <i>Gradual to:-</i>
	113-131	- Mottled dark red (50%) (10R 3/6 moist) and strong brown (50%) (7.5YR 5/6 moist); clay loam; roots; insect holes; massive; small carbonate concretions; manganese staining. <i>Clear to:-</i>
	131-170	- Light yellowish brown (10YR 6/4 moist) with coatings of dark red (2.5 YR 3/6 moist); sandy clay loam; gritty layer; massive; roots; carbonate concretions in a layer along top boundary of horizon and scattered throughout; pockets of soil from the horizon above; manganese stainings and concretions.

LOCATION: "Donohill", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 496 miles + 2910 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain.

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: Mallee (*Eucalyptus* spp.), pointed fruit mallee (*Eucalyptus socialis*), tar bush (*Eremophila glabra*), daisy bush (*Olearia pimelioides*), white cypress pine (*Callitris columellaris*), congoo mallee (*Eucalyptus dumosa*), gooma bush (*Bertya cunninghamii*), yarran (*Acacia homalophylla*), sword bush (*Bossiaea walkeri*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), scented mat rush (*Lomandra effusa*), grass cushions (*Isoetopsis graminifolia*), kidney weed (*Dichondra repens*), box grass (*Paspalidium constrictum*), variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), purple daisy burr (*Calotis cuneifolia*), fuzzweed (*Vittadinia triloba*), australian bugle (*Ajuga australis*), native carrot (*Daucus glochidiatus*), blue bells (*Wahlenbergia* sp.), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clayey sand material

Horizon	Depth (cm)	Description
	0-26	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive; surface crust with scattered small gravel on surface; roots; insect holes. <i>Abrupt to:-</i>
	26-38	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive to slight structure; gravel to 6 mm diam. <i>Abrupt to:-</i>
	38-62	- Dark red (10R 3/6 moist); clay loam; moderate SABL structure; roots; <i>Clear to:-</i>
	62-74	- Mottled dark red (50%) (2.5YR 3/6 moist) and greyish yellow (2.5Y 6/3 moist); poor structure; clay loam; manganese staining at base. <i>Abrupt to:-</i>
	74-139	- Light brownish grey (2.5Y 6/2 moist) with some red (2.5YR 4/8 moist) coatings; sandy clay loam; porous; massive; carbonate coatings on peds; carbonate seams between soil material. <i>Gradual to:-</i>
	139-159	- Dark red (2.5YR 3/6 moist); clayey sand; poor to moderately structured layered material; carbonate concretion; strongly manganese stained.

LOCATION: "Ulinbawn Creamy", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 497 miles + 1860 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Weathered granite.

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Plain

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5 Congo mallee (*Eucalyptus dumosa*), red box (*Eucalyptus intertexta*), kurrajong (*Brachychiton populneus*), yarran (*Acacia homalophylla*), *Cryptandra* sp., butterbush (*Pittosporum phylliraeoides*), sword bush (*Bossiaea walkeri*), white cypress pine (*Callitris columellaris*), wilga (*Geijera parviflora*), *Mirbelia pungens*, fringed heath myrtle (*Micromyrtus ciliata*), *Acacia brachybotrya*.

Pastures: Porcupine spinifex grass (*Triodia irritans* var *lawispicata*), *Goodenia hederacea*, blue bell (*Wahlenbergia* sp.), mulga grass (*Neurachne mitchelliana*), purple love grass (*Calotis cuneifolia*), rough spear grass (*Stipa scabra*), *Dianella revoluta*, *Asperula cunninghamii*, creamy candles (*Stackhousia monogyna*), *Lomandra glauca* spp *collina*, catsear (*Hypochaeris radicata*), scented mat rush (*Lomandra effusa*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), cotton fireweed (*Senecio quadridentatus*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-35	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive; roots; insect holes. Gradual to:-
	35-66	- Dark red (10R 3/6 moist); sandy clay loam; massive to poor structure; roots; gravel to 4-5 mm diam. Clear to:-
	66-107	- Dark red (2.5YR 3/6 moist); sandy clay loam; moderate SABL*structure; roots; manganese staining towards base of horizon. Clear to:-
	107-176*-	- Reddish yellow (5YR 3/6 moist) mottled; sandy clay loam; massive gritty layer; roots; grit is either deposited or from decomposing granite (bedrock not exposed); some gravel to 3 cm diam.

\*variants of this profile have lenses of carbonate material up to 5 to 10 cm wide occurring in this gritty horizon.

\*\* subangular blocky

LOCATION: "Ulinbawn Creamy", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 498 miles + 880 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Slight depression

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T5-10 Congoo mallee (*Eucalyptus dumosa*), yarran (*Acacia homalophylla*), *Acacia* sp., broombush (*Melaleuca uncinata*), sword bush (*Bossiaea walkeri*), white cypress pine (*Callitris columellaris*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), golden everlastings (*Helichrysum bracteatum*), yellow buttons (*Helichrysum apiculatum*), purple daisy burr (*Calotis cuneifolia*), variable spear grass (*Stipa variabilis*), bluebell (*Wahlenbergia* sp.), fan flower (*Scaevola aemula*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), woodruff (*Asperula* sp.), *Brachycome* sp., waukeroo daisy (*Stuartina muelleri*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon Depth (cm)

- 0-30 - Dusky red (10R 3/4) at surface to dark red (2.5YR 3/6) lower in horizon; sandy clay loam; massive; slight surface crust; some surface grit; major root concentration; insect holes; massive; small gravel to 3 mm diam. Clear to:-
- 30-68 - Dark red (2.5YR 3/6); sandy clay loam; massive; roots; gritty layer; small manganese concretions. Abrupt to:-
- 68-90 - Red (2.5YR 4/8) with some mottling; sandy clay loam; massive; pockets of carbonate coatings; thin lenses of grit; carbonate concretions to 2 cm diam.; manganese staining; wavy boundary. Abrupt to:-
- 90-126 - Mottled red (50%) (2.5YR 4/8) and light olive grey (50%) (5Y 6/2) clayey sand; massive; gritty layer with gravel to 2 cm diam. Abrupt to:-
- 126-138 - \*Pale yellow (5Y 7/3); clayey sand; massive with tendency to good structure in parts; manganese staining. Abrupt to:-
- 138-162 - \*Mottled red (50%) (2.5YR 4/8) and light olive grey (50%) (5Y 6/2); clayey sand; gritty layer; massive. Abrupt to:-
- 162-167 - \*Massive horizon (as above)
- 167-186 - \*Gritty horizon (as above)

\*The alternating grit layer/massive layer pattern disappears to either side of this profile.

LOCATION: "Ulinbawn Creamy", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 498 miles + 2180 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Midslope of rise

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T2-5 Pointed fruit mallee (*Eucalyptus socialis*), congo mallee (*Eucalyptus dumosa*), white cypress pine (*Callitris columellaris*), yarran (*Acacia homalophylla*), hooked needlewood (*Hakea tephrosperma*), *Cryptandra* sp., tar bush (*Eremophila glabra*), red box (*Eucalyptus intertexta*), kurrajong (*Brachychiton populneus*), gooma bush (*Bertya cunninghamii*), deane's wattle (*Acacia deanei*), sword bush (*Bossiaea walkeri*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), scented mat rush (*Lomandra effusa*), variable spear grass (*Stipa variabilis*), golden everlastings (*Helichrysum bracteatum*), *Brachycome* sp., bluebell (*Wahlenbergia* sp.), fan flower (*Scaevola aemula*), rough spear grass (*Stipa scabra*), *Velleia* sp., *Helipterum* sp.

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clayey sand material

Horizon	Depth (cm)	
	0-14	- Dark reddish brown (2.5YR 2/4 Moist) on surface changing to dark red (2.5YR 3/6 moist) lower in horizon; sandy clay loam; massive; surface crust; roots; insect holes. Clear to:-
	14-50	- Dark red (10R 3/6 moist); clay loam; poor structure; roots; insect holes; Clear to:-
	50-75	- Dark red (2.5YR 3/6 moist); clay loam; poor structure; carbonate staining; carbonate concretions to 2 cm diam. Abrupt to:-
	75-175	- Dark red (2.5YR 3/6 moist); clayey sand; complex horizon of strongly manganese stained; porous; roots; blocky material with both vertical and horizontal carbonate seams 1-2 cm wide between the blocks. The individual blocks are rounded and give the appearance of a structured layer in an earlier soil. Horizon continued to base of excavation.

LOCATION: "Corriedale", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 499 miles + 4430 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Crest of ridge

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T10 Congoo mallee (*Eucalyptus dumosa*), red box (*Eucalyptus intertexta*), butterbush (*Pittosporum phylliraeoides*), *Cryptandra* sp., *Mirbelia pungens*, white cypress pine (*Callitris columellaris*), daisy bush (*Olearia pimelioides*), *Dodonaea peduncularis*, yarran (*Acacia homalophylla*), sword bush (*Bossiaea walkeri*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), golden everlastings (*Helichrysum bracteatum*), clustered everlasting (*Helichrysum semipapposum*), *Brachycome* sp., No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), purple daisy burr (*Calotis cuneifolia*), woodruff (*Asperula* sp.).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-37	- Dusky red (10R 3/4 moist); sandy clay loam; massive; slight surface crust; loose sandy accumulation on surface; roots; insect holes; some yellow staining; wavy boundary. <i>Abrupt to:-</i>
	37-52	- Dark red (10R 3/6 moist) with 5% strong brown (7.5YR 5/6 moist) mottling; sandy clay loam; poor structure; roots; insect holes; some grit to 2 mm diam. <i>Clear to:-</i>
	52-74*	- Dark red (10R 3/6 moist) with 10% yellowish red (5YR 4/6 moist) mottling; massive to poor structure; sandy clay loam; some porous areas; roots; insect holes; large amount of gravel to 3 mm diam. increasing towards base of horizon; manganese staining towards the base. <i>Clear to:-</i>
	74-128	- Dark red (10R 3/6 moist); sandy clay loam; massive; gritty layer; roots; some gravel to 2 cm diam. <i>Clear to:-</i>
	128-173	- Mottled red (85%) (2.5YR 5/8 moist) and light brownish grey (15%) (10YR 6/2 moist); clay loam; moderate SABL to prismatic structure; roots; carbonate concretions to 5 cm diam.; small manganese concretions.

\*nearby variants showed carbonate staining in these layers.

LOCATION: "Heywood", Euabalong West COUNTY: Blaxland

FOOTAGE (APPROX): 501 miles + 2900 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope of long slope

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T10 Congoo mallee (*Eucalyptus dumosa*), pointed fruit mallee (*Eucalyptus socialis*), sword bush (*Bossiaea walkeri*), *Acacia brachybotrya*, *Eutaxia microphylla*, *Prostanthera microphylla*, *Olearia decurrens*, small-leaf clematis (*Clematis microphylla*).

Pastures: Porcupine spinifex grass (*Triodia irritans* var *laxispicata*), quena (*Solanum esuriale*), silky heads (*Cymbopogon oblectus*), spreading flax-lily (*Dianella revoluta*), *Lomandra glauca* ssp. *collina*, creamy candles (*Stachhouisia monogyna*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-18	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive; surface crust; roots; insect holes. <i>Abrupt to:-</i>
	18-48	- Dark red (2.5YR 3/6 moist); clay loam; moderate structure; roots; insect holes; manganese stains. <i>Abrupt to:-</i>
	48-66	- Red (2.5YR 4/8 moist); sandy clay loam; massive; roots; insect holes; some gravel to 3-4 cm diam.; carbonate staining; carbonate concretions to 2 cm diam. <i>Clear to:-</i>
	66-88	- Mottled red (65%) (2.5YR 4/8 moist) and reddish yellow (35%) (5YR 6/8 moist); sandy clay loam; massive to slight structure; roots; carbonate concretions to 4 cm diam.; carbonate staining; manganese staining. <i>Abrupt to:-</i>
	88-118	- Yellowish red (5YR 5/8 moist); sandy clay loam; massive; hard gritty layer; roots; vertically orientated carbonate concretions to 5-6+ cm diam. <i>Abrupt to:-</i>
	118-178	- Mottled red (50%) (2.5YR 4/8 moist) and very pale brown (50%) (10YR 7/3 moist); clay loam; massive to poor structure; roots to base of profile; vertical carbonate "pipes" to 15 cm long and 5 cm wide; moderate manganese staining.

LOCATION: "Heywood", Euabalong West

COUNTY: Blaxland

FOOTAGE (APPROX): 503 miles + 2050 ft

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope of low ridge

LAND USE: Grazing

VEGETATION: Edge of mallee

Trees and Shrubs: T5 Congoo mallee (*Eucalyptus dumosa*), yarran (*Acacia homalophylla*), sugarwood (*Myoporum platycarpum*), sword bush (*Bossiaea walkeri*), gooma bush (*Bertya cunninghamii*), deane's wattle (*Acacia deanei*), daisy bush (*Olearia pimelioides*), some bimble box (*Eucalyptus populnea*) and grey box (*Eucalyptus woollsiana*).

Pastures: Variable spear grass (*Stipa variabilis*), purple daisy burr (*Calotis cuneifolia*), porcupine spinifex grass (*Triodia irritans* var *laxispicata*), fuzzweed (*Vittadinia triloba*), australian bugle (*Ajuga australis*).

PROFILE DESCRIPTION: Northcote Classification Dr 2.13

Horizon Depth (cm)

- 0-26 - Dark reddish brown (2.5YR 2/4 moist) at surface to dark red (2.5YR 3/6 moist) lower in horizon; sandy loam surface grading into a sandy clay loam; massive; roots; insect holes. *Abrupt to:-*
- 26-33 - Bleached horizon; dark red (2.5YR 3/6 moist) to red (2.5YR 5/6 dry); massive; roots; insect holes, sandy loam. *Abrupt to:-*
- 33-82 - Dark red (2.5YR 3/6 moist); clay loam; moderate SABL structure; roots; insect holes; manganese staining increasing towards the base of horizon. *Abrupt to:-*
- 82-162 - Red (2.5YR 4/8 moist); clay loam; moderate SABL to prismatic structure; roots; insect holes; carbonate coatings between major peds; manganese staining. *Clear to:-*
- 162-192 - Yellowish red (5YR 5/6 moist) mottled; clay loam; massive to slight structure; roots; horizon of strong carbonate accumulation with concretions to 5 cm diam.; heavy deposits of manganese concretions.

\*this profile type was very limited in its occurrence in the mallee.

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 504 miles + 250 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Drainage depression

LAND USE: Grazing

VEGETATION: Bimble box-white cypress pine woodland

Trees and Shrubs: T20 Bimble box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), warrior bush (*Apophyllum anomalum*).

Pastures: Curly windmill grass (*Chloris acicularis*), purple love grass (*Eragrostis lacunaria*), golden everlastings (*Helichrysum bracteatum*), japanese cudweed (*Gnaphalium japonicum*), no. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), purple daisy burr (*Calotis cuneifolia*), fuzzweed (*Vittadinia triloba*).

PROFILE DESCRIPTION: Northcote Classification Dy 3.53

Horizon	Depth (cm)	
0-4	-	Dark reddish brown (5YR 3/4 moist); light sandy clay loam; massive; roots; many white ant holes. <i>Clear to:-</i>
4-21	-	Brown (5YR 3/6 moist); sandy clay loam; massive; roots; insect holes. <i>Abrupt to:-</i>
21-29	-	Red (2.5YR 4/6 moist) to light reddish brown (5YR 6/4 dry); light sandy clay loam; massive; soft; bleached layer; roots; insect holes. <i>Abrupt to:-</i>
29-51	-	Yellowish red (5YR 5/6 moist); clay loam; massive; roots; insect holes. <i>Diffuse to:-</i>
51-103	-	Mottled red (2.5YR 4/8 moist) and yellowish red (5YR 5/6 moist); clay loam; massive; porous; some carbonate concretions to 1 cm diam.; manganese staining. <i>Diffuse to:-</i>
103-144	-	Mottled reddish yellow (5YR 6/8 and 5YR 6/6 moist) and yellowish red (5YR 4/8 moist); sandy clay loam; massive; scattered carbonate concretions to 4 cm diam.; manganese concretions common. <i>Clear to:-</i>
144-172	-	Reddish yellow (5YR 6/8 moist) mottled; sandy clay loam; massive; porous; scattered carbonate concretions to 4 cm diam.; manganese staining.

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 504 miles + 4930 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 23/9/74

TOPOGRAPHY: Level

UNDERLYING ROCK: Weathered  
granite

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January ( $34.7^{\circ}\text{C}$ ;  $18.6^{\circ}\text{C}$ );  
July ( $15.7^{\circ}\text{C}$ ;  $3.4^{\circ}\text{C}$ )

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Shallow drainage line

LAND USE: Grazing

VEGETATION: Bimble box woodland

Trees and Shrubs: T10-20 Bimble box (*Eucalyptus populnea*), warrior bush (*Apophyllum anomalum*), butterbush (*Pittosporum phylliraeoides*), turpentine (*Eremophila sturtii*).

Pastures: Curly windmill grass (*Chloris acicularis*), variable spear grass (*Stipa variabilis*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), soft roly poly (*Salsola kali*), crimson lambs tails (*Ptilotus atriplicifolius*).

PROFILE DESCRIPTION: Northcote Classification: Um5.52 over sandy clay loam material

Horizon	Depth (cm)	
	0-8	- Dark reddish brown (5YR 3/4 moist); fine sandy clay loam; massive; roots; insect holes. Clear to:-
	8-37	- Yellowish red (5YR 5/6 moist); fine sandy clay loam; massive; roots; insect holes; small rounded concretions increasing towards base of horizon; manganese staining. Clear to:-
	37-53	- Yellowish red (5YR 5/6 moist); clay loam; poor to moderate structure; carbonate staining. Gradual to:-
	53-111	- Yellowish red (5YR 5/6 moist); clay loam; moderate crumb structure; carbonate coatings on peds; small carbonate concretions; manganese concretions. Gradual to:-
	111-161	- Brown (7.5YR 5/4 moist); sandy clay loam; massive; gritty; strong concentration of manganese concretions.

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 504 miles + 5200 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 23/9/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Edge of wide shallow drainage line

LAND USE: Grazing

VEGETATION: Bimble box woodland

Trees and Shrubs: T10-20 Bimble box (*Eucalyptus populnea*), warrior bush (*Apophyllum anomalum*), butterbush (*Pittosporum phylliraeoides*), turpentine (*Eremophila sturtii*).

Pastures: Curly windmill grass (*Chloris acicularis*), variable spear grass (*Stipa variabilis*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), soft roly poly (*Salsola kali*), crimson lambs tails (*Ptilotus atriplicifolius*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
0-10	-	Dark reddish brown (5YR 3/4 moist) at surface to brown (5YR 3/6 moist) lower in horizon; sandy clay loam; massive; roots; insect holes. Clear to:-
10-44	-	Yellowish red (5YR 4/8 moist); clay loam; poor to moderate SABL* structure; roots; insect holes. Gradual to:-
44-63	-	Red (2.5YR 4/6 moist); clay loam; massive to poor structure; carbonate stainings and concretions; some manganese staining. Clear to:-
63-90	-	Dark red (2.5YR 3/6 moist); clay loam; massive to slight structure; manganese stainings. Clear to:-
90-174	-	Red (2.5YR 4/8 moist) becoming paler towards base; massive; clay loam; some carbonate concretions; manganese staining.

\* subangular blocky

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 505 miles + 4700 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham

TOPOGRAPHY: Level to slightly undulating      UNDERLYING ROCK: Well cleaved purple slaty siltstone

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Bed of Crowie Creek

LAND USE: Grazing

VEGETATION: Black box swamp

Trees and Shrubs: T10-15 Black Box (*Eucalyptus largiflorens*), lignum (*Muehlenbeckia cunninghamii*).

Pastures: Climbing saltbush (*Rhagodia nutans*), kidney weed (*Dichondra repens*), sneezeweed (*Centipeda* sp.), bluebell (*Wahlenbergia* sp.), weeping lovegrass (*Eragrostis parviflora*), yellow wood sorrel (*Oxalis corniculatus*), plantain (*Plantago* sp.), windmill grass (*Chloris truncata*), curly windmill grass (*Chloris acicularis*), native carrot (*Daucus glochidiatus*), japanese cudweed (*Gnaphalium japonicum*), sow thistle (*Sonchus oleraceus*), *Crassula* sp., joyweed (*Alternanthera* sp.), sedge (*Carex* sp.), smooth buttercup (*Ranunculus pentandrus*).

PROFILE DESCRIPTION:      Northcote Classification Um 5.52 over sandy clay loam and clay loam material

Horizon	Depth (cm)	
	0-8	- Reddish brown (5YR 4/3 moist); clay loam; massive; hard; roots; <i>Abrupt to:-</i>
	8-30	- Greyish brown (7.5YR 5/3 moist); clay loam; poor to moderate structure; roots; insect holes. <i>Clear to:-</i>
	30-54	- Mottled reddish brown (5YR 5/4 - 4/3 moist); clay loam; moderate structure; roots; insect holes; small manganese concretions. <i>Clear to:-</i>
	54-84	- Mottled yellowish red (5YR 5/6 moist) and brown (7.5YR 5/4 moist); clay loam; poor to moderate structure; roots; increased concentration of manganese concretions. <i>Abrupt to:-</i>
	84-130	- Mottled yellowish red (5YR 5/8 moist) and reddish brown (5YR 4/3 moist); sandy clay loam; roots; massive; gritty horizon; some pockets of soil from horizon immediately above. <i>Clear to:-</i>
	130-161	- Red (2.5YR 4/8 moist) mottled horizon; sandy clay loam; massive; roots; gritty layer with gravel to 4 mm diam. and some angular stone to 3 cm diam. <i>Clear to:-</i>
	161-200	- Yellowish red (5YR 5/8 moist) mottled; clay loam; massive; roots; white shaley material nearby in this horizon.

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 507 miles + 470 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/9/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope

LAND USE: Grazing

VEGETATION: Open bimple box woodland

Trees and Shrubs: T200 Bimple box (*Eucalyptus populnea*), wilga (*Geijera parviflora*), needlewood (*Hakea leucoptera*), turpentine (*Eremophila sturtii*), yarran (*Acacia homalophylla*).

Pastures: Catsear (*Hypochaeris radicata*), variable spear grass (*Stipa variabilis*), curly windmill grass (*Chloris acicularis*), fuzzweed (*Vittadinia triloba*), desert chinese lanterns (*Abutilon otocarpum*), climbing saltbush (*Rhagodia nutans*), grass cushions (*Isoetopsis graminifolia*), bogan flea (*Calotis hispidula*), corrugated sida (*Sida corrugata*), yellow wood sorrel (*Oxalis corniculatus*), bluebell (*Wahlenbergia* sp.), flannel cudweed (*Gnaphalodes uliginosum*), native carrot (*Daucus glochidiatus*), wallaby grass (*Danthonia caespitosa*), australian bindweed (*Convolvulus erubescens*), sow thistle (*Sonchus oleraceus*), large white brachycome (*Brachycome marginata*), rock fern (*Cheilanthes tenuifolia*), waukeroo daisy (*Stuartina muelleri*), *Crassula* sp., curly windmill grass (*Chloris acicularis*), cotton fireweed (*Senecio quadridentatus*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over sandy clay loam material

Horizon	Depth (cm)	Description
	0-43	- Dark reddish brown (2.5YR 3/4 moist); sandy clay loam; massive; major root concentration; insect holes; wavy boundary. Abrupt to:-
	43-56	- Dark red (10R 3/6 moist); sandy clay loam; massive to poor structure; roots; small gravel to 2 mm diam. Clear to:-
	56-74	- Dark red (10R 3/6 moist); clay loam; poor structure; roots; gravelly layer with flat angular gravel to 3 cm diam. but mainly less than 1 cm; plentiful manganese concretions. Clear to:-
	74-111	- Dark red (2.5YR 3/6 moist); clay loam; moderate SABL* structure; roots; insect holes; some carbonate concretions to 2 cm diam. in the lowest 10 cm of the horizon. Abrupt to:-
	111-177	- Brown (7.5YR 5/4 moist) with coatings of dark red (10R 3/6 moist); light sandy clay loam; roots; massive to poor structure; porous; layered material; carbonate concretions to 3 cm diam.; very strong manganese staining.

\* subangular blocky

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 507 miles + 4750 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/9/74

TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Well cleaved yellow siltstone/shale (Ordovician sediments)

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope of ridge (western)

LAND USE: Grazing

VEGETATION: Wilga-red box community

Trees and Shrubs: T15 Wilga (*Geijera parviflora*), red box (*Eucalyptus intertexta*), rosewood (*Heterodendrum oleifolium*), pointed-fruit mallee (*Eucalyptus socialis*), punty bush (*Cassia eremophila*), bimble box (*Eucalyptus populnea*), hooked needlewood (*Hakea tephrosperma*), native jasmine (*Jasminum lineare*).

Pastures: Mother of misery (*Cuphonotus humistratus*), rock fern (*Cheilanthes tenuifolia*), purple love grass (*Eragrostis lacunaria*), *Digitaria* sp., variable spear grass (*Stipa variabilis*), soft roly poly (*Salsola kali*), golden everlastings (*Helichrysum bracteatum*), eastern cotton bush (*Kochia tamariscina*), *Crassula* sp., waukeroo daisy (*Stuartina muelleri*), saffron thistle (*Carthamus lanatus*), native tobacco (*Nicotiana suaveolens*), black crumbweed (*Chenopodium melanocarpum*), *Aristida echinata*, capeweed (*Cryptostemma calendula*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), australian bindweed (*Convolvulus erubescens*), japanese cudweed (*Gnaphalium japonicum*), catsear (*Hypochaeris radicata*), fuzzweed (*Vittadinia triloba*), climbing saltbush (*Rhagodia nutans*), cut leaf goodenia (*Goodenia cycloptera*), flannel cudweed (*Gnaphalodes uliginosum*), bluebell (*Wahlenbergia* sp.), small woolly burr medic (*Medicago mimima*), sow thistle (*Sonchus oleraceus*), spiny potato bush (*Solanum ferrocissimum*), barley grass (*Hordeum leporinum*), *Parietaria debilis*, stinging nettle (*Urtica* sp.), box grass (*Paspalidium constrictum*), curly windmill grass (*Chloris acicularis*), native leek (*Bulbinopsis semibarbata*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-12	- Dusky red (10R 3/4 moist); sandy clay loam; massive; roots; insect holes. <i>Abrupt to:-</i>
	12-52	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive; gravelly-stony layer with flat angular stones to 3-4 cm across; roots; insect holes. <i>Clear to:-</i>
	52-73	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive to slight structure; strong manganese staining.
	73+	- Decomposing rock and bedrock with lime as a capping in crevices.

\*Roots to 1 cm diameter were noted at 150 cm depth.

\*In a nearby variant the gravelly layer (12-52 cm in this profile) was located throughout the surface 20 cm.

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 508 miles + 1430 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/9/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Cleaved  
siltstone (Ordovician sediments)

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Narrow shelf between higher and lower ridge crests

LAND USE: Grazing

VEGETATION: Bimble box woodland

Trees and Shrubs: Bimble box (*Eucalyptus populnea*), kurrajong (*Brachychiton populneus*), needlewood (*Hakea leucoptera*), pointed-fruit mallee (*Eucalyptus socialis*), wilga (*Geijera parviflora*), rosewood (*Heterodendrum oleifolium*), budda (*eremophila mitchellii*).

Pastures: Golden everlastings (*Helichrysum bracteatum*), *Digitaria* sp., sow thistle (*Sonchus oleraceus*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), wire grass (*Aristida echinata*), galvanised burr (*Bassia birchii*), variable spear grass (*Stipa variabilis*), kerosene grass (*Aristida contorta*), rough spear grass (*Stipa scabra*), catsear (*Hypochaeris radicata*), australian bindweed (*Convolvulus erubescens*), purple daisy burr (*Calotis cuneifolia*), curly windmill grass (*Chloris acicularis*), waukeroo daisy (*Stuartina muelleri*), fuzzweed (*Vittadinia triloba*), mother of misery (*Cuphonotus humistratus*), cotton fireweed (*Senecio quadridentatus*), flannel cudweed (*Gnaphalodes uliginosum*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon Depth (cm)

- 0-40 - Dark reddish brown (2.5YR 2/4 - 2.5YR 3/4 moist); fine sandy clay loam; massive; surface crust; roots; charcoal. Abrupt to:-
- 40-58 - Dark red (2.5YR 3/6 moist); clay loam; moderate structure; strong root development; gravel to 1 cm diam. scattered through horizon; carbonate staining throughout. Clear to:-
- 58-112 - Red (2.5YR 4/8 moist); clay loam; poor to moderate structure; roots; insect holes; some stones to 4 cm diam.; carbonate stainings; carbonate concretions to 2.5 cm diam.; moderate manganese staining. Gradual to:-
- 112-147 - Dark red (2.5YR 3/6 moist) with coatings of pale brown (10YR 6/3 moist); clay loam; massive to poor structure; roots; insect holes; porous near base of horizon; strong manganese staining. Clear to:-
- 147-177 - Mottled dark red (2.5YR 3/6 moist) and light olive grey (5Y 6/2 moist); fine sandy clay loam; massive; porous; some roots; some carbonate seams; strong manganese staining.

Profile Number: GP 96

*LOCATION:* "Booberoi", Euabalong

*COUNTY:* Blaxland

*FOOTAGE (APPROX):* 508 miles + 2470 ft.

*COLLECTED AND DESCRIBED BY:* G.M. Cunningham *DATE SAMPLED:* 27/9/74

*TOPOGRAPHY:* Undulating

*UNDERLYING ROCK:* Cleaved Siltstone (Ordovician Sediments)

*CLIMATE:* Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

*POSITION IN LANDSCAPE:* Stony ridge crest

*LAND USE:* Grazing

*PROFILE DESCRIPTION:* Not available. Rock sample obtained.

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 509 miles + 600 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/9/74

TOPOGRAPHY: Level to slightly undulating

UNDERLYING ROCK: Coarse  
grained biotite granite  
with basic xenolith inclusions  
(Kikoira Granite)

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level bench between higher and lower ridge crests

LAND USE: Grazing

VEGETATION: Bimble box-red box woodland

Trees and Shrubs: T50 Bimble box (*Eucalyptus populnea*), red box (*Eucalyptus intertexta*), wilga (*Geijera parviflora*), ring-barked white cypress pine (*Callitris columellaris*), budda (*Eremophila mitchellii*).

