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BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

BULLETIN No. 65

CHEMICAL ANALYSES OF AUSTRALIAN ROCKS. PART I: IGNEOUS AND METAMORPHIC

COMPILED BY

GERMAINE A. JOPLIN

Department of Geophysics, Australian National University

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INTRODUCTION

Content

This compilation includes analyses of igneous, metamorphic, and sedimentary rocks from all Australian States, Territories, and Protectorates, although the list of analysed rocks from Australian Antarctica is probably not complete.

Part 1—this Bulletin—contains analyses of igneous and metamorphic rocks as well as analyses of natural slags, sinters and clinkers. Part 2 will contain analyses of sedimentary rocks.

Analyses of minerals, of coal and related materials, and of ore-stuffs and lode materials are excluded. Analyses of weathered, deuterically altered and metasomatically altered rocks are listed in separate tables, as their inclusion may prove useful to those making special studies of alteration phenomena. In some cases it has been diffcult to make a distinction between the metasomatically altered rocks and lode materials, and the compilation possibly errs on the side of including some rocks which might be regarded more properly as ores.

I have attempted to make the compilation as complete as possible, and old, unreliable, and incomplete analyses are included, because I believe that, though the discriminating petrologist will use them only with the greatest of caution, he may find them useful in leading to early work in a particular area and in showing up chemical peculiarities of rocks in certain areas; furthermore, these analyses have some historical value and are thus made accessible to the 'scientific historian'. One particular group of analyses, Appendix 3 of the Broken Hill Memoir (listed as Chemical Staff Broken Hill Mines) contains the results of work by several different analysts—highly efficient chemists and learners—using the same rock material, and this, in itself, is of interest as a study of reliability and reproducibility; though some petrologists would regard these analyses as unreliable, they are included in the general tables.

Two 'analyses' have been omitted, namely the granite from Mount Eliza, Victoria, and the granite gneiss from Olary, South Australia; for, though quoted in some later publications with chemical analyses, they are in fact calculated analyses.

Presentation

Arrangement of Analyses. The analyses have been arranged, so far as possible, lithologically—granitic rocks, dioritic rocks, basaltic rocks, etc. With the assistance of Professor A. F. Wilson I have attempted to separate granitic and dioritic rocks that are probably of igneous origin from rocks of granitic and dioritic composition that are of metamorphic origin. This scheme is probably too ambitious, and those searching for rocks of this composition are advised to consult both tables.

Another difficulty has arisen with regard to the pyroclastic rocks, for those occurring in the volcanic fields of the Territory of Papua and New Guinea are so closely related to the lavas that they should not be separated from them, whereas elsewhere bedded tuffs among the older formations are commonly fossiliferous and appear to be true sediments. Some pyroclastic rocks are, therefore, listed in Part 1 and others in Part 2. The compilation of porphyries and porphyrites has also proved difficult, as there are many old records of porphyries and porphyrites that have since proved to be lavas; so these rocks, whether they be lavas or minor intrusions associated with granites, are listed according to their composition either with rhyolitic rocks or with andesitic rocks.

The question of arrangement has been given serious thought, and I decided not to use the normative method of presentation for several reasons; mainly because it meant excluding incomplete analyses, which are often useful, and also because a simple method of comparison of oxides in the actual analysis seemed more desirable than a method involving tables and calculations.

As most igneous rock classifications are based on the composition and relative amounts of the feldspars, an arrangement using SiO_2, CaO, Na_2O, and K_2O seemed the best to adopt. The method has been designed for use as a means of bringing together rocks of similar chemical composition rather than as a means of classification, although some classification is implicit in the initial grouping according to lithologically similar types.

In order to compare a particular analysis with others of similar composition, the search first involves a decision as to whether the analysis is one of a granitic, dioritic, rhyolitic rock, etc. Having thus selected the appropriate table, or tables, it is then necessary only to inspect the analysis for the amount of SiO_2 and CaO and to make a simple division of the alkalis, which may be done direct from the analysis. Thus a granitic rock may fall into Table A if SiO_2 is greater than 70% or into Table B if less than 70%.

If the amount of CaO is less than 1% it would fall into subdivision 'a' of either table, if between 1% and 2% into subdivision 'b' and so on. The analyses are numbered consecutively in each subdivision, and are arranged according to their alkali ratio, there normally being three groups, K_2O/Na_2O greater than 1·25, K_2O/Na_2O equal to 1·25-0·75, and K_2O/Na_2O less than 0·75 within each subdivision. Within each of these minor groups the analyses are arranged in descending order of SiO_2. Thus an analysis containing 69% SiO_2 and 1·5% CaO would fall into the division Bb, and be compared with other analyses in that division.

A slightly different arrangement has been adopted for the basaltic rocks. As the CaO content of these rocks is very high and the amount of alkalis may be of great significance, an alkalinity ratio (CaO/alk) has been used instead of a direct comparison of the amount of lime. Furthermore, because of the importance of Na_2O in some of these rocks an extra subdivision has been erected for the sodic basic rocks, namely K_2O/Na_2O less than 0·3.

Again different ratios have been used for the metamorphosed sedimentary rocks, the non-calcareous pelites and psammites being divided on the basis of the SiO_2/Al_2O_3 ratio and the calcareous group on the CaO/MgO ratio.

As an inspection of the tables will show how each has been arranged they need not be explained in detail. Several analyses appear in two tables; for instance, certain diorites stated to be hybrids or xenoliths may appear in Table D as well as in Tables F or G.

Each lithological group is followed by analyses of its metamorphosed, metasomatized or deuterically altered, and weathered equivalents, and by incomplete and old analyses belonging to this group. These carry the letter of the main table, and are distinguished by the index number 1, 2, 3, 4, and 5 respectively. To avoid confusion the same index number is always reserved for a particular group; thus if there are no weathered rocks or incomplete analyses of a certain lithological group, the main table may be followed only by 1, 2, and 5. Tables S, T, U, V, W, X, and Y contain only metamorphic rocks, so there are no tables carrying index number 1 associated with them.

A slightly different arrangement of these minor tables follows the two lithological groups that have been divided into several tables—the granites, Tables A and B, and the basalts, Tables L, M, N, and O. Altered granitic rocks are listed in Tables AB^1, AB^2 etc., and metasomatized and weathered basaltic rocks are listed as L^2-O^2 and L^3-O^3, etc. Because there are a large number of metamorphosed basaltic rocks, and it is assumed that their composition has not been radically changed as a result of metamorphism, these rocks are listed in three separate tables—LM^1, N^1 and O^1.

For convenience of separation the larger groups of metasomatized and deuterically altered rocks have been subdivided according to the predominant process of alteration—albitization, chloritization, etc.

Incomplete analyses in which the oxides necessary for classification have been determined are to be found in the main tables and are not listed as incomplete analyses, and in many cases incomplete analyses are listed among the metasomatically altered and weathered rocks.

Other Remarks on the Tables

In many cases the actual rock name given in the earliest reference differs from that of later references, and as I have no access to the specimen and cannot decide which is the more appropriate name, I have commonly taken the more recent name. If this, or the old original name, conflicts with the chemical composition, I have quoted it in inverted commas, and in some instances have made some comment in 'Remarks'.

If the rock has a formal name, this is given, in italics beneath the lithological name.

References to the literature are given above each analysis; the numbers in bold type correspond to the numerical list of alphabetically arranged author's names on page 425, whilst the second number

refers to the page on which the analysis appears in the reference cited. Several references are given for many analyses, as quite commonly a second or third reference gives a description of the rock and relates it to others in the area, whereas the first may appear only as an analysis in a laboratory report: if the analysis is listed in Washington's compilation this is also noted.

Owing to lack of space, only very brief and somewhat general localities are given. The petrologist, using the analysis for comparison, probably needs nothing more precise, but those requiring further information may get it from the reference. In the case of analyses not previously published, or that are unlikely to appear in a later publication, a more detailed reference is given. Rock analyses by, or for, the Bureau of Mineral Resources are commonly from areas where place names are few, and specimens have been pin-pointed on air photographs; for such analyses only very general localities are given here, because many of them will be re-published in bulletins, accompanied by regional maps, now in the course of preparation.

In some cases it has been found that the summation of the published analysis is incorrect; this has been corrected, but as it is not known whether the actual total or one of the constituent oxides was misprinted, the new summation is shown in square brackets. When an author has added a corrigendum in a later publication, this publication is also quoted as a reference to the analysis.

There is a geographical index arranged according to States, Territories, and Protectorates, and after each place name the symbols Ab110, Bc2, etc. refer to the rocks from that particular locality that have been analysed and may be looked up in the appropriate table. An index of rock names directs readers to the table or tables in which they occur.

The following abbreviations have been used:

abs	=	absent
p	=	present
pnd	=	present not determined
tr	=	trace, less than 0·01%
nd	=	not determined
N.D.	=	not detected by ordinary chemical means
A.M.D.L.		Australian Mineral Development Laboratory.

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Miss Ruth Penrose searched many copies of the New South Wales Department of Mines Annual Reports for chemical analyses and Miss Edith Smith went through the publications of the Australian Institute of Mining and Metallurgy: to both I am extremely grateful. Mrs G. Bartlett, of the Bureau library also gave much valuable help.

I should also like to acknowledge the kindness of Dr D. E. Thomas of the Geological Survey of Victoria, Mr E. O. Rayner of the Geological Survey of New South Wales, Dr L. W. Samuel and Mr G. H. Payne of the Western Australian Government Chemical Laboratories and Mr J. H. Lord of the Geological Survey of Western Australia for making available unpublished analyses in the records of their departments. Professors A. R. Alderman and A. F. Wilson, Drs J. F. Lovering, C. T. McElroy, A. H. Spry, F. J. Stephenson, N. C. Stevens, T. G. Vallance, K. R. Walker, J. F. G. Wilkinson, and H. G. Wilshire, and Messrs D. R. Pinkstone and H. Yates also generously contributed unpublished analyses, and to all I offer my grateful thanks.

Finally I should like to thank Mr K. A. Townley and Mr D. S. Trail, who have edited this Bulletin, for their assistance and kindly advice.

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	1	2	3	4	5	6	7	8	9
Rock Name	Mica Aplite	Granite *Elizabeth Creek Granite*	Granite	Leucogranite *Yaouk Leuco-granite*	Acid Granite	Granite	Granite	Granite *Dumbano Granite*	Micro-granite
Locality	Youanmi, W.A.	40 miles S.W. of Mareeba, Qld.	Norseman, W.A.	Near Shannons Flat, Cooma Area, N.S.W.	Tingha, N.S.W.	Res. 13570 No. 1 Rabbit Proof Fence, W.A.	Hartley, N.S.W.	55 miles S. of Einasleigh, Qld.	Rossarden, Tas.
Reference	**563**	**95**	**67**, 28; **447**, 18; **456**, 7; **554**, 73	**472**, 194	**350**, 185; **554**, 71	**563**	**366**, 98	**95**	**38**, 28
Analyst	H. P. Rowledge	A. McClure	J. H. Brooking	R. Rudowski & E. Unwin	N.S.W. Dept. Mines	D. G. Murray	N.S.W. Dept. Mines	A. McClure	W. St C. Manson
Remarks		*Loss on ignition						*Loss on ignition	
Sp. Gr.	2·69	—	2·64	—	—	2·62	—		—
SiO_2	79·79	78·36	78·35	78·33	78·14	78·12	77·68	77·58	77·54
Al_2O_3	12·85	12·18	11·56	12·14	11·89	12·28	13·84	12·59	12·91
Fe_2O_3	0·77	0·60	0·61	0·33	0·60	0·33	tr.	1·14	0·86
FeO	tr.	0·37	0·90	0·47	0·27	0·36	—	0·02	nd.
MgO	0·31	abs.	0·61	0·08	0·15	0·03	tr.	0·10	0·16
CaO	tr.	0·44	0·02	0·42	0·44	0·85	tr.	0·29	tr.
Na_2O	0·32	2·95	2·86	2·98	3·51	3·10	0·69	2·58	2·98
K_2O	4·10	4·92	3·97	5·00	4·62	4·82	5·56	4·60	5·01
H_2O+	1·74	0·62*	0·12	0·55	0·28	0·42	} 2·10	0·34*	} 1·00
H_2O-	abs.	0·13	0·24	0·07	0·32	0·12		0·33	
CO_2	abs.	—	0·19	abs.	—	abs.	—	—	—
TiO_2	0·04	0·02	0·18	0·08	0·06	0·06	tr.	0·11	0·07
P_2O_5	0·03	0·06	—	0·04	0·02	abs.	tr.	0·04	—
MnO	0·10	0·07	0·03	0·03	0·02	0·03	—	0·06	abs.
Other Constituents	BaO = 0·11		FeS_2 = 0·11		ZrO_2 = 0·03 SO_3 = 0·05	FeS_2 = abs.			
	100·16	100·72	99·75	100·52	100·40	100·52	99·87	99·78	100·53

TABLE A — GRANITIC ROCKS — SiO_2>70%

a. CaO<1%

K_2O/Na_2O>1·25

	10	11	12	13	14	15	16	17	18
Rock Name	Granite *Elizabeth Creek Granite*	Aplitic Granite	Leucogranite *Bunyan Leucogranite*	Granite	Granite	Aplite	Aplite	Aplite	Leucogranite *Nanambu Granite*
Locality	S.W. of Mareeba, Qld.	Bowenfels, N.S.W.	Cooma Creek, Bunyan, N.S.W.	Blue Tier, Tas.	S.E. Everard, Ra, S.A.	Wallaroo, S.A.	Gong Gong, Ballarat, Vic.	Hartley, N.S.W.	South Alligator R., N.T.
Reference	**95**	**352**, 198; **554**, 71	**472**, 194	**417**, 20	**95**	**550**, 39	**591**, 96	**247**, 53	**95**
Analyst	A. McClure	N.S.W. Dept. Mines	Rudowski & Unwin	—	S. Baker	T. R. Frost	H. Yates	G. A. Joplin	S. Baker
Remarks	*Loss on ignition	*Spectroscopic	Formerly "White Gneiss"	Tin-bearing	*Loss on ignition	Kaolinized			*Loss on ignition
Sp. Gr.	—	2·622	—	—	—	—	—	2·603	—
SiO_2	77·47	77·28	77·13	77·00	77·00	76·96	76·96	76·94	76·86
Al_2O_3	12·38	11·90	12·53	13·80	12·63	12·84	13·04	13·98	12·39
Fe_2O_3	0·92	1·30	0·17	2·57	0·30	0·53	0·65	0·18	0·96
FeO	0·67	0·18	0·27	1·29	1·01	0·23	0·25	0·27	0·36
MgO	0·03	0·10	0·46	0·29	0·47	0·14	0·08	0·06	0·13
CaO	0·36	0·80	0·64	abs.	0·81	0·06	0·33	0·78	0·79*
Na_2O	3·25	3·01	3·22	1·22	1·80	0·18	3·54	2·68	2·44
K_2O	4·61	5·26	4·87	1·85	4·61	5·28	4·96	4·67	5·43
H_2O+	0·52*	0·38	0·55	—	0·53*	2·55	0·44	0·39	0·50*
H_2O-	0·09	0·07	0·05	1·68	abs.	0·42	0·03	0·11	abs.
CO_2	—	abs.	0·03	—	—	—	—	—	—
TiO_2	0·03	0·12	0·12	—	0·08	0·61	0·07	0·16	0·07
P_2O_5	0·03	0·04	0·03	—	0·11	—	0·02	0·02	0·02
MnO	0·02	tr.	0·03	—	0·06	—	—	tr.	0·02
Other Constituents		Cl=tr. SrO=tr. Li_2O=p*		SnO=0·06 F=4·38		SO_3=0·02 Cl=0·01			
				104·14					
Less O= Cl, F, S.				1·85					
	100·38	100·44	100·10	102·29	99·41	99·83	100·37	100·24	99·97