Pastures: *Crassula* sp., waukeroo daisy (*Stuartina muelleri*), variable spear grass (*Stipa variabilis*), fuzzweed (*Vittadinia triloba*), purple daisy burr (*Calotis cuneifolia*), soft roly poly (*Salsola kali*), australian bindweed (*Convolvulus erubescens*), rough spear grass (*Stipa scabra*), cotton fireweed (*Senecio quadridentatus*), sow thistle (*Sonchus oleraceus*), curly windmill grass (*Chloris acicularis*), small woolly burr medic (*Medicago minima*), mallee saltbush (*Atriplex stipitata*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), purple love grass (*Eragrostis lacunaria*), cotton panic (*Digitaria brownii*), box grass (*Paspalidium constrictum*), cut leaf goodenia (*Goodenia cycloptera*), yellow buttons (*Helichrysum apiculatum*), *Minuria* sp., wire grass (*Aristida echinata*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over sandy clay loam material.

Horizon Depth (cm)

- 0-19\* - Dark reddish brown (2.5YR 3/4 moist); sandy clay loam; massive; roots; insect holes. Clear to:-
- 19-79\*\* - Red (2.5YR 4/8 moist); clay loam; moderate SABL<sup>+</sup> to prismatic structure; strong root development; slight mottling towards base of horizon. Clear to:-
- 79-121 - Mottled yellowish red (5YR 4/6 moist) and brownish yellow (10YR 6/6 moist); sandy clay loam; massive; roots; insect holes; soil/rotten rock mixture with carbonate concretions to 1 cm diam.; wavy boundary. Abrupt to:-
- 121-170 - Decomposed rock with carbonate lenses and minor pockets of soil.

\*nearby the surface horizon extended to a depth of 40 cm.

\*\*in nearby areas, pockets of stones to 5 cm diam. exist.

+ subangular blocky

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 509 miles + 1580 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/9/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level bench between higher and lower ridge crests

LAND USE: Grazing

VEGETATION: Red box-bimble box woodland

Trees and Shrubs: T30-50 Red box (*Eucalyptus intertexta*), bimble box (*Eucalyptus populnea*), wilga (*Geijera parviflora*), rosewood (*Heterodendrum oleifolium*), kurrajong (*Brachychiton populneus*), budda (*Eremophila mitchellii*), broad leaved hopbush (*Dodonaea viscosa*), punty bush (*Cassia eremophila*).

Pastures: Purple love grass (*Eragrostis lacunaria*), native tobacco (*Nicotiana suaveolens*), *Sida cunninghamii*, No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), maltese cockspur (*Centaurea melitensis*), barley grass (*Hordeum leporinum*), black nightshade (*Solanum nigrum*), bathurst burr (*Xanthium spinosum*), stinging nettle (*Urtica* sp.), horehound (*Marrubium vulgare*), variable spear grass (*Stipa variabilis*), cotton fireweed (*Senecio quadridentatus*), fuzzweed (*Vittadinia triloba*), small woolly burr medic (*Medicago minima*), saffron thistle (*Carthamus lanatus*), desert chinese lanterns (*Abutilon otocarpum*), bogan flea (*Calotis hispidula*), soft roly poly (*Salsola kali*), box grass (*Paspalidium constrictum*), spear thistle (*Cirsium vulgare*), sow thistle (*Sonchus oleraceus*), curly windmill grass (*Chloris acicularis*), rock fern (*Cheilanthes tenuifolia*), *Glycine* sp., *Crassula* sp., cotton panic (*Digitaria brownii*), catsear (*Hypochaeris radicata*), waukeroo daisy (*Stuartina muelleri*), kidney weed (*Dichondra repens*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-40	- Dark reddish brown (2.5YR 3/4 moist) at the surface changing to dusky red (10R 3/4 moist) lower in horizon; fine sandy clay loam; massive; roots; insect holes; charcoal. <i>Abrupt to:-</i>
	40-78	- Dark red (2.5YR 3/6 moist); clay loam: moderate SABL <sup>†</sup> structure; roots; insect holes; small gravel to 4 mm diam.; some manganese staining. <i>Clear to:-</i>
	78-103*-	- Dark red (2.5YR 3/6 moist); clay loam; massive; roots; very stony layer - stones to 10-15 cm diam. but mainly <5 cm diam. <i>Gradual to:-</i>
	103-156*-	- Mottled red (50%) (2.5YR 4/8 moist) and greyish yellow (50%) (2.5Y 7/3 moist); clay loam; roots; massive; stone accumulation as in horizon above. <i>Abrupt to:-</i>
	156-176	- Mottled greyish yellow (75%) (2.5Y 7/3 moist) and yellowish red (25%) (5YR 5/8 moist); clay loam; decomposing granite.

\*in nearby profiles the stony layer is only 30 cm wide - not 78 cm wide (78-156 cm) as in this profile - and the grey lower horizon extends up to within 1 metre of the surface.

† subangular blocky

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 509 miles + 2160 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/9/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Weathered  
granite

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Bench between two ridge crests

LAND USE: Grazing

VEGETATION: Bimble box woodland

Trees and Shrubs: Bimble box (*Eucalyptus populnea*), wilga (*Geijera parviflora*), kurrajong (*Brachychiton populneus*), punty bush (*Cassia eremophila*).

Pastures: Kangaroo grass (*Themeda australis*), australian bindweed (*Convolvulus erubescens*), fuzzweed (*Vittadinia triloba*), cotton panic (*Digitaria brownii*), rough spear grass (*Stipa scabra*), cut leaf goodenia (*Goodenia cycloptera*), native leek (*Bulbinopsis semibarbata*), waukeroo daisy (*Stuartina muelleri*), cotton fireweed (*Senecio quadridentatus*), catsear (*Hypochaeris radicata*), rock fern (*Cheilanthes tenuifolia*), native carrot (*Daucus glochidiatus*), *Vulpia* sp., native tobacco (*Nicotiana suaveolens*), *Glycine* sp., saffron thistle (*Carthamus lanatus*), soft roly poly (*Salsola kali*), curly windmill grass (*Chloris acicularis*), mother of misery (*Cuphonotus humistratus*), flannel cudweed (*Gnaphalodes uliginosum*), sow thistle (*Sonchus oleraceus*), plantain (*Plantago varia*), *Sida cunninghamii*.

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over sandy clay loam material

Horizon	Depth (cm)	
	0-21	- Dark reddish brown (2.5YR 3/4 moist) changing to dark red (2.5YR 3/6 moist) lower in horizon; sandy clay loam grading to clay loam; massive; roots; insect holes. Clear to:-
	21-37	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive; roots; insect holes; gravel to 3 cm diam. Clear to:-
	37-69	- Mottled dark red (50%) (2.5YR 3/6 moist) and strong brown (50%) (7.5YR 5/6 moist); sandy clay loam; poor structure; gravelly layer with red soil nodules; some manganese staining in red nodules; stones to 5 cm diam. but mainly 1-2 cm diam..
	69+	- Bedrock with carbonate concretions in crevices.

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 510 miles + 720 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/9/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Booberoi - 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope

LAND USE: Grazing

VEGETATION: Open bimbale box woodland

Trees and Shrubs: T 100 Kurrajong (*Brachychiton populneus*), rosewood (*Heterodendrum oleifolium*), bimbale box (*Eucalyptus populnea*), pointed-fruit mallee (*Eucalyptus socialis*), white cypress pine (*Callitris columellaris*), yarran (*Acacia homalophylla*).

Pastures: Variable spear grass (*Stipa variabilis*), fuzzweed (*Vittadinia triloba*), cotton fireweed (*Senecio quadridentatus*), barley grass (*Hordeum leporinum*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), arabian grass (*Schismus barbatus*), saffron thistle (*Carthamus lanatus*), cotton panic (*Digitaria brownii*), spiny emex (*Emex australis*), plantain (*Plantago varia*), catsear (*Hypochaeris radicata*), bluebell (*Wahlenbergia* sp.), sow thistle (*Sonchus oleraceus*), cut leaf goodenia (*Goodenia cycloptera*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over sandy clay loam material

Horizon	Depth (cm)	
	0-8	- Dark reddish brown (2.5YR 3/4 moist); sandy clay loam; massive; roots; insect holes. Clear to:-
	8-32	- Dusky red (10R 3/4 moist); sandy clay loam; massive; roots; charcoal; hard layer. Clear to:-
	32-57	- Dark red (2.5YR 3/6 moist); sandy clay loam; massive; roots; charcoal. Abrupt to:-
	57-95	- Dark red (10R 3/6 moist); clay loam; poor to moderate SABE* to prismatic structure; gritty horizon; roots; insect holes. Clear to:-
	95-115	- Mottled dark red (10R 3/6 moist); clay loam; massive; roots; insect holes; more gritty than the horizon above; wavy boundary. Clear to:-
	115-177	- Decomposed bedrock material.

\* subangular blocky

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 512 miles + 2180 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/9/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Booberoi 380mm: 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Lower slope of ridge

LAND USE: Grazing and cropping

VEGETATION: Cleared to open bimble box woodland

Trees and Shrubs: T > 100 Bimble box (*Eucalyptus populnea*)

Pastures: Variable spear grass (*Stipa variabilis*), fuzzweed (*Vittadinia triloba*), cotton fireweed (*Senecio quadridentatus*), barley grass (*Hordeum leporinum*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), arabian grass (*Schismus barbatus*), saffron thistle (*Carthamus lanatus*), cotton panic (*Digitaria brownii*), spiny emex (*Emex australis*), plantain (*Plantago varia*), catsear (*Hypochaeris radicata*), bluebell (*Wahlenbergia* sp.), sow thistle (*Sonchus oleraceus*), cut leaf goodenia (*Goodenia cycloptera*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-10 cm	- Dark reddish brown (2.5YR 2/4 moist); fine sandy clay loam; massive; roots; insect holes. Clear to:-
	10-33 cm	- Dark reddish brown (2.5YR 3/4 moist); clay loam; massive; roots; insect holes; charcoal. Abrupt to:-
	33-50	- Dark red (10R 3/6 moist); clay loam; massive; roots; layer of small grit to 2 mm diam. Abrupt to:-
	50-106	- Dusky red (10R 3/4 moist); clay loam; moderate SABL structure; roots; insect holes; carbonate concretions to 2 cm diam. in lowest 10 cm of horizon. Abrupt to:-
	106-135	- Mottled brown (7.5YR 5/4 moist) with some dark red (10R 3/6 moist); clay loam; massive; gritty; carbonate concretions to 2-3 cm diam; slight manganese staining. Clear to:-
	135-182*	- Mottled dark red (50%) (2.5YR 3/6 moist) and strong brown (50%) (7.5YR 5/6 moist); clay loam; massive to poor structure; roots; carbonate concretions to 5 cm diam; strong manganese staining.

\* nearby variants have vertically orientated carbonate concretions to 15 cm long and 4 cm wide in lowest horizon

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX) 513 miles + 430 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/7/74

TOPOGRAPHY Undulating

UNDERLYING ROCK: Partly weathered coarse grained biotite muscovite granite (Kikoira granite)

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C); July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Ridge crest

LAND USE: Grazing

VEGETATION: Open bimble box woodland

Trees and Shrubs: T > 100 Bimble box (*Eucalyptus populnea*)

Pastures: Variable spear grass (*Stipa variabilis*), fuzzeed (*Vittadinia triloba*), cotton fireweed (*Senecio quadridentatus*), barley grass (*Hordeum leporinum*), No 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), arabian grass (*Schismus barbatus*), saffron thistle (*Carthamus lanatus*), cotton panic (*Digitaria brownii*), spiny emex (*Emex australis*), plantain (*Plantago varia*), catsear (*Hypochaeris radicata*), bluebell (*Wahlenbergia* sp.), sow thistle (*Sonchus oleraceus*), cut leaf goodenia (*Goodenia cycloptera*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over sany clay loam material

Horizon	Depth (cm)	Description
0-4	-	Dark reddish brown (2.5YR 3/4 moist); sandy clay loam; massive; roots. Clear to:-
4-40	-	Dark reddish brown (2.5YR 3/4 moist); sandy clay loam; massive; roots; insect holes. Abrupt to:-
40-63	-	Dark red (2.5YR 3/6 moist); clay loam; moderate structure; roots; some small gravel to 3 mm diam; some manganese staining. Gradual to:-
63-101	-	Mottled dark red (2.5YR 3/6 moist); clay loam; moderate SABL*to prismatic structure; some manganese staining in lowest 15 cm of horizon. Clear to:-
101-178	-	Mottled greyish brown (2.5Y 5/2 moist) with some dark red (2.5YR 3/6 moist); sandy clay loam; massive; decomposed granite; roots in soil pockets.

\* subangular blocky

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 513 miles + 2850 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/9/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Weathered granite (Kikoira granite)

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C)  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Mid slope of ridge grading towards Booberoi Creek and Lachlan River

LAND USE: Grazing

VEGETATION: Bimble box woodland

Trees and Shrubs: T50-100 Bimble box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), native jasmine (*Jasminum lineare*).

Pastures: Variable spear grass (*Stipa variabilis*), galvanised burr (*Bassia birchii*), *Sisymbrium* sp., spiny fruit saltbush (*Atriplex spinibractea*), purple love grass (*Eragrostis lacunaria*), cut leaf goodenia (*Goodenia cycloptera*), small woolly burr medic (*Medicago minima*), *Crassula* sp., windmill grass (*Chloris truncata*), curly windmill grass (*Chloris acicularis*), sow thistle (*Sonchus oleraceus*), bogan flea (*Calotis hispidula*), saffron thistle (*Carthamus lanatus*), bluebell (*Wahlenbergia* sp.), cotton fireweed (*Senecio quadridentatus*), catsear (*Hypochaeris radicata*), fuzzweed (*Vittadinia triloba*), flannel cudweed (*Gnaphalodes uliginosum*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), cut leaf medic (*Medicago laciniata*), sneezeweed (*Centipeda* sp.), *Glossogyne tenuifolia*, golden everlastings (*Helichrysum bracteatum*).

PROFILE DESCRIPTION: Northcote Classification Dr 3.13

Horizon	Depth (cm)
0-40	- Dark reddish brown (2.5YR 3/4 moist); sandy loam at surface grading to a light sandy clay loam; massive; roots; insect holes. Abrupt to:-
40-49	- Red (2.5YR 4/6 moist; 2.5YR 5/6 dry); loamy sand; massive; roots; whitish appearance; bleached horizon. Abrupt to:-
49-68	- Mottled red (2.5YR 4/6 moist) with some dusky red (2.5YR 3/2 moist); clay loam; moderate structure; roots; some manganese concretions. Clear to:-
68-142	- Mottled light yellowish brown (10YR 6/4 moist) with some light brown (5YR 5/6 moist); clay loam; massive to poor structure; scattered carbonate concretions to 2-3 cm dima; manganese stainings. Gradual to:-
142-162	- Mottled light brownish grey (50%) (2.5Y 6/2 moist) and reddish yellow (50%) (7.5YR 6/6 moist); clay loam; strong concentration of manganese concretions to 5 mm diam.

LOCATION: "Booberoi", Euabalong

COUNTY: Blaxland

FOOTAGE (APPROX): 513 miles +4400 ft.

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/9/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Weathered granite (Kikoira granite)

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin - January (34.7°; 18.6°);  
July (15.7°; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Lower slope of ridge just above flood plain of Booberoi Creek

LAND USE: Grazing

VEGETATION: Bimble box woodland

Trees and Shrubs: T50-100 Bimble box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), native jasmine (*Jasminum lineare*).

Pastures: Variable spear grass (*Stipa variabilis*), galvanised burr (*Bassia birchii*), *Sisymbrium* sp., spiny-fruit saltbush (*Atriplex spinibractea*), purple love grass (*Eragrostis lacunaria*), cut leaf goodenia (*Goodenia cycloptera*), small woolly burr medic (*Medicago minima*), *Crassula* sp., windmill grass (*Chloris truncata*), curly windmill grass (*Chloris acicularis*), sow thistle (*Sonchus oleraceus*), bogan flea (*Calotis hispidula*), saffron thistle (*Carthamus lanatus*), bluebell (*Wahlenbergia* sp.), cotton fireweed (*Senecio quadridentatus*), catsear (*Hypochaeris radicata*), fuzzweed (*Vittadinia triloba*), flannel cudweed (*Gnaphalodes uliginosum*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), cut leaf medic (*Medicago laciniata*), sneezeweed (*Centipeda* sp.), *Glossogyne tenuifolia*, golden everlastings (*Helichrysum bracteatum*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)
0-44	- Dark reddish brown (2.5YR 3/4 moist); loamy sand at surface grading to sandy loam; massive; roots; insect holes; charcoal. <i>Abrupt to:-</i>
44-64	- Dark reddish brown (2.5YR 3/4 moist) to red (2.5YR 4/6-5/6 dry); bleached horizon; sandy loam; massive; hard; small gravel to 3-4 mm diam. but mainly 2 mm; wavy boundary. <i>Abrupt to:-</i>
64-114	- Dark red (2.5YR 3/6 moist); sandy clay loam; poor structure becoming more massive towards base; roots; isolated manganese concretions. <i>Clear to:-</i>
114-150	- Mottled red (2.5YR 4/8 moist) with some reddish yellow (7.5 YR 6/6 moist); clay loam; moderate SABL* to prismatic structure; carbonate staining on peds; small carbonate concretions to 1 cm; some angular stones to 2 cm diam.; manganese stainings. <i>Clear to:-</i>
150-200-	- Red (2.5YR 4/8 moist); clay loam; roots; some gritty patches or lenses; poor to moderate structure; carbonate concretions to 1 cm diam.

\* subangular blocky

LOCATION: "Morven", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX): 517 miles + 3080 ft.

PARISH: Whyaddra

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 28/10/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C)  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Edge of floodplain

LAND USE: Grazing and cropping

VEGETATION: Cleared paddock

Trees and Shrubs: Scattered bimple box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), yarran (*Acacia homalophylla*).

Pastures: *Vulpia* sp., variable spear grass (*Stipa variabilis*), common wheat grass (*Agropyron scabrum*), barley grass (*hordeum leporinum*), cut leaf medic (*Medicago laciniata*), curly windmill grass (*Chloris acicularis*), blue crowfoot (*Erodium crinitum*), catsear (*Hypochaeris radicata*), sow thistle (*Sonchus oleraceus*), soft brome (*Bromus mollis*), saffron thistle (*Carthamus lanatus*), native carrot (*Daucus glochidiatus*), barrel medic (*Medicago truncatula*).

PROFILE DESCRIPTION: Northcote Classification Dy 2.53

Horizon	Depth (cm)	Description
0-30	-	Yellowish red (5YR 4/6) at surface to dark reddish brown (5YR 3/3) lower in horizon; fine sandy loam; massive; roots; insect holes. <i>Abrupt to:-</i>
30-53	-	Yellowish red (5YR 5/6); light clay; poor structure; roots; insect holes; some carbonate stainings and small concretions. <i>Clear to:-</i>  <i>Material below 53 cm appears to be a buried soil</i>
53-74	-	Mottled brown (7.5YR 5/4); silty clay loam; massive to poor structure; roots; insect holes; carbonate stainings and occasional concretions in old root lines- to 5 cm diam. and 2 cm long. <i>Abrupt to:-</i>
74-108	-	Yellowish red (50%) (5YR 4/6) to yellowish brown (50%) (10YR 5/4); clay loam; poor to moderate structure; many insect holes; increased carbonate staining; some manganese staining and concretions in lower section. <i>Diffuse to:-</i>
108-158	-	Dark red (2.5YR 3/6); clay loam; moderate to strong SABL* structure; some insect holes; many small flecks of manganese. <i>Abrupt to:-</i>
158-178	-	Mostly red (2.5YR 4/8) with some strong brown (7.5YR 5/6); clay loam; massive to poor structure; carbonate concretions to 4 cm diam.

\* subangular blocky

LOCATION: "Avoca", Condobolin COUNTY: Dowling  
FOOTAGE (APPROX): 518 miles + 2030 ft. PARISH: Wardry  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 28/10/74  
TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Mid slope of ridge

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Nil

Pastures: Variable spear grass (*Stipa variabilis*), wallaby grass (*Danthonia caespitosa*), *Phalaris* sp., fuzzweed (*Vittadinia triloba*), woolly heads (*Gnaphalodes uliginosum*), purple daisy burr (*Calotis cuneifolia*), *Kochia* sp., yellow wood sorrel (*Oxalis corniculatus*), desert chinese lanterns (*Abutilon otocarpum*), No. 9 wire grass (*Atistida jerichoensis* var *subspinulifera*), *Vulpia* sp., *Kochia ciliata*, mulga grass (*Neurachne mitchelliana*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
0-32	-	Dark reddish brown (2.5YR 3/4); sandy loam at surface grading to a sandy clay loam; massive; surface crust; roots; insect holes. Abrupt to:-
32-38	-	Dark reddish brown (2.5YR 3/4) moist; red (2.5YR 5/6) dry - bleached horizon; sandy clay loam; massive; roots; insect holes. Abrupt to:-
38-59	-	Dark red (10R 3/6); clay loam; moderate structure; roots; manganese stainings strong in lower parts of horizon. Gradual to:-
59-92	-	Red (10R 4/8); clay loam; poor to moderate structure; carbonate concretions to 3 cm diam; manganese stainings in lower section of horizon. Abrupt to:-
92-158	-	Red (10R 4/8); clay loam; poor to moderate SABL* structure; some gravel to 2-3 cm diam; carbonate concretions to 5 cm diam; many small manganese concretions. Clear to:-
158-170-		Red (2.5YR 4/8); clay loam; massive; gravelly layer with angular shaley gravel to 2-3 cm diam.; carbonate concretions to 3-4 cm diam.; many small manganese concretions.

\* subangular blocky

LOCATION: "Avoca", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX) 518 miles + 3900 ft.

PARISH: Wardry

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 28/10/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Brown slaty siltstone (Ordovician Sediments)

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Level bench on north west side of low hill

LAND USE: Grazing

VEGETATION: Open grey box woodland

Trees and Shrubs: T > 300 grey box (*Eucalyptus woollsiiana*).

Pastures: Saffron thistle (*Carthamus lanatus*), fuzzweed (*Vittadinia triloba*), golden everlastings (*Helichrysum bracteatum*), *Digitaria* sp., *Vulpia* sp., australian bindweed (*Convolvulus erubescens*), sow thistle (*Sonchus oleraceus*), purple daisy burr (*Calotis cuneifolia*), native carrot (*Daucus glochidiatus*), variable spear grass (*Stipa variabilis*), cotton fireweed (*Senecio quadridentatus*).

PROFILE DESCRIPTION: Northcote Classification Probably Dr 2.12

Horizon Depth (cm)

- 0-33 - Dark brown (5YR 2/4); sandy clay loam to light sandy clay loam; massive; roots; insect holes; some charcoal. Abrupt to:-
- 33-51 - Dark reddish brown (5YR 3/4); massive; sandy clay loam; roots; gravel to 1-3 cm diam. and some quartz stones to 5 cm diam. Undulating abrupt lower boundary to:-
- 51-71 - Red (2.5YR 4/8) with some dark reddish brown (5YR 3/3); light clay; moderate SAbE structure; roots; some gravel to 1 cm diam. Abrupt to:-
- 71-180 - Mottled yellowish red (5YR 4/6); clay loam; massive; gravelly layer with gravel to 1-3 cm diam. and some stones to 5 cm diam.; carbonate concretions to 1 cm diam. occur mainly below 100 cm depth; manganese concretions.

\* subangular blocky

LOCATION: "Avoca", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX): 518 miles + 4250 ft.

PARISH: Wardry

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 28/10/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Brown  
indurated shaley siltstone

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Top of minor rise

LAND USE: Grazing

VEGETATION: Bimble box-red box woodland

Trees and Shrubs: T20-40 Bimble box (*Eucalyptus populnea*), red box (*Eucalyptus intertexta*), dean's wattle (*Acacia deanei*), african box-thorn (*Lycium ferocissimum*), yarran (*Acacia homalophylla*).

Pastures: Grey beard grass (*Amphipogon caricinus*), purple daisy burr (*Calotis cuneifolia*), cut leaf goodenia (*Goodenia cycloptera*), wallaby grass (*Danthonia caespitosa*), *Helipterum australe*, catsear (*Hypochaeris radicata*), bluebell (*Wahlenbergia sp.*), curly windmill grass (*Chloris acicularis*), spiny potato bush (*Solanum ferocissimum*), tall copperburr (*Bassia convexula*), variable spear grass (*Stipa variabilis*), *Sida cunninghami*, yellow buttons (*Helichrysum apiculatum*).

PROFILE DESCRIPTION: Northcote Classification Uc 5.11

Horizon Depth (cm)

- 0-20 - Dark brown (5YR 2/3) at surface grading to dark reddish brown (5YR 3/4); sandy loam; massive; roots; insect holes; flat stones to 10cm diam. on surface; lichen on rocks; some surface crust. *Gradual to:-*
- 20-55 - Dark reddish brown (5YR 3/4); sandy loam; massive roots; insect holes; gravel to 4 cm diam. *Clear to:-*
- 55-73 - Dark reddish brown (2.5YR 3/4); light sandy clay loam; massive; decaying rocks with white staining (not carbonate stains).

LOCATION: "Avoca", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX): 518 miles + 4800 ft.

PARISH: Wardry

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 28/10/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Valley between minor rise and main hill

LAND USE: Grazing

VEGETATION: Open red box-bimble box woodland

Trees and Shrubs: T200-300 Red box (*Eucalyptus intertexta*), bimble box (*Eucalyptus populnea*), yarran (*Acacia homalophylla*), dean's wattle (*Acacia deanei*).

Pastures: No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), variable spear grass (*Stipa variabilis*), saffron thistle (*Carthamus lanatus*), fuzzweed (*Vittadinia triloba*), purple daisy burr (*Calotis cuneifolia*), cut leaf goodenia (*Goodenia cycloptera*), cotton panic (*Digitaria brownii*), *Digitaria* sp., bluebell (*Wahlenbergia* sp.), yellow buttons (*Helichrysum apiculatum*), australian bindweed (*Convolvulus erubescens*), native carrot (*Daucus glochidiatus*), catsear (*Hypochaeris radicata*), japanese cudweed (*Gnaphalium japonicum*), woolly heads (*Gnaphalodes uliginosum*), curly windmill grass (*Chloris acicularis*).

PROFILE DESCRIPTION: Northcote Classification Dr 2.51

Horizon Depth (cm)

- 0-6 - Dark reddish brown (2.5YR 3/4); sandy loam; slight surface crust; massive; roots; insect holes. Clear to:-
- 6-53 - Dark red (2.5YR 3/6); sandy clay loam; massive; roots; insect holes; some charcoal; gravel to 8 mm diam.; isolated yellow mottling. Abrupt to:-
- 53-62 - Dark red (2.5YR 3/6); sandy clay; slight structure; roots; insect holes; Clear to:-
- 62-86 - Dark red (2.5YR 3/6) with some yellowish red (5YR 4/8); sandy clay; slight to poor structure; roots; insect holes; slight porosity. Clear to:-
- 86-172 - Dark red (2.5YR 3/6) with some yellowish mottling; sandy clay loam; massive; roots; porous; some charcoal; isolated carbonate concretions; manganese staining at base of horizon.
- 172-194 - Dark red (2.5YR 3/6); clayey sand; massive; roots; some small gravel to 1 cm diam.; very strong manganese staining.

Profile Number: GP 110

LOCATION: "Avoca", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX): 519 miles + 1240 ft.

PARISH: Wardry

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 28/10/74

TOPOGRAPHY: Undulating

UNDERLING ROCK: Brown indurated  
shaley siltstone and white  
fine-grained sandstone.

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Top of hill

LAND USE: Grazing

VEGETATION: Mallee-ironbark community

Trees and Shrubs: T5-10 green mallee (*Eucalyptus viridis*), *Eucalyptus* sp.,  
mugga ironbark (*Eucalyptus sideroxylon*), grey box (*Eucalyptus woollsiana*),  
white cypress pine (*Callitris columellaris*), yarran (*Acacia homalophylla*).

Pastures: Mulga grass (*Neurachne mitchelliana*), spiny potato bush  
(*Solanum ferocissimum*), grey beard grass (*Amphipogon caricinus*),  
catsear (*Hypochaeris radicata*), rock fern (*Cheilanthes tenuifolia*),  
variable spear grass (*Stipa variabilis*), common wheat grass (*Agropyron  
scabrum*), corrugated sida (*Sida corrugata*), *Goodenia* sp., *Helipterum  
australe*, woolly heads (*Gnaphalodes uliginosum*), yellow wood sorrel  
(*Oxalis corniculatus*).

PROFILE DESCRIPTION: Northcote Classification Dr 4.51

Horizon	Depth (cm)	
	0-18	- Dark reddish brown (5YR 3/3); loamy sand at surface grading to a sandy loam; surface rock outcrop; massive; roots; gravel to 1 cm diam. Clear to:-
	18-46	- Brown (5YR 3/6); sandy clay loam; massive; gravel to 1 cm diam.; roots. Clear to:-
	46-57	- Yellowish red (5YR 4/6); sandy clay loam; decomposing rock.

\* In places the bedrock reached to within 10 cm of  
the surface.

\*\* Bedrock was contorted.

Profile Number: GP 111

*LOCATION:* "Avoca", Condobolin

*COUNTY:* Dowling

*FOOTAGE (APPROX) :* 519 miles + 1,950 ft.

*PARISH:* Wardry

*COLLECTED AND DESCRIBED BY:* G.M. Cunningham

*DATE SAMPLED:* 28/10/74

*TOPOGRAPHY:* Undulating

*CLIMATE:* Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January ( $34.7^{\circ}\text{C}$ ;  $18.6^{\circ}\text{C}$ );  
July ( $15.7^{\circ}$ ;  $3.4^{\circ}\text{C}$ )

Evaporation: Condobolin 1611 mm

*POSITION IN LANDSCAPE:* Valley between main hill and south-eastern foothill

*LAND USE:* Grazing

*VEGETATION:* Open grey box woodland

*PROFILE DESCRIPTION:* Profile similar to GP 109 but shallower and with stones to 10-15 cm diameter prominent at 100 cm depth.