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	19	20	21	22	23	24	25	26	27
Rock Name	Granite	Granite	Potash-soda Leucogranite	Aplite	Granite *Sybella Granite*	Granite *Jackson Granite*	Granophyre *Mt. Barney Granophyre*	Granite	Granite *Lochaber Granite*
Locality	40 miles S. of Einasleigh, Qld.	Encounter Bay, S.A.	Tintinara District, S.A.	Encounter Bay, S.A.	N.W. of Mt. Isa, Qld.	12 miles S. of Brinda-bella, N.S.W.	Mt. Barney, Qld.	Pine Mt. Ck.,Cudgewa, Vic.	50 miles S. of Einasleigh, Qld.
Reference	**95**	**95**	**319**, 267	**51**, 26	**95**	**95**	**487**; **486**	**142**, 82	**95**
Analyst	A. McClure	S. Baker	E. R. Segnit	W. R. Browne	A. McClure	J. C. Watts	E. L. P. Mercy	F. F. Field	A. McClure
Remarks	*Loss on ignition	*Loss on ignition			*Loss on ignition				*Loss on ignition
Sp. Gr.	—	—	2·612	2·59	—		—	—	—
SiO_2	76·84	76·82	76·77	76·65	76·61	76·6	76·6	76·60	76·58
Al_2O_3	12·78	10·78	12·53	12·98	11·66	12·1	12·1	12·14	12·41
Fe_2O_3	0·73	0·10	0·56	0·25	0·63	0·68	0·99	1·01	0·57
FeO	0·28	1·50	0·69	0·32	1·65	0·53	0·57	0·26	0·64
MgO	0·03	0·93	0·04	abs.	0·20	0·10	0·26	tr.	0·18
CaO	0·32	0·50	0·58	0·40	0·88	0·66	0·74	0·49	0·54
Na_2O	3·75	2·65	3·47	2·64	1·40	3·60	3·2	3·29	3·54
K_2O	4·84	5·18	4·83	6·18	5·48	4·80	5·3	5·26	4·90
H_2O+	0·66*	0·79*	0·26	0·29	0·46	0·42	0·67	0·71	0·39*
H_2O-	0·18	0·03	0·12	0·17	0·06	0·13		0·09	0·11
CO_2	—	—	0·08	—	—	—	—	tr.	—
TiO_2	0·04	0·07	0·08	0·11	0·16	0·18	0·17	abs.	0·07
P_2O_5	0·04	0·14	0·03	—	0·07	0·02	0·01	tr.	0·07
MnO	0·03	0·03	0·08	—	0·04	0·05	0·02	tr.	0·04
Other Constitutents			ZrO_2=0·01 BaO=0·04 F=0·14 S=0·03					SO_3=abs. Cl=tr.	
			100·34						
Less O= Cl, F, S			0·07						
	100·52	99·52	100·27	99·99	99·30	99·87	100·63	99·85	100·04

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	28	29	30	31	32	33	34	35	36
Rock Name	Granite *Lochaber Granite*	Granite	Granite *Albury Gneiss*	Granite *Esmeralda Granite*	Pegmatite	Granite	Microgranite	Granite	Granite
Locality	50 miles S. of Einasleigh, Qld.	24 miles N. of Tenterfield, N.S.W.	Albury, N.S.W.	45 miles S. of Croydon, Qld.	Lal Lal, Ballarat, Vic.	Wyangala Dam, N.S.W.	Ashford, N.S.W.	Rossarden, Tas.	Dog Rocks, Geelong, Vic.
Reference	**95**	**81**, 85; **554**, 147	**95**	**95**	**64**	**373**, 96	**12**, 619	**38**, 28	**500**, 268
Analyst	A. McClure	W.A. Greig	J. C. Watts	A. McClure	F. F. Field	W. A. Greig	M. Aurousseau	W. St C. Manson	A. G. Hall
Remarks	* Loss on ignition		Pegmatitic Phase	*Loss on ignition					
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	76·53	76·52	76·5	76·36	76·31	76·08	76·02	76·00	75·99
Al_2O_3	12·07	12·73	12·5	13·41	12·44	12·93	13·25	12·52	13·10
Fe_2O_3	1·04	0·48	0·44	0·27	} 0·70	0·70	0·61	1·86	0·57
FeO	0·64	0·62	0·85	0·83	}	0·90	0·69	nd.	0·61
MgO	abs.	0·14	0·12	0·05	0·22	0·53	0·07	0·17	0·18
CaO	0·54	0·75	0·42	0·88	0·64	0·52	0·51	0·68	0·41
Na_2O	3·23	3·58	2·90	3·34	2·38	2·31	3·06	2·87	3·30
K_2O	5·29	4·59	5·05	5·21	6·01	5·26	5·11	4·60	5·27
H_2O+	1·08*	0·37	1·04	0·46*	0·42	0·33	0·29	—	0·40
H_2O-	0·14	0·17	0·08	abs.	0·24	0·19	0·03	—	0·14
CO_2	—	0·04	—	—	—	abs.	abs.	—	abs.
TiO_2	0·02	0·07	0·06	0·03	—	0·35	0·19	0·15	0·11
P_2O_5	0·02	0·02	0·10	0·03	—	0·12	0·21	—	tr.
MnO	0·06	0·12	0·02	0·05	—	0·06	0·01	0·03	0·06
Other Constituents							S=0·03 F=pnd.		NiO=0·02
	100·66	100·20	100·08	100·92	99·36	100·28	100·08	98·88	100·16

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	37	38	39	40	41	42	43	44	45
Rock Name	Muscovite Granite	Pegmatite in *Wonga Granite*	Aplite	Microgranite	Muscovite Granite	Granite	Granite	Granite Porphyry	Granite
Locality	Southern Cross, W.A.	10 miles S. of Kajabbi, Qld.	Rossarden, Tas.	4 miles W.S.W. of Tidbinbilla, Tharwa, A.C.T.	S.S.W. Yaouk Trig. Station, N.W.Cooma, N.S.W.	Eyre Pen., S.A.	Herberton, Qld.	Mt. Leinster District, Vic.	Port Elliot, Encounter Bay, S.A.
Reference	**150**, 57; **447**, 16; **554**, 73	**95**	**38**, 28	**472**, 194	**472**, 194	**216**, 14; **220**, 68; **132**, 228	**95**	**45**, 239	**51**, 20
Analyst	A. J. Robertson	A. McClure	W. St C. Manson	Rudowski & Unwin	Rudowski & Unwin	W. S. Chapman	A. McClure	E. Broadhurst	W. R. Browne
Remarks		*Loss on ignition					*Loss on ignition		
Sp. Gr.	2·61	—	—	—	—	—	—	—	2·615
SiO_2	75·83	75·78	75·70	75·66	75·61	75·57	75·56	75·50	75·48
Al_2O_3	14·11	14·00	14·20	12·72	13·52	13·14	12·89	13·10	12·99
Fe_2O_3	0·49	0·64	2·15	0·60	0·51	0·63	0·37	2·12	0·25
FeO	0·12	0·23	nd.	0·64	0·51	1·04	1·60	0·29	0·85
MgO	0·25	0·37	0·38	0·23	0·93	0·14	0·29	0·16	0·13
CaO	0·55	0·32	tr.	0·82	0·21	abs.	0·88	0·53	0·74
Na_2O	3·12	2·38	0·27	2·90	3·31	2·96	2·76	2·83	2·31
K_2O	5·32	6·15	4·27	4·89	4·57	6·06	4·95	5·25	6·06
H_2O+	0·41	0·86*	1·77	0·63	0·88	0·46	0·53*	0·83	0·60
H_2O-	0·13	0·06		0·06	0·05	0·12	0·19		0·17
CO_2	abs.	—	—	abs.	0·05	—	—	—	—
TiO_2	0·08	0·03	abs.	0·25	0·11	0·08	0·12	0·25	0·12
P_2O_5	0·20	0·09	—	0·06	0·13	0·06	0·07	abs.	—
MnO	tr.	abs.	0·40	0·01	0·04	0·02	0·01	0·01	—
Other Constituents	FeS_2=tr.					Cl=0·03 Fes_2=0·05			
	100·61	100·91	99·14	99·47	100·43	100·36	100·22	100·87	99·70

TABLE A — GRANITIC ROCKS — SiO_2>70%

a. CaO<1%

K_2O/Na_2O>1·25

	46	47	48	49	50	51	52	53	54
Rock Name	Granite *Dumbano Granite*	Granite	Microgranite	Microgranite	Granite *Litchfield Complex*	Leucogranite *Bunyan Leucogranite*	Aplite	Microgranite	Granite
Locality	50 miles S. of Einasleigh, Qld.	Cooma, N.S.W.	South Alligator River, N.T.	Rossarden, Tas.	Mt. Litchfield, N.T.	Bunyan, near Cooma, N.S.W.	Wallaroo, S.A.	Rossarden, Tas.	South Darwin, Tas.
Reference	**95**	**65**, 315	**95**	**38**, 28	**95**	**257**, 171	**550**, 39	**38**, 28	**474**, 50
Analyst	A. McClure	H. B. Gurney	S. Baker	W. St C. Manson	S. Baker	G. A. Joplin	T. R. Frost	W. St C. Manson	W. St C. Manson
Remarks	*Loss on ignition	(Gneissic in places)	*Loss on ignition		*Loss on ignition	Formerly "White Gneiss"	Kaolinized		
Sp. Gr.	—	—	—	—	—	2·62	—	—	—
SiO_2	75·44	75·27	75·26	75·06	75·00	74·99	74·98	74·96	74·96
Al_2O_3	12·79	11·77	12·05	13·61	13·71	15·58	13·59	13·78	13·55
Fe_2O_3	0·77	1·95	1·40	1·57	0·87	0·44	0·32	1·57	0·79
FeO	0·49	2·91	1·18	nd.	0·37	nd.	0·16	nd.	0·71
MgO	0·24	0·70	0·20	0·30	0·27	0·09	0·04	0·32	0·48
CaO	0·72	0·80	0·58	0·52	0·64	0·50	0·06	0·12	0·16
Na_2O	3·60	1·56	2·97	1·61	2·23	2·66	0·28	2·88	2·33
K_2O	5·55	3·08	5·31	5·81	5·81	4·82	7·48	5·13	5·57
H_2O+	0·61*	0·70	0·48*	1·23	0·68*	0·52	1·86	0·75	0·86
H_2O-	0·24	0·15	abs.		abs.	0·17	0·26		0·16
CO_2	—	0·03	—	—	—	—	—	—	0·30
TiO_2	0·07	0·60	0·07	0·02	0·10	tr.	0·57	abs.	0·13
P_2O_5	0·11	0·19	0·04	—	0·03	nd.	—	—	0·05
MnO	0·04	0·05	0·02	0·02	0·04	tr.	—	0·01	0·01
Other Constituents		(NiCo)O=0·02 BaO=0·05				C=pnd.	SO_3=0·02 Cl=0·12		
							99·74		
Less O=Cl, F, S							0·03		
	100·67	99·83	99·56	99·75	99·75	99·77	99·71	99·52	100·06

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	55	56	57	58	59	60	61	62	63
Rock Name	Granite *Mt. Living-stone Granite*	Granite Porphyry	Granite	Micro-granite	Graphic Pegmatite	Graphic Pegmatite	Granite	Granite *Charleston Granite*	Granite *Protogine Granite*
Locality	10 miles E. of Corinna, Tas.	Walwa, Vic.	7½ mile N.E. of Cool-gardie, W.A.	May Downs, Mt. Isa, Qld.	Niagara, W.A.	Cooma, N.S.W.	Blue Tier, Tas.	Moonabie Ra., Middle-back Ra. Area, S.A.	Broken Hill, N.S.W.
Refer-ence	**95**	**548**	**563**	**262**, 59	**273**, 24 **447**, 16	**256**, 188	**417**, 20	**132**, 228	**53**, 348; **309**, 251; **352**, 198; **554**, 149
Analyst	S. Baker	F. F. Field	B. W. Stenhouse	Burnett & Williams	H. Bowley	G. A. Joplin	—	G. C. Carlos	J. C. H. Mingaye
Remarks	*Loss on ignition				Dyke	Dyke	Tin-bearing *Loss on ignition	Apophysis	
Sp. Gr.			2·62	2·594	2·58	2·60	—	—	—
SiO_2	74·82	74·80	74·77	74·76	74·75	74·71	74·60	74·58	74·50
Al_2O_3	13·64	12·53	13·88	14·01	14·23	15·51	16·65	12·74	13·72
Fe_2O_3	1·30	1·02	0·20	0·83	0·19	tr.	1·57	1·12	0·60
FeO	0·46	0·91	0·96	0·71	0·08	tr.	1·41	0·76	0·90
MgO	0·12	tr.	0·33	0·32	0·07	abs.	0·21	0·21	0·44
CaO	0·62	0·78	0·69	0·63	0·22	0·34	abs.	0·93	0·52
Na_2O	2·86	3·06	3·61	2·07	2·30	1·59	1·41	3·57	3·47
K_2O	4·55	5·95	4·54	6·04	8·46	8·11	2·57	5·05	5·13
H_2O+	0·82*	0·81	0·47	0·35	0·03	0·10	0·94*	0·52	0·26
H_2O-	abs.	0·14	0·01	0·01	0·07	0·03		0·03	0·18
CO_2	—	tr.	0·02	—	0·12	—		abs.	0·04
TiO_2	0·11	0·21	0·16	0·37	0·01	nd.		0·24	0·17
P_2O_5	0·20	tr.	0·29	0·11	tr.	0·10		0·14	0·27
MnO	0·09	tr.	0·01	tr.	abs.	nd.		0·14	0·03
Other Con-stituents		SO_3=abs. Cl=tr.			FeS_2=0·06			Cl=tr. SO_3=tr.	Cl=tr., Fes_2=0·07 CuO=tr. BaO=0·05 ZnO=tr.
	99·59	100·21	99·94	100·21	100·59	100·49	99·36	100·03	100·35

TABLE A — GRANITIC ROCKS — SiO_2>70%

a. CaO<1%

K_2O/Na_2O>1·25

	64	65	66	67	68	69	70	71	72
Rock Name	Porphyritic Microgranite	Aplite	Tourmaline Granite	Granite *Tinderra Granite*	Graphic Pegmatite	Aplite	Granite	Granite *Nymagee Granite*	Granite
Locality	Near Mt. Monster, S.A.	Wallaroo, S.A.	Middleback Ra. Area, S.A.	30 miles N. of Cobar, N.S.W.	Albury, N.S.W.	Omeo, Vic.	5 miles S. of Khancoban, N.S.W.	Nymagee, N.S.W.	Kolbolla, S.A.
Reference	**318**, 219	**550**, 38	**132**, 228	**381**	**260**, 99	**212**, 35	**95**	**381**	**215**, 12 **554**, 73
Analyst	D. J. Guppy	T. R. Frost	G. C. Carlos	J. H. Pyle	G. A. Joplin	A. W. Howitt	A.M.D.L.	J. H. Pyle	W. S. Chapman
Remarks	*Anal. by E. R. Segnit	Kaolinized				*Analysed after drying, H_2O-=0·49			
Sp. Gr.	2·742	—	—	—			—	—	—
SiO_2	74·44	74·38	74·38	74·28	74·26	74·14	74·1	74·07	74·02
Al_2O_3	12·94	13·42	12·92	14·55	14·87	15·43	14·6	13·60	14·83
Fe_2O_3	1·35	1·06	0·98	0·69	0·20	0·99	0·40	1·47	0·95
FeO	0·99	abs.	0·49	0·06		0·24	0·55	0·82	0·40
MgO	0·16	0·20	0·10	0·12	0·03	0·14	0·02	0·25	0·16
CaO	0·53	0·10	tr.	0·45	0·25	0·60	0·70	0·67	0·70
Na_2O	3·53	1·12	3·12	3·10	1·81	2·37	3·20	2·91	3·16
K_2O	4·79	6·80	6·26	5·15	8·39	6·20	4·85	4·83	4·68
H_2O+	0·55	1·85	0·10	1·26	0·37	1·22	0·89	0·79	0·12
H_2O-	0·01	0·60	0·37	0·19	0·07	*	0·09	0·09	0·08
CO_2	0·20	—	0·05	0·05	—		—	0·15	0·02
TiO_2	0·26	0·52	0·59	0·14	abs.		0·08	0·22	0·19
P_2O_5	0·05		0·28	0·11	abs.		0·22	0·16	0·05
MnO	—		0·27	0·01	abs.		0·01	0·04	0·11
Other Constituents	F=0·04*	SO_3=0·01 Cl=0·17	Cl=0·01 SO_3=0·01	BaO=tr. V_2O_3=tr. Cr_2O_3=tr.				BaO=tr. Cr_2O_3=tr. V_2O_3=tr.	Cl=0·02 FeS_2=0·07
	99·84	100·23							
Less O= Cl, F, S	0·01	0·04							
	99·83	100·19	[99·93]	100·16	100·25	101·33	99·71	100·07	99·56

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	73	74	75	76	77	78	79	80	81
Rock Name	Granite	Granite *Ogilvies Granite*	Aplitic Granite	Granite	Granite	Granite *Wimberu Granite*	Alkaline Granite	Two-mica Granite	Granite
Locality	Mt. Bute, Ballarat, Vic.	6 miles S. of Cabramurra, N.S.W.	Tenterfield, N.S.W.	Bolivia, N.S.W.	Rivertree, N.S.W.	10 miles S.W. of Selwyn, Qld.	Mt. Ridley, W.A.	Burrumbeat, Ballarat, Vic.	Tenterfield, N.S.W.
Reference	**591**, 96	**95**	**11**, 225; **554**, 213	**11**, 220; **554**, 213	**355**, 198; **554**, 149	**95**	**582**, 67	**591**, 96	**11**, 200
Analyst	H. Yates	A.M.D.L.	J. C. H. Mingaye	J. C. H. Mingaye	W. A. Greig	A. McClure	D. G. Murray	H. Yates	J. C. H. Mingaye
Remarks						*Loss on ignition		(Ejected Block)	
Sp. Gr.	—	—	2·630	2·639	2·645	—	2·64	—	2·658
SiO_2	74·01	74·0	74·00	73·98	73·93	73·84	73·80	73·76	73·68
Al_2O_3	14·05	13·6	14·49	13·47	12·19	14·13	13·42	15·10	15·06
Fe_2O_3	1·80	0·29	1·10	0·72	1·80	0·98	0·71	0·64	0·68
FeO	1·80	1·76	0·45	0·97	0·99	1·18	1·00	1·16	0·54
MgO	0·45	1·02	0·44	0·36	0·44	0·48	0·54	0·04	0·26
CaO	0·66	0·49	0·92	0·90	0·76	0·75	0·79	0·43	0·54
Na_2O	3·10	3·15	3·29	3·39	3·32	2·40	3·54	3·56	3·36
K_2O	4·72	4·65	4·85	4·88	4·95	6·12	4·96	4·86	5·45
H_2O+	0·58	0·61	0·56	0·32	1·13	0·67*	0·39	0·57	0·28
H_2O-	0·07	0·10	0·18	0·12	0·15	0·04	0·01	0·14	0·18
CO_2	—	—	abs.	0·04	—	—	0·01	—	0·01
TiO_2	0·21	0·21	0·14	0·54	0·20	0·08	0·23	0·15	0·16
P_2O_5	0·06	0·11	0·05	0·05	0·10	0·07	0·10	nd.	0·11
MnO	—	0·01	0·08	0·03	0·04	0·01	0·17	—	0·07
Other Constituents			BaO = 0·06	ZrO_2 = 0·02 Cl = 0·02 F = 0·02	Cl = 0·05		FeS_2 = 0·23 F = 0·02	(?) 0·05	BaO = 0·04
				99·83	100·05		99·92		
Less O = Cl, F, S				0·01	0·01		0·01		
	[101·51]	100·00	100·61	99·82	100·04	100·75	99·91	[100·46]	100·42

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	82	83	84	85	86	87	88	89	90
Rock Name	Albite-muscovite "Gneiss"	Granophyre *Mt. Barney Granophyre*	Granite *Erimeran Granite*	Granite	Granite *Byrock Granite*	Microada-mellite *Naraku Granite*	Granite	Granite	Leucogranite
Locality	Cooma, N.S.W.	Mt. Barney, Qld.	22 miles S.E. of Nymagee, N.S.W.	Hermit Hill, Daly R.— Port Keats Track, N.T.	Byrock, N.S.W.	Cloncurry, Qld.	Buffalo Mts., Vic.	Poolamacca, Broken Hill, N.S.W.	Rum Jungle, N.T.
Reference	**256**, 188	**487**; **486**	**381**	**95**	**381**	**262**, 59	**291**, 8; **500**, 268; **554**, 149	**43**, 138	**95**
Analyst	G. A. Joplin	E. L. P. Mercy	J. H. Pyle	S. Baker	J. H. Pyle	J. K. Burnett	P. G. W. Bayley	D. R. Bowes	S. Baker
Remarks	*Feldspar slightly Kaolinized			*Loss on ignition					*Loss on ignition
Sp. Gr.	2·67	—	—	—	—	2·623	—	—	—
SiO_2	73·66	73·6	73·59	73·58	73·53	73·49	73·30	73·3	73·24
Al_2O_3	17·89*	12·7	13·90	14·16	13·42	14·06	13·84	14·4	13·96
Fe_2O_3	tr.	1·7	1·09	0·76	1·09	0·37	0·82	0·66	0·88
FeO	tr.	0·40	0·45	0·98	1·11	1·74	1·22	0·66	0·71
MgO	0·09	0·28	0·25	0·73	0·25	0·01	0·82	0·44	0·68
CaO	0·27	0·62	0·56	0·82	0·89	0·96	0·84	0·47	0·70
Na_2O	2·36	3·7	3·01	3·29	3·10	2·68	3·12	4·0	3·23
K_2O	5·12	5·4	5·21	4·42	5·02	5·63	4·89	5·4	4·90
H_2O+	0·58	0·76	1·03	0·88*	0·68	0·33	0·50	0·67	0·37*
H_2O-	0·07		0·37	0·03	0·10	0·03	0·19	—	0·05
CO_2	—	—	0·23	—	0·50	—	—	—	—
TiO_2	nd.	0·23	0·13	0·05	0·22	0·78	0·20	0·18	0·20
P_2O_5	0·02	0·02	0·15	0·09	0·13	tr.	0·08	0·23	0·45
MnO	tr.	0·04	0·06	0·02	0·03	tr.	0·15	0·01	0·08
Other Constituents			$BaO = tr.$ $V_2O_3 = tr.$ $Cr_2O_3 = tr.$		$BaO = tr.$ $V_2O_3 = tr.$ $Cr_2O_3 = tr.$				
	100·06	99·45	100·03	99·81	100·07	100·08	99·97	100·4	99·45

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	91	92	93	94	95	96	97	98	99
Rock Name	Pegmatite Granite	Granite *Cullen Granite*	Granite	Leucogranite	Granite *Fenton Granite*	Granite	Garnet-bearing Granite	Micro-adamellite *Naraku Granite*	Aplite
Locality	Middleback Ra., S.A.	Stuart Highway at Edith River, N.T.	Rossarden, Tas.	Towonga, Vic.	2½ miles E. of Fenton Airstrip, N.T.	40 miles N.W. of Franklin, Eyre Pen., S.A.	Albury, N.S.W.	Cloncurry, Qld.	Marysville, Vic.
Reference	**132**, 229	**95**	**95**	**507**	**95**	**95**	**260**, 98	**95**	**198**, 163
Analyst	G. C. Carlos	S. Baker	S. Baker	C. M. Tattam	S. Baker	A. McClure	G. A. Joplin	S. Baker	E. S. Hills
Remarks		*Loss on ignition	*Loss on ignition	Quartz—feldspar Injection Type	*Loss on ignition	*Loss on ignition		*Loss on ignition	
Sp. Gr.	—	—	—	—	—	—	2·66	—	—
SiO_2	72·98	72·94	72·88	72·85	72·82	72·72	72·71	72·70	72·63
Al_2O_3	15·50	13·70	14·69	15·83	14·03	13·70	17·48	14·49	14·12
Fe_2O_3	1·06	0·51	0·95	0·25	0·91	0·57	0·05	0·90	0·22
FeO	0·66	2·10	0·78	0·14	1·83	1·16	0·90	0·80	1·39
MgO	0·48	1·08	1·40	0·17	0·79	0·32	0·29	0·28	0·59
CaO	tr.	0·66	0·45	0·51	0·87	0·82	0·14	0·81	0·64
Na_2O	2·81	2·54	1·58	3·31	2·76	3·88	3·09	3·71	2·62
K_2O	6·37	4·93	2·40	5·68	5·18	6·01	4·34	5·24	4·99
H_2O+	0·10	0·90*	2·71*	0·76	0·71*	0·78*	0·43	0·41*	1·93
H_2O-	0·25	0·04	1·12	0·23	abs.	0·06	0·08	0·06	0·23
CO_2	abs.	—	—	—	—	—	—	—	0·10
TiO_2	abs.	0·03	0·04	tr.	0·30	0·14	abs.	0·08	0·26
P_2O_5	0·09	0·09	0·04	0·21	0·07	0·23	nd.	0·09	0·12
MnO	0·03	0·04	0·37	tr.	0·05	0·03	0·35	0·05	0·04
Other Constituents	SO_3=abs. Cl=abs.			BaO=0·06					S=0·09
									[99·97]
Less O= Cl, F, S									0·03
	100·33	99·56	99·41	100·00	100·32	100·42	99·86	99·62	[99·94]

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	100	101	102	103	104	105	106	107	108
Rock Name	Adamellite *Waterhouse Granite*	Granite	Granite *Wonga Granite*	Autometamorphosed Microgranite	Granite	Pegmatite	Potash Leucogranite	Graphic Pegmatite	Graphic Pegmatite
Locality	Rum Jungle, N.T.	Oura, near Wagga, N.S.W.	10 miles N. of Duchess, Qld.	Near Mt. Monster, S.A.	Minnipa Hill S.A.	Middleback Ra., S.A.	Mt. Painter, S.A.	Tallangatta, Vic.	Albury, N.S.W.
Reference	**95**	**535**, 202	**95**	**318**, 219	**215**, 12; **220**, 68, **554**, 149	**132**, 229	**311**, 254, **316**, 32	**548**	**260**, 99
Analyst	S. Baker	T. G. Vallance	S. Baker	E. R. Segnit	W. S. Chapman	G. C. Carlos	W. S. Chapman	R. C. Callister	G. A. Joplin
Remarks	*Loss on ignition		*Loss on ignition			(4″ seam in gneiss)		P_2O_5 too high for CaO	
Sp. Gr.	—	—	—	2·595	—	—	—	—	—
SiO_2	72·61	72·53	72·50	72·50	72·30	72·10	72·06	71·96	71·94
Al_2O_3	14·20	14·57	13·26	14·02	14·64	14·96	15·10	15·57	15·71
Fe_2O_3	0·56	0·74	1·04	0·92	1·21	0·97	0·47	0·33	0·35
FeO	0·93	2·02	2·24	1·24	0·24	1·13	0·17	—	
MgO	1·00	1·04	1·00	0·23	0·32	0·59	0·12	0·05	tr.
CaO	0·42	0·70	0·67	0·77	0·32	0·35	0·62	0·16	0·34
Na_2O	3·29	2·25	2·96	3·47	4·38	2·71	0·15	1·46	4·41
K_2O	5·43	4·96	5·33	5·24	6·04	6·77	11·14	8·24	7·58
H_2O+	0·84*	0·72	0·45*	0·73	0·24	0·07	0·59	0·75	0·20
H_2O-	abs.	0·11	0·03	0·18	0·20	0·10	0·01	0·70	0·01
CO_2	—	—	—	0·80	0·10	0·02	abs.	—	—
TiO_2	0·15	0·42	0·10	0·08	0·36	0·22	0·14	abs.	abs.
P_2O_5	0·05	0·09	0·06	0·06	0·04	0·01	0·02	0·38	0·06
MnO	0·03	0·04	0·15	0·04	0·11	0·35	—	—	tr.
Other Constituents				$BaO = 0 \cdot 07$ $ZrO_2 = 0 \cdot 04$ $F = 0 \cdot 08$	$Cl = 0 \cdot 03$ $FeS_2 = 0 \cdot 15$	$Cl = 0 \cdot 01$ $SO_3 = 0 \cdot 01$	Fe (Fe_2) = 0·07		
				100·47	100·68				
Less O = Cl, F, S				0·03	0·01				
	99·51	100·19	99·79	100·44	100·67	100·37	100·66	99·60	100·60