Profile Number: GP 112

LOCATION: "Avoca", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX): 519 miles + 2580 ft.

PARISH: Wardry

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 28/10/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Medium brown  
Tertiary Sediment

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Lower south eastern slope of hill

LAND USE: Grazing

VEGETATION: Grey box community

Trees and Shrubs: T5-20 Grey box (*Eucalyptus woollsiana*), butterbush (*Pittosporum phillyraeoides*), rosewood (*Heterodendrum oleifolium*), *Eucalyptus* sp.

Pastures: Saffron thistle (*Carthamus lanatus*), native carrot (*Daucus glochidiatus*), barley grass (*Hordeum leporinum*), spiny potato bush (*Solanum ferocissimum*), variable spear grass (*Stipa variabilis*), golden everlastings (*Helichrysum bracteatum*), hairy fissure weed (*Kochia ciliata*), purple daisy burr (*Calotis cuneifolia*).

PROFILE DESCRIPTION: - Not available. Rock sample taken. Rock begins at 120 cm depth.

LOCATION: "Delladale", Condobolin COUNTY: Dowling  
 FOOTAGE (APPROX): 519 miles + 5000 ft. PARISH: Wardry  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 28/10/74  
 TOPOGRAPHY: Undulating  
 CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin 1611 mm  
 POSITION IN LANDSCAPE: Saddle between main hill and southern foothill  
 LAND USE: Grazing and cropping  
 VEGETATION: Open bimble box/white cypress pine woodland

Trees and Shrubs: T200-300 Wilga (*Geijera parviflora*), bimble box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), yarran (*Acacia homalophylla*), kurrajong (*Brachychiton populneus*), rosewood *Heterodendrum oleifolium*, red box (*Eucalyptus intertexta*).

Pastures: Brush wire grass (*Aristida behriana*), cut leaf goodenia (*Goodenia cycloptera*), fuzzeed (*Vittadinia triloba*), yellow wood sorrel (*Oxalis corniculatus*), native carrot (*Daucus glochidiatus*), *Digitaria* sp., No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), common wheat grass (*Agropyron scabrum*), wallaby grass (*Danthonia caespitosa*), variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), bluebells (*Wahlenbergia* sp.), grass cushions (*Isoetopsis graminifolia*), *Helipterum australe*, sow thistle (*Sonchus oleraceus*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	Description
0-61	-	Dark reddish brown (2.5YR 3/4); clay loam; massive with tendency to layering or platiness at surface; roots; insect holes. <i>Abrupt to:-</i>
61-102	-	Dusky red (10R 3/4); clay loam; moderate SABL* to prismatic structure; roots; insect holes; some manganese staining. <i>Clear to:-</i>
102-122	-	Dark red (2.5YR 3/6); clay loam; massive; much small gravel to 3 mm diam. with stones to 5 cm diam. <i>Abrupt to:-</i>
122-168	-	Mottled dark red (2.5YR 3/6); clay loam; moderate prismatic structure; occasional large gravel to 4 cm diam.; carbonate concretions to 2 cm diam. but mainly less; some manganese staining. <i>Gradual to:-</i>
168-180	-	Red (2.5YR 4/8); clay loam; moderate structure; some small carbonate concretions; moderate manganese staining.

\* subangular blocky

Profile Number: GP 114

LOCATION: "Delladale", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX): 520 miles + 800 ft.

PARISH: Wardry

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 28/10/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Well cleaved  
purple slaty siltstone

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January ( $34.7^{\circ}\text{C}$ ;  $18.6^{\circ}\text{C}$ );  
July ( $15.7^{\circ}\text{C}$ ;  $3.4^{\circ}\text{C}$ )

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Crest of ridge

LAND USE: Grazing and cropping

VEGETATION: Largely cleared

Trees and Shrubs: Scattered kurrajong (*Brachychiton populneus*), mallee (*Eucalyptus sp.*), green mallee (*Eucalyptus viridis*).

Pastures: Silver tails (*Ptilotus obovatus*), variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), woolly minuria (*Minuria denticulata*), catsear (*Hypochaeris radicata*), cut leaf goodenia (*Goodenia cycloptera*), fuzzweed (*Vittadinia triloba*), wallaby grass (*Danthonia caespitosa*), *Kochia ciliata*, woolly heads (*Gnaphalodes uliginosum*).

PROFILE DESCRIPTION: Northcote Classification Uc 5.11

Horizon	Depth (cm)	
0-5	-	Dark brown (5YR 2/4); sandy loam; massive; roots; insect holes; surface crust. Clear to:-
5-35	-	Dark reddish brown (5YR 3/4); massive; sandy loam; roots; gravel to 4-5 cm diam. Clear to:-
35-79	-	Brown (5YR 3/6); sandy loam; massive; stone to 8 cm diam. with some to 15 cm. Gradual to:-
79-108	-	Yellowish red (5YR 4/6); sandy clay loam; massive; roots; white coatings on gravel; many stones to 6 cm diam.
108+	-	Bedrock.

LOCATION: "Delladale", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX): 521 miles + 930 ft.

PARISH: Wardry

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 28/10/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Mid-slope of low ridge

LAND USE: Grazing and cropping

VEGETATION: Ploughed, cleared land with isolated trees

Trees and Shrubs: T500 Kurrajong (*Brachychiton populneus*), bimble box (*Eucalyptus populnea*), wilga (*Geijera parviflora*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon Depth (cm)

- 0-37 - Dark reddish brown (2.5YR 2/4 to 2.5YR 3/4); sandy clay loam; massive; roots; insect holes. *Abrupt to:-*
- 37-51 - Dark red (2.5YR 3/6); clay loam; poor structure; roots; insect holes; some gravel to 1.5 cm diam. *Abrupt to:-*
- 51-76 - Dark red (2.5YR 3/6); light medium clay; moderate SABL\* structure; roots; insect holes. *Clear to:-*
- 76-123 - Mainly dark red (2.5YR 3/6) with some red (2.5YR 4/8); clay loam; moderate prismatic structure; some roots; some carbonate concretions to 1 cm diam; moderate manganese staining increasing towards base. *Gradual to:-*
- 123-187- Red (2.5YR 4/6) with some pale brown (10YR 6/3); light sandy clay loam; poor to moderate structure; pads tending to porous; carbonate concretions to 3 cm diam; strong manganese staining.

\* subangular blocky

LOCATION: "Delladale", Condobolin COUNTY: Dowling  
FOOTAGE (APPROX): 521 miles + 3900 ft. PARISH: Wardry  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 28/10/74  
TOPOGRAPHY: Undulating UNDERLYING ROCK: Yellow sandstone  
CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)  
Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Top of low ridge

LAND USE: Grazing and cropping

VEGETATION: Open, cleared land

Trees and Shrubs: T200-500 Kurrajong (*Brachychiton populneus*), bimple box (*Eucalyptus populnea*), congoo mallee (*Eucalyptus dumosa*).

Pastures: Variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), golden everlastings (*Helichrysum bracteatum*), cut leaf medic (*Medicago laciniata*), fuzzweed (*Vittadinia triloba*), saffron thistle (*Carthamus lanatus*), native carrot (*Daucus glochidiatus*), *Phalaris* sp., *Goodenia pinnatifida*, cotton fireweed (*Senecio quadridentatus*), spear thistle (*Cirsium vulgare*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)
0-6	- Dark brown (5YR 2/4); sandy clay loam; massive; roots; small charcoal. Abrupt to:-
6-21	- Dark red (2.5YR 3/6); sandy clay loam; massive; roots; gravel to 5 mm diam. Abrupt to:-
21-43	- Dark red (2.5YR 3/6); clay loam; massive; gravelly layer with gravel to 1 cm diam. Clear to:-
43-80	Red (2.5YR 4/6); clay loam; massive; roots; layer of gravel to 3-5 cm diam. from 43-57 cm depth - stones white; decomposing rock.
80+	- Bedrock.

\* bedrock may reach as high as 50 cm below the surface.

LOCATION: "Delladale", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX): 522 miles +2030 ft.

PARISH: Wardry

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 28/10/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Valley between two ridges

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: T100 Bimble box (*Eucalyptus populnea*), rosewood (*Heterodendrum oleifolium*), kurrajong (*Brachychiton populneus*), white cypress pine (*Callitris columellaris*), hooked needlewood (*Hakea tephrosperma*), grey box (*Eucalyptus woollsiana*).

Pastures: Wheat crop, *Sisymbrium* sp., skeleton weed (*Chondrilla juncea*), variable spear grass (*Stipa variabilis*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over clayey sand material

Horizon	Depth (cm)	
0-5	-	Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes. Clear to:-
5-33	-	Dark reddish brown (2.5YR 3/4); clay loam; massive; roots; insect holes. Abrupt to:-
33-74	-	Dark red (10R 3/6); clay loam; poor to moderate structure; roots; insect holes; white staining on peds in upper 25 cm; some gravel to 3 mm diam. Clear to:-
74-91	-	Dark red (2.5YR 3/6); clay loam; massive; insect holes; gravel to 4 cm diam. Abrupt to:-
91-144	-	Red (2.5YR 4/6 (50%) and 2.5YR 4/8 (50%)); clay loam; moderate prismatic structure; isolated roots. Abrupt to:-
144-180	-	Dark reddish brown (5YR 3/4) with red (10R 4/8) and some grey (10Y 5/1); clayey sand; massive; insect holes; isolated stones; strong manganese staining.

LOCATION: "Delladale", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX): 523 miles +330 ft.

PARISH: Wardry

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 28/10/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Cleaved white  
shaley siltstone.

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January ( $34.7^{\circ}$ ;  $18.6^{\circ}$ );  
July ( $15.7^{\circ}\text{C}$ ;  $3.4^{\circ}\text{C}$ )

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Ridge top

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: Green mallee (*Eucalyptus viridia*), *Eucalyptus* sp.,  
gargaloo (*Parsonsia eucalyptophylla*).

Pastures: Wallaby grass (*Danthonia caespitosa*), sow thistle (*Sonchus*  
*oleraceus*), windmill grass (*Chloris truncata*), golden everlastings  
(*Helichrysum bracteatum*), variable spear grass (*Stipa variabilis*).

PROFILE DESCRIPTION: - Not available. Rock sample obtained. Bedrock  
rises to within 50 cm of the surface in parts.

LOCATION: "Delladale", Condobolin COUNTY: Dowling  
FOOTAGE (APPROX): 523 miles + 2160 ft. PARISH: Wardry  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 28/10/74  
TOPOGRAPHY: Undulating UNDERLYING ROCK: Light-and dark  
grey banded cleaved shale.

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Western mid-slope of ridge

LAND USE: Grazing

VEGETATION: Mallee

Trees and Shrubs: T10 Green mallee (*Eucalyptus viridis*).

Pastures: Cut leaf goodenia (*Goodenia cycloptera*), variable spear grass (*Stipa variabilis*), rock fern (*Cheilanthes tenuifolia*).

PROFILE DESCRIPTION: Northcote Classification Dr 2.53

Horizon	Depth (cm)
0-20	- Dark yellowish brown (7.5YR 3/4); sandy loam; massive. Abrupt to:-
20-71	- Reddish brown (5YR 4/4); sandy clay loam; massive; zone of small flat gravel to 4 cm and larger stones to 20 cm diam. Clear to:-
71-101	- Yellowish red (5YR 4/8) with dark brown (7.5YR 4/4); loamy sand; massive to slight structure; pockets of soil with decomposing rock inclusions.
101+	- Bedrock.

LOCATION: "Delladale", Condobolin COUNTY: Dowling  
FOOTAGE (APPROX): 523 miles + 4800 ft. PARISH: Wardry  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 28/10/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance  
Temperature: Condobolin (January 34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin 1611 mm

POSITION IN LANDSCAPE: Mid slope of ridge

LAND USE: Grazing

VEGETATION: Cleared

Trees and Shrubs: Cleared

Pastures: Variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), saffron thistle (*Carthamus lanatus*), purple daisy burr (*Calotis cuneifolia*), fuzzweed (*Vittadinia triloba*), catsear (*Hypochaeris radicata*), cotton fireweed (*Senecio quadridentatus*), horehound (*Marrubium vulgare*), barley grass (*Hordeum leporinum*), bluebell (*Wahlenbergia* sp.), *crassula* sp., blue crowfoot (*Erodium crinitum*), purple love grass (*Eragrostis lacunaria*), sow thistle (*Sonchus oleraceus*), yellow wood sorrel (*Oxalis corniculatus*).

PROFILE DESCRIPTION: Northcote Classification Dr 4.53 over sandy loam material

Horizon	Depth (cm)	
0-5	-	Dark greyish brown (2.5YR 3/3); loamy sand; massive; roots. Clear to:-
5-63	-	Dark reddish brown (2.5YR 3/4); sandy loam; massive; main root concentration; some charcoal; some stones to 5-6 cm diam. at base of horizon; undulating lower boundary. Abrupt to:-
63-94	-	Dusky red (10R 3/4); clay loam; poor to moderate SABL* structure; some gravel to 1.5 cm diam. Clear to:-
94-163	-	Dark red (2.5YR 3/6); clay loam; poor to moderate prismatic structure; roots; manganese staining increasing towards base; some manganese concretions near base of horizon; stones to 5 cm diam. in discontinuous layer at about 135 cm depth. Clear to:-
163-170-		Dark reddish brown (2.5YR 3/4); sandy loam; massive; strongly manganese stained layer.

\* subangular blocky

LOCATION: "Ben Lomond", Condobolin COUNTY: Dowling  
FOOTAGE (APPROX): 524 miles + 2470 ft. PARISH: Brotherony  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January 34.7°C; 18.6°C;  
July (15.7°C; 3.4°C)

Evaporation: Condobolin: 1611 mm

POSITION IN LANDSCAPE: Minor drainage line between hill and eastern lower rise

LAND USE: Grazing

VEGETATION: White cypress pine-red box community

Trees and Shrubs: T 1-50 (20-30) White cypress pine (*Callitris columellaris*), red box (*Eucalyptus intertexta*), rosewood (*Heterodendrum oleifolium*), wilga (*Geijera parviflora*), kurrajong (*Brachychiton populneus*).

Pastures: Variable spear grass (*Stipa variabilis*), sow thistle (*Sonchus oleraceus*), *Chenopodium* sp., native carrot (*Daucus glochidiatus*), cut leaf goodenia (*Goodenia cycloptera*), japanese cudweed (*Gnaphalium japonicum*), saffron thistle (*Carthamus lanatus*), *Centaureum* sp., *Lactuca* sp., wallaby grass (*Danthonia caespitosa*), purple daisy burr (*Calotis cuneifolia*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over light clay and clay loam material

Horizon	Depth (cm)	
	0-5	- Dark greyish brown (2.5YR 3/3); sandy clay loam; massive; slight surface crust. Clear to:-
	5-44	- Dark reddish brown (2.5YR 3/4); fine sandy clay loam; massive; roots; insect holes; isolated stones to 2 cm diam. Clear to:-
	44-86	- Dark red (2.5YR 3/6); sandy clay loam; massive to slight structure; roots; insect holes; wavy boundary. Abrupt to:-
	86-134	- Dark red (2.5YR 3/6); sandy clay loam; moderate SABL* structure with small peds; roots; many angular stones to 8 cm diam; lower boundary wavy. Clear to:-
	134-147-	Red (2.5YR 4/8); light clay; moderate prismatic to SABL* structure; roots; some small carbonate concretions to 1 cm diam.; white staining on peds. Clear to:-
	147-190-	Red (2.5YR 4/8); clay loam; massive to poor structure; roots at base; carbonate concretions to 4 cm diam. at base of profile; some stones to 3 cm diam.; moderate manganese staining.

Nearby variants show the stone layer extending from 86 cm depth to the base of the trench and show strong carbonate staining above the stone layer.

\* subangular blocky

*LOCATION:* "Ben Lomond", Condobolin *COUNTY:* Dowling  
*FOOTAGE (APPROX):* 524 miles + 3050 ft. *PARISH:* Brotherony  
*COLLECTED AND DESCRIBED BY:* G.M. Cunningham *DATE SAMPLED:* 31/10/74  
*TOPOGRAPHY:* Undulating

*CLIMATE:* Rainfall: Booberoi 380 mm; 9% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)  
Evaporation: Condobolin - 1611 mm

*POSITION IN LANDSCAPE:* Top of low rise

*LAND USE:* Grazing

*VEGETATION:* Red box-white cypress pine woodland

*Trees and Shrubs:* T10-50 Red box (*Eucalyptus intertexta*), white cypress pine (*Callitris columellaris*).

*Pastures:* Box grass (*Paspalidium constrictum*), soft roly poly (*Salsola kali*), corrugated sida (*Sida corrugata*), golden everlastings (*Helichrysum bracteatum*), flax-leaf fleabane (*Conyza bonariensis*), *Lactuca* sp.

*PROFILE DESCRIPTION:* Northcote Classification Probably Uc 5.11  
(to 102 cm)

Horizon	Depth (cm)
0-5	- Dark greyish brown (2.5YR 3/3); fine sandy loam; massive. <i>Clear to:-</i>
5-34	- Red (2.5YR 4/6); fine sandy clay loam; massive; roots; insect holes; isolated stones to 2 cm diam. <i>Clear to:-</i>
34-82	- Red (2.5YR 4/6); clayey sand; large structural units to 5 cm square each of which is porous and massive and separated by carbonate seams to 1 cm wide; roots; insect holes; carbonate concretions to 2 cm diam.; some manganese staining in lower parts of horizon. <i>Clear to:-</i>
82-102	- Dark reddish brown (2.5YR 3/4); light sandy clay loam; massive; roots; carbonate concretions in old root lines; slight to moderate manganese staining. <i>Clear to:-</i>
102-175-	Reddish brown (5YR 4/4); sandy clay loam; massive; stony layer with some stones to 12 cm diam. but mainly 3-5 cm diam. <i>Abrupt to:-</i>
175-192-	Greyish yellow (2.5Y 6/3) with some dark red (2.5YR 3/6); light clay; massive; isolated roots; small gravel to 3 mm diam.; few stones to 4 cm diam.; generally some staining with some pockets of strong manganese staining.

LOCATION: "Ben Lomond", Condobolin COUNTY: Dowling  
 FOOTAGE (APPROX): 525 miles + 200 ft. PARISH: Brotheroney  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Crest of slight rise

LAND USE: Grazing

VEGETATION: Red box-white cypress pine woodland

Trees and Shrubs: T20-30 Red box (*Eucalyptus intertexta*), white cypress pine (*Callitris columellaris*), wilga (*Geijera parviflora*).

Pastures: Golden everlastings (*Helichrysum bracteatum*), catsear (*Hypochaeris radicata*), bluebell (*Wahlenbergia* sp.), japanese cudweed (*Gnaphalium japonicum*), fuzzweed (*Vittadinia triloba*), saffron thistle (*Carthamus lanatus*), rough spear grass (*Stipa scabra*), native carrot (*Daucus glochidiatus*), purple daisy burr (*Calotis cuneifolia*), flax-leaf fleabane (*Conyza bonariensis*), sow thistle (*Sonchus oleraceus*), flannel cudweed (*Gnaphalodes uliginosum*), cut-leaf medic (*Medicago laciniata*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), wallaby grass (*Danthonia caespitosa*), variable spear grass (*Stipa variabilis*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.12 over silty clay loam and sandy clay loam material

Horizon	Depth (cm)	Description
0-30	-	Dark reddish brown (2.5YR 3/4); sandy clay loam at surface grading to fine sandy clay loam; hard setting surface; massive; roots; insect holes. Clear to:-
30-41	-	Dark reddish brown (2.5YR 3/4); fine sandy clay loam; massive; roots; insect holes; layer of angular stones to 3-8cm. Abrupt to:-
41-82	-	Dark red (2.5YR 3/6); light clay; moderate SABL* to prismatic structure; roots; insect holes. Clear to:-
82-102	-	Dark red (2.5YR 3/6) with some yellowish red (5YR 4/6); silty clay loam; poor structure; insect holes; some carbonate concretions to 1 cm diam; manganese staining increasing to strong at horizon base. Clear to:-
102-199	-	Yellowish red (5YR 5/6) with red (2.5YR 4/8); light sandy clay loam; poor to moderate structure; some carbonate concretions 2-3 cm diam.; horizontal and vertical carbonate seams; some stones to 10 cm diam.; moderate to strong manganese staining; the stronger manganese stained areas are more brown in colour.

\* subangular blocky

Profile Number: GP 124

LOCATION: "Hillside", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX): 526 miles + 760 ft.

PARISH: Brotheroney

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74

TOPOGRAPHY: Undulating

UNDERLYING ROCK: Possibly recent sandstone

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Crest of slight rise

LAND USE: Grazing

VEGETATION: Cleared

Trees and Shrubs: T300 Red box (*Eucalyptus intertexta*), kurrajong (*Brachychiton populneus*).

Pastures: Variable spear grass (*Stipa variabilis*), rough spear grass (*Stipa scabra*), fuzzweed (*Vittadinia triloba*), purple daisy burr (*Calotis cuneifolia*), golden everlastings (*Helichrysum bracteatum*), opium poppy (*Papaver somniferum*), sow thistle (*Sonchus oleraceus*), barley grass (*Hordeum leporinum*), native carrot (*Daucus glochidiatus*), saffron thistle (*Carthamus lanatus*), australian bindweed (*Convolvulus erubescens*), cotton fireweed (*Senecio quadridentatus*), wallaby grass (*Danthonia caespitosa*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.11

Horizon	Depth (cm)	
0-13	-	Dark reddish brown (2.5YR 3/4); clay loam; massive; hard; roots; insect holes. Abrupt to:-
13-38	-	Dusky red (10R 3/4); clay loam; massive; roots; insect holes; some flat stones to 3-10 cm. Abrupt to:-
38-58	-	Dusky red (10R 3/4); clay loam; massive to poor structure; roots; insect holes. Abrupt to:-
58-133	-	Dark red (2.5YR 3/6); light clay; moderate SABL* structure changing to prismatic at base of horizon; roots; insect holes; slight manganese staining at base. Clear to:-
133-175-		Dark red (2.5YR 3/6) with some yellowish red (5YR 4/8); sandy clay loam; massive; roots; many carbonate concretions 1-5 cm in diam.; strong manganese staining; some manganese concretions.

\* subangular blocky

LOCATION: "The Pines", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 526 miles + 4330 ft. PARISH: Wardry  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74  
TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Very weathered  
granite?  
CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)  
Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Broad shallow drainage line

LAND USE: Grazing and cropping

VEGETATION: Cleared - very open white cypress pine-red box woodland

Trees and Shrubs: T100-200 White cypress pine (*Callitris columellaris*),  
kurrajong (*Brachychiton populneus*), red box (*Eucalyptus intertexta*).

Pastures: No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*),  
*Vulpia* sp., fuzzweed (*Vittadinia triloba*), purple daisy burr (*Calotis*  
*cuneifolia*), curly windmill grass (*Chloris acicularis*), catsear (*Hypochaeris*  
*radicata*), rock fern (*Cheilanthes tenuifolia*), *Centaurium* sp., golden  
everlastings (*Helichrysum bracteatum*), saffron thistle (*Carthamus lanatus*),  
horehound (*Marrubium vulgare*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)
	0-18 - Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes. Clear to:-
	18-56 - Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes. Abrupt to:-
	56-92 - Dusky red (10R 3/4); sandy clay; poor to moderate SABL structure; roots; insect holes; some small grit. Clear to:-
	92-138 - Red (2.5YR 4/8); medium clay; moderate SABL to prismatic structure; some carbonate concretions to 1 cm diam.; isolated stones to 2 cm diam. Gradual to:-
	138-183- Mottled red (2.5YR 4/6) with some pale brown (10YR 6/3); sandy clay; massive to poor structure; some carbonate concretions to 1.5 cm diam.; some manganese staining and small concretions.

\* subangular blocky

LOCATION: "The Pines", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 527 miles + 0009 ft.

PARISH: Wardry

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74

TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCKS: Pink, weathered muscovite granite

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January ( $34.7^{\circ}\text{C}$ ;  $18.6^{\circ}\text{C}$ );  
July ( $15.7^{\circ}\text{C}$ ;  $3.4^{\circ}\text{C}$ )

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Slight rise

LAND USE: Grazing and cropping

VEGETATION: Cleared - very open white cypress pine-red box woodland

Trees and Shrubs: T100-200 White cypress pine (*Callitris columellaris*), kurrajong (*Brachychiton populneus*), red box (*Eucalyptus intertexta*).

Pastures: No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), *Vulpia* sp., fuzzweed (*Vittadinia triloba*), purple daisy burr (*Calotis cuneifolia*), curly windmill grass (*Chloris acicularis*), catsear (*Hypochaeris radicata*), rock fern (*Cheilanthes tenuifolia*), *Centaurium* sp., golden everlastings (*Helichrysum bracteatum*), saffron thistle (*Carthamus lanatus*), horehound (*Marrubium vulgare*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon Depth (cm)

- 0-30 - Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes; Abrupt to:-
- 30-57 - Dusky red (10R 3/4); sandy clay loam; massive with a slight semblance of structure; roots; insect holes. Clear to:-
- 57-125 - Dark red (10R 3/6); sandy clay loam; poor to moderate SABL\*structure; hard; roots; insect holes; small manganese concretions; lower boundary wavy. Gradual to:-
- 125-185- Red (2.5YR 4/6); light sandy clay loam; separating rock floaters of granitic origin; massive; calcareous appearance.

\* subangular blocky

LOCATION: "The Pines", Condobolin COUNTY: Gipps  
 FOOTAGE ( APPROX): 527 miles + 4150 ft. PARISH: Wardry  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74  
 TOPOGRAPHY : Level to slightly undulating UNDERLYING ROCK: White-green very weathered granite.

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: In depression

LAND USE: Grazing and cropping

VEGETATION: Cleared with scattered trees

Trees and Shrubs: T10-300 White cypress pine (*Callitris columellaris*), kurrajong (*Brachychiton populneus*), wilga (*Geijera parviflora*).

Pastures: Skeleton weed (*Chondrilla juncea*), yellow wood sorrel (*Oxalis corniculatus*), bluebell (*Wahlenbergia sp.*), sow thistle (*Sonchus oleraceus*), patterson's curse (*Echium plantagineum*), *Crassula sp.*, fuzzweed (*Vittadinia triloba*), cotton fireweed (*Senecio quadridentatus*), saffron thistle (*Carthamus lanatus*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	Description
0-20	-	Dark reddish brown (2.5YR 3/4) and dark greyish brown (2.5YR 3/3); sandy clay loam; massive; roots; insect holes. <i>Gradual to:-</i>
20-63	-	Dark red (2.5YR 3/6); sandy clay loam; massive; roots; insect holes. <i>Clear to:-</i>
63-92	-	Dark red (2.5YR 3/6); clay loam; poor to moderate structure; roots; insect holes. <i>Clear to:-</i>
92-137	-	Mostly brown (7.5YR 5/4) with some dark reddish brown (2.5YR 3/4); sandy clay; massive; some grit. <i>Clear to:-</i>
137-187-	-	Mottled light brownish grey (2.5Y 6/2) with some dark red (2.5YR 3/6); moderate SABL* to prismatic structure decreasing towards base of horizon; sandy clay; some gritty inclusions increasing towards base; no carbonate material noted in this profile but carbonates occur at nearby sites.

\* subangular blocky

LOCATION: "The Pines", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 528 miles + 5120 ft. PARISH: Wardry  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74  
TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Weathered granite  
CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C);  
Evaporation: Condobolin - 1611 mm  
POSITION IN LANDSCAPE: Midslope of slight rise  
LAND USE: Grazing and cropping  
VEGETATION: Cleared  
Trees and Shrubs: Scattered wilga (*Geijera parviflora*), kurrajong  
(*Brachychiton populnea*), white cypress pine (*Callitris columellaris*).  
Pastures: Wheat crop.

PROFILE DESCRIPTION: Northcote Classification Gn 2.11

Horizon	Depth (cm)	
0-8	-	Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; hard when dry; roots; insect holes. <i>Gradual to:-</i>
8-34	-	Dusky red (10R 3/4); sandy clay loam; massive; hard when dry; roots; insect holes. <i>Gradual to:-</i>
34-98	-	Dark red (10R 3/6); sandy clay; massive to some semblance of structure; roots; insect holes. <i>Abrupt to:-</i>
98-182	-	Dark red (2.5YR 3/6); with slight grey mottling becoming more pronounced near base; medium clay; moderate prismatic structure; roots; insect holes; structure less well developed below 145 cm depth.

LOCATION: "Wallaroi", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 529 miles +4450 ft. PARISH: Wardry  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74  
 TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Weathered granite  
 CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm  
 POSITION IN LANDSCAPE: Centre of broad depression  
 LAND USE: Grazing  
 VEGETATION: Bimble box-white cypress pine woodland

Trees and Shrubs: T5-40 Bimble box (*Eucalyptus populnea*), hooked  
 needlewood (*Hakea tephrosperma*), white cypress pine (*Callitris  
 columellaris*), budda (*Eremophila mitchellii*).

Pastures: Variable spear grass (*Stipa variabilis*), golden everlastings  
 (*Helichrysum bracteatum*), saffron thistle (*Carthamus lanatus*), fuzzweed  
 (*Vittadinia triloba*), climbing saltbush (*Rhagodia nutans*), catsear  
 (*Hypochaeris radicata*), curly windmill grass (*Chloris acicularis*), *Sida  
 cunninghamii*, corrugated sida (*Sida corrugata*), rough spear grass (*Stipa  
 scabra*), box grass (*Paspalidium constrictum*), wallaby grass (*Danthonia  
 caespitosa*), *Atriplex spinebractea*.

PROFILE DESCRIPTION: Northcote Classification Gn 2.13 over sandy clay  
 loam material

Horizon	Depth (cm)	Description
0-28	-	Dark greyish brown (2.5YR 3/3); sandy clay loam; massive; roots; insect holes. Abrupt to:-
28-35	-	Dark greyish brown (2.5YR 3/3) moist; red (2.5YR 5/6) dry; discontinuously bleached horizon; massive; sandy clay loam; roots; insect holes; some grit to 4 mm diam.; undulating boundary. Abrupt to:-
35-62	-	Dark reddish brown (2.5YR 3/4); sandy clay; poor to moderate structure; roots; insect holes; some grit to 4 mm diam. Clear to:-
62-146	-	Red (2.5YR 4/8); mottled with mottle increasing towards base; sandy clay loam; massive to slight structure; porous in parts; roots; carbonate concretions to 2 cm diam.; carbonate stainings on peds in lower part; some manganese staining increasing with depth. Clear to:-
146-176-	-	More mottled red (2.5YR 4/6) zone; massive; sandy clay loam; roots; carbonate concretions to 4 cm diam.