TABLE A — GRANITIC ROCKS — SiO_2>70%

a. CaO<1%

K_2O/Na_2O>1·25

	109	110	111	112	113	114	115	116	117
Rock Name	Granite	Muscovite-biotite Adamellite	Granite	Granite	Aplitic Granite	Pegmatite	Pegmatite	Muscovite-biotite Granite	Granite *Cullen Granite*
Locality	Mt. Wagra, Vic.	Kangaroo Bore, Kulgera, N.T.	South Darwin, Tas.	25 miles N.E. of Mt. Painter, S.A.	Charters Towers, Qld.	Near Lyndoch, S.A.	Barnawartha, Vic.	Bethanga, Vic.	1 mile past Goodparla Turnoff, N.T.
Reference	**507**, 38	**584**	**474**, 50	**95**	**418**, 79	**395**, 59	**64**	**548**	**95**
Analyst	C. M. Tattam	W. H. Herdsman	Mt. Lyell Co.	S. Baker	P. Mansini	W. S. Chapman	R. C. Callister	Mines Dept. Vict.	S. Baker
Remarks				*Loss on ignition			Alkalis too high for Al_2O_3		*Loss on ignition
Sp. Gr.	—	—	—	—	—	—	—	2·645	—
SiO_2	71·93	71·92	71·9	71·84	71·71	71·68	71·60	71·58	71·30
Al_2O_3	14·62	14·34	14·7	13·04	13·36	16·34	15·12	13·78	14·57
Fe_2O_3	0·83	1·09	3·6	0·45	1·03	1·56	0·29	2·53	1·19
FeO	2·25	2·01	nd.	2·00	0·21	—		0·62	1·43
MgO	1·18	1·02	0·6	0·47	0·51	0·10	0·09	0·59	0·69
CaO	0·91	0·96	0·5	0·90	0·90	0·50	0·67	0·56	0·76
Na_2O	1·98	2·52	1·9	3·12	5·11	4·13	4·24	1·91	3·13
K_2O	5·03	5·28	4·7	8·39	6·73	5·97	7·68	5·85	5·68
H_2O+	0·75	0·53	0·6	0·30*	0·51	0·05		1·30	0·87*
H_2O-	0·34	0·08		abs.	0·10	0·14		0·29	abs.
CO_2	—	—	0·4	—	—			tr.	—
TiO_2	0·33	0·28	nd.	0·09	0·03		abs.	0·35	0·08
P_2O_5	0·22	0·05	nd.	0·04	0·13		0·42	0·30	0·08
MnO	0·03	0·12	nd.	0·06	0·10		0·02	abs.	0·06
Other Constituents	BaO=0·02 S=tr.	BaO=0·10			S=0·14			Li_2O=tr. Cl=tr.	
	100·42	100·30	98·9	100·70	100·57	100·47	[100·13]	99·66	99·84

TABLE A — GRANITIC ROCKS — SiO_2>70%

a. CaO<1%

K_2O/Na_2O>1·25

	118	119	120	121	122	123	124	125	126
Rock Name	Granite *Hawkesview Granite*	Chinastone	Granite	Graphic Granite	Granite	Granite *Cooma Gneiss*	Graphic Pegmatite	Granite *Albury Gneiss*	Chinastone
Locality	Thurgoona, Albury, N.S.W.	Between Birdwood & Gumeracha, S.A.	Lake Boga, Vic.	Omeo, Vic.	Mannum, S.A.	Cooma, N.S.W.	Balmoral, Vic.	Albury, N.S.W.	Kangaroo Island, S.A.
Reference	**95**	**221**, 32	**13**, 200; **296**, 260	**209**, 21 **554**, 113	**2**, 251; **176**, 127	**256**, 188	**548**	**260**, 117	**218**, 41 **221**, 34
Analyst	A.M.D.L.	W. S. Chapman	F. F. Field	A. W. Howitt	B. F. Goode	G. A. Joplin	F. F. Field	G. A. Joplin	W. S. Chapman
Remarks									
Sp. Gr.	—	—	2·64	2·564	2·66	2·79	—	2·74	—
SiO_2	71·30	70·98	70·94	70·91	70·77	70·65	70·56	70·44	70·20
Al_2O_3	14·30	17·97	16·14	15·32	13·69	15·25	15·60	15·84	18·90
Fe_2O_3	0·21	0·40	0·21	} tr.	1·97	0·83	} 0·29	0·53	1·02
FeO	2·64	—	1·30	}	0·97	3·45	}	3·35	—
MgO	0·95	abs.	0·45	0·07	0·34	1·63	0·09	1·24	abs.
CaO	0·99	abs.	0·93	0·58	0·94	0·94	0·32	0·73	0·08
Na_2O	2·28	3·62	2·77	2·31	3·70	1·77	1·21	1·70	2·58
K_2O	5·00	5·62	6·40	10·07	5·68	4·63	11·18	4·09	5·74
H_2O+	1·30	1·16	0·75	0·36	0·45	0·60	0·23	0·62	0·63
H_2O-	0·13	0·10	—	0·15	0·36	0·09	0·02	0·09	0·04
CO_2	—	abs.	—	—	—	—	—	—	abs.
TiO_2	0·39	abs.	0·17	—	0·72	0·65	abs.	0·66	abs.
P_2O_5	0·27	—	tr.	—	0·11	0·12	abs.	0·22	—
MnO	0·03	—	tr.	—	0·28	0·05	abs.	tr.	—
Other Constituents		Cl=abs.	Cl=tr. SO_3=abs.		FeS_2=0·17 ZrO_2=tr.		SO_3=abs. Cl=tr.		Cl=abs.
	99·79	99·85	100·06	99·77	100·15	100·66	99·50	99·51	99·19

TABLE A — GRANITIC ROCKS — SiO_2>70%

a. CaO<1%

K_2O/Na_2O>1·25	K_2O/Na_2O=1·25–0·75							
127	128	129	130	131	132	133	134	135
Rock Name	Granite *Waterhouse Granite*	Granite	Granite *Elizabeth Creek Granite*	Aplite	Aplite	Granite	Granite	Granite	Granite
Locality	Rum Jungle, N.T.	Thompson's Well, Eyre Pen., S.A.	95 miles E.N.E. of Einasleigh, Qld.	750 yds. E. of Dam Wall, Burrinjuck, N.S.W.	600 yds. E. of Dam Wall, Burrinjuck, N.S.W.	Northern Spillway Burrinjuck Dam, N.S.W.	Tinderry Ra., Michelago, N.S.W.	Tanunda Ck., S.A.	South Darwin, Tas.
Reference	**95**	**215**, 12 **554**, 91	**95**	**590**	**590**	**590**	**95**	**201**, 195	**474**, 50
Analyst	S. Baker	W. S. Chapman	A. McClure	H. Yates	H. Yates	H. Yates	J. C. Watts	R. Hossfeld	W. St C. Manson
Remarks	*Loss on ignition		*Loss on ignition						
Sp. Gr.	—	—	—	2·61	2·62	2·64	—	2·668 (calc.)	—
SiO_2	70·14	78·98	78·18	77·97	77·41	77·37	77·2	77·05	76·92
Al_2O_3	15·70	13·02	12·74	12·36	11·81	11·88	12·4	12·24	14·07
Fe_2O_3	1·27	0·17	0·51	0·19	0·15	0·27	0·34	0·47	0·43
FeO	1·24	0·18	0·27	0·28	0·90	0·63	0·80	0·54	0·64
MgO	1·26	0·18	0·03	0·09	0·11	0·19	0·09	0·10	0·25
CaO	0·90	0·90	0·38	0·12	0·32	0·59	0·48	0·20	0·16
Na_2O	3·28	2·63	3·52	3·91	4·04	4·40	3·65	4·24	3·24
K_2O	4·20	3·23	4·40	4·56	4·48	3·88	4·35	4·86	2·61
H_2O+	0·92*	0·40	0·52*	0·28	0·32	0·28	0·34	0·21	1·84
H_2O-	0·02	abs.	0·07	abs.	0·12	0·14	0·07	0·10	abs.
CO_2	—	0·17	—	—	—	—	—	nd.	0·06
TiO_2	0·25	0·08	0·04	0·14	0·42	0·13	0·08	0·36	0·19
P_2O_5	0·20	0·09	0·05	nd.	nd.	tr.	0·02	0·02	tr.
MnO	0·05	0·02	0·02	—	—	—	0·03	0·06	tr.
Other Constituents		Cl=0·03 FeS_2=0·10						BaO=0·01 ZrO_2=0·10	
	99·43	100·18	100·73	99·90	100·08	99·76	99·85	100·56	100·41

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

a. $CaO < 1\%$

$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$

	136	137	138	139	140	141	142	143	144
Rock Name	Potash-soda Granite	Aplite	Potash-soda Microgranite	Granite	Granite	Aplo-granite	Granite *Elizabeth Creek Granite*	Aplite	Aplite
Locality	7 miles S. of Keith, S.A.	Northern Spillway, Burrinjuck Dam.,N.S.W.	17 miles S. of Keith, S.A.	Cape Woolamai, Vic.	Tingha, N.S.W.	Learmouth, near Ballarat, Vic.	35 miles N.E. of Einasleigh, Qld.	Hinnomunjie Morass, Omeo, Vic.	Murray Bridge, S.A.
Reference	**315**, 200, **318**, 267	**590**	**315**, 200	**500**, 268	**81**, 63; **353**, 191; **554**, 149	**591**, 96	**95**	**209**, 110	**240**, 125 **277**, 240
Analyst	W. B. Dallwitz	H. Yates	E. R. Segnit	A. G. Hall	H. P. White	H. Yates	A. McClure	A. W. Howitt	A. W. Kleeman
Remarks					*Spectroscopic		*Loss on ignition		
Sp. Gr.	2·603	2·62	2·584	2·643	—	—	—	2·673	2·627
SiO_2	76·81	76·77	76·74	76·31	76·28	76·22	76·19	76·10	76·07
Al_2O_3	12·38	11·86	12·00	13·09	11·41	13·27	13·28	15·95	13·96
Fe_2O_3	0·28	0·04	1·13	0·41	1·60	0·34	0·57	tr.	0·14
FeO	0·78	0·90	0·43	1·07	0·72	1·06	0·50		0·42
MgO	0·09	0·11	0·03	0·36	0·15	0·13	0·05	0·11	tr.
CaO	0·53	0·31	0·49	0·65	0·62	0·51	0·40	0·23	0·68
Na_2O	3·79	4·28	4·23	3·00	3·97	3·74	3·93	2·90	3·90
K_2O	4·70	4·98	4·19	4·76	4·54	4·14	4·85	3·27	4·64
H_2O+	0·34	0·25	0·47	0·29	0·40	0·25	0·58*	0·98	0·18
H_2O-	0·14	0·16	0·18	0·11	0·16	abs.	0·13	0·18	0·07
CO_2	0·03	—	0·06	0·66	0·04		—	—	—
TiO_2	0·11	0·12	0·10	0·20	0·20	0·13	0·02	—	0·11
P_2O_5	0·02	tr.	0·04	tr.	0·17	nd.	0·03	—	0·01
MnO	0·01	—	tr.	0·11	0·06	—	0·03	—	tr.
Other Constituents	F=0·10		BaO=0·02 F=0·20	NiO=0·01	SrO—pnd.* Li_2O—pnd.*	(?)=0·05			ZrO_2=tr. FeS_2=0·13 F=0·10
	100·11		100·31						100·41
Less O= Cl, F, S	0·04		0·08						0·04
	100·07	99·78	100·23	[101·03]	100·32	99·84	100·56	99·72	100·37

TABLE A — GRANITIC ROCKS — SiO_2>70%

a. CaO<1%

K_2O/Na_2O=1·25–0·75

	145	146	147	148	149	150	151	152	153
Rock Name	Granite	Garnet-bearing Aplite	Tourmaline-muscovite Granite	Muscovite Granite	Granite	Granite Porphyry	Aplitic Granitc	Granite	Granite *Forsayth Granite*
Locality	Cocata, S.A.	4 miles S.W. of Wanta-badgery, N.S.W.	Bethanga, Vic.	Whipstick, N.S.W.	Gosnells, W.A.	Gibraltar, Coolgardie, W.A.	N. of Dunedoo, N.S.W.	20 miles S.E. of Tarcoola, S.A.	15 miles N. of Einasleigh, Qld.
Refer-ence	**215**, 12; **554**, 73	**535**, 202	**548**	**10**, 156; **359**, 225	**108**, 254	**563**	**351**, 184; **554**, 149	**95**	**95**
Analyst	W. S. Chapman	T. G. Vallance	Vic. Dept. Mines	H. P. White	C. E. S. Davis	D. Burns	J. C. H. Mingaye	S. Baker	S. Baker
Remarks				*Spectro-scopic				*Loss on ignition	*Loss on ignition
Sp. Gr.	—	—	2·628	2·633	—	2·612	2·607	—	
SiO_2	75·58	75·53	75·23	75·02	75·01	74·86	74·74	74·58	74·30
Al_2O_3	13·66	15·88	14·77	13·77	13·14	13·94	13·57	11·84	14·88
Fe_2O_3	0·85	0·46	0·73	1·40	1·08	0·93	1·20	1·26	0·37
FeO	0·26	0·40	0·24	0·27	1·39	0·12	0·27	0·80	0·07
MgO	0·16	0·29	0·12	0·04	0·02	abs.	0·32	0·12	1·20
CaO	0·28	0·65	0·37	0·12	0·26	0·69	0·26	0·81	0·33
Na_2O	3·64	2·80	3·41	3·29	3·96	4·09	3·89	4·35	3·92
K_2O	4·44	3·19	3·60	4·78	4·00	4·52	4·48	4·93	4·42
H_2O+	0·26	1·01	0·55	1·17	0·28	0·09	0·57	0·68*	0·51*
H_2O-	0·10	0·09	0·14	0·07	0·30	0·15	0·26	0·03	0·08
CO_2	0·04	—	abs.	abs.	—	0·30	0·02	—	—
TiO_2	0·20	abs.	0·05	0·30	0·20	0·07	0·36	0·10	0·04
P_2O_5	0·08	0·15	0·04	0·03	0·07	0·13	0·05	0·03	0·03
MnO	0·22	0·04	abs.	0·02	0·01	abs.	tr.	0·68	0·04
Other Con-stituents	Cl=0·02 FeS_2=0·16		Li_2O=tr. Cl=tr. F=abs. B_2O_3—pnd.	Li_2O—pnd.*	BaO=0·08		BaO=0·05		
	99·95	100·49	99·25	100·28	99·80	99·89	100·04	100·21	100·19

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

a. $CaO < 1\%$

$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$

	154	155	156	157	158	159	160	161	162
Rock Name	Granite *Mundi Mundi Granite*	Oligoclase-microcline granite	Granite	Micro-granite	Granite *Mareeba Granite*	Granite *Mundi Mundi Granite*	Granite *Williams Granite*	Granite *Cannibal Creek Granite*	Soda-potash Granite *Boolcoomata Granite*
Locality	Poolamacca, Broken Hill, N.S.W.	Albury, N.S.W.	Tambo Crossing, Gippsland, Vic.	Rossarden, Tas.	S.W. Mt. Carbine, N.W. of Cairns, Qld.	Broken Hill, N.S.W.	20 miles N.E. of Kuridala, Qld.	150 miles N.W. of Cairns, Qld.	Broken Hill, N.S.W.
Reference	**281**, 126	**260**, 98	**548**	**38**, 28	**332**	**281**, 126	**95**	**332**	**281**, 126
Analyst	R. B. Leslie	G. A. Joplin	F. F. Field	W. St C. Manson	S. Baker	A. J. R. White	S. Baker	S. Baker	W. S. Chapman
Remarks					*Loss on ignition		*Loss on ignition	*Loss on ignition	
Sp. Gr.	—	2·66	2·61	—				—	—
SiO_2	74·07	73·99	73·81	73·72	73·64	73·08	72·92	72·80	72·60
Al_2O_3	14·77	16·08	13·42	15·11	14·40	14·78	15·00	14·50	15·99
Fe_2O_3	0·51	} 0·65	0·74	1·29	0·48	0·67	0·96	1·80	0·34
FeO	0·46	}	1·34	nd.	0·40	0·79	0·97	0·98	0·78
MgO	0·16	0·31	0·57	0·10	0·90	0·28	0·14	0·38	0·20
CaO	0·51	0·09	0·99	tr.	0·45	0·55	0·64	0·19	0·38
Na_2O	3·89	3·67	3·91	3·87	4·56	4·35	3·97	3·70	4·30
K_2O	4·43	4·04	3·65	4·63	3·79	4·17	4·42	4·42	4·36
H_2O+	0·70	0·45	0·60	} 0·14	0·84*	0·77	0·61*	0·74*	1·15
H_2O-	0·15	0·06	0·19	}	abs.	0·24	0·06	0·01	0·05
CO_2	—	abs.	abs.	—	—	—	—	—	—
TiO_2	0·19	abs.	0·19	abs.	0·03	0·24	0·06	0·04	0·13
P_2O_5	0·10	0·43	abs.	—	0·07	0·11	0·08	0·04	0·14
MnO	0·01	tr.	tr.	0·04	0·10	0·01	0·02	0·09	0·03
Other Constituents	ZrO_2=0·03 S=0·03		Li_2O=abs. SO_3=abs. Cl=tr.			BaO=0·02 ZrO_2=0·01			
	100·01	99·77	99·41	98·90	99·66	100·07	99·85	99·69	100·45

TABLE A — GRANITIC ROCKS — SiO_2>70%

a. CaO<1%

	K_2O/Na_2O=1·25–0·75			K_2O/Na_2O<0·75					
	163	164	165	166	167	168	169	170	171
Rock Name	Granite	Pegmatite	Granite	Chinastone	Soda Pegmatite	Eurite	Soda Aplite	Leucogranite	Soda Aplite
Locality	Mossman Area N. of Cairns, Qld.	Near Lyndoch, S.A.	10 miles N. of Mudgee, N.S.W.	Gumeracha, S.A.	Niagara, W.A.	Mt. Alexander, Harcourt, Vic.	Kittys Plain, Mt. Isa, Qld.	The Pinnacles, Umberatana, S.A.	Port Elliot, Encounter Bay, S.A.
Reference	**332**	**395**, 59	**366**, 97	**221**, 31	**273**, 24 **447**, 14	**443**, 10 & 94	**263**, 84 **266**, 47	**316**, 32	**51**, 29; **263**; **316**, 32
Analyst	S. Baker	W. S. Chapman	H. P. White	W. S. Chapman	H. Bowley	J. C. Newbery	J. K. Burnett	T. W. Dalwood	W. R. Browne
Remarks	*Loss on ignition				*Quartz veins included in analysis	(Dyke)			
Sp. Gr.	—	—	—	—	2·61				2·626
SiO_2	72·00	71·34	71·28	79·50	78·58	78·05	77·68	76·90	76·02
Al_2O_3	14·50	16·80	17·65	12·02	13·14	13·87	13·04	13·75	14·60
Fe_2O_3	1·80	1·56	0·30	1·10	0·24	tr.	0·02	0·34	0·27
FeO	0·98	—	0·54	—	0·11	—	0·09	—	0·08
MgO	0·38	abs.	0·03	0·88	0·14	tr.	1·52	0·22	0·04
CaO	0·91	0·54	0·26	0·10	0·57	0·74	0·11	0·20	0·34
Na_2O	3·70	4·66	4·71	5·62	6·96	6·50	5·03	6·26	7·08
K_2O	4·42	4·98	4·64	0·15	0·06	0·25	0·46	2·78	0·96
H_2O+	0·74*	0·04	0·46	0·12	0·17	0·27	0·61	0·15	0·34
H_2O-	0·01	0·13	0·05	0·23	0·08	—	0·04	0·05	0·15
CO_2	—	—	abs.	abs.	0·16	—	abs.	abs.	—
TiO_2	0·04	—	abs.	abs.	0·03	—	1·15	0·03	0·07
P_2O_5	0·04	—	tr.		tr.	—	abs.	—	—
MnO	0·09	—	0·42		abs.	—	abs.	—	—
Other Constituents				Cl=0·01	FeS_2=0·04				
	99·61	100·05	100·34	99·73	100·28	99·68	[99·75]	100·68	99·95

TABLE A — GRANITIC ROCKS — SiO_2>70%

a. CaO<1%

K_2O/Na_2O<0·75

	172	173	174	175	176	177	178	179	180
Rock Name	Porphyritic Aplite	Chinastone	Leucogranite	Soda Aplite	Granite	Alkaline Granite	Alkaline Granite	Pegmatitic Granite	Granite
Locality	Por. 58, Par. of Childowla, Burrinjuck, N.S.W.	Near Gumeracha, S.A.	Giants Head, S.A.	Soldiers Cap, Cloncurry, Qld.	West Bonnie Vale, Coolgardie, W.A.	40 miles S.S.W. of Darwin, N.T.	Newcastle Ra., Einasleigh Area, Qld.	Chiltern, Vic.	Olary, S.A.
Reference	**590**	**221**, 31	**316**, 32	**263**, 84 **266**, 47	**563**	**95**	**95**	**548**	**95**
Analyst	H. Yates	W. S. Chapman	A. R. Alderman	J. K. Burnett	B. W. Stenhouse	S. Baker	S. Baker	Vict. Dept. Mines	S. Baker
Remarks				Soda low		*Loss on ignition	*Loss on ignition		*Loss on ignition
Sp. Gr.	2·66	—	—	—	2·65			—	—
SiO_2	75·79	75·42	75·36	75·30	74·93	74·68	74·48	74·43	74·42
Al_2O_3	13·14	15·82	14·64	14·80	14·52	14·56	14·80	14·12	15·00
Fe_2O_3	0·24	0·28	0·35	0·25	0·48	1·58	1·05	1·18	0·39
FeO	1·18	—	0·17	0·14	0·89	0·37	0·46	—	1·03
MgO	0·14	0·10	0·12	0·03	0·51	0·33	0·08	0·64	0·30
CaO	0·26	0·82	0·49	0·07	0·29	0·48	0·99	0·88	0·41
Na_2O	4·94	7·77	5·48	6·70	6·81	4·77	4·40	6·36	4·37
K_2O	2·88	0·36	3·25	0·12	0·27	2·30	2·44	0·40	3·03
H_2O+	0·86	0·13	0·12	0·25	0·82	0·39*	0·83*	1·11	0·82*
H_2O-	0·07	0·02	0·21	0·21	abs.	abs.	0·01	0·27	0·01
CO_2	—	—	abs.	0·97	abs.	—	—	—	—
TiO_2	0·34	—	tr.	1·12	0·17	0·05	0·01	—	0·08
P_2O_5	nd.	—	0·19	abs.	0·11	0·05	0·01	0·01	0·06
MnO	—	—	—	abs.	tr.	0·04	0·08	—	0·07
Other Constituents			B_2O_3=0·19					SO_3=tr. Cl=0·01	
	99·84	100·72	100·57	99·96	99·80	99·60	99·64	99·50	99·99

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

a. $CaO < 1\%$

$K_2O/Na_2O < 0{\cdot}75$

	181	182	183	184	185	186	187
Rock Name	Chinastone	Chinastone	Soda Aplite *Sybella Granite*	Leucogranite	Pegmatite	Soda Granite	Pegmatite
Locality	Near Gumeracha, S.A.	Hartley, N.S.W.	Kittys Plain, near Mt. Isa, Qld.	Giants Head, S.A.	Near Lyndoch, S.A.	Radium Hill, S.A.	Near Lyndoch S.A.
Reference	**221**, 31	**365**, 103	**95**	**316**, 32	**395**, 59	**313**, 338 **111**, 27	**395**, 59
Analyst	W. S. Chapman	W. A. Greig	S. Baker	W. S. Chapman	W. S. Chapman	W. S. Chapman	W. S. Chapman
Remarks			*Loss on ignition		(?Albitite)	(?Albitite)	
Sp. Gr.	—	2·630	—	—			—
SiO_2	73·60	73·44	72·90	72·34	71·58	71·56	70·94
Al_2O_3	17·16	15·95	10·57	16·30	17·26	17·74	16·92
Fe_2O_3	0·28	0·30	3·65	0·06	1·56	0·30	2·20
FeO	—	0·18	1·52	0·22	—	0·86	—
MgO	0·16	0·34	3·92	0·20	abs.	abs.	tr.
CaO	0·56	0·14	0·10	0·50	0·54	0·38	abs.
Na_2O	6·66	6·81	4·67	5·26	8·49	7·54	5·92
K_2O	2·35	2·46	1·26	3·97	0·78	0·78	4·16
H_2O+	0·07	0·28	0·98*	1·25	0·09	0·47	0·06
H_2O-	0·03	0·10	0·10	0·07	0·19	0·15	0·18
CO_2	—	—	—	abs.	—	abs.	—
TiO_2	—	0·15	0·25	0·05	—	0·38	—
P_2O_5	—	0·02	0·07	0·13	—	0·03	—
MnO	—	tr.	0·06	0·01	—	0·01	—
Other Constituents						$FeS_2 = 0{\cdot}08$	
	100·87	100·17	100·05	100·36	100·49	100·28	100·38

TABLE A — GRANITIC ROCKS — SiO_2>70%

b. CaO=1%–2%

K_2O/Na_2O>1·25

	1	2	3	4	5	6	7	8	9
Rock Name	Aplite	Granite	Aplite	Pegmatite	Granite	Aplite	Muscovite Adamellite	Granite *Herbert River Granite*	Biotite Granite
Locality	Moruya, N.S.W.	Stanthorpe, Qld.	Dargo, Vic.	Tarnagulla, Vic.	Bolivia, N.S.W.	Watts Creek, Ensay Area, Vic.	Mt. Mulgine, W.A.	Herbert River, 7 mls. W. of Herberton, Qld.	Binnies Water, S.A.
Reference	**47**, 182	**60**, 153; **407**; **554**, 91	**208**, 137	**548**	**11**, 220; **554**, 91	**207**, 97	**456**, 7; **582**, 67	**95**	**317**, 238; **319**, 267
Analyst	I. A. Brown	G. R. Patten	A. W. Howitt	F. F. Field	J. C. H. Mingaye	A. W. Howitt	D. G. Murray	S. Baker	L. R. Parkin
Remarks			*H_2O- = 0·15 Dried before analysis			*H_2O- = 0·47 Dried before analysis		*Loss on ignition	
Sp. Gr.	2·646	—	2·611	—	2·626	2·635	2·66		—
SiO_2	77·92	77·15	76·48	75·96	75·78	75·74	75·40	75·20	75·18
Al_2O_3	11·99	13·45	13·94	13·01	12·42	12·45	12·68	12·73	12·89
Fe_2O_3	0·21	0·40	tr.	0·93	0·55	1·02	0·76	0·07	0·60
FeO	0·74	1·26	—	—	1·08	—	0·44	1·48	1·07
MgO	0·24	0·72	0·01	tr.	0·50	0·08	0·16	0·60	0·04
CaO	1·23	1·22	1·08	1·03	1·06	1·00	1·01	1·34	1·04
Na_2O	2·29	2·72	3·70	2·55	3·20	2·91	3·14	3·39	3·59
K_2O	4·78	3·26	4·90	5·74	4·60	6·77	4·68	4·42	5·06
H_2O+	0·26	0·30	0·86	0·39	0·44	0·33	0·58	0·44*	0·37
H_2O-	0·14	0·08	*	0·11	0·14	*	0·03	0·05	tr.
CO_2	—	—	—	—	0·01		0·88	—	—
TiO_2	0·18	—	—	tr.	0·29		0·05	0·05	0·14
P_2O_5	0·03	0·10	—	—	0·10		0·04	0·10	tr.
MnO	tr.	0·32	—	—	0·07		0·13	0·04	0·02
Other Constituents					SO_3=0·08 BaO=0·03		FeS_2=0·19 F=tr. B_2O_3=tr. ZrO_2=tr.		F=0·15
									100·15
Less O = Cl, F, S									0·07
	100·01	[100·98]	100·97	99·72	100·35	100·30	100·17	99·91	100·08

b. CaO=1%–2%

K_2O/Na_2O>1·25

	10	11	12	13	14	15	16	17	18
Rock Name	Granite Porphyry	Granite *Forsayth Granite*	Granite	Biotite Granite	Granophyre *Mt. Barney Granophyre*	Porphyritic Granite	Granite	Potash-soda Granite	Granite
Locality	Tharwa Village, A.C.T.	Georgetown, Qld.	Dergholm, near Casterton, Vic.	Mt. Mittamatite, near Corryong, Vic.	Mt. Barney, Qld.	30 miles S.W. of Whyalla, S.A.	Albany, W.A.	Armchair Rocks, Tintinara Area, S.A.	60 miles E. of Southern Cross, W.A.
Reference	**472**, 194	**95**	**319**, 275	**142**, 82	**486** **487**	**95**	**89**, 43	**319**, 267	**95**
Analyst	Rudowski & Unwin	A. McClure	F. F. Field	F. F. Field	E. L. P. Mercy	A. McClure	W. H. Herdsman	E. R. Segnit	A. McClure
Remarks		*Loss on Ignition	Vict. Mines Dept. unpub. record FeO=1·07, MnO=0·21			*Loss on ignition			*Loss on ignition
Sp. Gr.	—	—	—	—	—	—	—	2·631	—
SiO_2	75·14	74·80	74·37	74·28	74·1	73·71	73·69	73·67	73·56
Al_2O_3	12·42	13·61	13·01	12·90	12·08	12·75	13·61	13·55	12·85
Fe_2O_3	0·61	0·09	0·84	1·16	2·02	0·79	0·22	0·61	1·71
FeO	0·68	1·30	1·12	1·04	0·86	1·45	1·92	1·66	1·33
MgO	0·57	0·53	0·05	tr.	0·64	0·68	0·32	0·22	0·71
CaO	1·55	1·67	1·44	1·12	1·10	1·35	1·06	1·05	1·57
Na_2O	3·18	2·62	3·17	2·96	3·32	3·26	3·32	3·41	3·39
K_2O	4·74	4·95	4·56	5·32	4·98	5·51	5·43	5·01	4·32
H_2O+	0·54	0·70*	0·52	0·78	0·81	0·67*	0·37	0·24	0·36*
H_2O-	0·05	0·09	0·15	0·07	0·34	0·08	0·04	0·08	0·05
CO_2	0·03	—	tr.	tr.	—	—	abs.	0·23	—
TiO_2	0·21	0·09	0·25	0·17	0·21	0·23	0·18	0·26	0·38
P_2O_5	0·09	0·14	tr.	tr.	0·07	0·13	0·05	0·06	0·01
MnO	0·02	0·02	0·17	tr.	0·05	0·06	0·04	0·01	0·01
Other Constituents			Cl=tr. Li_2O=tr. S=0·04	Li_2O=tr. SO_3=abs.				BaO=0·02 F=0·14 Cl=0·04 S=0·01	
			99·69					100·27	
Less O = Cl, F, S			0·01					0·06	
	99·83	100·61	99·68	99·80	100·58	100·67	100·25	100·21	100·25