Profile Number: GP 130

**LOCATION:** "Wallaroi", Condobolin **COUNTY:** Gipps  
**FOOTAGE (APPROX):** 530 miles + 1930 ft. **PARISH:** Wardry  
**COLLECTED AND DESCRIBED BY:** G.M. Cunningham **DATE SAMPLED:** 31/10/74  
**TOPOGRAPHY:** Level to slightly undulating **UNDERLYING ROCK:** Weathered granite  
**CLIMATE:** Rainfall: Booberoi 380 mm; 9% summer dominance.

**Temperature:** Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

**Evaporation:** Condobolin - 1611 mm

**POSITION IN LANDSCAPE:** Crest of rise

**LAND USE:** Grazing and cropping

**VEGETATION:** Cleared to leave scattered trees

**Trees and Shrubs:** Kurrajong (*Brachychiton populneus*), white cypress pine (*Callitris columellaris*), myall (*Acacia pendula*), wilga (*Geijera parviflora*).

**Pastures:** Variable spear grass (*Stipa variabilis*), *Panicum* sp., *Centaurium* sp., bluebell (*Wahlenbergia* sp.), fuzzweed (*Vittadinia triloba*), golden everlasting (*Helichrysum bracteatum*), catsear (*Hypochaeris radicata*), skeleton weed (*Chondrilla juncea*).

**PROFILE DESCRIPTION:** Northcote Classification Um 5.52

Horizon	Depth (cm)
0-37	- Red (10R 4/6); sandy clay loam; massive; roots; insect holes; some charcoal. <i>Clear to:-</i>
37-59	- Dark red (10R 3/6); sandy clay loam; massive; roots; insect holes; slightly gritty; some gravel to 1.5 cm diam. <i>Abrupt to:-</i>
59-125	- Dark red (10R 3/6); sandy clay loam; poor prismatic structure; roots; insect holes. <i>Clear to:-</i>
125-159-	- Dark red (10R 3/6); sandy clay loam; massive; similar to horizon above. <i>Abrupt to:-</i>
159+	- Decomposing rock.

LOCATION: "Wallaroi", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 530 miles + 2800 ft. PARISH: Wardry  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74  
 TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Weathered granite  
 CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm  
 POSITION IN LANDSCAPE: Crest of slight rise  
 LAND USE: Grazing and cropping  
 VEGETATION: Cleared to leave scattered trees

Trees and Shrubs: Scattered kurrajong (*Brachychiton populneus*), white cypress pine (*Callitris columellaris*), myall (*Acacia pendula*), wilga (*Geijera parviflora*).

Pastures: Variable spear grass (*Stipa variabilis*), *Panicum* sp., *Centaureium* sp., bluebell (*Wahlenbergia* sp.), fuzzweed (*Vittadinia triloba*), golden everlastings (*Helichrysum bracteatum*), catsear (*Hypochaeris radicata*), skeleton weed (*Chondrilla juncea*).

PROFILE DESCRIPTION: Northcote Classification Dr 2.52

Horizon	Depth (cm)	Description
0-6	-	Dark reddish brown (2.5YR 3/4); sandy loam; massive; hard surface crust; roots; insect holes. <i>Gradual to:-</i>
6-25	-	Dark reddish brown (2.5YR 3/4); sandy loam; massive; roots; insect holes. <i>Clear to:-</i>
25-72	-	Dark red (2.5YR 3/6); sandy clay loam; massive to poor structure; roots; insect holes. <i>Clear to:-</i>
72-107	-	Dark red (2.5YR 3/6); light clay; massive to poor structure; roots; gritty. <i>Diffuse to:-</i>
107-180+-		Decomposing rock.

Profile Number: GP 132

LOCATION: "Avalon", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 530 miles + 4930 ft.

PARISH: Wardry

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 31/10/74

TOPOGRAPHY: Level to slightly undulating

UNDERLYING ROCK: Weathered granite

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Midslope of a very slight rise

LAND USE: Grazing and cropping - ploughed ground

VEGETATION: Cleared

Trees and Shrubs: Scattered bimple box (*Eucalyptus populnea*).

Pastures: Saffron thistle (*Carthamus lanatus*), fuzzweed (*Vittadinia triloba*), skeleton weed (*Chondrilla juncea*), cut leaf goodenia (*Goodenia cycloptera*), purple daisy burr (*Calotis cuneifolia*), variable spear grass (*Stipa variabilis*), cut leaf medic (*Medicago laciniata*), *Vulpia* sp.

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon Depth (cm)

- 0-6 - Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; much plant debris - ploughed layer. Abrupt to:-
- 6-42 - Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes; small charcoal pieces. Abrupt to:-
- 42-82 - Dusky red (10R 3/4); sandy clay loam; poor prismatic structure; roots; gritty. Abrupt to:-
- 82-122 - Dark red (2.5YR 3/6) with coatings of light yellowish brown (10YR 6/4) - mottle increasing towards base; clay loam; massive; roots. Abrupt to:-
- 122-150+- Decomposing rock.

LOCATION: "Avalon", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 531 miles + 2420 ft. PARISH: Wardry  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Midslope of slight rise

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Scattered bimple box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*).

Pastures: *Vulpia* sp., barley grass (*Hordeum leporinum*), saffron thistle (*Carthamus lanatus*), patterson's curse (*Echium plantagineum*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), cluster clover (*Trifolium glomeratum*), lucerne (*Medicago sativa*), subterranean clover (*Trifolium subterraneum*), *Helipterum australe*, fuzzweed (*Vittadinia triloba*), japanese cudweed (*Gnaphalium japonicum*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	
0-23	-	Dark greyish brown (2.5YR 3/3); sandy clay loam; massive; hard; roots; insect holes. <i>Abrupt to:-</i>
23-32	-	Dark reddish brown (2.5YR 3/4) moist; red (2.5YR 5/6-4/6) dry; bleached zone; sandy clay loam; massive; roots. <i>Abrupt to:-</i>
32-87	-	Dark red (2.5YR 3/6); clay loam; poor to moderate structure; roots; insect holes; isolated carbonate concretions to 1 cm diam. <i>Gradual to:-</i>
87-171	-	Mottled red (2.5YR 4/8) with some yellowish red (5YR 5/6); light clay; massive; zone of major carbonate concretions to 10 cm diam. with some vertically orientated concretions to 30 cm long and 3 cm wide; manganese staining increasing towards the horizon base.

LOCATION: "Avalon", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 531 miles + 4920 ft. PARISH: Wardry  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Centre of wide flat depression

LAND USE: Grazing and cropping

VEGETATION: Cleared

Pastures: Sown to oats and lucerne (*Medicago sativa*).

PROFILE DESCRIPTION: Northcote Classification Dr 2.53

Horizon	Depth (cm)	
0-5	-	Pale brown (5YR 2/4); sandy loam. <i>Clear to:-</i>
5-55	-	Dark red (2.5YR 3/4); sandy clay loam; massive; roots; insect holes; small charcoal pieces. <i>Abrupt to:-</i>
55-77	-	Red (2.5YR 4/6); sandy clay loam; poor to moderate structure; roots; insect holes; some gravel to 1 cm diam.; wavy boundary. <i>Clear to:-</i>
77-129	-	Mottled greyish brown (7.5YR 5/3) with red (2.5YR 4/6) coatings; sandy clay loam; massive. <i>Abrupt to:-</i>
129-178-		Yellowish brown (7.5YR 4/6) with some brown inclusions in old root lines; clay loam; massive; roots; some carbonate concretions to 5 mm diam.; strong manganese staining.

LOCATION: "Avalon", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 532 miles + 100 ft. PARISH: Wardry  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74  
TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Weathered granite

CLIMATE: Rainfall: Booberoi 380 mm; 9% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Midslope of slight rise

LAND USE: Cropping and grazing

VEGETATION: Cleared

Pastures: Sown to oats and lucerne (*Medicago sativa*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52 over sandy clay loam material.

Horizon	Depth (cm)	
0-36	-	Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes. <i>Abrupt to:-</i>
36-42	-	Dark reddish brown(50%)(2.5YR 3/4 moist) and red (50%) (2.5R 4/6) moist; light red (2.5YR 6/6) dry; bleached zone; sandy clay loam; massive; roots. <i>Abrupt to:-</i>
42-67	-	Dark red (2.5YR 3/6); clay loam; poor to moderate structure; carbonate concretions to 1 mm diam. <i>Clear to:-</i>
67-101	-	Dark red (2.5YR 3/6); clay loam; poor structure; roots; isolated carbonate concretions to 1 cm diam.; strong manganese staining. <i>Clear to:-</i>
101-149-		Yellowish red (5YR 5/6) with coatings of dark red (10R 3/6); light sandy clay loam; large "peds" or blocks of massive porous soil; some carbonate concretions to 2 cm diam.; manganese coatings on soil blocks. <i>Abrupt to:-</i>
149-179-		Gritty material (no further details recorded).

LOCATION: "Glenarty", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 532 miles + 2920 ft. PARISH: Wallaroi  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 31/10/74  
TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Weathered granite  
CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)  
Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Midslope of slight rise near drainage line

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Scattered bimple box (*Eucalyptus populnea*) and white cypress pine (*Callitris columellaris*), nearby.

Pastures: Sown to wheat and medic (*Medicago* sp.).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	
0-6	-	Dark greyish brown (2.5YR 3/3); sandy loam. <i>Clear to:-</i>
6-57	-	Dark red (2.5YR 3/6); sandy clay loam; massive; roots; insect holes. <i>Abrupt to:-</i>
57-85	-	Dark red (2.5YR 3/6); sandy clay loam; poor to moderate structure; slight manganese staining. <i>Clear to:-</i>
85-121	-	Dark red (2.5YR 3/6); sandy clay loam; poor to moderate structure; slight manganese staining; carbonate concretions to 2 cm diam. <i>Clear to:-</i>
121-189	-	Dark red (2.5YR 3/6) with some yellow mottling; fine sandy clay loam; massive to poor structure; roots; insect holes; vertically orientated carbonate concretions to 3 cm diam. and 6 cm long but mainly 2 cm diam.; slight manganese staining near base.

LOCATION: "Glenarty", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 532 miles + 4610 ft. PARISH: Wallaroi  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74  
TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Weathered granite  
CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)  
Evaporation: Condobolin - 1611 mm  
POSITION IN LANDSCAPE: Drainage line centre  
LAND USE: Grazing and cropping  
VEGETATION: Cleared to scattered grey box-white cypress pine woodland  
Trees and Shrubs: Isolated grey box (*Eucalyptus woollsiana*) and white  
cypress pine (*Callitris columellaris*).  
Pastures: Catsear (*Hypochaeris radicata*), ryegrass (*Lolium sp*), bottle  
washers (*Erneapogon avenaceus*).  
PROFILE DESCRIPTION: Northcote Classification Uc 1.23 over clayey  
material

Horizon	Depth (cm)
	0-50 - Dark reddish brown (2.5YR 3/4); loamy sand; massive. Abrupt to:-
	50+ - Clayey material.

No further details as trench was full of water in  
this depression area.

LOCATION: "Glenarty", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 533 miles + 1450 ft. PARISH: Wallaroi  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74  
TOPOGRAPHY: Slightly undulating UNDERLYING ROCK: Weathered granite  
CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)  
Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Scattered grey box (*Eucalyptus woollsiana*), white cypress pine (*Callitris columellaris*) and mallee (*Eucalyptus* spp.).

Pastures: Lucerne (*Medicago sativa*), ryegrass (*Lolium* sp.), *Centaureium* sp., small woolly burr medic (*Medicago minima*), variable spear grass (*Stipa variabilis*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	
0-8	-	Dark brown (5YR 2/3); sandy loam; massive; roots; small charcoal pieces. <i>Abrupt to:-</i>
8-23	-	Red (2.5YR 4/6); sandy clay loam; massive; roots; insect holes; charcoal. <i>Abrupt to:-</i>
23-31	-	Reddish brown (2.5YR 4/4 moist; red (2.5YR 5/6) to light red (2.5YR 6/6) dry); bleached zone; sandy loam; massive; roots; charcoal. <i>Abrupt to:-</i>
31-54	-	Yellowish red (5YR 5/6); fine sandy clay loam; moderate SABL*structure; roots; slight manganese staining. <i>Clear to:-</i>
54-78	-	Mottled brown (7.5YR 5/4); fine sandy clay loam; poor to moderate SABL*structure; carbonate concretions to 3 mm diam.; manganese stains at base. <i>Clear to:-</i>
78-188	-	Reddish brown (5YR 5/4); silty clay loam; moderate structure; roots; carbonate stains on peds; carbonate concretions mainly 1 cm but to 4 cm diam. (roots at base of profile).

\* subangular blocky

LOCATION: "Glenarty", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 533 miles + 4720 ft. PARISH: Wallaroi  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74  
TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Weathered granite  
CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)  
Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Crest of slight rise

LAND USE: Grazing and cropping

VEGETATION: Cleared to scattered trees

Trees and Shrubs: Scattered grey box (*Eucalyptus woollsiana*), white cypress pine (*Callitris columellaris*) and mallee (*Eucalyptus* spp.).

Pastures: Lucerne (*Medicago sativa*), ryegrass (*Lolium* sp.), *Centaurium* sp., small woolly burr medic (*Medicago minima*), variable spear grass (*Stipa variabilis*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon Depth (cm)

- 0-15 - Dark reddish brown (2.5YR 2/4); light sandy clay loam; massive; roots; insect holes; small charcoal pieces. Abrupt to:-
- 15-43 - Dark red (2.5YR 3/6); sandy clay loam; massive; roots; insect holes; charcoal. Abrupt to:-
- 43-92 - Dusky red (10R 3/4)(50%) to dark red (10R 3/6) (50%); clay loam; poor crumb structure; roots; insect holes. Abrupt to:-
- 92-134 - Mottled yellowish red (5YR 5/8); light clay; massive to slight structure; roots; carbonate stains; carbonate concretions to 1 cm diam.
- 134+ - Bedrock.

LOCATION: "Glenarty", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 534 miles + 560 ft. PARISH: Wallaroi  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74  
 TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Weathered granite  
 CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope of slight rise

LAND USE: Grazing and cropping

VEGETATION: Formerly mallee now cleared

Trees and Shrubs: Formerly congoo mallee (*Eucalyptus dumosa*), mallee (*Eucalyptus* spp.), *Dodonaea boroniifolia*, tar bush (*Eremophila glabra*), sword bush (*Bossiaea walkeri*), *Halgania cyanea*, *Prostanthera microphylla*, gooma bush (*Bertya cunninghamii*), punty bush (*Cassia eremophila*), daisy bush (*Olearia pimelioides*), white cypress pine (*Callitris columellaris*).

Pastures: Lucerne (*Medicago sativa*), golden everlastings (*Helichrysum bracteatum*), panic grass (*Panicum* sp.), windmill grass (*Chloris truncata*), variable spear grass (*Stipa variabilis*), purple daisy burr (*Calotis cuneifolia*), fuzzweed (*Vittadinia triloba*), saffron thistle (*Carthamus lanatus*), catsear (*Hypochaeris radicata*), *Goodenia pinnatifida*, yellow buttons (*Helichrysum apiculatum*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*). Plus in nearby undisturbed areas wallaby grass (*Danthonia caespitosa*), *Stipa platychaeta*, sow thistle (*Sonchus oleraceus*), *Goodenia* sp., fan flower (*Scaevola aemula*), *Dianella revoluta*, porcupine spinifex grass (*Triodia irritans* var *laxispicata*), mulga grass (*Neurachne mitchelliana*), curly windmill grass (*Chloris acicularis*), desert chinese lanterns (*Abutilon otocarpum*), yellow buttons (*Helichrysum apiculatum*), cane panic (*Panicum subaerophilum*), bandicoot grass (*Danthonia bipartita*).

PROFILE DESCRIPTION: Northcote Classification Dr 2.12

Horizon	Depth (cm)	Description
0-21	-	Red (2.5YR 4/6); sandy clay loam; massive; roots; insect holes; some gravel to 1 cm diam. Abrupt to:-
21-29	-	Red (2.5YR 4/6) moist; red (2.5YR 5/8) dry; bleached zone; sandy loam; massive; roots; insect holes; gritty material. Abrupt to:-
29-46	-	Red (2.5YR 4/8); light to medium clay; poor structure; roots; insect holes. Clear to:-
46-154	-	Mottled strong brown (7.5YR 5/6) with red (2.5YR 4/6) and some greyish yellow (2.5Y 7/3); light clay; moderate crumb to SABL*structure; improving and grading to prismatic near base; roots; insect holes; some manganese staining increasing towards base. Abrupt to:-
154-174-	-	Mainly greyish yellow (2.5Y 7/3) with some white (5Y 8/1) and small amounts of yellowish red (5YR 5/8); light clay; poor to moderate structure; roots; some white concretions.

\* subangular blocky

LOCATION: "Glenarty", Condoblin

COUNTY: Gipps

FOOTAGE (APPROX): 534 miles + 3110 ft.

PARISH: Milbee

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/79

TOPOGRAPHY: Level to slightly undulating

UNDERLYING ROCK: Weathered  
pink granite

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Slight rise

LAND USE: Cropping and grazing

VEGETATION: Cleared

Trees and Shrubs: T100-200 Kurrajong (*Brachychiton populneus*), formerly mallee as for GP 140.

Pastures: Fuzzweed (*Vittadinia triloba*), barley grass (*Hordeum leporinum*), skeleton weed (*Chondrilla juncea*), spear thistle (*Cirsium vulgare*), fan flower (*Scaevola aemula*), bluebells (*Wahlenbergia sp.*), purple daisy burr (*Calotis cuneifolia*), horehound (*Marrubium vulgare*).

PROFILE DESCRIPTION: Northcote Classification Uc 5.11

Horizon	Depth (cm)	
	0-12	- Dark reddish brown (2.5YR 3/4) to dark brown (2.5YR 2/3); sandy clay loam; massive; roots. Abrupt to:-
	12-30	- Dark red (2.5YR 3/6); sandy clay loam; massive; roots. Abrupt to:-
	30-60	- Dark red (2.5YR 3/6); light sandy clay loam; poor to moderate structure; roots; slight manganese staining increasing towards base of horizon. Clear to:-
	60-100	- Red (2.5YR 4/8 + some 2.5YR 4/6) with some dark red (2.5YR 3/6); loamy sand; massive with soil blocks to 5 cm visible; roots; strong manganese staining. Gradual to:-
	100-127-	- Red (2.5YR 5/8 with some 2.5YR 4/8) to dark red (2.5YR 3/6 minor) with whitish appearance; sand; decomposing material; massive; strong manganese staining. Diffuse to:-
	127+	- Decomposing rock.

Profile Number: GP 142

LOCATION: "Glenarty", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 535 miles + 800 ft.

PARISH: Milbee

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 14/11/74

TOPOGRAPHY: Level to slightly undulating

UNDERLYING ROCK: Very weathered muscovite granite

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Slight depression

LAND USE: Cropping and cultivation

VEGETATION: Cleared

Trees and Shrubs: T100-200 Kurrajong (*Brachychiton populneus*) - formerly also red box (*Eucalyptus intertexta*), white cypress pine (*Callitris columellaris*), wilga (*Geijera parviflora*), mallee (*Eucalyptus* sp.).

Pastures: sown to oats - also with skeleton weed (*Chondrilla juncea*) evident.

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	
	0-20	- Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; charcoal. <i>Abrupt to:-</i>
	20-47	- Dusky red (10R 3/4); fine sandy clay loam; massive; roots; charcoal; isolated small gravel to 1 cm diam. <i>Abrupt to:-</i>
	47-81	- Dusky red (10R 3/4); fine sandy clay loam; poor to moderate structure; roots; small carbonate concretions; discontinuous areas with carbonate coatings on peds. <i>Abrupt to:-</i>
	81-115	- Dark red (10R 3/6) with some reddish yellow (7.5YR 6/6) coatings; some grey mottling; light clay; moderate prismatic structure; roots; insect holes. <i>Clear to:-</i>
	115-174-	Mottled red (2.5YR 4/6) (50%) and light grey (5Y 7/2) (50%); light clay; moderate prismatic structure; roots.
	174+	- Decomposing bedrock.

LOCATION: "Bunberrang", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 535 miles + 4650 ft. PARISH: Milbee  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74  
TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Very weathered muscovite granite

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Midslope of ridge

LAND USE: Grazing

VEGETATION: Bimble box-white cypress pine woodland - previously pushed prior to clearing and now regenerating.

Trees and Shrubs: T5-30 Bimble box (*Eucalyptus populnea*), grey box (*Eucalyptus woollsiana*), red box (*Eucalyptus intertexta*), white cypress pine (*Callitris columellaris*) and bimble box regrowth.

Pastures: Mulga grass (*Neurachne mitchelliana*), cut leaf goodenia (*Goodenia cycloptera*), purple daisy burr (*Calotis cuneifolia*), variable spear grass (*Stipa variabilis*), wallaby grass (*Danthonia caespitosa*), fuzzweed (*Vittadinia triloba*), windmill grass (*Chloris truncata*), cluster clover (*Trifolium glomeratum*), spear thistle (*Cirsium vulgare*), saffron thistle (*Carthamus lanatus*), *Sida cunninghamii*.

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon Depth (cm)

- 0-9 - Dark greyish brown (2.5YR 3/3); sandy clay loam; massive; roots. *Abrupt to:-*
- 9-50 - Red (10R 4/6); sandy clay loam; massive; roots. *Gradual to:-*
- 50-98 - Red (10R 4/6); clay loam; massive to slight structure; gritty; gravel to 4-5 mm diam. *Gradual to:-*
- 98-126 - Mottled light yellow (50%) (10YR 6/4) and dark red (50%) (2.5YR 3/6); silty clay loam; massive. *Abrupt to:-*
- 126-198+ Bedrock material.

LOCATION: "Bunberrang", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 536 miles + 5070 ft. PARISH: Milbee  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74  
TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Purple Recent  
coarse-grained friable sandstone  
(granite derived?)  
CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)  
Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Depression

LAND USE: Grazing

VEGETATION: Open red box-wilga woodland

Trees and Shrubs: T50 Red box (*Eucalyptus intertexta*), wilga (*Geijera parviflora*), kurrajong (*Brachychiton populneus*).

Pastures: Variable spear grass (*Stipa variabilis*), wallaby grass (*Danthonia caespitosa*), golden everlastings (*Helichrysum bracteatum*), saffron thistle (*Carthamus lanatus*), *Atriplex spinebractea*, cut leaf medic (*Medicago laciniata*), purple daisy burr (*Calotis cuneifolia*), ryegrass (*Lolium sp.*), fuzweed (*Vittadinia triloba*).

PROFILE DESCRIPTION: Northcote Classification Uf 6.31 over clay loam and sandy clay loam material

Horizon	Depth (cm)
0-12	- Dusky red (10R 3/3); fine sandy clay loam; massive; roots; insect holes. Clear to:-
12-32	- Dark reddish brown (2.5YR 3/4); light clay; massive; roots; insect holes. Abrupt to:-
32-63	- Red (10R 4/6); light clay; moderate crumb to SABL* structure; roots; slight manganese staining. Gradual to:-
63-136	- Dark red (10R 3/6); clay loam; poor to moderate crumb to SABL* structure; roots; some carbonate concretions to 2 cm diam.; slight manganese staining. Clear to:-
136-168	- Dark red (2.5YR 3/6); sandy clay loam; massive; roots; porous; some gravel to 3 cm diam. Clear to:-
168+	- Hard porous material requiring blasting - probably decomposing rock.

\* subangular blocky

LOCATION: "Elouera", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 537 miles + 3150 ft. PARISH: Milbee  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74  
 TOPOGRAPHY: Level to slightly undulating  
 CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm  
 POSITION IN LANDSCAPE: Top of slope near crest of ridge  
 LAND USE: Grazing  
 VEGETATION: Grey box-white cypress pine woodland

Trees and Shrubs: T10 Grey box (*Eucalyptus woollsiana*), white cypress pine (*Callitris columellaris*), *Acacia* sp., broad leaved hopbush (*Dodonaea viscosa*).

Pastures: Variable spear grass (*Stipa variabilis*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), *Stipa setacea*, purple daisy burr (*Calotis cuneifolia*), *Hydrocotyle* sp., cane panic (*Panicum subxerophilum*), golden everlastings (*Helichrysum bracteatum*), yellow buttons (*Helichrysum apiculatum*), curly windmill grass (*Chloris acicularis*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	
0-15	-	Dark reddish brown (2.5YR 3/4); fine sandy clay loam; massive; roots; insect holes. <i>Abrupt to:-</i>
15-42	-	Dusky red (10R 3/4); fine sandy clay loam; massive; roots; insect holes. <i>Abrupt to:-</i>
42-50	-	Red (2.5YR 4/6) moist; red (2.5YR 5/6) to light red (2.5YR 6/6) dry; bleached zone; massive; fine sandy clay loam; roots. <i>Abrupt to:-</i>
50-63	-	Dark red (2.5YR 3/6); light clay; poor SABL*structure; hard; roots; insect holes. <i>Clear to:-</i>
63-137	-	Dark red (2.5YR 3/6); clay loam; moderate structure; roots; insect holes; isolated gravel to 2 cm diam.; manganese stains in band between 63 and 96 cm depth. <i>Gradual to:-</i>
137-197-		Red (2.5YR 4/8) with some brown/yellow mottling; clay loam; massive; zone of carbonate concretions to 4 cm diam.; manganese staining strong at the base.

\* subangular blocky

LOCATION: "Elouera", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 537 miles + 5100 ft.

PARISH: Milbee

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Crest of rise

LAND USE: Grazing and cropping

VEGETATION: Very open woodland

Trees and Shrubs: T > 500 Kurrajong (*Brachychiton populneus*), white cypress pine (*Callitris columellaris*).

Pastures: Panic grass (*Panicum sp.*), variable spear grass (*Stipa variabilis*), fuzzweed (*Vittadinia triloba*), *Vulpia sp.*, saffron thistle (*Carthamus lanatus*), catsear (*Hypochaeris radicata*), cut leaf goodenia (*Goodenia cycloptera*), native carrot (*Daucus glochidiatus*), skeleton weed (*Chondrilla juncea*), patterson's curse (*Echium lycopsis*), golden everlastings (*Helichrysum bracteatum*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	Description
0-23	-	Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes; some gravel to 4 cm diam.; a bleached layer 2 cm wide occurs at horizon base. Abrupt to:-
23-43	-	Dark reddish brown (2.5YR 3/4); fine sandy clay loam; poor structure; roots; insect holes. Clear to:-
43-72	-	Red (2.5YR 4/6); light clay; poor to moderate structure; roots; carbonate concretions to 1 cm diam. Clear to:-
72-112	-	Red (2.5YR 5/6); fine sandy clay loam; moderate structure; roots; insect holes; carbonate stainings; some carbonate concretions to 2 cm diam.; manganese stainings. Clear to:-
112-158	-	Red (2.5YR 5/6); fine sandy clay loam; massive; more gritty layer; roots; insect holes; stone layer 10-30 cm wide at base; strong carbonate staining; slight manganese staining and some small concretions. Gradual to:-
158-178	-	Mottled red (50%) (2.5YR 4/6) and pale brown (50%) (10YR 6/3); silty clay loam; moderate structure; some carbonate coatings; slight manganese staining with some concretions.

LOCATION: "Milby Valley", Condobolin COUNTY: Gipps  
FOOTAGE:(APPROX): 539 miles + 1650 ft. PARISH: Milbee  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope

LAND USE: Cropping and grazing

VEGETATION: Cleared

Trees and Shrubs: T 100 Kurrajong (*Brachychiton populneus*).

Pastures: Ryegrass (*Lolium* sp.), variable spear grass (*Stipa variabilis*), horehound (*Marrubium vulgare*), purple daisy burr (*Calotis cuneifolia*), fuzzweed (*Vittadinia triloba*), patterson's curse (*Echium plantagineum*), wheat stubble.

PROFILE DESCRIPTION Northcote Classification Dr 4.13

Horizon Depth (cm)

- 0-34 - Reddish brown (2.5YR 4/4); loamy sand; massive; roots (major root zone); charcoal; undulating boundary. Abrupt to:-
- 34-74 - Mottled dark red (2.5YR 3/6); sandy clay; poor structure; roots; layer of manganese stains between 72 and 74 cm depth. Clear to:-
- 74-93 - Dark red (2.5YR 3/6); light clay; moderate SABL\* to prismatic structure; roots. Clear to:-
- 93-135 - Red (2.5YR 4/8); light clay; moderate prismatic structure; zone of carbonate accumulation - concretions to 4-5 cm diam. Clear to:-
- 135-182- Red (2.5YR 4/8); light clay; massive to poor structure; roots; carbonate concretions common; manganese staining; small manganese concretions common.

\* subangular blocky

LOCATION: "Milby Valley", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 539 miles + 4730 ft. PARISH: Milbee  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74  
 TOPOGRAPHY: Slightly undulating UNDERLYING ROCK: Very weathered  
 granite (Ungarie Granite)  
 CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Lower slope

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Treeless

Pastures: Lucerne (*Medicago sativa*), variable spear grass (*Stipa variabilis*),  
 rye grass (*Lolium* sp.), barrel medic (*Medicago truncatula*), saffron thistle  
 (*Carthamus lanatus*), patterson's curse (*Echium plantagineum*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
0-6	-	Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes; charcoal. <i>Abrupt to:-</i>
6-28	-	Red (2.5YR 4/6) to dark red (2.5YR 3/6); sandy clay loam; massive; roots; small gravel to 3 mm diam.; discontinuous bleached layer between 26 and 28 cm depth. <i>Abrupt to:-</i>
28-46	-	Red (2.5YR 4/6); clay loam; poor structure; roots; insect holes; isolated gravel to 3 cm diam. <i>Abrupt to:-</i>
46-95	-	Dark red (2.5YR 3/6); clay loam; poor to moderate SABL* structure; roots; insect holes; some gravel to 2 cm diameter; manganese staining. <i>Clear to:-</i>
95-125	-	Red (2.5YR 4/6); sandy clay loam; massive; roots; zone of strong carbonate accumulation with carbonate nodules to 4 cm diam. <i>Abrupt to:-</i>
125-184	-	Red (2.5YR 5/6); sandy clay loam; massive; gritty material; some carbonate concretions; manganese staining - strongest near base; pockets of manganese concretions.