TABLE A — GRANITIC ROCKS — SiO_2>70%

b. CaO=1%–2%

K_2O/Na_2O>1·25

	19	20	21	22	23	24	25	26	27
Rock Name	Sodaclase Granite	Biotite Granite	Biotite Granite	Granite	Aplite	Granite	Granite *Dumbano Granite*	Garnetiferous Granite Porphyry	Granite *Tor Granite*
Locality	40 miles S. of Darwin, N.T.	Hartley, N.S.W.	Near Dromana Vic.	Mahogany Ck., W.A.	Jeremiah Ck, near Burrinjuck, N.S.W.	2 miles W. of Jerangle, N.S.W.	55 miles S. of Einasleigh, Qld.	Mt. Taylor, near Bairnsdale, Vic.	Middleback Ra. Area, S.A.
Reference	**95**	**247**, 24	**275**, 21	**447**, 18; **582**, 67	**590**	**399**	**95**	**548**	**132**, 228
Analyst	S. Baker	G. A. Joplin	F. F. Field	A. J. Robertson	H. Yates	J. H. Pyle	A. McClure	F. F. Field	G. C. Carlos
Remarks	*Loss on ignition						*Loss on ignition		
Sp. Gr.	—	2·658	2·65	2·66	2·67	—	—	2·59	—
SiO_2	73·51	73·51	73·42	73·36	73·23	73·09	73·06	72·94	72·82
Al_2O_3	14·49	14·03	13·50	13·88	14·73	13·89	13·77	13·49	13·80
Fe_2O_3	0·53	0·79	0·89	0·84	0·17	0·59	1·10	0·53	1·14
FeO	0·96	0·91	1·27	0·93	1·15	1·15	1·12	1·99	1·76
MgO	1·05	0·38	0·25	0·51	0·31	0·20	0·35	0·41	0·10
CaO	1·17	1·69	1·84	1·69	1·37	1·23	1·45	1·10	1·36
Na_2O	2·97	3·03	3·06	3·22	3·28	3·33	2·92	2·63	3·23
K_2O	3·98	4·58	4·44	5·07	4·82	5·61	5·99	5·00	4·93
H_2O+	0·53*	0·20	0·55	0·18	0·49	0·56	0·58*	1·06	0·17
H_2O-	abs.	0·18	0·16	0·11	0·08	0·02	0·04	0·38	tr.
CO_2	—	—	tr.	abs.	—	nd.	—	tr.	abs.
TiO_2	0·21	0·45	0·34	0·04	0·67	0·17	0·13	0·23	0·24
P_2O_5	0·04	0·05	tr.	0·07	0·09	0·12	0·05	0·16	0·38
MnO	0·02	0·01	0·15	0·15		0·05	0·03	0·05	0·04
Other Constituents			Li_2O=tr. Cl=tr. BaO=0·05	FeS_2=0·05 BaO=0·09 ZrO_2=tr.		V_2O_3=tr. Cr_2O_3=tr. CuO=tr. BaO=0·07		Li_2O=tr. SO_3=tr.	Cl=tr. SO_3=tr.
	99·46	99·81	99·92	100·19	100·39	100·08	100·59	99·97	99·97

b. CaO=1%–2%

K_2O/Na_2O>1·25

	28	29	30	31	32	33	34	35	36
Rock Name	Granite *Wonga Granite*	Porphyritic Granite *Sybella Granite*	Granodiorite *Kalkadoon Granite*	Granite	Granite *Wonga Granite*	Granite (slightly gneissic)	Alkaline Biotite Granite	Granite	Granodiorite *Kyambra Granodiorite*
Locality	Mary Kathleen, Qld.	Near McKellars Bore, S. of Mt. Isa, Qld.	20 miles S. of Duchess, Qld.	Gabo Island, Vic.	10 miles N. of Duchess, Qld.	Cowra, N.S.W.	Bannister, S.W. Division, W.A.	N.N.W. Brocks Creek Siding, N.T.	Near Wagga, N.S.W.
Reference	**95**	**262**, 56	**95**	**500**, 268	**95**	**489**, 92	**445**, 60 **447**, 18; **582**, 67	**95**	**95**
Analyst	S. Baker	G. A. Joplin	S. Baker	J. Watson	S. Baker	N. C. Stevens	C. C. Williams	S. Baker	A.M.D.L.
Remarks	*Loss on ignition		*Loss on ignition					*Loss on ignition	
Sp. Gr.	—	2·615	—	2·635	—	—	2·62	—	—
SiO_2	72·78	72·68	72·62	72·49	72·10	72·03	72·00	71·96	71·90
Al_2O_3	12·27	12·83	14·33	13·48	13·77	16·29	12·46	13·87	13·40
Fe_2O_3	1·54	0·97	0·29	1·16	2·00	0·39	0·62	0·41	0·38
FeO	2·47	2·25	2·38	2·09	1·29	1·73	3·13	1·35	2·90
MgO	0·45	0·04	0·29	0·49	0·30	0·40	0·27	0·68	0·58
CaO	1·56	1·55	1·44	1·31	1·43	1·61	1·41	1·07	1·47
Na_2O	2·44	3·50	2·54	3·38	3·22	2·65	3·47	3·50	3·00
K_2O	5·05	5·03	5·05	4·06	6·06	3·52	5·89	5·68	4·57
H_2O+	0·69*	0·50	0·33*	0·76	abs.	0·73	0·26	0·61*	0·82
H_2O-	abs.	0·02	abs.	0·18	abs.	0·12	0·15	abs.	0·19
CO_2	—	—	—	tr.	—	—	0·03	—	—
TiO_2	0·08	0·43	0·09	0·46	0·13	0·32	0·38	0·30	0·38
P_2O_5	0·11	0·03	0·08	tr.	0·05	nd.	—	0·07	0·17
MnO	0·05	tr.	0·07	0·13	0·04	0·03	—	0·05	0·05
Other Constituents									
	99·49	99·83	99·51	99·99	100·39	99·82	100·07	99·55	99·81

TABLE A — GRANITIC ROCKS — SiO_2>70%

b. CaO=1%–2%

K_2O/Na_2O>1·25

	37	38	39	40	41	42	43	44	45
Rock Name	Granite *Forsayth Granite*	Granite	Granite	Granodiorite Porphyry	Biotite Granite	Biotite Adamellite	Granite	Granite	Porphyritic Biotite Adamellite
Locality	7 miles N. of Georgetown, Qld.	45 miles S. of Einasleigh, Qld.	Blue Tier, Tas.	Mt. Macedon, Vic.	Gnarlbine Rock, Coolgardie, W.A.	Ingliston, near Ballarat, Vic.	20 miles W. of Coolgardie, W.A.	Encounter Bay, S.A.	Esperance, W.A.
Reference	**95**	**95**	**417**, 20	**468**, 20 **554**, 91	**563**	**500**, 268	**95**	**220**, 68	**89**, 43
Analyst	A. McClure	A. McClure	Not Stated	A. G. Hall	D. Burns	A. H. Hall	A. McClure	W. S. Chapman	—
Remarks	*Loss on ignition	*Loss on ignition	*Loss on ignition				*Loss on ignition	Average Sample	
Sp. Gr.	—	—	—	—	—	—		—	—
SiO_2	71·82	71·68	71·68	71·65	71·63	71·57	71·56	71·44	71·40
Al_2O_3	14·09	14·72	15·57	14·56	14·76	13·58	14·72	15·09	14·73
Fe_2O_3	0·75	1·01	2·86	1·13	1·09	1·18	1·75	0·86	1·01
FeO	1·32	1·39	2·32	1·56	1·10	2·19	1·32	2·35	2·38
MgO	0·45	0·54	0·86	0·84	0·13	1·07	0·50	0·80	0·14
CaO	1·38	1·16	1·20	1·27	1·87	1·72	1·46	1·18	1·92
Na_2O	2·57	3·62	1·75	2·76	3·66	2·79	3·65	2·09	2·92
K_2O	6·61	4·76	2·24	4·14	4·98	4·36	4·79	4·46	4·46
H_2O+	0·93*	0·58*	1·98*	0·15	0·19	0·69	0·32*	0·24	0·62
H_2O-	0·02	0·24	—	1·20	0·06	0·11	0·03	0·04	0·08
CO_2	—	—	—	abs.	0·27	0·29	—	tr.	abs.
TiO_2	0·91	0·28	—	0·35	0·18	0·46	0·42	0·53	0·38
P_2O_5	0·03	0·08	—	0·12	0·17	0·11	0·07	0·22	0·05
MnO	0·04	0·06	0·18	0·04	0·01	0·09	0·05	0·02	tr.
Other Constituents			F=1·36	Cl=tr. Li_2O=tr.				Cl=0·05 FeS_2=0·04 BaO=abs.	
			101·00					99·41	
Less O = Cl, F, S			0·60					0·01	
	100·92	100·12	100·40	99·77	100·10	100·21	100·64	99·40	100·09

b. CaO=1%–2%

K_2O/Na_2O>1·25

	46	47	48	49	50	51	52	53	54
Rock Name	Biotite Adamellite	Hornblende-biotite Adamellite	Granite	Porphyritic Granite *Sybella Granite*	Porphyritic Biotite Granite	Granite	Granite	Granite *Wonga Granite*	Adamellite *Shoebridge Granite*
Locality	Oura, near Wagga, N.S.W.	Tolmers Rock, Tintinara Area, S.A.	30 miles S. of Einasleigh, Qld.	Mica Ck., S. of Mt. Isa, Qld.	Mt. Beckworth, near Ballarat, Vic.	Mt. Bundy, N.T.	Cape Radstock, Eyre Pen., S.A.	30 miles W. of Cloncurry, Qld.	Mt. Shoebridge, Stuart Highway, N.T.
Reference	**535**, 202	**319**, 267	**95**	**262**, 56	**591**, 96	**95**	**95**	**95**	**95**
Analyst	T. G. Vallance	E. R. Segnit	A. McClure	G. A. Joplin	H. Yates	S. Baker	A. McClure	S. Baker	S. Baker
Remarks			*Loss on ignition		* (?) Total Iron repeated	*Loss on ignition	*Loss on ignition	*Loss on ignition	*Loss on ignition
Sp. Gr.	—	—	—	2·653	—		—	—	—
SiO_2	71·33	71·28	71·26	71·26	71·16	71·16	70·98	70·90	70·88
Al_2O_3	14·82	14·05	14·01	13·95	14·06	13·82	13·67	13·81	15·00
Fe_2O_3	1·99	1·13	1·06	1·08	2·88*	1·59	1·31	0·93	1·80
FeO	2·31	1·94	1·70	2·58	2·88*	1·09	1·44	1·00	0·89
MgO	0·99	0·33	0·83	0·10	0·89	1·23	0·74	0·35	0·74
CaO	1·60	1·81	1·57	1·84	1·68	1·45	1·53	1·93	1·27
Na_2O	2·61	3·56	2·80	2·74	3·16	3·71	4·02	3·70	3·29
K_2O	3·39	4·78	5·05	5·65	5·70	5·05	5·21	6·19	4·48
H_2O+	0·89	0·37	0·77*	0·37	0·34	0·58*	0·90*	0·28*	0·75*
H_2O-	0·12	0·09	0·21	0·07	0·12	abs.	0·17	abs.	abs.
CO_2	—	0·15	—	—	—	—	—	—	—
TiO_2	0·52	0·37	0·44	0·26	0·31	0·09	0·26	0·21	0·26
P_2O_5	tr.	0·13	0·09	0·41	0·12	0·07	0·16	0·05	0·03
MnO	0·04	0·05	0·02	tr.	—	0·03	0·09	0·07	0·03
Other Constituents		ZrO_2=0·03 BaO=0·02 F=0·09 S=0·01 Cl=0·08							
		100·27							
Less O = Cl, F, S		0·06							
	100·61	100·21	99·81	[100·31]	[103·30]*	99·87	100·48	99·42	99·42

TABLE A — GRANITIC ROCKS — SiO_2>70%

b. CaO=1%–2%

	K_2O/Na_2O>1·25						K_2O/Na_2O=1·25–0·75		
	55	56	57	58	59	60	61	62	63
Rock Name	Porphyritic Gneissic Granite *Wonga Granite*	Granite *Dumbano Granite*	Pegmatite	Aplite	Adamellite *Shoebridge Granite*	Granite	Granite	Granophyre	Granite
Locality	15½ miles W.S.W. of Quamby, Qld.	40 miles S.S.W. of Einasleigh, Qld.	Broken Hill, N.S.W.	Talmo, near Burrinjuck, N.S.W.	Mt. Shoebridge, Stuart Highway, N.T.	11½ miles from Tumbalong, near Wagga, N.S.W.	Stanthorpe, Qld.	Near Moograh, Mt. Moon Area, Qld.	Middleback Ra., S.A.
Reference	**262**, 56	**95**	**53**, 30; **362**, 187; **495**, 376	**590**	**95**	**95**	**60**, 153; **407**, **422**, 150; **554**, 71	**490**	**132**, 229
Analyst	G. A. Joplin	S. Baker	W. G. Stone	H. Yates	S. Baker	A.M.D.L.	G. R. Patten	Avery & Anderson	G. C. Carlos
Remarks		*Loss on ignition	Vein in Footwall Gneiss		*Loss on ignition				2" from Xenolith
Sp. Gr.	2·702	—	2·677	2·68			—	—	—
SiO_2	70·77	70·58	70·54	70·51	70·42	70·40	76·19	75·62	75·36
Al_2O_3	14·97	13·80	13·58	14·70	14·02	14·50	11·53	12·97	12·77
Fe_2O_3	0·36	1·00	0·80	2·01	0·73	0·63	0·84	tr.	1·85
FeO	2·78	1·00	1·17	1·31	1·55	3·05	1·25	1·28	0·54
MgO	0·18	0·53	0·43	0·61	1·29	1·44	0·60	0·25	0·18
CaO	1·86	1·30	1·60	1·03	1·63	1·68	1·14	1·42	1·00
Na_2O	3·23	4·21	1·45	3·04	3·34	2·15	3·80	3·36	3·48
K_2O	5·04	7·37	8·81	5·03	6·06	3·75	4·14	4·03	4·13
H_2O+	0·39	0·40*	0·26	1·35	0·98*	1·35	0·28	1·15	0·31
H_2O-	0·12	abs.	0·08	0·11	0·02	0·14	abs.	0·13	0·02
CO_2	—	—	0·02	—	—	—	—	—	abs.
TiO_2	0·68	0·07	0·20	0·58	0·25	0·50	0·09	0·22	0·22
P_2O_5	pnd.	0·05	0·94	0·13	0·10	0·14	0·25	0·09	tr.
MnO	tr.	0·06	0·24	—	0·08	0·04	0·16	0·02	0·03
Other Constituents			Cl=0·02 BaO=0·17						Cl=abs. SO_3=0·01
	100·38	100·37	100·31	100·41	100·47	99·77	100·27	100·53	[99·90]

b. $CaO = 1\% - 2\%$

$K_2O/Na_2O = 1 \cdot 25 - 0 \cdot 75$

	64	65	66	67	68	69	70	71	72
Rock Name	Granite *Robin Hood Granite*	Biotite Granite	Granite (Younger Granite)	Granite	Adamellite	Granite	Hornblende-biotite Granite	Alkaline Granite	Granite
Locality	15 miles S.S.E. of Forsayth, Qld.	Kookynie, W.A.	Canning Dam, W.A.	Palmer, S.A.	Beeragoona, W.A.	Swanport, Murray Bridge, S.A.	Crottys Knob, S.A.	Newcastle Ra., Einasleigh Area, Qld.	Palmer, S.A.
Reference	**95**	**273**, 23	**403**, 144; **582**, 67	**411**, 154	**456**, 24; **582**, 67	**2**, 252; **220**, 70; **240**, 125; **277**, 238	**317**, 235; **319**, 267	**95**	**2**, 252; **220**, 68
Analyst	A. McClure	H. Bowley	R. T. Prider	J. H. Rattigan		W. S. Chapman	E. R. Segnit	S. Baker	W. S. Chapman
Remarks	*Loss on ignition					F analysed by A. W. Kleeman			
Sp. Gr.	—	2·66	2·66	—	2·64	—	2·784	—	—
SiO_2	75·06	74·98	74·80	74·62	74·56	74·20	74·08	74·06	73·96
Al_2O_3	14·01	12·85	13·93	13·91	14·58	14·53	13·50	12·80	13·67
Fe_2O_3	0·87	0·16	0·78	1·18	tr.	1·14	0·60	1·86	1·22
FeO	0·40	1·59	0·97	0·92	0·78	0·90	1·64	0·90	1·03
MgO	0·16	0·59	0·22	0·55	0·28	0·20	0·16	0·38	0·56
CaO	1·13	1·55	1·92	1·61	1·65	1·00	1·09	1·00	1·58
Na_2O	4·05	3·80	3·89	3·15	3·92	3·06	3·86	3·92	3·01
K_2O	3·94	3·34	3·30	3·56	3·82	3·55	4·19	4·93	3·36
H_2O+	0·41*	0·48	0·14	0·25	0·28	0·15	0·23	0·60	0·29
H_2O-	abs.	0·10	0·24	0·14	0·02	0·15	0·06	0·05	0·04
CO_2	—	0·05	—	—	abs.	0·11	—	—	0·22
TiO_2	0·02	0·21	0·14	0·32	0·05	0·29	0·24	0·12	0·37
P_2O_5	0·02	0·06	0·05	0·08	tr.	0·08	0·04	0·02	0·16
MnO	0·01	0·11	0·02	—	0·22	0·03	0·03	0·03	0·04
Other Constituents		$FeS_2 = 0 \cdot 09$ ZrO_2 = tr.		S = 0·04	$FeS_2 = 0 \cdot 06$	F = 0·19 Cl = 0·03 $FeS_2 = 0 \cdot 10$	BaO = 0·03 $ZrO_2 = 0 \cdot 02$ S = 0·04 F = 0·16		Cl = 0·02 $FeS_2 = 0 \cdot 25$
				[100·33]		99·71	99·97		
Less O = Cl, F, S				0·02		0·09	0·06		
	100·08	99·96	100·40	100·31	100·22	99·62	99·91	100·67	99·78

TABLE A — GRANITIC ROCKS — SiO_2>70%

b. CaO=1%–2%

K_2O/Na_2O=1·25–0·75

	73	74	75	76	77	78	79	80	81
Rock Name	Granite *Elizabeth Creek Granite*	Granite *Murray Bridge Granite*	Granite	Granite *Enoggera Granite*	Granite	Aplite	Adamellite	Granite *Dumbano Granite*	Granite
Locality	15 miles S.E. of Chillagoe, Qld.	Murray Bridge, S.A.	12 miles E.N.E. of Perth, W.A.	Enoggera, Qld.	Boya, W.A.	Mannum, S.A.	Monarto, S.A.	50 mls. S.S.E. of Einasleigh, Qld.	Monarto, S.A.
Reference	**95**	**240**, 125	**95**	**60**, 128; **408**; **61**, 52; **554**, 147	**108**, 254; **582**, 67	**2**, 251	**240**, 132	**95**	**2**, 252; **220**, 68; **240**, 132
Analyst	A. McClure	J. M. Kruger	S. Baker	G. R. Patten	J. N. A. Grace	A. R. Alderman	R. K. Johns	A. McClure	W. S. Chapman
Remarks	*Loss on ignition		*Loss on ignition					*Loss on ignition	
Sp. Gr.	—	—		—	—	2·70	—	—	—
SiO_2	73·84	73·83	73·72	73·52	73·49	73·49	73·20	72·63	72·42
Al_2O_3	13·72	12·45	13·96	11·05	14·24	14·14	15·46	14·38	15·49
Fe_2O_3	0·83	0·74	1·60	abs.	0·88	1·26	0·64	1·08	0·44
FeO	1·49	1·64	0·20	3·15	0·92	0·69	0·80	0·96	1·03
MgO	0·56	0·24	0·25	1·03	0·43	0·44	0·48	0·43	0·20
CaO	1·58	1·04	1·25	1·70	1·84	1·60	1·73	1·94	1·44
Na_2O	3·50	4·29	3·82	4·08	3·86	3·75	3·90	4·10	4·30
K_2O	4·26	5·13	4·17	3·99	3·42	3·67	3·34	3·54	3·78
H_2O+	0·32*	0·26	0·59*	0·44	0·55	0·34	0·22	0·62*	0·12
H_2O-	0·11	0·02	0·02	0·16	0·08	0·13	0·08	0·04	0·18
CO_2	—	—	—	—	0·07	tr.	—	—	0·04
TiO_2	0·15	0·30	0·10	0·20	0·14	0·25	0·23	0·14	0·22
P_2O_5	0·14	0·09	0·10	0·15	0·01	0·11	0·08	0·03	0·19
MnO	0·06	tr.	0·07	—	tr.	0·02	tr.	0·08	0·02
Other Constituents		ZrO_2=0·06 BaO=0·05 S=0·06 F=0·11			BaO=0·07 FeS_2=0·01	ZrO_2=tr. S=0·05 BaO=abs. Cr_2O_3=abs.	ZrO_2=0·11 S=0·02 BaO=0·06		BaO=abs. FeS_2=0·11 Cl=abs.
		100·31							
Less O = Cl, F, S		0·05							
	100·56	100·26	99·85	99·47	100·01	99·94	100·35	99·97	99·98

b. CaO=1%–2%

K_2O/Na_2O=1·25–0·75

	82	83	84	85	86	87	88	89	90
Rock Name	Granite *Roberts Creek Granite*	Adamellite *Wimberu Granite*	Granite	Micro-adamellite *Naraku Granite*	Granite	Aplite	Porphyritic Biotite Granite	Gneissic Granite	Adamellite *Williams Granite*
Locality	5 miles W. of Finnis Crossing, N.T.	35 miles S. of Cloncurry, Qld.	5 miles S. of Einasleigh, Qld.	North of Cloncurry, Qld.	Castlemaine, Vic.	Limestone Ck., Burrinjuck, N.S.W.	Bullabulling Rocks, Coolgardie, W.A.	Hillgrove, N.S.W.	S. of Cloncurry, Qld.
Reference	**95**	**95**	**95**	**95**	**184**, 34; **554**, 753	**590**	**563**	**11**, 218, **554**, 215	**95**
Analyst	S. Baker	A. McClure	A. McClure	S. Baker	P. G. Bayley	H. Yates	D. Burns	J. C. H. Mingaye	S. Baker
Remarks	*Loss on ignition	*Loss on ignition	*Loss on ignition	*Loss on ignition				Dyke invading "Blue Granite"	*Loss on ignition
Sp. Gr.	—	—		—	—	2·65	2·665	2·678	—
SiO_2	71·78	71·70	71·58	71·48	71·31	71·25	71·23	70·74	70·56
Al_2O_3	15·48	13·63	14·55	15·19	15·31	14·50	14·95	14·91	14·25
Fe_2O_3	0·39	2·02	1·04	1·48	3·82	0·36	0·43	0·33	2·16
FeO	1·49	1·47	1·28	1·29	nd.	1·30	1·70	2·43	1·52
MgO	0·92	0·75	0·51	0·12	tr.	0·71	0·33	0·89	0·66
CaO	1·78	1·84	1·26	1·25	1·68	1·32	1·36	1·88	1·75
Na_2O	4·03	3·81	4·31	3·98	4·08	3·84	4·08	3·29	3·71
K_2O	3·66	4·51	4·88	4·04	3·57	4·58	4·49	4·07	4·17
H_2O+	0·86*	0·48*	0·63*	0·47*	0·40	1·53	0·48	0·48	0·64*
H_2O-	abs.	0·07	0·13	0·04	0·43	0·16	0·08	0·32	0·02
CO_2	—	—	—	—	—	—	0·01	0·05	—
TiO_2	0·10	0·30	0·18	0·11	—	0·52	0·42	0·37	0·09
P_2O_5	0·07	0·10	0·14	0·10	tr.	—	0·59	0·04	0·13
MnO	0·03	0·05	0·06	0·07	—	—	0·02	0·13	0·07
Other Constituents					Cl=0·14			SO_3=0·41 BaO=0·02 Sb_2O_3=0·03	
					100·74				
Less O = Cl, F, S					0·03				
	100·59	100·73	100·55	99·62	100·71	100·07	100·17	100·39	99·73

TABLE A — GRANITIC ROCKS — SiO_2>70%

b. CaO=1%–2%

K_2O/Na_2O=1·25–0·75			K_2O/Na_2O<0·75						
	91	92	93	94	95	96	97	98	99
Rock Name	Adamellite *Mt. Bundy Granite*	Granite	Granodiorite	Granite	Granite	Biotite Granite	Granite *Esmeralda Granite*	Soda Granite	Adamellite *Williams Granite*
Locality	Mt. Bundy Ck, N.T.	Inverell, N.S.W.	30 miles N.E. of Mt. Painter, S.A.	E. end of Everard Ra., S.A.	Ballandean, Qld.	Mt. Cole, near Ballarat, Vic.	30 miles W. of Georgetown, Qld.	Tynong, Vic.	30 miles W.S.W. of Selwyn, Qld.
Reference	**95**	**99**, 225	**95**	**95**	**60**, 154, **407**, **554**, 53	**591**, 96	**95**	**548**	**95**
Analyst	S. Baker	L. A. Cotton	S. Baker	S. Baker	G. R. Patten	H. Yates	A. McClure	F. F. Field	S. Baker
Remarks	*Loss on ignition		*Loss on ignition	*Loss on ignition			*Loss on ignition		*Loss on ignition
Sp. Gr.		—		—	—	—	—	2·63	—
SiO_2	70·40	76·69	76·42	75·06	74·89	73·98	73·79	73·04	72·58
Al_2O_3	15·18	10·89	13·48	13·10	15·11	13·30	15·28	13·25	15·55
Fe_2O_3	1·57	0·76	0·44	1·27	1·06	0·61	0·62	0·43	0·80
FeO	1·36	0·39	0·71	0·48	2·26	1·40	1·21	2·12	0·46
MgO	1·16	0·18	0·55	0·26	0·82	0·71	0·42	0·59	0·63
CaO	1·53	1·73	1·25	1·60	1·67	1·56	1·83	1·80	1·75
Na_2O	3·39	5·35	3·92	5·41	2·06	4·96	4·86	4·89	5·62
K_2O	3·84	2·97	2·27	1·77	0·73	3·16	2·06	3·56	1·77
H_2O+	0·63*	0·13	0·46*	0·39*	0·50	0·44	0·42*	0·69	0·25*
H_2O-	0·03	0·37	abs.	abs.	0·31	abs.	0·02	0·10	0·05
CO_2	—	—	—	—	—	—	—	abs.	—
TiO_2	0·34	—	0·07	0·07	—	0·40	0·12	0·27	0·12
P_2O_5	0·16	—	0·04	0·14	0·27	0·06	0·03	tr.	0·10
MnO	0·05	—	0·08	0·06	0·22	—	0·04	tr.	0·05
Other Constituents								Li_2O=tr. SO_3=tr. Cl=tr.	
	99·64	99·46	99·69	99·61	99·90	[100·58]	100·70	100·74	99·73

TABLE A — GRANITIC ROCKS — $SiO_2 > 70\%$

b. CaO = 1%–2%						c. CaO = 2%–3%			
	$K_2O/Na_2O < 0{\cdot}75$					$K_2O/Na_2O > 1{\cdot}25$			
	100	101	102	103		1	2	3	4
Rock Name	Granite	Hornblende Soda Granite	Granite *Forsayth Granite*	Soda Granite		Granite *Boro Granite*	Granite *Mareeba Granite*	Granodiorite *Shannons Flat Granodiorite*	Adamellite *Tharwa Adamellite*
Locality	Broken Hill, N.S.W.	Mt. Norcote, W.A.	Newcastle Ra., Einasleigh Area, Qld.	Ravens-thorpe, W.A.		Boro, E. of Lake George, N.S.W.	Near Mareeba Township, Qld.	N.W. of Shannons Flat, near Cooma, N.S.W.	Tharwa, A.C.T.
Reference	**226**, 51; **554**, 161	**304**, 9; **558**, 107; **582**, 67	**95**	**447**, 44; **461**, 21; **521**, 666; **554**		**95**	**332**	**472**, 194	**472**, 194
Analyst	J. C. H. Mingaye	H. P. Rowledge	S. Baker	E. S. Simpson		J. C. Watts	S. Baker	Rudowski & Unwin	Rudowski & Unwin
Remarks		*Original publication F quoted in error as S.	*Loss on ignition				*Loss on ignition		
Sp. Gr.	—	2·65		2·70		—	—	—	2·68
SiO_2	71·56	71·32	70·40	70·27		73·70	73·02	73·02	72·74
Al_2O_3	17·27	15·14	16·95	16·11		12·6	14·32	12·49	13·16
Fe_2O_3	nd.	0·67	1·00	0·97		0·94	0·41	0·60	0·89
FeO	0·78	0·54	0·31	1·22		1·81	1·81	1·64	1·83
MgO	tr.	0·43	0·12	1·87		0·71	0·80	1·21	0·80
CaO	1·06	1·47	1·40	1·76		2·65	2·02	2·45	2·55
Na_2O	6·82	5·25	6·06	4·64		2·75	2·76	2·75	2·56
K_2O	2·13	3·14	2·10	0·64		3·65	3·92	4·40	4·14
H_2O+	0·26	0·40	0·81*	1·08		0·87	0·67*	0·65	0·70
H_2O-	—	0·16	0·06	0·10		0·11	abs.	0·05	0·06
CO_2	—	0·20	—	0·20		—	—	0·07	0·05
TiO_2	—	0·11	0·20	0·12		0·30	0·11	0·38	0·43
P_2O_5	0·22	0·57	0·05	0·12		0·06	0·07	0·12	0·15
MnO	—	0·08	0·06	0·20		0·04	0·08	0·05	0·02
Other Constituents	SO_3 = 0·35	FeS_2 = abs. F = 0·13*		0·09					
		99·61							
Less O = Cl, F, S		0·06							
	100·45	99·55	99·52	99·39		100·19	99·99	99·88	100·08