\* subangular blocky

LOCATION: "Wyonga", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 540 miles + 2,770 ft. PARISH: Milbee  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74  
 TOPOGRAPHY: Slightly undulating UNDERLYING ROCK: Very weathered  
 granite (Ungarie Granite)  
 CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7<sup>o</sup>; 18.6<sup>o</sup>C);  
 July (15.7<sup>o</sup>C; 3.4<sup>o</sup>C)  
 Evaporation: Condobolin - 1611 mm  
 POSITION IN LANDSCAPE: Slight rise  
 LAND USE: Grazing and cropping  
 VEGETATION: Bimble box-white cypress pine woodland

Trees and Shrubs: T5-10 Bimble box (*Eucalyptus populnea*), white cypress pine (*Callitris columellaris*), bullock (*Casuarina leuhmannii*), hooked needlewood (*Hakea tephrosperma*).

Pastures: Wallaby grass (*Danthonia caespitosa*), tar vine (*Boerhavia diffusa*), variable spear grass (*Stipa variabilis*), mulga grass (*Neurachne mitchelliana*), *Kochia ciliata*, woolly heads (*Gnaphalodes uliginosum*), corrugated sida (*Sida corrugata*), catsear (*Hypochaeris radicata*), curly windmill grass (*Chloris acicularis*), native carrot (*Daucus glochidiatus*), golden everlastings (*Helichrysum bracteatum*), australian bindweed (*Convolvulus erubescens*), bogan flea (*Calotis hispidula*), saffron thistle (*Carthamus lanatus*), *Helipterum australe*, japanese cudweed (*Gnaphalium japonicum*).

PROFILE DESCRIPTION: Northcote Classification Dr 2.53 over clayey sand and sandy clay loam material

Horizon	Depth (cm)	Description
0-7	-	Dark greyish brown (2.5YR 3/3); sandy clay loam; massive; roots. <i>Abrupt to:-</i>
7-31	-	Red (2.5YR 4/6); sandy clay loam; massive; roots; insect holes; charcoal. <i>Abrupt to:-</i>
31-39	-	Bleached zone; dark greyish brown (2.5YR 3/3 moist); red (2.5YR 5/6) dry; sandy loam; massive; roots; soft to the pick. <i>Abrupt to:-</i>
39-63	-	Red (2.5YR 4/6) mottled with grey; sandy clay; massive; roots; insect holes. <i>Clear to:-</i>
63-171	-	Yellowish red (5YR 4/6); clayey sand; massive; roots to 150 cm depth; gritty; hardpan-like material; carbonate concretions - both vertically orientated and rounded; isolated gravel to 2 cm diam. <i>Clear to:-</i>
171-185-	-	Mottled yellowish red (5YR 4/6) and greyish yellow (2.5Y 6/3); sandy clay loam; massive; manganese staining common.

LOCATION: "Rosemere", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 541 miles + 3570 ft.

PARISH: Merribooka

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 14/11/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Wide flat area near gilgais

LAND USE: Grazing

VEGETATION: Cleared

Trees and Shrubs: Isolated white cypress pine (*Callitris columellaris*), bullock (*Casuarina leuhmannii*), grey box (*Eucalyptus woollsiana*).

Pastures: Variable spear grass (*Stipa variabilis*), spear thistle (*Cirsium vulgare*), *Ptilotus spathulatus*, plantain (*Plantago varia*), windmill grass (*Chloris truncata*), saffron thistle (*Carthamus lanatus*), fuzzweed (*Vittadinia triloba*), *Vulpia* sp., barrel medic (*Medicago truncatula*), corrugated sida (*Sida corrugata*), *Centaureum* sp., haresfoot clover (*Trifolium arvense*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon Depth (cm)

- 0-6 - Dark greyish brown (2.5YR 3/3); sandy clay loam; massive; roots; insect holes; small charcoal pieces. Abrupt to:-
- 6-24 - Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes; small charcoal pieces. Abrupt to:-
- 24-28 - Dark reddish brown (2.5YR 3/4) moist ; light red (2.5YR 6/6) dry; bleached zone; sandy loam; massive; roots. Abrupt to:-
- 28-75 - Red (2.5YR 4/6); clay loam; moderate SABL<sup>+</sup> structure; roots; insect holes. Clear to:-
- 75-167 - Mottled mainly yellowish red (5YR 4/8) with some red (2.5YR 4/6 and 2.5YR 5/6 (minor)); clay loam; poor to moderate structure; roots; zone of carbonate accumulation; carbonate concretions to 4 cm diam. and vertical "pipes" to 15 cm long. Abrupt to:-
- 167-179- Mottled mainly yellowish red (5YR 5/6) with some red (2.5YR 4/6) and minor dark reddish brown (2.5YR 3/4); silty clay loam; poor structure; roots; some carbonate concretions to 2 cm diam.; strong manganese staining.

\* in nearby variants, pockets of very pale brown (10YR 7/4) material of silty clay loam to medium clay texture occur. These pockets carry a strong accumulation of powdery carbonate material.

+ subangular blocky

LOCATION: "Milby", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 541 miles + 4650 ft.

PARISH: Merribooka

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7<sup>o</sup>C; 18.6<sup>o</sup>C);  
July (15.7<sup>o</sup>; 3.4<sup>o</sup>)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Wide level area with gilgais - basalt floaters on surface

LAND USE: Grazing

VEGETATION: Bimble box woodland

Trees and Shrubs: T10-100 Bimble box (*Eucalyptus populnea*).

Pastures: No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*),  
*Vulpia* sp., variable spear grass (*Stipa variabilis*), saffron thistle  
(*Carthamus lanatus*), fuzzweed (*Vittadinia triloba*), bluebell (*Wahlenbergia*  
sp.), catsear (*Hypochaeris radicata*), woolly heads (*Gnaphalodes uliginosum*).

PROFILE DESCRIPTION: Northcote Classification Dr 2.53

Horizon	Depth (cm)
	0-12 - Dark greyish brown (2.5YR 3/3); sandy clay loam; massive; roots; insect holes. Clear to:-
	12-39 - Dark reddish brown (2.5YR 3/4); clay loam; massive; roots; insect holes. Clear to:-
	39-65 - Dark red (2.5YR 3/6); light to medium clay; massive to slight structure; roots; insect holes; accumulations of flat stones to 5 cm at base.
	65+ - Bedrock with some cracks containing mottled light yellowish brown (10YR 6/4) and dark red (2.5YR 3/6 (minor)) medium clay.

LOCATION: "Milby", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 542 miles + 3080 ft.

PARISH: Merribooka

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/11/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7<sup>o</sup>C; 18.6<sup>o</sup>C);  
July 15.7<sup>o</sup>C; 3.4<sup>o</sup>C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing and cropping

VEGETATION: Open grey box-white cypress pine-rosewood community

Trees and Shrubs: Open stand of rosewood (*Heterodendrum oleifolium*), white cypress pine (*Callitris columellaris*), grey box (*Eucalyptus woollsiana*).

Pastures: Cereal stubble, sow thistle (*Sonchus oleraceus*), golden everlastings (*Helichrysum bracteatum*), fuzzweed (*Vittadinia triloba*), japanese cudweed (*Gnaphalium japonicum*), saffron thistle (*Carthamus lanatus*), variable spear grass (*Stipa variabilis*), patterson's curse (*Echium plantagineum*), spear thistle (*Cirsium vulgare*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.23

Horizon	Depth (cm)
	0-20 - Dark greyish brown (2.5YR 3/3); sandy clay loam; massive; lower 2 cm bleached. <i>Clear to:-</i>
	20-40 - Dark greyish brown (2.5YR 3/3); sandy clay loam; poor SABL*to prismatic structure; roots; insect holes. <i>Abrupt to:-</i>
	40-61 - Red (2.5YR 4/6); clay loam; poor to moderate structure; roots; insect holes; small carbonate concretions to 3 mm diam. <i>Abrupt to:-</i>
	61-174- Yellowish red (mainly 5YR 5/6 with some 5YR 6/6); light clay; moderate SABL*structure changing to prismatic towards base; roots; carbonate "pipes" to 10 cm long and powdery concretions of carbonate material to 3 cm diam.; small manganese concretions increasing in concentration towards the base.

\* subangular blocky

LOCATION: "Milby", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 543 miles + 2750 ft. PARISH: Cookaburrangong  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 15/11/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Slight rise

LAND USE: Grazing

VEGETATION: Open mallee-grey box-white cypress pine woodland

Trees and Shrubs: T5-50 Pointed fruit mallee (*Eucalyptus socialis*), grey box (*Eucalyptus woollsiana*), white cypress pine (*Callitris columellaris*), miljee (*Acacia oswaldii*).

Pastures: Curly windmill grass (*Chloris acicularis*), variable spear grass (*Stipa variabilis*), saffron thistle (*Carthamus lanatus*), purple daisy burr (*Calotis cuneifolia*), purple love grass (*Eragrostis lacunaria*), sow thistle (*Sonchus oleraceus*), grey copper burr (*Bassia diacantha*), *Conyza bonariensis*, japanese cudweed (*Gnaphalium japonicum*), *Atriplex spinebractea*, fuzzweed (*Vittadinia triloba*), bandicoot grass (*Danthonia bipartita*), mulga grass (*Neurachne mitchelliana*), *Plantago varia*, brush wire grass (*Aristida behriana*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13 over clay loam and sandy clay loam material

Horizon	Depth (cm)
	0-34 - Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes; isolated small gravel to 1.5 cm diam. Abrupt to:-
	34-40 - Red (2.5YR 4/6) - zone of discontinuous bleach; fine sandy clay loam; massive; roots; insect holes; isolated small gravel to 1.5 cm diam. Abrupt to:-
	40-106- Dusky red (10R 3/4); light clay; poor to moderate SABL*structure tending to prismatic; roots; insect holes; some manganese stains near base. Clear to:-
	108-147- Dark red (2.5YR 3/6); clay loam; massive; roots; some gravel to 1 cm diam.; carbonate concretions to 8 cm diam.; vertical carbonate "pipes" to 35 cm long; manganese staining increasing towards base. Clear to:-
	147-198- Red (2.5YR 5/6); sandy clay loam; massive to poor structure; porous; roots; vertical carbonate "pipes" to 10 cm long; some carbonate staining between soil blocks; strongly manganese stained layer; manganese concretions.

\* subangular blocky

LOCATION: "Mt. Alma", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 544 miles + 0450 ft.

PARISH: Coōkaburragong

COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 15/11/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Lower slope

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: T > 100 White cypress pine (*Callitris columellaris*),  
belah (*Casuariana cristata*), grey box (*Eucalyptus woollsiana*), kurrajong  
(*Brachychiton populnea*).

Pastures: Fuzzweed (*Vittadinia triloba*), wallaby grass (*Danthonia  
caespitosa*), variable spear grass (*Stipa variabilis*), golden everlastings  
(*Helichrysum bracteatum*), barrel medic (*Medicago truncatula*), No. 9 wire  
grass (*Aristida jerichoensis* var *subspinulifera*), *Sida* sp., panic grass  
(*Panicum* sp.), purple daisy burr (*Calotis cuneifolia*), saffron thistle  
(*Carthamus lanatus*), windmill grass (*Chloris truncata*), *Centaurium* sp.,  
*Digitaria* sp., bluebells (*Wahlenbergia* sp.), *Vulpia* sp., patterson's  
curse (*Echium plantagineum*), wimmera ryegrass (*Lolium rigidum*), lucerne  
(*Medicago sativa*).

PROFILE DESCRIPTION: Northcote Classification Dr 2.51 over sandy loam  
and clayey sand material

Horizon	Depth (cm)	Description
	0-17	- Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; <i>Gradual to:-</i>
	17-45	- Dark red (2.5YR 3/6); sandy clay loam; massive; roots; insect holes; isolated gravel to 4 cm diam. <i>Abrupt to:-</i>
	45-89	- Red (10R 4/6); light clay; poor to moderate crumb to SABL*structure; roots; insect holes; gravel to 5 mm diam. <i>Abrupt to:-</i>
	89-118	- Red (2.5YR 4/6); sandy loam; gritty layer; massive; porous; some roots; some gravel to 3 cm diam. at base; continuous 2-4 cm wide carbonate seam through horizon. <i>Abrupt to:-</i>
	118-139	- Similar layer to above but clayey sand texture; horizon contains a lower carbonate seam 2-4 cm wide. <i>Abrupt to:-</i>
	139-162	- Dark red (2.5YR 3/6); clayey sand; less gritty than two above horizons; massive; porous. <i>Abrupt to:-</i>
	162-187	- Mottled mainly dark red (2.5YR 3/6) with red (2.5YR 4/8), yellowish red (5YR 4/8) and greyish yellow (2.5Y 6/3); clayey sand; massive; carbonate concretions to 2 cm diam.; some vertical carbonate "pipes" in old root lines lower in horizon; strong manganese staining.

\* subangular blocky

LOCATION: "Mt. Alma", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 544 miles + 3750 ft.

PAIRSH: Merribooka

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Midslope (1%-2% slope)

LAND USE: Grazing and cropping

VEGETATION: Cleared and cultivated paddock under fallow

Trees and Shrubs: T > 100 Kurrajong (*Brachychiton populneus*), rosewood (*Heterodendrum oleifolium*), grey box (*Eucalyptus woollsiana*).

Pastures: Quena (*Solanum esuriale*), saffron thistle (*Carthamus lanatus*), bluebells (*Wahlenbergia sp.*), patterson's curse (*Echium plantagineum*), lucerne (*Medicago sativa*).

PROFILE DESCRIPTION: Northcote Classification Dr 2.12 over sandy clay loam and loamy sand

Horizon	Depth (cm)	Description
	0-15	- Dark greyish brown (2.5YR 3/3); massive; fine sandy clay loam. <i>Gradual to:-</i>
	15-32	- Red (2.5YR 4/6); sandy clay loam; massive; roots; insect holes. <i>Abrupt to:-</i>
	32-44	- Red (10R 4/6); moist; red (2.5YR 5/8) dry; bleached zone; sandy clay loam; roots; massive; insect holes; layer of strong gravel accumulation - gravel between 1 cm and 4 cm diam. <i>Abrupt to:-</i>
	44-135	- Red (2.5YR 4/6); light clay; moderate SABE structure; roots; insect holes; small carbonate concretions to less than 1 cm diam. <i>Clear to:-</i>
	135-153	- Yellowish red (5YR 4/8) with coatings of red (2.5YR 4/8); sandy clay loam; massive; insect holes; small carbonate accumulations; manganese staining; undulating boundary. <i>Clear to:-</i>
	153-185	- Yellowish red (5YR 4/8) with coatings of red (2.5YR 4/8); loamy sand; massive; somewhat porous; interbedded carbonate seams to 2 cm wide; strong manganese staining.

\* subangular blocky

LOCATION: "Beulah", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 544 miles + 4920 ft.

PARISH: Cookaburragong

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Upper midslope

LAND USE: Grazing and cropping

VEGETATION: Cultivated wheat paddock

Trees and Shrubs: Isolated kurrajong (*Brachychiton populneus*)

Pastures: Wheat crop.

PROFILE DESCRIPTION: Northcote Classification Gn 2.16

Horizon	Depth (cm)
0-20	- Dark greyish brown (2.5YR 3/3); loam fine sandy; massive; Clear to:-
20-31	- Dark reddish brown (2.5YR 3/4); fine sandy clay loam; massive; roots; insect holes; some gravel to 2 cm diam. Abrupt to:-
31-44	- Reddish brown (2.5YR 4/4) moist; red (2.5YR 5/6) dry; bleached zone; fine sandy clay loam; massive; roots; insect holes. Abrupt to:-
44-88	- Yellowish red (5YR 4/6); light clay; moderate SABL * structure; 10 cm wide layer of gravel-stones at top of horizon - gravel mainly 1-2 cm diam. and stones to 8 cm diam. Clear to:-
88-123	- Yellowish red (5YR 5/6); medium clay; moderate structure; roots; similar to above horizon but with stones in base; carbonate concretions to 1-2 cm diam.; some manganese staining. Clear to:-
123-202-	- Brown (7.5YR 5/4); light to medium clay; poor to moderate structure; layer of strong carbonate accumulation; much small gravel increasing to stones 10 cm diam. at base.

\* subangular blocky

LOCATION: "Beulah", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 545 miles + 0450 ft.

PARISH: Cookaburragong

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Upper slope of ridge

LAND USE: Grazing

VEGETATION: Cleared to that described below

Trees and Shrubs: T30 Bimble box (*Eucalyptus populnea*), green mallee (*Eucalyptus virdis*), white cypress pine (*Callitris columellaris*), kurrajong (*Brachychiton populneus*), rosewood (*Heterodendrum oleifolium*), emu bush (*Eremophila longifolia*), deane's wattle (*Acacia deanei*), mallee (*Eucalyptus* sp.).

Pastures: Wallaby grass (*Danthonia caespitosa*), variable spear grass (*Stipa variabilis*), *Vulpia* sp., saffron thistle (*Carthamus lanatus*), catsear (*Hypochaeris radicata*), sow thistle (*Sonchus oleraceus*), brush wire grass (*Aristida behriana*), fuzzweed (*Vittadinia triloba*), windmill grass (*Chloris truncata*), golden everlastings (*Helichrysum bracteatum*), rock fern (*Cheilanthes tenuifolia*), cluster clover (*Trifolium glomeratum*), cane panic (*Panicum subxerophilum*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	Description
	0-28	- Dark brown (5YR 2/4); loam fine sandy; massive; roots; insect holes; discontinuous slightly bleached layer between 26 and 28 cm depth. <i>Gradual to:-</i>
	28-42	- Dark reddish brown (2.5YR 3/4); loam fine sandy; massive; roots; insect holes. <i>Abrupt to:-</i>
	42-68	- Reddish brown (2.5YR 4/4) with some dark reddish grey (5YR 4/2); clay loam; massive to poor structure; roots; insect holes; some gravel to 2 cm diam. <i>Abrupt to:-</i>
	68-97	- Mainly very dark greyish brown (10YR 3/2) with some dark reddish brown (2.5YR 3/4); sandy clay loam; roots; layer of major gravel deposition; discontinuous carbonate seam at top of horizon. <i>Abrupt to:-</i>
	97-136	- Brown (10YR 5/3); sandy clay; poor to moderate structure; roots; insect holes; isolated carbonate concretions to 4 cm diam. <i>Clear to:-</i>
	136-188	- Brown (10YR 4/3) with small amounts of red (2.5YR 4/6); light clay; massive; layer of major gravel deposition - gravel 1-3 cm diam. but some stones to 12 cm diam.; gravel increasing near base; stones with carbonate stain.

LOCATION: "Beulah", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 545 miles + 2450 ft.

PARISH: Cookaburrangong

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January ( $34.7^{\circ}\text{C}$ ;  $18.6^{\circ}\text{C}$ );  
July ( $15.7^{\circ}\text{C}$ ;  $3.4^{\circ}\text{C}$ )

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid-slope of ironbark ridge

LAND USE: Grazing

VEGETATION: Ironbark-green mallee community

Trees and Shrubs: T < 5-200 Mugga ironbark (*Eucalyptus sideroxylon*), green mallee (*Eucalyptus viridis*), grey box (*Eucalyptus woollsiana*), white cypress pine (*Callitris columellaris*), currawang (*Acacia doratoxylon*), kurrajong (*Brachychiton populneus*), belah (*Casuarina cristata*), hooked needlewood (*Hakea tephrosperma*), deane's wattle (*Acacia deanei*).

Pastures: Spear thistle (*Cirsium vulgare*), sow thistle (*Sonchus oleraceus*), saffron thistle (*Carthamus lanatus*), catsear (*Hypochaeris radicata*), corrugated sida (*Sida corrugata*), cane panic (*Panicum subserophilum*), jersey cudweed (*Gnaphalium luteoalbum*), yellow buttons (*Helichrysum apiculatum*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), variable spear grass (*Stipa variabilis*), skeleton weed (*Chondrilla juncea*), windmill grass (*Chloris truncata*), purple daisy burr (*Calotis cuneifolia*), australian bindweed (*Convolvulus erubescens*), horehound (*Marrubium vulgare*), eastern cotton bush (*Kochia tamariscina*), common wheat grass (*Agropyron scabrum*), wallaby grass (*Danthonia caespitosa*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

This profile is similar to GP 157 in all respects except for the top 0-20 cm which is a dark reddish brown (5YR 3/2) loam.

LOCATION: Hoffman's property, Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 546 miles + 0200 ft. PARISH: Cookaburragong  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 15/11/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Base of depression (valley) between two rises

LAND USE: Cropping and grazing

VEGETATION: Cleared to scattered trees

Trees and Shrubs: Isolated white cypress pine (*Callitris columellaris*),  
 grey box (*Eucalyptus woollsiana*), bumble box (*Eucalyptus populnea*),  
 kurrajong (*Brachychiton populneus*).

Pastures: Wheat crop with some skeleton weed (*Chondrilla juncea*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.11 over loam and  
 sandy clay loam material.

Horizon	Depth (cm)	Description
	0-16	- Dark greyish brown (2.5YR 3/3); silty clay loam; massive; roots; insect holes. <i>Gradual to:-</i>
	16-40	- Red (2.5YR 4/6); silty clay loam; massive; hard; charcoal; roots; insect holes. <i>Abrupt to:-</i>
	40-51	- Red (2.5YR 4/6) moist; red (2.5YR 5/6) dry; slightly bleached layer; light clay; massive; strong root accumulation; insect holes. <i>Abrupt to:-</i>
	51-77	- Red (2.5YR 4/6); light clay; poor structure; roots; insect holes. <i>Abrupt to:-</i>
	77-122	- Red (2.5YR 4/6); clay loam; poor structure; roots; insect holes; moderate manganese staining. <i>Clear to:-</i>
	122-137	- Mottled red (2.5YR 4/6); and dark reddish brown (2.5YR 3/4); sandy clay loam; roots; insect holes; massive; zone of deposition of gravel to 2.5 cm diam. <i>Clear to:-</i>
	137-177	- Yellowish red (5YR 4/6); clay loam; moderate crumb to SABL* structure; roots; insect holes; layer of gravel to 3 cm diam. in lower 10-15 cm of horizon. <i>Clear to:-</i>
	177-199	- Mottled yellowish red (5YR 4/6) and brown (7.5YR 5/4); clay loam; massive; manganese concretions.

\* subangular blocky

LOCATION: Hoffman's property, Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 546 miles + 3200 ft. PARISH: Cookaburragong  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 15/11/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C)  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Mid slope of ironbark-green mallee ridge

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Isolated white cypress pine (*Callitris columellaris*), grey box (*Eucalyptus woollsiana*), bimble box (*Eucalyptus populnea*), kurrajong (*Brachychiton populneus*).

Pastures: Wheat crop with some skeleton weed (*Chondrilla juncea*).

PROFILE DESCRIPTION: Northcote Classification Uf 6.71 over sandy clay loam and clay loam material

Horizon	Depth (cm)
	0-13 - Dark reddish brown (5YR 3/3); fine sandy clay loam; massive; hard; roots; charcoal. Clear to:--
	13-37 - Dark brown (5YR 2/3); light clay; massive; hard; roots; charcoal. Clear to:-
	37-52 - Dark brown (5YR 2/3); light clay; moderate platy-SABL*structure; hard; roots; insect holes; some charcoal. Abrupt to:-
	52-77 - Dark reddish brown (5YR 3/4); sandy clay loam; massive; roots; depositional layer with gravel to 1-2 cm diam. and some to 4 cm diam. Clear to:-
	77-98 - Mottled yellowish red (5YR 4/6); clay loam; poor to moderate structure; roots; insect holes; less gravelly than horizon above; some vertical carbonate "pipes" to 12 cm long. Gradual to:-
	98-150- Yellowish red (5YR 5/6); clay loam; moderate crumb structure; roots; insect holes; slight manganese stain. Abrupt to:-
	150-195- Reddish yellow (7.5YR 6/8) with coatings of dark reddish brown (2.5YR 3/4); sandy clay loam; massive blocky layer; roots to base of horizon; some interbedded carbonate seams; strong manganese staining.

\* subangular blocky

LOCATION: "Ascot", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 547 miles + 1950 ft. PARISH: Currah  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 15/11/74  
 TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Scattered bimple box (*Eucalyptus populnea*), grey box (*Eucalyptus woollisiana*), white cypress pine (*Callitris columellaris*), bullock (*Casuarina leuhmannii*).

Pastures: Barley grass (*Hordeum leporinum*), *Vulpia* sp., cluster clover (*Trifolium glomeratum*), saffron thistle (*Carthamus lanatus*), *Centaurium* sp., *Lolium* sp., *Bromus* sp., curly windmill grass (*Chloris acicularis*), patterson's curse (*Echium plantagineum*), spear thistle (*Cirsium vulgare*).

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
	0-20	- Dark greyish brown (2.5YR 3/3); sandy clay loam; massive; roots; insect holes. <i>Gradual to:-</i>
	20-49	- Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes. <i>Clear to:-</i>
	49-105	- Red (2.5YR 4/6); clay loam; massive to moderate SABL* structure; roots; insect holes; gravel to 1 cm diam.; patchy carbonate staining on peds. <i>Gradual to:-</i>
	105-158	- Red (2.5YR 4/6); clay loam; moderate structure; roots; insect holes; more small gravel; some carbonate concretions to 2 cm diam.; less carbonate staining on peds than in horizon above; slight manganese staining. <i>Gradual to:-</i>
	158-188	- Mottled yellowish red (5YR 5/6); light clay; massive; some carbonate concretions to 5 cm diam.; moderate manganese staining.

\* subangular blocky

LOCATION: "Ascot", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 548 miles + 2650 ft.

PARISH: Currah

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Slight depression in plain

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: T200 Grey box (*Eucalyptus woollsiana*), white cypress pine (*Callitris columellaris*).

Pastures: Ryegrass (*Lolium* sp.), saffron thistle (*Carthamus lanatus*), patterson's curse (*Echium plantagineum*), variable spear grass (*Stipa variabilis*), *Atriplex spinebractea*, native carrot (*Daucus glochidiatus*), golden everlasting (*Helichrysum bracteatum*), horehound (*Marrubium vulgare*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.63

Horizon	Depth (cm)	Description
	0-20	- Dark greyish brown (2.5YR 3/3); sandy clay loam; massive; roots; insect holes. Clear to:-
	20-36	- Dark reddish brown (50%) (2.5YR 3/4) to red (50%) (2.5YR 4/6); sandy clay loam; massive; roots; insect holes. Abrupt to:-
	36-45	- Dark reddish brown (5YR 5/4) moist; red (2.5YR 4/6) dry; bleached layer; sandy loam; massive; roots; insect holes. Abrupt to:-
	45-97	- Red (2.5YR 4/6); clay loam; moderate prismatic structure; roots; slight manganese staining. Abrupt to:-
	97-151	- Yellowish red (5YR 5/6) with some reddish yellow (7.5YR 6/6); light clay; poor to moderate structure; roots; zone of very strong carbonate accumulation with vertical carbonate "pipes" to 30 cm long; slight manganese stain. Clear to:-
	151-184	- Reddish yellow (7.5YR 6/6); light clay; poor to moderate prismatic structure; roots; some carbonate material; slight manganese staining.

LOCATION: "Ascot", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 548 miles + 4700 ft. PARISH: Currah  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 15/11/79

TOPOGRAPHY: Level plain with gilgais

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Gilgai base

LAND USE: Grazing

VEGETATION: Treeless plain

Trees and Shrubs: Treeless

Pastures: Rush (*Juncus* sp.), spike rush (*Eleocharis* sp.), *Potamogeton* sp., dock (*Rumex* sp.), weeping lovegrass (*Eragrostis parviflora*), poison pratia (*Pratia concolor*).

PROFILE DESCRIPTION: Northcote Classification Ug 6.2

Horizon	Depth (cm)
0-33	- Greyish brown (7.5YR 4/1); light to medium clay; moderate structure; rough faced peds; roots; deeply and widely cracking. Gradual to:-
33-104	- Mainly dark grey (10YR 4/1) with greyish olive (2.5YR 5/1); light clay; moderate structure; rough faced peds; roots; insect holes; isolated carbonate staining. Gradual to:-
104-138-	- Light brownish grey (2.5YR 6/2) with greyish olive (2.5Y 5/1) and some very pale brown (10YR 7/4); sandy clay; moderate structure; rough faced peds; roots; moderate manganese staining; manganese concretions.

LOCATION: "Ascot", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 548 miles + 4700 ft.

PARISH: Currah

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/74

TOPOGRAPHY: Level plain with gilgais

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Gilgai midslope

LAND USE: Grazing

VEGETATION: Treeless plain

Trees and Shrubs: Treeless

Pastures: Woodruff (*Asperula* sp.), dock (*Rumex* sp.), ryegrass (*Lolium* sp.),  
*Mimulus gracilis*, blown grass (*Agrostis avenaceus*).

PROFILE DESCRIPTION: Northcote Classification Ug 6.2

Horizon      Depth (cm)

0-11      -      Very dark grey (5YR 3/1) with brown (10YR 5/3);  
light clay; moderate structure; rough faced peds;  
roots; insect holes; very widely cracking.  
*Abrupt to:-*

11-54      -      Light yellowish brown (10YR 6/4); light clay;  
moderate structure; rough faced peds; roots; insect  
holes; deeply cracking; zone of carbonate concretions  
to 1 cm diam. *Gradual to:-*

54-160      -      Pale brown (10YR 6/3); light clay; moderate  
structure; rough faced peds; roots; isolated small  
carbonate concretions; deeply cracking.

LOCATION: "Ascot", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 548 miles + 4700 ft. PARISH: Currah  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 15/11/79

TOPOGRAPHY: Level plain with gilgais

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Crest of gilgai mound

LAND USE: Grazing

VEGETATION: Treeless plain

Trees and Shrubs: Treeless

Pastures: Spear thistle (*Cirsium vulgare*), golden everlastings (*Helichrysum bracteatum*), rye grass (*Lolium sp.*), horehound (*Marrubium vulgare*), fuzzweed (*Vittadinia triloba*), catsear (*Hypochaeris radicata*), patterson's curse (*Echium plantagineum*), saltweed (*Atriplex spinebractea*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.63

Horizon	Depth (cm)	Description
	0-10	- Reddish brown (5YR 4/4) with some lighter mottling; clay loam; massive. Clear to:-
	10-35	- Mottled yellowish red (5YR 5/6) (70%) and light yellowish brown (10YR 6/4) (30%); light clay; poor to moderate structure; slightly cracking; roots; insect holes. Clear to:-
	35-57	- Yellowish brown (10YR 5/6) with some light yellowish brown (10YR 6/4); light medium clay; poor structure; roots; insect holes; carbonate concretions. Clear to:-
	57-143	- Mainly pale brown (10YR 6/3) with some yellowish red (5YR 5/6); light medium clay; poor to moderate prismatic structure; grey-brown stains along cracks; carbonate concretions to 3 cm diam. and vertical carbonate "pipes" to 30 cm long; slight manganese stains at base. Gradual to:-
	143-183-	- Light yellowish brown (10YR 6/4) with some yellowish red (5YR 4/6); light clay; massive to poor structure; gritty; carbonate concretions to 3 mm diam.

LOCATION: "Ascot Vale", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 549 miles + 3380 ft.

PARISH: Currah

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Plain

LAND USE: Grazing and cropping

VEGETATION: Open bulloak-grey box-white cypress pine community

Trees and Shrubs: T500 Bulloak (*Casuarina leuhmannii*), grey box (*Eucalyptus woollsiiana*), white cypress pine (*Callitris columellaris*).

Pastures: Saffron thistle (*Carthamus lanatus*), cut leaf goodenia (*Goodenia cycloptera*), bluebell (*Wahlenbergia sp.*), catsear (*Hypochaeris radicata*), fuzzweed (*Vittadinia triloba*), native carrot (*Daucus glochidiatus*), australian bindweed (*Convolvulus erubescens*), *Digitaria sp.*, variable spear grass (*Stipa variabilis*), *Bromus sp.*, *Helipterum australe*, *Vulpia sp.*

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
0-13	-	Dark brown (5YR 2/4); massive; sandy clay loam. <i>Gradual to:-</i>
13-26	-	Dark reddish brown (5YR 3/3); sandy clay loam; massive. <i>Abrupt to:-</i>
26-36	-	Dark reddish brown (5YR 3/4) moist; light reddish brown (5YR 6/4) dry; bleached zone; light sandy clay loam; massive; roots. <i>Abrupt to:-</i>
36-70	-	Red (2.5YR 4/6) to reddish brown (2.5YR 4/4); clay loam; poor to moderate structure; hard; roots; isolated carbonate concretions to 1 cm diam. <i>Clear to:-</i>
70-101	-	Yellowish red (5YR 5/6); clay loam to light clay; poor to moderate structure; roots; insect holes; some carbonate concretions to 2 cm diam. <i>Clear to:-</i>
101-157	-	Brown (7.5YR 5/4) with some yellowish red (5YR 5/6); sandy clay loam; blocky massive material; roots; some carbonate concretions; strong manganese staining. <i>Clear to:-</i>
157-187	-	Yellowish red (5YR 5/6 and 5YR 4/2); sandy clay loam; massive; small manganese concretions.

LOCATION: "Ascot Vale", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 550 miles + 1040 ft. PARISH: Currah  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 15/11/74

TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Depression near gilgai area

LAND USE: Grazing

VEGETATION: Open bimble box-white cypress pine woodland

Trees and Shrubs: T20-100 Bimble hox (*Eucalyptus populnea*), White cypress pine (*Callitris columellaris*), belah (*Casuarina cristata*).

Pastures: Rush (*Juncus* sp.), cane panic (*Panicum subserophilum*), wallaby grass (*Danthonia caespitosa*), jersey cudweed (*Gnaphalium luteoalbum*), *Spergularia* sp., australian bindweed (*Convolvulus erubescens*), variable spear grass (*Stipa variabilis*), saltweed (*Atriplex spinebractea*), catsear (*Hypochaeris radicata*), *Goodenia pinnatifida*, wallaby grass (*Danthonia caespitosa*), cluster clover (*Trifolium glomeratum*), bluebell (*Wahlenbergia* sp.).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)	Description
	0-8	- Dark brown (5YR 2/3); loam fine sandy; massive; roots; insect holes. <i>Abrupt to:-</i>
	8-15	- Dark brown (5YR 2/4); fine sandy clay loam; massive with a tendency to platy structure; roots; insect holes; discontinuous bleached layer at horizon base (not sampled). <i>Abrupt to:-</i>
	15-64	- Dark reddish brown (5YR 3/4); light clay; poor to moderate platy structure; roots; insect holes. <i>Clear to:-</i>
	64-95	- Yellowish red (5YR 5/6); light clay; poor to moderate SABL structure; roots; insect holes; isolated carbonate concretions to 1 cm diam. <i>Clear to:-</i>
	95-177	- Light yellowish brown (10YR 6/4) with minor yellowish red (5YR 4/6); light clay; moderate SABL*to prismatic structure - becoming more prismatic towards the base; roots; isolated carbonate concretions; moderate manganese staining. <i>Clear to:-</i>
	177-189	- Reddish yellow (7.5YR 6/6) with minor dark reddish brown (2.5YR 3/4); light clay; moderate structure; roots; carbonate concretions to 5 mm diam. more prevalent; manganese staining.

\* subangular blocky

LOCATION: "Ascot Vale", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 550 miles + 4050 ft.

PARISH: Currah

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/79

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Plain

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: T > 200 White cypress pine (*Callitris columellaris*),  
bimble box (*Eucalyptus populnea*), kurrajong (*Brachyhiton populneus*).

Pastures: Ploughed ground

PROFILE DESCRIPTION: Northcote Classification Dr 2.53

Horizon	Depth (cm)	Description
0-15	-	Dark brown (5YR 2/4); sandy clay loam; massive. <i>Gradual to:-</i>
15-25	-	Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes. <i>Abrupt to:-</i>
25-55	-	Reddish brown (2.5YR 4/4); light clay; poor structure; roots; insect holes; some charcoal. <i>Clear to:-</i>
55-82	-	Yellowish red (5YR 5/6); light clay; poor to moderate structure; roots; carbonate concretions to 2 cm diam. <i>Abrupt to:-</i>
82-127	-	Yellowish red (5YR 5/6 with 5YR 5/8); clay loam; massive; roots; insect holes; some carbonate concretions to 4 cm diam.; slight manganese staining. <i>Abrupt to:-</i>
127-158	-	Yellowish red (5YR 5/6); clay loam; massive; vertical carbonate pipes to 20 cm long and 4 cm diam.; carbonate concretions to 5 cm diam.; strong manganese staining in lower 10 cm. <i>Clear to:-</i>
158-185	-	Mainly strong brown (7.5YR 5/6) with some dark reddish brown (2.5YR 3/4); clay loam; moderate structure; some carbonate concretions to 3 cm diam.; moderate manganese staining.

LOCATION: "Ascot Vale", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 551 miles + 0700 ft. PARISH: Currah  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 15/11/74  
 TOPOGRAPHY: Level to slightly undulating UNDERLYING ROCK: Purple siltstone  
 CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Midslope of ridge

LAND USE: Cropping and grazing

VEGETATION: Cleared

Trees and Shrubs: Isolated white cypress pine (*Callitris columellaris*).

Pastures: Ploughed ground

PROFILE DESCRIPTION: Northcote Classification Dr 2.53

Horizon	Depth (cm)	Description
0-15	-	Dark greyish brown (2.5YR 3/3); massive; fine sandy clay loam. <i>Clear to:-</i>
15-31	-	Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes; zone of accumulation of gravel to 3 cm diam. but mainly 1 cm diam. <i>Abrupt to:-</i>
31-57	-	Red (2.5YR 4/6); light clay; poor to moderate structure; roots; isolated small gravel. <i>Abrupt to:-</i>
57-81	-	Red (2.5YR 4/6); silty clay loam; massive to poor structure; roots; some gravel to 3-4 cm diam.; manganese staining. <i>Clear to:-</i>
81-115	-	Red (2.5YR 4/6) with some reddish yellow (7.5YR 6/8) and dark red (2.5YR 3/6); light sandy clay loam; massive;
115+	-	Bedrock with carbonate seams between blocks of rock.

LOCATION: "Ascot Vale", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 552 miles + 0010 ft.

PARISH: Currah

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/74

TOPOGRAPHY: Slightly undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C)  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Midslope of rise

LAND USE: Grazing and cropping

VEGETATION: Cleared to open white cypress pine woodland

Trees and Shrubs: T100 White cypress pine (*Callitris columellaris*),  
rosewood (*Heterodendrum oleifolium*), kurrajong (*Brachychiton populneus*).

Pastures: Lucerne (*Medicago sativa*) pasture with some saffron thistle  
(*Carthamus lanatus*).

PROFILE DESCRIPTION: Northcote Classification Uf 6.71 over sandy clay  
loam material

Horizon	Depth (cm)	Description
	0-9	- Dark greyish brown (2.5YR 3/3); massive; fine sandy clay loam. Clear to:-
	9-22	- Dark reddish brown (2.5YR 3/4); light clay; massive; roots; insect holes. Clear to:-
	22-57	- Red (2.5YR 4/6); light clay; poor structure; roots; some charcoal. Clear to:-
	57-80	- Red (2.5YR 4/8) with some dark red (2.5YR 3/6) and minor light grey (2.5Y 7/2); moderate SABL*structure; light clay; roots; insect holes; some gravel to 1 cm diam. Clear to:-
	80-110	- Mottled mainly red (2.5YR 4/8) with minor light grey (2.5Y 7/2); light clay; massive to poor structure; roots; insect holes. Gradual to:-
	110-185-	Mottled red (2.5YR 4/6) with light grey (2.5Y 7/2) and some reddish brown hard rocky material; sandy clay loam; massive; roots; insect holes; some carbonate concretions; moderate manganese staining.

\* subangular blocky

LOCATION: "Merrylands", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 552 miles + 2050 ft. PARISH: Euglo South  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 15/11/74  
 TOPOGRAPHY: Undulating UNDERLYING ROCK: Dark green  
 grey siliceous siltstone

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Ridge crest

LAND USE: Grazing and cropping

VEGETATION: White cypress pine-grey box woodland

Trees and Shrubs: T5-20 White cypress pine (*Callitris columellaris*),  
 grey box (*Eucalyptus woollsiana*), boobialla (*Myoporum montanum*).

Pastures: On edge of cleared, ploughed land and pasture of wallaby  
 grass (*Danthonia caespitosa*), variable spear grass (*Stipa variabilis*),  
 golden everlastings (*Helichrysum bracteatum*), *Centaureum* sp., native  
 carrot (*Daucus glochidiatus*), *Vulpia* sp., purple daisy burr (*Calotis*  
*cuneifolia*), sow thistle (*Sonchus oleraceus*).

PROFILE DESCRIPTION: Northcote Classification Dy 3.51

Horizon	Depth (cm)
0-15	- Dark reddish brown (5YR 3/3); massive; sandy clay loam; Clear to:-
15-42	- Dark reddish brown (5YR 3/4); sandy clay loam; massive; roots; gravel to 1 cm diam. Abrupt to:-
42-56	- Mottled red (2.5YR 4/6) moist; light reddish brown (5YR 6/4) dry; sandy clay loam; bleached zone; massive; roots; gravel to 3 cm diam. Abrupt to:-
56-82	- Mottled strong brown (7.5YR 5/6) with dark red (2.5YR 3/6) and minor dark brown (5YR 2/3) and greyish brown (10YR 5/2); light clay; massive to slight structure; roots; floaters of decomposing rock to 8 cm diam. Diffuse to:-
82-135	- Mottled light brownish grey (2.5YR 6/2) and strong brown (7.5YR 5/6) with minor red (2.5YR 4/6); massive; medium clay; roots; soil material occurs in pockets between vertically bedded decomposing rock.
135+	- Bedrock.

LOCATION: "Merrylands", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 553 miles + 0650 ft. PARISH: Euglo South  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 15/11/74  
 TOPOGRAPHY: Slightly undulating UNDERLYING ROCK: Dark-purple  
 fine grained sandstone  
 CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C)  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Midslope of rise

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Isolated bimple box (*Eucalyptus populnea*).

Pastures: Cereal crop stubble, cut leaf goodenia (*Goodenia cycloptera*), sow thistle (*Sonchus oleraceus*), *Centaurium* sp., japanese cudweed (*Gnaphalium japonicum*), catsear (*Hypochaeris radicata*), bluebells (*Wahlenbergia* sp.), barley grass (*Hordeum leporinum*), *Vulpia* sp., purple daisy burr (*Calotis cuneifolia*), skeleton weed (*Chondrilla juncea*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.12 over sandy clay loam material

Horizon	Depth (cm)	Description
	0-15	- Dark reddish brown (2.5YR 3/4); massive; silty clay loam. Clear to:-
	15-47	- Dusky red (10R 3/4); light clay; massive; roots; gravel to 1 cm diam. Clear to:-
	47-80	- Dark red (10R 3/6); light clay; massive to slight structure; roots; insect holes; gravel to 1.5 cm; undulating boundary. Clear to:-
	80-164	- Mottled red (2.5YR 4/8) with some greyish yellow (2.5Y 7/3); light clay; poor structure; roots; zone of decomposing rock floaters; undulating boundary. Clear to:-
	164-175-	- Dark red (2.5YR 3/6) to red (10R 4/8); sandy clay loam; decomposing rock; strong manganese staining.
	175+	- Bedrock.

LOCATION: "Wilstan", Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 553 miles + 5200 ft. PARISH: Euglo South  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 15/11/74  
TOPOGRAPHY: Level to slightly undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)  
Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Midslope of low ridge

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Isolated bimple box (*Eucalyptus populnea*)

Pastures: Wheat crop

PROFILE DESCRIPTION: Northcote Classification Dr 2.53

Horizon	Depth (cm)	
0-15	-	Dark greyish brown (2.5YR 3/3); massive; sandy clay loam. Clear to:-
15-37	-	Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; charcoal; gravel to 1 cm diam. Abrupt to:
37-47	-	Dark reddish brown (2.5YR 3/4)moist ; red (2.5YR 5/6) dry; bleached zone; sandy clay loam; massive; roots; insect holes. Abrupt to: -
47-98	-	Dark red (2.5YR 3/6); light clay; poor to moderate SABL* structure; roots; insect holes; manganese staining in base. Gradual to:-
98-140	-	Dark red (50%) (2.5YR 3/6); with red (50%) (2.5YR 5/8); clay loam; moderate SABL*structure; roots; some carbonate concretions to 3 cm diam; isolated vertical carbonate "pipes" to 15 cm long; some gravel to 3 cm diam. Gradual to:-
140-180-		Mottled red (2.5YR 4/6) and reddish yellow (7.5YR 6/6); light to medium clay; poor to moderate structure tending to prismatic; roots; carbonate concretions to 5-6 cm diam.

\* subangular blocky

LOCATION: "Wilstan", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 554 miles + 4400 ft.

PARISH: Euglo South

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/74

TOPOGRAPHY: Level

UNDERLYING ROCK: Possibly weathered granite

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Isolated rosewood (*Heterodendrum oleifolium*), kurrajong (*Brachychiton populneus*), grey box (*Eucalyptus woollsiana*), white cypress pine (*Callitris columellaris*).

Pastures: Wheat crop with some skeleton weed (*Chondrilla juncea*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)
0-15	- Dark brown (5YR 2/4); fine sandy clay loam; massive. <i>Clear to:-</i>
15-34	- Dark brown (5YR 2/4) with red (2.5YR 4/6); light clay; massive to poor SABL*structure; roots. <i>Gradual to:-</i>
34-58	- Mottled yellowish red (5YR 4/6 (50%)) and strong brown (7.5YR 5/6); light to medium clay; massive to poor structure; roots. <i>Gradual to:-</i>
58-118	- Brown (7.5YR 5/4); light to medium clay; massive; roots; carbonate concretions to 2-6 cm diam; vertical carbonate "pipes" to 30 cm long and 3 cm diam.; manganese staining at base. <i>Clear to:-</i>
118-176-	- Yellowish red (5YR 5/6 to 5YR 4/8); light clay; massive; roots to base of profile; carbonate concretions as in horizon above; strong accumulation of manganese concretions.

\* subangular blocky

LOCATION: 'Euglo', Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 555 miles + 4670 ft.

PARISH: Euglo South

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Plain

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: T500 Grey box (*Eucalyptus woollsiana*), white cypress pine (*Callitris columellaris*), rosewood (*Heterodendrum oleifolium*), kurrajong (*Brachychiton populneus*).

Pastures: Lucerne (*Medicago sativa*) pasture with ryegrass (*Lolium sp.*), variable spear grass (*Stipa variabilis*), spear thistle (*Cirsium vulgare*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.43

Horizon	Depth (cm)
	0-24 - Dark brown (5YR 2/4); fine sandy clay loam; massive; roots; insect holes. <i>Abrupt to:-</i>
	24-30 - Dark reddish brown (5YR 3/4 moist; reddish brown (5YR 5/4) dry; - bleached zone; fine sandy clay loam; massive; roots; insect holes. <i>Abrupt to:-</i>
	30-58 - Dark reddish brown (5YR 3/3) (75%) with yellowish red (5YR 4/6) (25%); light clay; poor to moderate structure; hard; roots; insect holes. <i>Gradual to:-</i>
	58-165 - Light yellowish brown (10YR 6/4) with small pockets of light grey (2.5Y 7/2) light clay; massive to poor structure; roots; many carbonate concretions 1-2cm diam. with some to 3-4 cm diam.; some manganese staining. <i>Clear to:-</i>
	165-185- Reddish yellow (7.5YR 6/6) with small pockets of light brownish grey (2.5Y 6/2); light clay; massive; roots; many large carbonate concretions to 10 cm diam.; manganese staining.

LOCATION: "Euglo", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 557 miles + 2050 ft.

PARISH: Euglo South

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Plain

LAND USE: Grazing and cropping

VEGETATION: Open belah-rosewood community

Trees and Shrubs: T5-100 Rosewood (*Heterodendrum oleifolium*), belah (*Casuarina cristata*).

Pastures: Lucerne (*Medicago sativa*), ryegrass (*Lolium sp.*), saffron thistle (*Carthamus lanatus*), patterson's curse (*Echium plantagineum*), *Vulpia sp.*, variable spear grass (*Stipa variabilis*), cluster clover (*Trifolium glomeratum*), sow thistle (*Sonchus oleraceus*), rushes (*Juncus sp.*), yellow poverty weed (*Calocephalus sonderi*), barley grass (*Hordeum leporinum*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)
	0-10 - Dark reddish brown (5YR 3/4); clay loam; massive; hard surface crust; Clear to:-
	10-38 - Reddish brown (5YR 4/4); light clay; moderate prismatic to blocky structure; roots. Clear to:-
	38-146 - Yellowish red (5YR 5/6); light clay; moderate prismatic to blocky structure - tending to massive at base; roots; many soft carbonate accumulations. Clear to:-
	146-198- Red (2.5YR 5/6); light medium clay; massive to slight structure; roots; carbonate accumulations similar to those in above horizon but more prevalent.

LOCATION: "Euglo", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 557 miles + 4750 ft.

PARISH: Euglo South

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 15/11/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Western bank of Euglo or Humbug Creek

LAND USE: Grazing

VEGETATION: Open white cypress pine-bimble box woodland

Trees and Shrubs: Scattered white cypress pine (*Callitris columellaris*),  
bimble box (*Eucalyptus populnea*).

Pastures: Wheat crop

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)
	0-20 - Dark brown (5YR 2/4); loam fine sandy; massive; roots; insect holes; charcoal. <i>Clear to:-</i>
	20-58 - Red (2.5YR 4/6); fine sandy clay loam; massive; roots; insect holes. <i>Clear to:-</i>
	58-85 - Red (2.5YR 5/6 to 2.5YR 4/6); fine sandy clay loam; massive; roots; insect holes; some carbonate staining. <i>Abrupt to:-</i>
	85-139 - Yellowish red (5YR 5/6) with some mottling; fine sandy clay loam; poor to moderate structure; roots; some carbonate staining. <i>Gradual to:-</i>
	139-194- Reddish brown (5YR 5/4 to 5YR 4/4); fine sandy clay loam; massive; roots and insect holes to base; isolated carbonate concretions to 5 mm diam.

LOCATION: "Euglo", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 559 miles + 0400 ft.

PARISH: Livingstone

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 27/11/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing and cropping

VEGATION: Open bumble box, rosewood and belah community

Trees and Shrubs: Treeless at site. Nearby is bumble box (*Eucalyptus populnea*), rosewood (*Heterodendrum oleifolium*), belah (*Casuarina cristata*).

Pastures: curly windmill grass (*Chloris acicularis*), lucerne (*Medicago sativa*), cluster clover (*Trifolium glomeratum*), ryegrass (*Lolium sp.*), *Vulpia sp.*, windmill grass (*Chloris truncata*).

PROFILE DESCRIPTION: Northcote Classification Dr 2.13

Horizon	Depth (cm)	Description
0-3	-	Dark yellowish brown (7.5YR 2/3); clay loam; massive to poor structure with rough peds; roots; small pieces of charcoal. Abrupt to:-
3-19	-	Dark reddish brown (5YR 3/4) (50%) and dark yellowish brown (7.5YR 3/3) (50%); light clay; massive to poor structure with rough peds; roots; some gravel to 4 mm diam. Clear to:-
19-44	-	Reddish brown (5YR 4/4); medium clay; moderate SABL* structure; smooth peds, roots; small grit. Clear to:-
44-98	-	Reddish yellow (7.5YR 6/6) with some light grey (2.5YR 7/2); light medium clay; poor to moderate SABL structure; rough and smooth peds; roots; insect holes; some small carbonate concretions; some carbonate stains on peds; very small (pinhead size) manganese concretions. Gradual to:-
98-198	-	Mainly very pale brown (10YR 7/3) with some light grey (2.5Y 7/2), brown (7.5YR 5/4) and yellowish red (5YR 5/6); light clay; poor to moderate SABL* structure; tending to prismatic towards base; roots; insect holes; larger carbonate concretions; strong manganese staining. Gradual to:-
198-220	-	Mottled light grey (2.5Y 7/2) (50%) and strong brown (7.5YR 5/6) (50%); sandy clay; massive to poor structure; somewhat porous; gritty material; manganese concretions.

\* subangular blocky

LOCATION: Coleman's property, Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 559 miles + 2800 ft. PARISH: Livingstone  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/11/74  
 TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing and cropping

VEGETATION: Very open bimble box, belah, rosewood community

Trees and Shrubs: Scattered bimble box (*Eucalyptus populnea*), rosewood (*Heterodendrum oleifolium*), belah (*Casuarina cristata*), white cypress pine (*Callitris columellaris*).

Pastures: Wheat crop

PROFILE DESCRIPTION: Northcote Classification Dr 3.53

Horizon	Depth (cm)	Description
0-13	-	Mottled yellowish red (5YR 5/6) and reddish brown (5YR 4/4); silty clay loam; massive; roots; some soft carbonate accumulations to 4-5 cm diam. and some concretions. <i>Clear to:-</i>
13-52	-	Mottled reddish brown (5YR 4/3) and reddish yellow (7.5YR 6/6); medium clay; massive to poor structure improving towards base; roots; insect holes; carbonate stainings and some concretions to 2 cm diam. <i>Clear to:-</i>
52-122	-	Reddish yellow (7.5YR 6/6); light medium clay; poor SABL* structure; roots; isolated gravel to 5 mm diam.; isolated carbonate concretions to 5 cm diam.; some small (pin head) manganese concretions. <i>Gradual to:-</i>
122-218	-	Mottled light yellowish brown (10YR 6/4) and reddish yellow (7.5YR 6/6); light medium clay; poor to moderate ABL* structure; smooth faced peds; gravel to 2 cm diam.; carbonate concretions towards base; some brown staining near base; slight manganese staining.

\* subangular blocky

+ angular blocky

LOCATION: Coleman's property, Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 559 miles + 2980 ft.

PARISH: Livingstone

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 27/11/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing and cropping

VEGETATION: Very open bimple box, belah and rosewood community

Trees and Shrubs: Scattered bimple box (*Eucalyptus populnea*), rosewood (*Heterodendrum oleifolium*), belah (*Casuarina cristata*), white cypress pine (*Callitris columellaris*).

Pastures: Wheat crop

PROFILE DESCRIPTION: Northcote Classification Gn 2.43

Horizon	Depth (cm)
	0-9 - Dark reddish brown (5YR 3/3); silty clay loam; massive to slight structure; roots; insect holes; charcoal. Clear to:-
	9-59 - Mainly reddish brown (5YR 4/4) with some yellowish red (5YR 5/6); light clay; poor SABL*structure; smooth faced peds; roots; insect holes; small carbonate concretions. Clear to:-
	59-85 - Mottled light brown (7.5YR 6/4) (50%) and yellowish red (5YR 5/6) (50%); light medium clay; poor to moderate structure; some smooth and some rough faced peds; roots; insect holes; charcoal; isolated carbonate stainings and concretions to 2 mm diam. Gradual to:-
	85-139 - Mainly light brownish grey (2.5YR 6/2) with brown (7.5YR 5/4) and some reddish brown (5YR 5/4); light medium clay; poor structure; roots; insect holes; carbonate concretions to 1 cm diam; some manganese staining on peds; small manganese concretions. Clear to:-
	139-227- Light brownish grey (2.5YR 6/2) with minor yellowish red (5YR 4/6); light clay; poor SABL*structure; isolated roots generally not beyond mid point of horizon; manganese concretions; stronger manganese staining than horizon above.

\* subangular blocky

LOCATION: Coleman's property, Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 559 miles + 5200 ft. PARISH: Livingstone  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 27/11/74  
 TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing and cropping

VEGETATION: Open box-white cypress pine community

Trees and Shrubs: T200 Bimble box (*Eucalyptus populnea*), needlewood (*Hakea sp.*), white cypress pine (*Callitris columellaris*), grey box (*Eucalyptus woollsiana*).

Pastures: Wheat crop

PROFILE DESCRIPTION: Northcote Classification Dy 3.13

Horizon	Depth (cm)	Description
	0-11	- Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes; charcoal. <i>Clear to:-</i>
	11-33	- Red (2.5YR 4/6); sandy clay loam; poor to moderate structure; peds smooth faced; roots; insect holes. <i>Gradual to:-</i>
	33-61	- Red (2.5YR 4/6- 2.5YR 5/6); light clay; moderate SABL*structure; some peds smooth faced - others rough; roots; insect holes; manganese staining. <i>Gradual to:-</i>
	61-90	- Mainly red (2.5YR 5/6 and some 2.5YR 4/6) with minor light yellowish brown (10YR 6/4); light clay; poor structure; smooth faced peds; roots; insect holes; some manganese staining. <i>Gradual to:-</i>
	90-119	- Mottled mainly yellowish red (5YR 5/6) with light brown (7.5YR 6/4); light brownish grey (10Y 6/2) and minor red (2.5YR 4/6); light clay; massive to poor structure; roots; insect holes; manganese concretions. <i>Gradual to:-</i>
	119-148-	Yellowish red (5YR 5/6) with some light brownish grey (10YR 6/2); sandy clay; massive; roots; insect holes; manganese stainings. <i>Gradual to:-</i>
	148-208-	Yellowish red (5YR 5/6) with some light brownish grey (10YR 6/2); sandy clay; similar to above horizon; moderate manganese staining; some manganese concretions. <i>Clear to:-</i>
	208-223-	Strong brown (7.5YR 5/6) and yellowish red (5YR 4/8) with some light brownish grey (10YR 6/2); sandy clay; massive to poor structure; roots; moderate manganese staining; moderate development of manganese concretions.

\* subangular blocky

LOCATION: "Euglo", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 558 miles + 4830 ft.

PARISH: Livingstone

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 19/12/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Base of major drainage channel in plain

LAND USE: Grazing

VEGETATION: Treeless in channel but a fringing community of bimble box and bulloak.

Trees and Shrubs: T20-30 along creek bank - bimble box (*Eucalyptus populnea*), bulloak (*Casuarina leuhamni*).

Pastures: Spike rush (*Eleocharis* sp.), couch grass (*Cynodon dactylon*), rush (*Juncus* sp.), *Ottelia* sp., warrego summer grass (*Paspalidium jubiflorum*).

PROFILE DESCRIPTION: Northcote Classification Uf 6.61 over sandy clay material

Horizon	Depth (cm)
0-30	- Dark brown (7.5YR 4/2); fine sandy clay loam; massive; widely cracking; weak surface crust; hard - particularly where "pugged" by animals; roots. <i>Gradual to:-</i>
30-77	- Dark greyish brown (10YR 4/2) to greyish brown (10YR 5/2); light clay; massive to poor structure; hard; widely cracking; roots. <i>Clear to:-</i>
77-154	- Greyish brown (10YR 5/2) with some brown (5YR 3/6); light clay; poor to moderate SABL* structure; some rough faced peds; insect holes; manganese concretions. <i>Gradual to:-</i>
154-248-	Mottled mainly light grey (2.5Y 7/2) with beige (7.5YR 7/1) and some strong brown (7.5YR 5/6) and greyish brown (7.5YR 4/1); sandy clay; massive; more gritty layer with yellow and black staining.

\* subangular blocky

LOCATION: Coleman's property, Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 560 miles + 1060 ft. PARISH: Livingstone  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/12/74

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Plain

LAND USE: Grazing and cropping

VEGETATION: Bimble box-white cypress pine-belah woodland

Trees and Shrubs: T5-20 Bimble box (*Eucalyptus populnea*), belah (*Casuarina cristata*), white cypress pine (*Callitris columellaris*).

Pastures: Spear grass (*Stipa sp.*), catsear (*Hypochaeris radicata*), tar vine (*Boerhavia diffusa*), woolly clover (*Trifolium tomentosum*), saffron thistle (*Carthamus lanatus*), caustic weed (*Euphorbia drummondii*), No. 9 wire grass (*Aristida jerichoensis var subspinulifera*), purple daisy burr (*Calotis cuneifolia*), desert chinese lanterns (*Abutilon otocarpum*), mulga grass (*Neurachne mitchelliana*), fuzzweed (*Vittadinia triloba*).

PROFILE DESCRIPTION: Northcote Classification Uc 5.11

Horizon	Depth (cm)
	0-15 - Dark reddish brown (2.5YR 3/4); sandy loam; massive. Clear to:-
	15-61 - Red (2.5YR 4/6); sandy loam; massive; roots; insect holes; porous; charcoal. Clear to:-
	61-140 - Red (2.5YR 5/6); clayey sand; massive; roots; insect holes; some small gravel to 5 mm diam.; slightly harder layer. Gradual to:-
	140-191- Red (2.5YR 5/6); clayey sand; massive; porous layer; roots; insect holes; small gravel similar to above. Gradual to:-
	191-206- Reddish brown (2.5YR 5/4); sand; cemented material with very isolated gravel to 2 cm diam.

LOCATION: Coleman's property, Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 560 miles + 3680 ft. PARISH: Livingstone  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/12/74  
TOPOGRAPHY: Slightly undulating UNDERLYING ROCK: Partly weathered  
cleaved slaty siltstone  
(Ordovician sediments)

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Isolated rise in plain

LAND USE: Grazing and cropping

VEGETATION: Bimble box-belah and rosewood community

Trees and Shrubs: Scattered belah (*Casuarina cristata*), rosewood (*Heterodendrum oleifolium*), bimble box (*Eucalyptus populnea*).

Pastures: Brush wire grass (*Aristida behriana*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), fuzzweed (*Vittadinia triloba*), curly windmill grass (*Chloris acicularis*), tar vine (*Boerhavia diffusa*), australian bindweed (*Convolvulus erubescens*), native carrot (*Daucus glochidiatus*), variable spear grass (*Stipa variabilis*), golden everlasting (*Helichrysum bracteatum*), saffron thistle (*Carthamus lanatus*).

PROFILE DESCRIPTION: Northcote Classification Dr 2.51

Horizon	Depth (cm)
0-15	- Dark reddish brown (2.5YR 3/4) to red (10R 4/6); sandy clay loam; massive; gravelly layer with some stones to 15 cm diam. Clear to:-
15-38	- Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; zone of heavier gravel concentration. Clear to:-
38-76	- Mottled red (2.5YR 4/6); light clay; horizon of soil material in large blocks to 15 cm mixed with decomposing rock.
76-259+-	- Bedrock with a whitish coating on material in the upper part.

LOCATION: Coleman's property, Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 561 miles + 1700 ft. PARISH: Livingstone  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/12/74  
 TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Scattered belah (*Casuarina cristata*), rosewood (*Heterodendrum oleifolium*), bimble box (*Eucalyptus populnea*).

Pastures: Brush wire grass (*Aristida behriana*), No. 9 wire grass (*Aristida jerichoensis* var *subspinulifera*), fuzzweed (*Vittadinia triloba*), curly windmill grass (*Chloris acicularis*), tar vine (*Boerhavia diffusa*), australian bindweed (*Convolvulus erubescens*), native carrot (*Daucus glochidiatus*), variable spear grass (*Stipa variabilis*), golden everlasting (*Helichrysum bracteatum*), saffron thistle (*Carthamus lanatus*) and wheat stubble.

PROFILE DESCRIPTION: Northcote Classification Gn 2.63

Horizon	Depth (cm)
0-10	- Dark greyish brown (2.5YR 3/3); clay loam; massive; roots; charcoal; slight crust. Clear to:-
10-20	- Dark greyish brown (2.5YR 3/3); fine sandy clay loam; massive; porous; roots; occasional charcoal. Abrupt to:-
20-53	- Mottled dark greyish brown (2.5YR 3/3) (50%) and yellowish red (5YR 5/6) (50%); light clay; moderate SABE <sup>†</sup> to prismatic structure; deeply cracking. Clear to:-
53-110	- Mottled light brown (7.5YR 6/4) (50%) and yellowish red (5YR 5/6) (50%); medium clay; moderate SABE <sup>†</sup> /ABE <sup>†</sup> /prismatic structure; rough and smooth faced peds; roots; insect holes; vertical carbonate "pipes" to 15 cm long and 2 cm diam.; slight manganese staining. Clear to:-
110-182-	Mainly light yellowish brown (10YR 6/4) with yellowish red (5YR 5/6); light medium clay; poor to moderate ABE <sup>†</sup> structure; roots; insect holes; small carbonate concretions. Gradual to:-
182-222-	Red (mainly 2.5YR 5/6 with some 2.5YR 5/8); light medium clay; poor to moderate structure; smooth faced peds; some carbonate accumulation; horizon contains yellow and pink rock and manganese stained gravel up to 5 mm diam.

\* subangular blocky

+ angular blocky

LOCATION: Coleman's property, Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 561 miles + 3350 ft. PARISH: Livingstone  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/12/74

TOPOGRAPHY: Level with gilgais

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Centre of drainage line

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs; Treeless

Pastures: Wheat crop

PROFILE DESCRIPTION: Northcote Classification Gn 2.63

Horizon	Depth (cm)
0-8	- Dark brown (5YR 2/4); clay loam; massive; insect holes; isolated gravel to 1.5 cm diam. <i>Clear to:-</i>
8-46	- Yellowish red (5YR 5/6) and reddish yellow (7.5YR 6/6); light clay; poor to moderate structure; rough faced peds; roots; insect holes; carbonate concretions to 1.5 cm diam. <i>Gradual to:-</i>
46-104	- Mottled light brown (7.5YR 6/4) and reddish brown (5YR 4/4); light clay; poor to moderate ABL <sup>+</sup> structure; smooth faced peds; insect holes; isolated gravel to 5 mm diam.; little carbonate accumulation; gypsum accumulations to 3 cm diam. <i>Gradual to:-</i>
104-173	- Mottled mainly light grey (5Y 7/1) with some light brown (7.5YR 6/4) and dark reddish brown (5YR 3/3); medium clay; moderate ABL <sup>+</sup> structure; large smooth faced peds; many gypsum accumulations to 3-4cm diam. <i>Gradual to:-</i>
173-211	- Mottled mainly light grey (5Y 7/1) with yellowish red (5YR 5/6 and 5YR 4/6); medium clay; poor to moderate structure; smooth faced peds; moderate manganese staining; strong gypsum accumulation as above.

+ angular blocky

LOCATION: Coleman's property, Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 561 miles + 4470 ft. PARISH: Livingstone  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/12/74  
 TOPOGRAPHY: Undulating UNDERLYING ROCK: Well-cleaved  
 purple shale  
 CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Midslope of low hill

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Formerly white cypress pine (*Callitris columellaris*),  
 belah (*Casuarina cristata*), wilga (*Geijera parviflora*), bimble box  
 (*Eucalyptus populnea*).

Pastures: Wheat crop

PROFILE DESCRIPTION: Northcote Classification Um 5.52

Horizon	Depth (cm)	Description
0-23	-	Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; porous; roots; buried stubble; insect holes. <i>Abrupt to:-</i>
23-33	-	Reddish brown (2.5YR 4/4); sandy clay loam; massive; roots; layer of gravel to 4 cm diam. but generally 1-2 cm diam. <i>Gradual to:-</i>
33-76	-	Red (2.5YR 4/6); clay loam; poor SABL* structure; rough faced peds; roots; insect holes. <i>Clear to:-</i>
76-147	-	Mottled red (2.5YR 4/6); clay loam; massive; carbonate concretions to 1 cm diam. throughout; vertical carbonate "pipes" to 15 cm long and 3 cm diam.; scattered gravel to 2 cm diam. in lower half. <i>Gradual to:-</i>
147-180	-	Red (2.5YR 5/6 with some 5YR 5/8) with grey/brown mottling; clay loam; massive; roots; insect holes; vertical carbonate "pipes" to 15 cm long and 5 cm diam.; moderate manganese staining.

\* subangular blocky

LOCATION: Coleman's property, Condobolin COUNTY: Gipps  
FOOTAGE (APPROX): 562 miles + 1350 ft. PARISH: Livingstone  
COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/12/74

TOPOGRAPHY: Undulating land with gilgais on ridge slopes and crest

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Gilgai base

LAND USE: Grazing

VEGETATION: Belah-rosewood community

Trees and Shrubs: Scattered belah (*Casuarina cristata*), myall (*Acacia pendula*), rosewood (*Heterodendrum oleifolium*).

Pastures: Rushes (*Juncus sp.*), blown grass (*Agrostis avenacea*), nardoo (*Marsilea drummondii*).

PROFILE DESCRIPTION: Northcote Classification Ug 5.25

Horizon	Depth (cm)	
	0-36	- Dark brown (7.5YR 4/2); light clay; moderate SABL* structure; rough faced peds; moderately cracking; roots; some gravel to 4 mm diam. Clear to:-
	36-114	- Mainly dark brown (7.5YR 4/2) (60%) with greyish brown (7.5YR 5/3) (40%); light medium clay; moderate ABL+ structure; moderately cracking; roots; small carbonate concretions scattered throughout; some gravel to 4 mm diam. Diffuse to:-
	114-152-	Mottled reddish brown (5YR 5/4) with some pinkish grey (5YR 6/2); light clay; massive to poor structure.

\* subangular blocky

+ angular blocky

LOCATION: Coleman's property, Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 562 miles + 1350 ft. PARISH: Livingstone  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/12/74  
 TOPOGRAPHY: Undulating land with gilgais on ridge slopes and crest  
 CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Gilgai mound crest

LAND USE: Grazing

VEGETATION: Belah-rosewood community

Trees and Shrubs: Scattered belah (*Casuarina cristata*), myall (*Acacia pendula*), rosewood (*Heterodendrum oleifolium*).

Pastures: Wallaby grass (*Danthonia caespitosa*), saffron thistle (*Carthamus lanatus*), cotton bush (*Maireana aphylla*), windmill grass (*Chloris truncata*), variable spear grass (*Stipa variabilis*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.43

Horizon	Depth (cm)	Description
	0-9	- Dark reddish brown (5YR 3/3); clay loam; stone strewn surface; slight surface crust; massive; roots. Abrupt to:-
	9-23	- Dark reddish brown (2.5YR 3/4) to reddish brown (2.5YR 4/4); clay loam; massive; roots; insect holes; small gravel to 2 cm, generally flat. Abrupt to:-
	23-46	- Mottled red (2.5YR 4/6) (50%) and dark reddish brown (5YR 3/2) (50%); light clay; moderate SABL* to crumb structure; roots; insect holes; charcoal. Clear to:-
	46-81	- Mottled reddish brown (5YR 5/4) and beige (7.5YR 6/3) with minor reddish brown (5YR 4/4); light clay; poor SABL* structure; rough faced peds; roots; insect holes; zone of carbonate accumulation with concretions generally less than 1 cm diam. Clear to:-
	81-183	- Mottled beige (7.5YR 6/3) and brown (7.5YR 5/4); light medium clay; poor to moderate ABL to SABL* structure; roots to 150 cm.; insect holes; 5 cm wide band of manganese staining at top of horizon.

\* subangular blocky

+ angular blocky

LOCATION: "Sandalwood", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 562 miles + 4170 ft.

PARISH: Livingstone

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 19/12/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Crest of hill

LAND USE: Grazing

VEGETATION: Grey box-white cypress pine woodland

Trees and Shrubs: T20-30 White cypress pine (*Callitris columellaris*), grey box (*Eucalyptus woollsiana*), rosewood (*Heterodendrum oleifolium*), miljee (*Acacia oswaldii*).

Pastures: Saffron thistle (*Carthamus lanatus*), wallaby grass (*Danthonia caespitosa*), cotton bush (*Maireana aphylla*), woolly clover (*Trifolium tomentosum*), windmill grass (*Chloris truncata*), curly windmill grass (*Chloris acicularis*), *Petrorhagia nanteuillii*.

PROFILE DESCRIPTION: Northcote Classification Dd 2.52

Horizon	Depth (cm)
0-8	- Dark yellowish brown (7.5YR 3/3); sandy loam; massive; roots. Abrupt to:-
8-30	- Dark reddish brown (5YR 3/2); sandy clay loam; massive; roots; gravel to 3 cm diam. but generally 1 cm or less. Clear to:-
30-46	- Mainly reddish brown (5YR 5/4 with some 5YR 4/3) with yellowish red (5YR 4/6); sandy clay; massive; roots; appearance of more gravel than in above horizon. Clear to:-
46-89	- Light brownish grey (10YR 6/2) with some dark brown (7.5YR 4/4); sandy clay; massive; roots; zone of weathering stones.
89+	- Bedrock - boundary varies from 46 to 89 cm depth from surface.

LOCATION: "Glenmore", Condobolin COUNTY: Gipps  
 FOOTAGE (APPROX): 563 miles + 1600 ft. PARISH: Livingstone  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 19/12/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Eastern midslope of hill

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Timber around edges and scattered over the paddock. White cypress pine (*Callitris columellaris*), Casuarina sp., yarran (*Acacia homalophylla*), bimble box (*Eucalyptus populnea*), warrior bush (*Apophyllum anomalum*).

Pastures: Saffron thistle (*Carthamus lanatus*), pussy tails (*Ptilotus sp.*), wallaby grass (*Danthonia caespitosa*), variable spear grass (*Stipa variabilis*), brush wire grass (*Aristida behriana*), golden everlastings (*Helichrysum bracteatum*), curly windmill grass (*Chloris acicularis*).

PROFILE DESCRIPTION: Northcote Classification Gn 2.13

Horizon	Depth (cm)
	0-10 - Dark greyish brown (2.5YR 3/3); clay loam; massive; roots; insect holes; small pieces of charcoal. <i>Abrupt to:-</i>
	10-36 - Dark reddish brown (2.5YR 2/4); light clay; moderate SABL*to crumb structure; rough faced peds; roots. <i>Abrupt to:-</i>
	36-107 - Dark reddish brown (2.5YR 3/4); light clay; poor to moderate SABL*to crumb structure; roots to base of horizon; strong concentration of gravel to 4 cm diam. but mainly 1 to 2 cm diam.; some decomposing vertically-bedded flat rocks; some manganese stainings. <i>Gradual to:-</i>
	107-170- Zone of decomposing rocks with pockets of soil similar to above.

\* subangular blocky

Profile Number: GP 192

LOCATION: "Wylgamere", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 564 miles + 0100 ft.

PARISH: Livingstone

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 19/12/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Lower slope of hill

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Scattered wilga (*Geijera parviflora*), white cypress pine (*Callitris columellaris*), bumble box (*Eucalyptus populnea*).

Pastures: Cereal crop

PROFILE DESCRIPTION: *Northctoe Classification* Um 5.52 over sandy clay loam material

Horizon	Depth (cm)
	0-23 - Dark greyish brown (2.5YR 3/3); clay loam; massive; roots. <i>Clear to:-</i>
	23-46 - Dark reddish brown (2.5YR 3/4); fine sandy clay loam; massive; porous; roots. <i>Clear to:-</i>
	46-61 - Dark reddish brown (2.5YR 3/4); clay loam; poor ABL <sup>+</sup> structure; <i>rough</i> faced peds, some white staining. <i>Gradual to:-</i>
	61-163 - Red (2.5YR 4/6); sandy clay loam; poor to moderate SABL* to crumb structure; rough and smooth faced peds; roots; gravel to 3 cm (usually flat) common; manganese staining increasing towards base where it reaches a light to moderate level. <i>Gradual to:-</i>
	163-180- Mottled red (2.5YR 4/6); sandy clay loam; moderate crumb structure; zone of decomposing rocks.

\* subangular blocky

+ angular blocky

LOCATION: "Wylgamere", Condobolin

COUNTY: Gipps

FOOTAGE (APPROX): 564 miles + 3000 ft.

PARISH: Livingstone

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 19/12/74

TOPOGRAPHY: Undulating

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C)  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Lower western slope of hill

LAND USE: Grazing and cropping

VEGETATION: Cleared

Trees and Shrubs: Scattered white cypress pine (*Callitris columellaris*), rosewood (*Heterodendrum oleifolium*), bimble box (*Eucalyptus populnea*).

Pastures: Cereal crop

PROFILE DESCRIPTION: Northcote Classification Dr 2.53

Horizon	Depth (cm)	Description
	0-18	- Dark greyish brown (2.5YR 3/3); sandy clay loam; massive; roots; insect holes. <i>Abrupt to:-</i>
	18-38	- Dark reddish brown (2.5YR 3/4); sandy clay loam; massive; roots; insect holes; gravel to 1 cm diam. <i>Abrupt to:-</i>
	38-71	- Yellowish brown (10R 4/6) mottled; light clay; poor SABL*structure; roots; insect holes. <i>Gradual to:-</i>
	71-124	- Mottled dark red (2.5YR 3/6) and red (2.5YR 4/6) with some yellowish brown (10YR 5/4); sandy clay massive; roots; light manganese staining. <i>Clear to:-</i>
	124-163	- Mainly strong brown (7.5YR 5/6) with dark red (2.5YR 3/6) and minor light yellowish brown (10YR 6/4); medium clay; moderate prismatic structure; roots at base; flat gravel to 3 cm and angular quartz gravel. <i>Clear to:-</i>
	163-178	- Yellowish red (5YR 4/6) with red (2.5YR 4/6); light clay; massive; plentiful flat angular shaley material; moderate manganese staining.

\* subangular blocky

LOCATION: "North Brotherony", Condobolin COUNTY: Dowling  
 FOOTAGE (APPROX): 514 miles + 1120 ft. PARISH: Whyaddra  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/1/75  
 TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Bank of river back channel

LAND USE: Grazing

VEGETATION: River red gum forest

Trees and Shrubs: T2-5 River red gum (*Eucalyptus camaldulensis*).

Pastures: Curly windmill grass (*Chloris acicularis*), windmill grass (*Chloris truncata*), climbing saltbush (*Rhagodia nutans*), warrego summer grass (*Paspalidium jubiflorum*), *Psoralea* sp., rushes (*Juncus* sp.), common verbain (*Verbena officinalis*), japanese cudweed (*Gnaphalium japonicum*), *Eclipta platyglossa*, noogoora burr (*Xanthium pungens*), daisy burr (*Calotis* sp.), *Maireana* sp.

PROFILE DESCRIPTION: Northcote Classification Uf 6.51 over fine sandy clay loam and silty clay loam material

Horizon	Depth (cm)
0-10	- Dark greyish brown (10Y 4/2); light clay; massive to poor structure; slight surface crust; roots; insect holes. <i>Clear to:-</i>
10-45	- Greyish olive (2.5Y 5/1); medium clay; poor structure; roots; insect holes; some clay "pipes". <i>Clear to:-</i>
45-100	- Mainly greyish brown (10YR 5/2) with some brown (10YR 5/3); light clay; poor SABL* to prismatic structure; some charcoal; carbonate concretions to 5 mm diam. <i>Abrupt to:-</i>
100-120-	Grey brown (10YR 5/2) and brown (10YR 5/3) with minor dark yellowish brown (7.5YR 3/4); light clay; poor to moderate structure; roots; insect holes; small flecks (minute concretions) of carbonate material. <i>Clear to:-</i>
120-184-	Mainly pale brown (10YR 6/3) with greyish brown (7.5YR 4/3) and some dark yellowish brown (7.5YR 3/3); fine sandy clay loam; massive; some sandier lenses; roots; insect holes; isolated carbonate concretions. <i>Abrupt to:-</i>
184-248-	Mainly light brownish grey (2.5YR 6/2) with pale brown (10YR 6/3) and some dark brown (7.5YR 4/4); silty clay loam; massive; roots; insect holes; some carbonate concretions to 2 cm diam.; manganese staining.

\* subangular blocky

LOCATION: "North Brotherony", Condobolin COUNTY: Dowling  
 FOOTAGE (APPROX): 514 miles + 2220 ft. PARISH: Whyaddra  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/1/75  
 TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Swamp

LAND USE: Grazing

VEGETATION: Open swamp box woodland

Trees and Shrubs: Scattered live and dead swamp box (*Eucalyptus largiflorens*).

Pastures: Nardoo (*Marsilea drummondii*), warrego summer grass (*Paspalidium jubiflorum*), black roly poly (*Bassia quinquecuspis*), *Panicum* sp., curly windmill grass (*Chloris acicularis*), spike rush (*Eleocharis* sp.), joyweed (*Alternanthera* sp.), dock (*Rumex* sp.), blown grass (*Agrostis avenacea*).

PROFILE DESCRIPTION: Northcote Classification Dy 3.53

Horizon	Depth (cm)	Description
	0-16	- Greyish olive (2.5Y 5/1); clay loam; massive; widely cracked surface; slight surface crust; roots; insect holes. Clear to:-
	16-72	- Greyish brown (2.5Y 5/2); heavy clay; massive; cracking; roots. Gradual to:-
	72-112	- Greyish brown (2.5Y 5/2); medium clay; massive to poor SABL*to platy structure; roots; some manganese concretions. Diffuse to:-
	112-239-	Mottled strong brown (7.5YR 5/6) with yellowish brown (7.5YR 4/6) and some light brownish grey (10YR 6/2); light clay; massive; some dark staining.

\* subangular blocky

LOCATION: "North Brotherony", Condobolin COUNTY: Dowling  
 FOOTAGE (APPROX): 515 miles + 1130 ft. PARISH: Whyaddra  
 COLLECTED AND DESCRIBED: G.M. Cunningham DATE SAMPLED: 14/1/75  
 TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain between cowals

LAND USE: Grazing

VEGETATION: Open swamp box community

Trees and Shrubs: Scattered swamp box (*Eucalyptus largiflorens*),  
 lignum (*Muehlenbeckia cunninghamii*).

Pastures: Curly windmill grass (*Chloris acicularis*), quena (*Solanum  
 esuriale*).

PROFILE DESCRIPTION: Northcote Classification Uf 6.61 over fine sandy  
 clay loam material

Horizon	Depth (cm)	Description
0-16	-	Dark greyish brown (10YR 4/2) to greyish brown (10YR 5/2) with isolated mottling; light clay; slight surface crust; varying from hard to almost self mulching on the surface; massive to poor structure; roots; insect holes. <i>Clear to:-</i>
16-49	-	Mainly dark greyish brown (10YR 4/2) with some greyish brown (10YR 5/2) and light yellowish brown (10YR 6/4); light clay; poor SABL* structure; strong root development; some charcoal. <i>Clear to:-</i>
49-70	-	Dark greyish brown (10YR 4/2) to light yellowish brown (10YR 6/4) with minor greyish olive (2.5YR 4/1); light clay; massive to poor crumb structure; roots; insect holes. <i>Gradual to:-</i>
70-231	-	Reddish yellow (7.5YR 6/6) with some mottling; fine sandy clay loam; massive; roots throughout; some dark coloured concretions.

\* subangular blocky

LOCATION: "North Brotherony", Condobolin COUNTY: Dowling  
 FOOTAGE (APPROX): 515 miles + 4480 ft. PARISH: Whyaddra  
 COLLECTED AND DESCRIBED BY: G.M. Cunningham DATE SAMPLED: 14/1/75  
 TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance  
 Temperature: Condobolin January (34.7°C; 18.6°C);  
 July (15.7°C; 3.4°C)  
 Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain

LAND USE: Grazing

VEGETATION: Open swamp box community

Trees and Shrubs: T20-200 Swamp box (*Eucalyptus largiflorens*).

Pastures: Black roly poly (*Bassia quinquecuspis*), wallaby grass (*Danthonia caespitosa*), curly windmill grass (*Chloris acicularis*), *Lepidium* sp., barley grass (*Hordeum leporinum*), fairy grass (*Sporobolus caroli*), salt weed (*Atriplex spinebractea*), yellow poverty weed (*Calocephalus sonderi*).

PROFILE DESCRIPTION: Northcote Classification Uf 6.41

Horizon	Depth (cm)	Description
	0-6	- Greyish brown (7.5YR 4/3); light clay; self mulching; roots; insect holes. Clear to:-
	6-40	- Greyish brown (7.5YR 4/3); medium clay; massive; soil in large blocks to 10 cm square; roots; many small carbonate concretions. Clear to:-
	40-85	- Brown (7.5YR 5/4); medium clay; moderate SABL* structure; smooth faced peds; zone of gypsum accumulation; carbonate concretions to 2 cm diam. Clear to:-
	85-180	- Brown (7.5YR 5/4); medium clay; poor to moderate prismatic to blocky structure; insect holes; some carbonate and gypsum accumulations; moderate manganese staining in lower 30 cm. Gradual to:-
	180-206-	Mottled greyish yellow (2.5Y 6/3) (50%) and strong brown (7.5YR 5/6) (50%); silty clay; massive; some carbonate concretions to 3-4 cm diam.

\* subangular blocky

LOCATION: "North Brotherony", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX): 516 miles + 0070 ft.

PARISH: Whyaddra

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 14/1/75

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Centre of base of Borapine Creek

LAND USE: Grazing

VEGETATION: Fringing river red gum and swamp box community

Trees and Shrubs: Scattered river red gum (*Eucalyptus camaldulensis*),  
swamp box (*Eucalyptus largiflorens*), on banks.

Pastures: Warrego summer grass (*Paspalidium jubiflorum*), spike rush  
(*Eleocharis sp.*), couch grass (*Cynodon dactylon*), mud grass (*Pseudoraphis  
spinescens*).

PROFILE DESCRIPTION: Northcote Classification Uf 6.61

Horizon	Depth (cm)
	0-93 - Grey (10YR 5/1) to greyish brown (10YR 5/2); light medium clay; massive; roots; some charcoal. Diffuse to:-
	93-185 - Mottled greyish brown (10YR 5/2); light clay; massive; some roots; charcoal. Diffuse to:-
	185-300- Mainly light brown (2.5Y 6/2) with strong brown (7.5YR 5/6) mottle; light clay; massive; no roots; some manganese concretions. Diffuse to:-
	300-342- Mainly light brown (2.5Y 6/2) with a strong brown (7.5YR 5/6) mottle; sandy clay; massive; no roots.

LOCATION: "Everton", Condobolin

COUNTY: Dowling

FOOTAGE (APPROX): 516 miles + 3500 ft.

PARISH: Whyaddra

COLLECTED AND DESCRIBED BY: G.M. Cunningham

DATE SAMPLED: 14/1/75

TOPOGRAPHY: Level

CLIMATE: Rainfall: Condobolin 435 mm; 13% summer dominance

Temperature: Condobolin January (34.7°C; 18.6°C);  
July (15.7°C; 3.4°C)

Evaporation: Condobolin - 1611 mm

POSITION IN LANDSCAPE: Level plain near edge of floodplain

LAND USE: Grazing

VEGETATION: Open swamp box

Trees and Shrubs: Scattered swamp box (*Eucalyptus largiflorens*).

Pastures: Barley grass (*Hordeum leporinum*), medic (*Medicago sp.*),  
saffron thistle (*Carthamus lanatus*).

PROFILE DESCRIPTION: Northcote Classification Uf 6.61

Horizon	Depth (cm)	Description
0-7	0-7	- Dark brown (7.5YR 4/4); fine sandy clay loam; massive; porous; roots; insect holes. <i>Clear to:-</i>
	7-38	- Brown (7.5YR 5 <sup>+</sup> / <sub>4</sub> ) to dark brown (7.5YR 4/4); light clay; poor ABL structure; rough faced peds; roots. <i>Clear to:-</i>
	38-112	- Reddish yellow (7.5YR 6/6) <sub>3</sub> ; silty clay; poor crumb to small block (1 cm) structure; rough faced peds; roots; insect holes; carbonate stains in upper 20 cm; isolated carbonate concretions. <i>Clear to:-</i>
	112-161	- Brown (10YR 5/3); light clay; poor to moderate prismatic structure; roots; small flecks of carbonate material. <i>Gradual to:-</i>
	161-206	- Light yellowish brown (10YR 6/4) to yellowish brown (7.5YR 4/6); light clay; massive; roots - mainly tree roots; some manganese concretions.

+ angular blocky

APPENDIX I  
SOIL REACTION (pH) DATA

	<u>Horizon</u>	<u>pH</u>
<u>PROFILE NO. GP 1</u>	0-10	6.5
	10-31	6.5
	31-51	6.5
	51-103	8.0
	103-179	9.0
<u>PROFILE NO. GP 2</u>	0-10	6.5
	10-23	6.0
	23-61	6.5
	61-161	9.0
	161-210	8.5
<u>PROFILE NO. GP 3</u>	Surface	6.5
	0-42	9.0
	42-54	9.0
	54-99	9.0
	99-139	8.5
	139-179	9.0
<u>PROFILE NO. GP 4</u>	0-30	9.0
	30-56	9.0
	56-86	7.5
	86-128	7.5
	128-141	8.0
	141-151	8.0
	151-164	8.0
<u>PROFILE NO. GP 5</u>	0-5	7.0
	5-34	6.5
	34-57	6.5
	57-108	8.5
	108-178	8.5
<u>PROFILE NO. GP 6</u>	0-20	6.5
	20-53	6.5
	53-72	6.0
	72-150	7.0
	150-192	8.0
<u>PROFILE NO. GP 7</u>	0-29	
	29-65	
	65-98	Not available
	98-153	
<u>PROFILE NO. GP 8</u>	0-6	6.5
	6-29	8.5
	29-49	6.5
	49-85	7.0
	85-164	8.5
<u>PROFILE NO. GP 9</u>	0-5	6.0
	5-60	7.5
	60-74	9.0
	74-84	8.5
	84-104	8.5
	104-149	8.5
	149-189	8.5
189-195	8.0	

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NO. GP 10</u>	0-37	
	37-62	
	62-104	No sample
	104-150	
	150-182	

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<u>PROFILE NO. GP 11</u>	0-39	
	39-82	
	82-129	No sample
	129-158	

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<u>PROFILE NO. GP 12</u>	Surface	6.0
	0-26	9.0
	26-42	9.0
	42-80	9.0
	80-126	9.0
	126-154	9.0
	154-214	9.0
	214-236	9.0

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<u>PROFILE NO. GP 13</u>	0-37	
	37-67	
	67-117	No sample
	117-167	
	167-221	
	221-259	

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<u>PROFILE NO. GP 14</u>	0-4	6.5
	4-83	6.5
	83-175	7.0
	175+	8.5

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<u>PROFILE NO. GP 15</u>	Surface	6.0
	0-39	5.5
	39-109	6.5
	109-141	7.5
	141-241	8.5

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<u>PROFILE NO. GP 16</u>	0-10	6.0
	10-30	6.0
	30-46	6.0
	46-66	6.5
	66-90	8.5

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<u>PROFILE NO. GP 17</u>	0-5	7.0
	5-21	7.0
	21-42	7.0
	42-78	7.5
	78-121	8.5
	121-153	9.0
	153-190	9.0

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	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NO. GP 18</u>	0-5	6.5
	5-28	6.0
	28-53	7.5
	53-83	9.0
	83-171	9.0
	171-179	9.0
<u>PROFILE NO. GP 19</u>	0-9	5.5
	9-28	6.0
	28-66	8.5
	66-106	9.0
	106-142	9.0
	142-197	9.0
	197-236	9.0
	236+	9.0
<u>PROFILE NO. GP 20</u>	0-5	6.5
	5-35	7.5
	35-64	8.0
	64-102	9.0
	102-179	9.0
	179+	9.0
<u>PROFILE NO. GP 21</u>	0-10	7.0
	10-68	5.5
	68-78	6.5
	78-115	8.5
	115-188	9.0
<u>PROFILE NO. GP 22</u>	0-10	6.5
	10-66	7.0
	66-86	9.0
	86-109	9.0
	109-167	9.0
	167-187	9.0
<u>PROFILE NO. GP 23</u>	0-10	6.5
	10-64	6.5
	64-78	7.0
	78-151	8.5
	151-201	9.0
<u>PROFILE NO. GP 24</u>	0-32	
	32-51	
	51-74	No sample
	74-134	
	134-186	
<u>PROFILE NO. GP 25</u>	0-35	
	35-56	
	56-98	No sample
	98-178	
<u>PROFILE NO. GP 26</u>	0-34	
	34-60	
	60-80	No sample
	80-147	
	147-172	

	Horizon (cm)	pH
<u>PROFILE NO. GP 27</u>	No sample	
<u>PROFILE NO. GP 28</u>	0-1	6.0
	1-27	7.0
	27-43	8.0
	43-105	8.5
	105-156	9.0
	156-171	9.0
<u>PROFILE NO. GP 29</u>	Similar to GP 28	
<u>PROFILE NO. GP 30</u>	0-5	6.5
	5-30	6.0
	30-65	7.0
	65-92	9.0
	92-192	8.5/9.0
<u>PROFILE NO. GP 31</u>	Similar to GP 30 but with upper 3 horizons compressed	
<u>PROFILE NO. GP 32</u>	0-10	6.0
	10-33	8.5
	33-51	8.5/9.0
	51-86	8.0
	86-110	8.5
	110-139	8.5/9.0
	139-178	8.5
	178-221	8.0
<u>PROFILE NO. GP 33</u>	No sample	
<u>PROFILE NO. GP 34</u>	0-14	6.0
	14-38	8.5/9.0
	38-58	8.5
	58-81	8.5/9.0
<u>PROFILE NO. GP 35</u>	0-5	5.5
	5-27	5.0
	27-53	7.5
	53-103	8.0
	103-203	-
<u>PROFILE NO. GP 36</u>	0-12	6.5
	12-32	5.0
	32-46	5.5
	46-63	6.0
	63-94	8.0
	94-132	9.0
	132-152	9.0
	152-170	9.0
	170-195	8.5
<u>PROFILE NO. GP 37</u>	0-10	-
	10-73	-
	73-183	9.0

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NO. GP 38</u>	No sample	
<u>PROFILE NO. GP 39</u>	Surface	6.0
	0-21	8.5
	21-27	8.5
	27-62	8.5
	62-140	9.0
	140-181	9.0
<u>PROFILE NO. GP 40</u>	Surface	6.0
	0-15	6.0
	15-65	8.5/9.0
	65-75	8.5
	75-203	8.5/9.0
<u>PROFILE NO. GP 41</u>	Surface	6.0
	0-52	6.5
	52-65	7.0
	65-92	7.5
	92-134	9.0
	134-164	8.5
<u>PROFILE NO. GP 42</u>	0-50	-
	50-60	-
	60-93	8.5/9.0
	93-148	-
	148-190	9.0
<u>PROFILE NO. GP 43</u>	0-8	5.5
	8-18	5.0
	18-29	6.5
	29-73	5.5
	73-88	6.0
	88+	5.5
<u>PROFILE NO. GP 44</u>	0-10	6.0
	10-43	6.5
	43-63	7.0
	63-78	7.0
	78-96	7.5
	96-153	8.5
	153-175	-
<u>PROFILE NO. GP 45</u>	Not available	
<u>PROFILE NO. GP 46</u>	Similar to GP 44	
<u>PROFILE NO. GP 47</u>	0-8	5.5
	9-50	5.0
	50-110	6.0
	110+	7.0

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NO. GP 48</u>	Not available	
<u>PROFILE NO. GP 49</u>	Surface	6.5
	0-45	9.0
	45-54	9.0
	54-113	8.5/9.0
	113-139	9.0
<u>PROFILE NO. GP 50</u>	0-33	5.5
	33-50	6.0
	50-64	6.5
	64-103	8.0
	103-133	8.0
	133-164	8.5
	164-190	8.5
<u>PROFILE NO. GP 51</u>	0-33	6.0
	33-53	6.0
	53-89	6.0
	89-130	6.5
	130-174	7.0
	174-193	8.0
<u>PROFILE NO. GP 52</u>	Surface	6.5
	0-10	7.5/8.0
	10-30	7.5
	30-55	8.0
	55-117	-
<u>PROFILE NO. GP 53</u>	Surface	6.0
	0-20	7.5
	20-43	7.0
	43-74	8.5
	74-125	9.0
	125+	-
<u>PROFILE NO. GP 54</u>	Surface	6.0
	0-17	6.5
	17-47	6.5
	47-64	7.5
	64-88	8.0
	88-120	9.0
	120-180	8.5/9.0
<u>PROFILE NO. GP 55</u>	Surface	6.0
	0-14	6.5/7.0
	14-54	7.0
	54-87	8.5/9.0
	87-100	8.5/9.0
	100-155	9.0
	155-195	9.0
<u>PROFILE NO. GP 56</u>	Surface	8.5/9.0
	0-15	6.5
	15-49	6.0
	49-77	7.0
	77-110	9.0
	110-155	9.0
	155-179	9.0

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NO. GP 57</u>	Similar to GP 56 up to 140 cm depth 140-185	9.0
<u>PROFILE NO. GP 58</u>	Surface 0-20 20-54 54-88 88-104 104-144 144-177	6.0 5.5 6.0 7.0 7.0 8.0 9.0
<u>PROFILE NO. GP 59</u>	Surface 0-12 12-61 61-87 87-106 106-160 160-177	6.0 5.5 5.0 7.0 8.5 9.0 9.0
<u>PROFILE NO. GP 60</u>	Surface 0-16 16-31 31-48 48-90 90-118 118-149 149-174	5.5 6.0 7.0 7.5 8.5 8.5/9.0 8.5/9.0 9.0
<u>PROFILE NO. GP 61</u>	Surface 0-26 26-45 45-67 67-95 95-130 130-178	6.0 6.5 7.0 8.5/9.0 9.0 9.0 9.0
<u>PROFILE NO. GP 62</u>	Surface 0-20 20-35 35-57 57-78 78-139 139-189	6.0 6.5 6.5 8.5 8.5 9.0 9.0
<u>PROFILE NO. GP 63</u>	Surface 0-30 30-58 58-109 109-149 149+	6.5 5.5 7.0 8.5/9.0 9.0 -
<u>PROFILE NO. GP 64</u>	Not available	
<u>PROFILE NO. GP 65</u>	Surface 0-23 23-37 37-56 56-123 123-166 166-194	6.0 6.5 6.5 8.0/8.5 9.0 9.0 9.0/9.5

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NO. GP 66</u>	Similar to GP 63	
	Surface	6.0
<u>PROFILE NO. GP 67</u>	0-14	6.0
	14-31	6.0
	31-52	7.5
	52-79	8.5
	79+	-
<u>PROFILE NO. GP 68</u>	Surface	5.5
	0-28	9.0
	28-40	9.0
	40-66	9.0
	66-101	9.0
	101+	-
<u>PROFILE NO. GP 69</u>	Surface	6.5
	0-16	7.0
	16-40	6.0
	40-79	8.0
	79-116	9.0
	116-136	9.0
	136-196	9.0
<u>PROFILE NO. GP 70</u>	Surface	6.0
	0-24	6.0
	24-33	6.0
	33-40	6.5
	40-67	8.0
	67-88	8.5/9.0
	88-111	8.5/9.0
	111-134	8.5/9.0
	134-178	8.5
	178-196	8.5/9.0
<u>PROFILE NO. GP 71</u>	Surface	5.5
	0-32	6.0
	32-40	6.0
	40-57	6.5
	57-74	7.5
	74-100	8.5
	100-119	8.5
	119-161	8.5/9.0
	161-194	8.5/9.0
<u>PROFILE NO. GP 72</u>	Surface	6.0
	0-31	5.5
	31-38	5.5
	38-56	6.0
	56-85	7.5
	85-187	9.0
	187-195	9.0
<u>PROFILE NO. GP 73</u>	0-45	8.5
	45-76	7.5
	76-135	8.5/9.0
	135-174	9.0
	174-198	8.5/9.0

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 74</u>	0-15	6.5
	15-41	7.0
	41-61	8.5
	61-196	8.0
	196-214	8.5
	214+	-
<u>PROFILE NUMBER GP 75</u>	0-22	6.0
	22-30	6.0
	30-61	8.0
	61-96	9.0
	96-115	9.0
	115-151	8.5/9.0
	151-214	8.5
<u>PROFILE NUMBER GP 76</u>	Surface	6.0
	0-30	8.5/9.0
	30-58	8.5/9.0
	58-74	8.0
	74-100	8.5
	100-130	8.5/9.0
	130-170	9.0
	170-230	8.5
<u>PROFILE NUMBER GP 77</u>	Surface	6.0
	0-25	8.5
	25-39	8.5/9.0
	39-57	8.5
	57-97	8.5
	97+	-
<u>PROFILE NUMBER GP 78</u>	Not available	
<u>PROFILE NUMBER GP 79</u>	Surface	6.5
	0-20	7.0
	20-41	8.5/9.0
	41-62	9.0
	62-112	9.0
	112-143	9.0
	143-176	-
<u>PROFILE NUMBER GP 80</u>	Surface	6.0
	0-14	7.0
	14-29	8.0
	29-65	8.5/9.0
	65-146	9.0
	146-167	9.0
<u>PROFILE NUMBER GP 81</u>	Surface	6.0
	0-29	6.5
	29-50	7.0
	50-72	7.0
	72-97	8.5
	97-122	8.5/9.0
	122-160	8.5/9.0
	160-180	9.0

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 82</u>	Surface	6.5
	0-18	7.0
	18-32	6.5
	32-64	6.0
	64-113	7.5
	113-131	8.5
	131-170	9.0
<u>PROFILE NUMBER GP 83</u>	0-26	8.0
	26-38	9.0
	38-62	9.0
	62-74	8.5/9.0
	74-139	9.0
	139-159	9.0
<u>PROFILE NUMBER GP 84</u>	Surface	5.5/6.0
	0-35	6.0
	35-66	6.5
	66-107	7.0
	107-176	8.0
<u>PROFILE NUMBER GP 85</u>	Surface	6.0
	0-30	6.5
	30-68	7.0
	68-90	9.0
	90-126	8.5
	126-138	9.0
	138-162	
	162-167	
167-186		
<u>PROFILE NUMBER GP 86</u>	Surface	6.0
	0-14	6.0
	14-50	7.0
	50-75	8.5/9.0
	75-175	8.5/9.0
<u>PROFILE NUMBER GP 87</u>	Surface	6.0
	0-37	6.0
	37-52	6.0
	52-74	6.0
	74-128	7.0
	128-173	9.0
<u>PROFILE NUMBER GP 88</u>	Surface	6.0
	0-18	7.5
	18-48	8.5
	48-66	9.0
	66-88	9.0
	88-118	9.0
118-178	9.0	
<u>PROFILE NUMBER GP 89</u>	Surface	6.5
	0-26	6.5
	26-33	8.0
	33-82	8.0
	82-162	8.5/9.0
	162-192	9.0

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 90</u>	0-4	5.5
	4-21	5.5/6.0
	21-29	6.0
	29-51	7.5
	51-103	8.5/9.0
	103-144	9.0
	144-172	9.0
<u>PROFILE NUMBER GP 91</u>	0-8	6.5
	8-37	7.5
	37-53	8.5/9.0
	53-111	8.5/9.0
	111-161	8.5/9.0
<u>PROFILE NUMBER GP 92A</u>	Surface	6.0
	0-10	6.5
	10-44	8.0
	44-63	8.5
	63-90	8.5/9.0
	90-174	8.5
<u>PROFILE NUMBER GP 92B</u>	Surface	5.5/6.0
	0-8	6.0
	8-30	7.0
	30-54	7.5
	54-84	7.5/8.0
	84-130	8.0
	130-161	8.0
	161-200	8.5
<u>PROFILE NUMBER GP 93</u>	Surface	5.5
	0-43	5.5
	43-56	6.5/7.0
	56-74	8.0
	74-111	8.5
	111-177	8.5
<u>PROFILE NUMBER GP 94</u>	Surface	5.5
	0-12	5.5/6.0
	12-52	5.5
	52-73	6.0
	73+	
<u>PROFILE NUMBER GP 95</u>	Surface	6.0
	0-40	8.5
	40-58	8.5/9.0
	58-112	8.5
	112-147	8.5/9.0
	147-177	85./9.0
<u>PROFILE NUMBER GP 96</u>	Not available	

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 97</u>	0-19	6.0
	19-79	7.0
	79-121	8.0
	121-170	-
<u>PROFILE NUMBER GP 98</u>	Surface	6.5
	0-40	8.5
	40-78	8.5
	78-103	8.0
	103-156	8.0
	156-176	9.0
<u>PROFILE NUMBER GP 99</u>	Surface	5.5
	0-21	5.5
	21-37	6.0
	37-69	6.5
	69+	-
<u>PROFILE NUMBER GP 100</u>	0-8	5.5/6.0
	8-32	6.0
	32-57	7.0
	57-95	7.5
	95-115	8.0
	115-177	8.5
<u>PROFILE NUMBER GP 101</u>	0-10	6.0
	10-33	5.5
	33-50	5.5
	50-106	7.5/8.0
	106-135	8.5
	135-182	8.5
<u>PROFILE NUMBER GP 102</u>	0-4	6.0
	4-40	5.5/6.0
	40-63	5.5/6.0
	63-101	6.0
	101-178	7.0
<u>PROFILE NUMBER GP 103</u>	Surface	5.5
	0-40	5.5
	40-49	6.5/7.0
	49-68	7.0
	68-142	8.5/9.0
	142-162	9.0
<u>PROFILE NUMBER GP 104</u>	Surface	6.5
	0-44	5.5
	44-64	5.5
	64-114	6.5/7.0
	114-150	8.5/9.0
	150-200	8.5/9.0

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 105</u>	Surface	6.0
	0-30	7.0
	30-53	9.0
	53-74	9.0
	74-108	9.0
	108-158	8.5
	158-178	9.0
<u>PROFILE NUMBER GP 106</u>	Surface	5.5
	0-32	5.5
	32-38	5.5/6.0
	38-59	6.0
	59-92	8.5/9.0
	92-158	9.0
	158-170	9.0
<u>PROFILE NUMBER GP 107</u>	Surface	5.5
	0-33	6.0
	33-51	8.0
	51-71	8.0
	71-180	8.5
<u>PROFILE NUMBER GP 108</u>	Surface	5.0
	0-20	5.5
	20-55	5.5/6.0
	55-73	5.5/6.0
<u>PROFILE NUMBER GP 109</u>	0-6	6.0
	6-53	5.0
	53-62	6.5
	62-86	6.0
	86-172	7.5
	172-194	8.0
<u>PROFILE NUMBER GP 110</u>	Surface	4.5
	0-18	5.0
	18-46	5.0
	46-57	4.5
<u>PROFILE NUMBER GP 111</u>	Similar to GP 109	
<u>PROFILE NUMBER GP 112</u>	Not available. Rock sample taken at 120 cm	
<u>PROFILE NUMBER GP 113</u>	Surface	6.0
	0-61	6.0
	61-102	7.5
	102-122	7.5
	122-168	8.5
	168-180	8.5/9.0
<u>PROFILE NUMBER GP 114</u>	0-5	5.5
	5-35	5.5
	35-79	6.0
	79-108	6.0
	108+	-

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 115</u>	Surface	6.0
	0-37	6.0
	37-51	8.5
	51-76	9.0
	76-123	9.0
	123-187	9.0
<u>PROFILE NUMBER GP 116</u>	0-6	8.0
	6-21	8.5/9.0
	21-43	9.0
	43-80	9.0
	80+	-
	<u>PROFILE NUMBER GP 117</u>	0-5
5-33		7.5
33-74		9.0
74-91		9.0
91-144		9.0
144-180		9.0
<u>PROFILE NUMBER GP 118</u>	Not available	
<u>PROFILE NUMBER GP 119</u>	0-20	4.5
	20-71	5.5/6.0
	71-101	8.5
	101+	-
<u>PROFILE NUMBER GP 120</u>	0-5	5.5
	5-63	6.0
	63-94	7.5
	94-163	8.0
	163-170	8.5/9.0
<u>PROFILE NUMBER GP 121</u>	0-5	5.5
	5-44	5.5
	44-86	6.5
	86-134	7.5
	134-147	8.5/9.0
	147-190	8.5/9.0
<u>PROFILE NUMBER GP 122</u>	0-5	6.0
	5-34	7.0
	34-82	9.0
	82-102	9.0
	102-175	8.5
	175-192	9.0
<u>PROFILE NUMBER GP 123</u>	Surface	5.5
	0-30	6.0
	30-41	6.0
	41-82	7.5
	82-102	8.5
	102-199	9.0
<u>PROFILE NUMBER GP 124</u>	0-13	6.0
	13-38	5.5
	38-58	5.5
	58-133	6.0
	133-175	8.5

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 125</u>	0-18	5.5
	18-56	5.0
	56-92	6.0
	92-138	8.5
	138-183	9.0
<u>PROFILE NUMBER GP 126</u>	0-30	8.0
	30-57	7.0
	57-125	8.5
	125-185	9.0
<u>PROFILE NUMBER GP 127</u>	0-20	6.5
	20-63	5.5/6.0
	63-92	5.5/6.0
	92-137	7.0
	137-187	8.5/9.0
<u>PROFILE NUMBER GP 128</u>	0-8	6.5
	8-34	7.0
	34-98	6.0
	98-182	6.0
<u>PROFILE NUMBER GP 129</u>	0-28	5.5
	28-35	6.0
	35-62	8.0
	62-146	9.0
	146-176	9.0
<u>PROFILE NUMBER GP 130</u>	0-37	5.0
	37-59	5.5
	59-125	6.0
	125-159	6.5
	159+	-
<u>PROFILE NUMBER GP 131</u>	0-6	5.5/6.0
	6-25	6.0
	25-72	6.0
	72-107	6.5/7.0
	107-180+	
<u>PROFILE NUMBER GP 132</u>	0-6	6.0
	6-42	6.5
	42-82	7.0
	82-122	9.0
	122-150+	8.5
<u>PROFILE NUMBER GP 133</u>	0-23	5.5
	23-32	6.0
	32-87	8.5/9.0
	87-171	9.0
<u>PROFILE NUMBER GP 134</u>	0-5	5.5
	5-55	5.5
	55-77	7.0
	77-129	8.5
	129-178	9.0

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 135</u>	0-36	4.5
	36-42	5.5
	42-67	6.5
	67-101	8.5
	101-149	9.0
	149-179	8.5/9.0
<u>PROFILE NUMBER GP 136</u>	0-6	5.5
	6-57	6.0
	57-85	7.5/8.0
	85-121	9.0
	121-189	9.0
<u>PROFILE NUMBER GP 137</u>	0-50	5.0
	50+	
<u>PROFILE NUMBER GP 138</u>	0-8	6.0
	8-23	6.0
	23-31	6.0
	31-54	7.5
	54-78	9.0
	78-188	9.0
<u>PROFILE NUMBER GP 139</u>	0-15	8.0
	15-43	9.0
	43-92	9.0
	92-134	9.0
	134+	
<u>PROFILE NUMBER GP 140</u>	0-21	5.5
	21-29	6.0
	29-46	7.5
	46-154	8.0
	154-174	6.5
<u>PROFILE NUMBER GP 141</u>	0-12	8.0
	12-30	7.5/8.0
	30-60	8.0
	60-100	9.0
	100-127	9.0
	127+	-
<u>PROFILE NUMBER GP 142</u>	0-20	6.0
	20-47	6.0
	47-81	9.0
	81-115	9.0
	115-174	9.0
	174+	-
<u>PROFILE NUMBER GP 143</u>	0-9	6.5
	9-50	6.0
	50-98	6.5
	98-126	8.0
	126-198+	-

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 144</u>	0-12	5.5/6.0
	12-32	6.0
	32-63	8.0
	63-136	8.5/9.0
	136-168	9.0
	168+	
<u>PROFILE NUMBER GP 145</u>	0-15	5.5
	15-42	5.5
	42-50	6.0
	50-63	7.5
	63-137	9.0
	137-197	9.0
<u>PROFILE NUMBER GP 146</u>	0-23	5.5
	23-43	7.0
	43-72	9.0
	72-112	9.0
	112-158	9.0
	158-178	9.0
<u>PROFILE NUMBER GP 147</u>	0-34	6.5
	34-74	6.5
	74-93	8.5
	93-135	9.0
	135-182	9.0
<u>PROFILE NUMBER GP 148</u>	0-6	6.0
	6-28	5.5
	28-46	6.5
	46-95	8.5
	95-125	9.0
	125-184	8.5
<u>PROFILE NUMBER GP 149</u>	0-7	6.0
	7-31	5.5
	31-39	6.0
	39-63	6.5/7.0
	63-171	9.0
	171-185	9.0
<u>PROFILE NUMBER GP 150</u>	0-6	6.0
	6-24	6.0
	24-28	7.0
	28-75	8.5
	75-167	9.0
	167-179	9.0
<u>PROFILE NUMBER GP 151</u>	0-12	6.0
	12-39	5.5/6.0
	39-65	7.0
	65+	8.0/8.5
<u>PROFILE NUMBER GP 152</u>	0-20	5.5
	20-40	6.0
	40-61	9.0
	61-174	9.0

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 153</u>	0-34	5.5
	34-40	5.5/6.0
	40-106	8.5
	108-147	9.0
	147-198	9.0
<u>PROFILE NUMBER GP 154</u>	0-17	6.5
	17-45	5.5/6.0
	45-89	6.5
	89-118	8.0
	118-139	8.5
	139-162	8.5/9.0
	162-187	8.5/9.0
<u>PROFILE NUMBER GP 155</u>	0-15	7.5
	15-32	5.5/6.0
	32-44	5.5/6.0
	44-135	6.5
	135-153	8.0
	153-185	8.0
<u>PROFILE NUMBER GP 156</u>	0-20	5.5
	20-31	5.5/6.0
	31-44	5.5/6.0
	44-88	7.5
	88-123	9.0
	123-202	9.0
<u>PROFILE NUMBER GP 157</u>	0-28	5.0
	28-42	5.5
	42-68	6.5
	68-97	8.5
	97-136	9.0
	136-188	9.0
<u>PROFILE NUMBER GP 158</u>	Similar to GP 157 except for the 0-20 cm horizon	
	0-20	5.5
<u>PROFILE NUMBER GP 159</u>	0-16	6.0
	16-40	5.5
	40-51	5.5
	51-77	6.0
	77-122	7.0
	122-137	8.0
	137-177	8.5
	177-199	9.0
<u>PROFILE NUMBER GP 160</u>	0-13	6.0
	13-37	6.0
	37-52	6.0
	52-77	7.0
	77-98	8.5
	98-150	8.5
	150-195	8.5

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 161</u>	0-20	6.0
	20-49	8.5
	49-105	8.0
	105-158	8.5
	158-188	9.0
<u>PROFILE NUMBER GP 162</u>	0-20	6.5
	20-36	7.5
	36-45	7.5
	45-97	9.0
	97-151	9.0
	151-184	9.0
<u>PROFILE NUMBER GP 163</u>	0-33	7.5
	33-104	9.0
	104-138	9.0
<u>PROFILE NUMBER GP 164</u>	0-11	7.5
	11-54	9.0
	54-160	9.0
<u>PROFILE NUMBER GP 165</u>	0-10	9.0
	10-35	9.0
	35-57	9.0
	57-143	9.0
	143-183	9.0
<u>PROFILE NUMBER GP 166</u>	0-13	6.0
	13-26	6.0
	26-36	6.0
	36-70	8.0
	70-101	9.0
	101-157	9.0
	157-187	9.0
<u>PROFILE NUMBER GP 167</u>	0-8	5.5
	8-15	6.0
	15-64	8.0
	64-95	8.5/9.0
	95-177	8.5/9.0
	177-189	8.5/9.0
<u>PROFILE NUMBER GP 168</u>	0-15	6.0
	15-25	6.0
	25-55	6.5/7.0
	55-82	9.0
	82-127	9.0
	127-158	9.0
	158-185	9.0
<u>PROFILE NUMBER GP 169</u>	0-15	6.0
	15-31	6.0
	31-57	7.5
	57-81	9.0
	81-115	9.0
	115+	-

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 170</u>	0-9	6.0
	9-22	7.0
	22-57	7.5/8.0
	57-80	7.5/8.0
	80-110	9.0
	110-185	9.0
<u>PROFILE NUMBER GP 171</u>	0-15	6.0
	15-42	6.0
	42-56	6.0
	56-82	5.5
	82-135	6.0
	135+	-
<u>PROFILE NUMBER GP 172</u>	0-15	6.0
	15-47	6.0
	47-80	6.5
	80-164	6.0
	164-175	7.5
	175+	-
<u>PROFILE NUMBER GP 173</u>	0-15	6.0
	15-37	6.0
	37-47	6.0
	47-98	7.0
	98-140	9.0
	140-180	9.0
<u>PROFILE NUMBER GP 174</u>	0-15	6.0
	15-34	6.5/7.0
	34-58	9.0
	58-118	9.0
	118-176	9.0
<u>PROFILE NUMBER GP 175</u>	Surface	6.0
	0-24	6.0
	24-30	6.0
	30-58	8.0
	58-165	9.0
	165-185	9.0
<u>PROFILE NUMBER GP 176</u>	0-10	6.0
	10-38	8.0
	38-146	9.0
	146-198	9.0
<u>PROFILE NUMBER GP 177</u>	0-20	6.0
	20-58	7.5
	58-85	7.5/8.0
	85-139	8.5
	139-194	8.5/9.0

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 178</u>	0-3	7.0
	3-19	7.5
	19-44	9.0
	44-98	9.0
	98-198	9.0
	198-220	9.0
<u>PROFILE NUMBER GP 179</u>	0-13	7.0
	13-52	9.0
	52-122	9.0
	122-218	9.0
<u>PROFILE NUMBER GP 180</u>	0-9	6.0
	9-59	8.5
	59-85	9.0
	85-139	9.0
	139-227	8.5/9.0
<u>PROFILE NUMBER GP 181</u>	Surface	5.5/6.0
	0-11	6.0
	11-33	6.0
	33-61	6.5
	61-90	6.5
	90-119	7.0
	119-148	8.0
	148-208	8.5
208-223	8.5	
<u>PROFILE NUMBER GP 182</u>	0-30	5.5/6.0
	30-77	6.0
	77-154	6.5
	154-248	7.0
	248-348	9.0/9.5
<u>PROFILE NUMBER GP 183</u>	0-15	6.0
	15-61	6.5
	61-140	7.0
	140-191	5.0
	191-206	5.5
<u>PROFILE NUMBER GP 184</u>	0-15	7.0
	15-38	6.0
	38-76	6.0
	76-259+	
<u>PROFILE NUMBER GP 185</u>	0-10	5.5/6.0
	10-20	6.5
	20-53	8.5
	53-110	9.0
	110-182	9.0
	182-222	9.0
<u>PROFILE NUMBER GP 186</u>	0-8	6.5
	8-46	9.0
	46-104	9.0
	104-173	8.5
	173-211	7.5

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 187</u>	0-23	6.5/7.0
	23-33	7.0
	33-76	9.0
	76-147	9.0
	147-180	9.0
<u>PROFILE NUMBER GP 188</u>	0-36	8.5
	36-114	9.0
	114-152	5.5
<u>PROFILE NUMBER GP 189</u>	0-9	6.5/7.0
	9-23	7.5
	23-46	8.5
	46-81	9.0
	81-183	5.5
<u>PROFILE NUMBER GP 190</u>	0-8	7.0
	8-30	6.5
	30-46	6.5
	46-89	8.0
	89+	-
<u>PROFILE NUMBER GP 191</u>	0-10	5.5
	10-36	6.5
	36-107	8.5
	107-170	-
<u>PROFILE NUMBER GP 192</u>	0-23	6.0
	23-46	7.0
	46-61	8.5/9.0
	61-163	8.5
	163-180	9.0
<u>PROFILE NUMBER GP 193</u>	0-18	6.0
	18-38	6.0
	38-71	7.0
	71-124	8.0
	124-163	8.5
	163-178	8.5
<u>PROFILE NUMBER GP 194</u>	0-10	6.5
	10-45	6.5
	45-100	8.5
	100-120	8.5
	120-184	8.5
	184-248	8.5
<u>PROFILE NUMBER GP 195</u>	0-16	5.5
	16-72	9.0
	72-112	9.0
	112-239	8.5

	<u>Horizon (cm)</u>	<u>pH</u>
<u>PROFILE NUMBER GP 196</u>	0-16	6.0
	16-49	7.0
	49-70	7.5
	70-231	8.0
<u>PROFILE NUMBER GP 197</u>	0-6	6.0
	6-40	9.0
	40-85	9.0
	85-180	8.5
	180-206	8.5/9.0
<u>PROFILE NUMBER GP 198</u>	0-93	6.5/7.0
	93-185	9.0
	185-300	9.0
	300-342	8.5
<u>PROFILE NUMBER GP 199</u>	Surface	5.5/6.0
	0-7	6.5
	7-38	7.5
	38-112	8.5
	112-161	8.0
	161-206	8.0