TABLE A — GRANITIC ROCKS — SiO_2>70%

c. CaO=2%–3%

	K_2O/Na_2O>1·25								K_2O/Na_2O= 1·25–0·75
	5	6	7	8	9	10	11	12	13
Rock Name	Granodiorite *Shannons Flat Granodiorite*	Adamellite *Tharwa Adamellite*	Granite	Granite	Granodiorite *Kalkadoon Granite*	Granodiorite *Shannons Flat Granodiorite*	Granodiorite *Kalkadoon Granite*	Biotite Granodiorite	Granodiorite *Shannons Flat Granodiorite*
Locality	N.W. of Tharwa, A.C.T.	Tharwa, A.C.T.	Hartley, N.S.W.	Tingha, N.S.W.	5 miles E. of Dajarra, Qld.	Shannons Flat, W.N.W. of Cooma, N.S.W.	Wills Ck., on Duchess-Dajarra Rd., Qld.	Lilydale, Vic.	N.W. of Tharwa, A.C.T.
Reference	**95**	**472**, 194	**95**	**81**, 64; **353**, 191; **554**, 215	**95**	**535**, 210	**262**, 56	**134**, 131	**472**, 194
Analyst	J. C. Watts	Rudowski & Unwin	J. C. Watts	H. P. White	A. McClure	G. A. Joplin	B. E. Williams	F. F. Field	Rudowski & Unwin
Remarks					*Loss on ignition	Al_2O_3 high (?)			
Sp. Gr.	—	2·69	—	2·687	—		2·686	—	—
SiO_2	72·5	71·56	71·4	71·27	71·21	70·31	70·29	70·12	74·23
Al_2O_3	13·7	13·92	13·9	13·40	13·94	18·68	12·59	14·66	12·60
Fe_2O_3	0·44	0·77	1·17	1·11	0·87	0·63	0·69	1·53	0·50
FeO	2·50	2·12	1·34	1·89	2·52	1·83	2·49	1·96	1·34
MgO	0·51	0·60	0·80	0·79	0·76	1·10	0·96	0·99	0·31
CaO	2·45	2·61	2·15	2·46	2·28	2·22	2·31	2·34	2·80
Na_2O	2·20	2·84	3·10	3·08	2·88	1·37	3·72	2·25	2·98
K_2O	3·90	4·32	4·45	4·91	4·68	3·32	4·72	3·60	3·72
H_2O+	1·19	0·79	1·05	0·32	0·77*	0·65	0·64	1·22	0·75
H_2O-	0·07	0·04	0·10	0·18	0·07	0·09	0·08	0·37	0·06
CO_2	—	0·05	—	0·03	—	—	—	abs.	0·03
TiO_2	0·30	0·46	0·36	0·24	0·23	0·35	0·78	0·52	0·32
P_2O_5	0·07	0·15	0·12	0·10	0·07	0·06	0·38	0·22	0·08
MnO	0·02	0·02	0·04	0·07	0·08	—	0·02	abs.	0·06
Other Constituents		—		Cl=0·06 (Ni·Co) O= 0·01				FeS_2=0·10 Cl=tr. Li_2O=pnd.	
				99·92					
Less O = Cl, F, S				0·01					
	99·85	100·25	99·98	99·91	100·36	100·61	[99·67]	99·88	99·78

c. CaO=2%–3%

K_2O/Na_2O=1·25–0·75

	14	15	16	17	18	19	20	21	22
Rock Name	Granite *Herbert River Granite*	Granite	Porphyritic Granite	Granite *Charlestone Granite*	Granodiorite	Adamellite	Granite *Enoggera Granite*	Granite *Herbert River Granite*	Granodiorite
Locality	N.E. Einasleigh Area, Qld.	West of Braidwood, N.S.W.	30 miles N. of Mt. Painter, S.A.	Middleback Ra. Area, S.A.	Charters Towers, Qld.	The Granites, N.T.	Enoggera, Qld.	70 miles N.E. of Einasleigh, Qld.	Harcourt, Vic.
Reference	**95**	**95**	**95**	**132**, 228	**418**, 69	**276**, 235	**60**, 128; **422**, 150	**95**	**500**, 268
Analyst	A. McClure	S. Baker	S. Baker	G. C. Carlos	F .E. Connah	A. W. Kleeman	N. Christensen	A. McClure	G. Ampt
Remarks	*Loss on ignition	*Loss on ignition	*Loss on ignition					*Loss on ignition	
Sp. Gr.	—		—	—	—	2·688	—	—	—
SiO_2	72·34	71·92	71·91	71·82	71·58	71·55	71·50	71·09	70·94
Al_2O_3	13·84	13·51	15·04	12·08	15·04	15·00	14·13	15·06	13·99
Fe_2O_3	0·82	2·07	2·87	2·02	0·97	0·56	0·60	0·86	0·35
FeO	2·29	1·66	1·03	2·70	1·66	2·13	3·23	2·07	3·02
MgO	0·71	0·35	0·25	0·77	0·90	0·14	1·17	0·64	0·80
CaO	2·02	2·63	2·00	2·57	2·52	2·18	2·70	2·40	2·35
Na_2O	3·33	2·86	2·91	2·97	3·83	3·92	2·97	4·02	3·94
K_2O	3·69	3·35	3·35	3·70	3·12	3·68	2·86	3·05	3·66
H_2O+	0·62*	1·00*	0·75*	0·08	0·20	0·43	0·32	0·32*	0·21
H_2O-	0·05	0·08	abs.	0·26	0·15	0·05	0·10	0·11	0·11
CO_2	—	—	—	0·03	tr.	—	—	—	abs.
TiO_2	0·24	0·23	0·22	0·76	0·16	0·39	0·41	0·22	0·58
P_2O_5	0·03	0·18	0·10	0·16	0·13	0·19	0·35	0·19	tr.
MnO	0·06	0·13	0·10	0·08	0·03	0·04	tr.	0·07	abs.
Other Constituents				Cl=tr. SO_3=tr.	S=0·02 F=abs.	BaO=abs. ZrO_2=0·04 S=0·06 Cr_2O_3=abs.			
	100·04	99·97	100·53	100·00	100·31	100·36	100·34	100·10	99·95

TABLE A — GRANITIC ROCKS — SiO_2>70%

c. CaO=2%–3%

	K_2O/Na_2O=1·25–0·75				K_2O/Na_2O<0·75				
	23	24	25	26	27	28	29	30	31
Rock Name	Biotite Granite	Two Mica Granite	Granite *Forsayth Granite*	Biotite Adamellite	Granite	Granodiorite *Litchfield Complex*	Granodiorite	Granodiorite *Sybella Granite*	Hornblende-biotite Granite
Locality	Moruya, N.S.W.	North of Albury, N.S.W.	20 miles S.E. of Einasleigh, Qld.	Gong Gong, Ballarat, Vic.	Burrinjuck, N.S.W.	Mt. Litch-field, N.T.	5 miles S. of Geehi Dam, N.S.W.	20 m. N.W. of Dajarra, Qld.	S. of Pine Mt., Cowra, N.S.W.
Refer-ence	**47**, 182	**260**, 120	**95**	**591**, 96	**590**	**95**	**95**	**95**	**489**, 92
Analyst	I. A. Brown	G. A. Joplin	A. McClure	H. Yates	H. Yates	S. Baker	A.M.D.L.	S. Baker	N. C. Stevens
Remarks			*Loss on ignition			*Loss on ignition		*Loss on ignition	
Sp. Gr.	2·688	2·69	—	—	2·64			—	—
SiO_2	70·78	70·73	70·48	70·22	75·28	74·00	72·7	72·68	72·30
Al_2O_3	15·77	15·38	14·86	16·32	11·36	14·06	13·8	12·94	14·50
Fe_2O_3	0·69	0·50	1·03	0·42	0·96	1·28	0·66	2·56	0·73
FeO	2·44	2·31	2·12	1·40	0·95	1·29	2·95	1·52	1·98
MgO	0·72	0·79	1·13	0·78	0·13	0·41	0·46	0·66	0·52
CaO	2·53	2·54	2·90	2·02	2·05	2·28	2·25	2·57	2·60
Na_2O	2·88	3·78	3·14	3·86	5·07	4·35	4·45	4·88	3·63
K_2O	2·44	3·29	3·40	3·62	3·27	1·26	1·68	1·10	2·53
H_2O+	0·50	0·29	0·81*	0·53	0·55	0·35*	0·59	0·41*	0·62
H_2O-	0·06	0·10	0·07	abs.	0·12	abs.	0·10	0·03	0·13
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0·45	0·34	0·21	0·54	0·43	0·22	0·31	0·30	0·36
P_2O_5	0·25	0·42	0·19	0·11	0·04	0·03	0·07	0·15	nd.
MnO	0·08	0·04	0·06	—	0·03	0·03	0·05	0·06	0·19
Other Con-stituents					S=0·05				
	99·59	100·51	100·40	99·82	100·29	99·56	100·07	99·86	100·09

TABLE A — GRANITIC ROCKS — SiO_2>70%

	c. CaO=2%–3%					d. CaO>3%		
	K_2O/Na_2O<0·75					K_2O/Na_2O<0·75		
	32	33	34	35	36	1	2	3
Rock Name	Granophyre	Granite *Forsayth Granite*	Granite	Granite	Granite *Dumbano Granite*	Enderbite (Hypersthene Granite)	Foliated Granite	Soda Granite
Locality	W. of Stawell, Vic.	Einasleigh Area, Qld.	15 miles S.E. of Mareeba, Qld.	20 miles N.E. of George-town, Qld.	55 miles S. of Einasleigh, Qld.	Proclamation I., Enderby Land, Ant.	Tharwa, A.C.T.	Coolgardie, W.A.
Refer-ence	**548**	**95**	**95**	**95**	**95**	**528**, 7	**297**, 54	**447**, 16; **582**, 67
Analyst	P. G. W. Bayly	A. McClure	S. Baker	A. McClure	S. Baker	Not Stated	A. G. Hall	H. P. Webb
Remarks		*Loss on ignition	*Loss on ignition	*Loss on ignition	*Loss on ignition		*Alkalis or CaO trans-posed?	
Sp. Gr.	—	—	—	—	—	—	2·698	2·67
SiO_2	71·71	71·70	71·60	70·48	70·00	75·50	72·11	70·40
Al_2O_3	14·84	14·76	15·43	15·45	16·40	13·92	13·89	14·18
Fe_2O_3	1·72	0·64	0·75	0·80	1·29	0·48	1·28	0·50
FeO	4·67	2·08	2·00	1·73	0·57	1·17	2·00	1·67
MgO	abs.	0·88	1·00	0·85	0·52	0·52	1·30	1·34
CaO	2·18	2·86	2·58	2·64	2·61	3·54	4·47*	3·00
Na_2O	3·17	3·62	3·92	4·58	6·18	3·64	2·66*	5·18
K_2O	1·46	2·54	1·26	2·52	2·15	0·74	0·16*	1·88
H_2O+	abs.	0·56*	0·54*	0·98*	0·62*	0·15	1·12	0·56
H_2O-	0·10	0·02	0·07	0·04	—	0·30	0·12	0·06
CO_2	—	—	—	—	—	—	0·43	abs.
TiO_2	—	0·23	0·09	0·15	0·05	0·08	tr.	0·34
P_2O_5	tr.	0·03	0·05	0·21	0·05	abs.	0·05	0·14
MnO	—	0·08	0·16	0·06	0·09	abs.	tr.	0·37
Other Con-stituents	Cl=abs. SO_3=abs.						Cl=tr. Li_2O=tr.	FeS_2=0·22
	99·85	100·00	99·45	100·49	100·53	100·04	99·59	99·84

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

a. $CaO < 1\%$

	$K_2O/Na_2O > 1 \cdot 25$						$K_2O/Na_2O = 1 \cdot 25 - 0 \cdot 75$
	1	2	3	4	5	6	7
Rock Name	Cornish Stone	Granite	Granite	Porphyritic Granite	Adamellite	Pegmatite	Aplite
Locality	Yetholme, N.S.W.	Omeo, Vic.	Rum Jungle, N.T.	Omeo, Vic.	Wolfram Hill, N.T.	Broken Hill, N.S.W.	Milton, N.S.W.
Reference	**374**, 99	**209**, 122	**95**	**209**, 122; **554**, 113	**95**	**309**, 297 **554**, 269	**46**, 459
Analyst	W. G. Stone	A. W. Howitt	S. Baker	A. W. Howitt	S. Baker	H. P. White	I. A. Brown
Remarks	*Loss on ignition		*Loss on ignition		*Loss on ignition		
Sp. Gr.	—	2·720		2·762	—	2·633	—
SiO_2	69·80	69·79	69·62	68·87	68·41	65·52	69·40
Al_2O_3	17·27	16·47	14·35	16·62	17·26	16·49	—
Fe_2O_3	0·80	0·53	1·09	0·43	1·32	0·14	—
FeO		2·97	2·20	2·72	2·15	0·18	—
MgO	0·21	1·95	1·40	1·60	0·96	0·11	—
CaO	0·30	0·73	0·80	0·71	0·56	0·76	0·92
Na_2O	3·91	1·68	2·67	1·80	3·31	1·89	5·22
K_2O	6·83	3·44	6·19	6·48	4·37	10·87	4·02
H_2O+	1·10*	0·50	0·23*	0·53	0·85*	0·23	
H_2O-	—	0·49	0·04	0·21	abs.	0·09	
CO_2	—	—	—	—	—	0·07	
TiO_2	—	—	0·61	—	0·33	abs.	
P_2O_5	—	0·06	0·25	0·05	0·09	0·12	
MnO	0·01	—	0·04	—	0·05	0·06	
Other Constituents						Cl = 0·02 BaO = 0·08 FeS_2 = 1·08 CuO = 0·78 ZnO = 1·01 PbS = 0·78	
	100·23	98·61	99·49	100·02	99·66	100·28	

b. $CaO = 1\% - 2\%$

$K_2O/Na_2O > 1 \cdot 25$

	1	2	3	4	5	6	7	8	9
Rock Name	Granite *Wonga Granite*	Adamellite	Granite *Hawkesview Granite*	Porphyritic Microgranite	"Adamellite Porphyry"	Granite *Sybella Granite*	Porphyritic Microgranite	Biotite Granite	Sodaclase Adamellite
Locality	Near Duchess, Qld.	Prices Spring Track to Burrundie, N.T.	Thurgoona, near Albury, N.S.W.	Point Hillier, W.A.	Encounter Bay, S.A.	30 miles S.S.W. of Mt. Isa, Qld.	Near Mt. Monster, S.A.	Uralla, N.S.W.	120 miles E.S.E. of Darwin, N.T.
Reference	**266**, 40	**95**	**260**, 120	**89**, 43	**278**, 212	**95**	**318**, 219	**356**, 191; **554**, 215	**95**
Analyst	Avery & Anderson	S. Baker	G. A. Joplin	W. H. Herdsman	A. W. Kleeman	S. Baker	J. H. Shepard	W. G. Stone	S. Baker
Remarks	(Possibly meta-somatic)	*Loss on ignition				*Loss on ignition	Additions to analysis by E. R. Segnit		*Loss on ignition
Sp. Gr.	—	—	2·67	—	—	—	2·580	2·708	—
SiO_2	69·94	69·92	69·71	69·65	69·56	69·44	69·42	69·31	69·00
Al_2O_3	14·62	15·08	17·90	15·37	13·98	13·50	15·01	13·48	16·05
Fe_2O_3	0·28	0·91	1·16	0·79	0·60	1·00	0·36	0·85	0·78
FeO	3·12	2·20	0·88	3·54	3·75	1·50	2·42	3·64	1·09
MgO	0·45	1·14	0·16	0·26	1·76	0·39	0·12	1·41	0·94
CaO	1·90	1·64	1·22	1·83	1·92	1·13	1·63	1·75	1·25
Na_2O	2·38	2·65	1·76	2·37	2·65	3·26	3·48	2·91	3·66
K_2O	6·34	5·18	6·14	4·31	4·27	9·60	5·71	4·30	6·32
H_2O+	0·56	0·77*	0·73	1·33	0·66	0·40*	0·68	0·15	0·32*
H_2O-	0·08	abs.	0·04	0·09	0·10	0·06	0·13	0·88	abs.
CO_2	—	—	—	abs.	—	—	0·81	0·02	—
TiO_2	0·48	0·45	0·34	0·22	0·79	0·10	0·31	0·70	0·20
P_2O_5	0·02	0·18	0·42	tr.	0·07	0·05	0·11	0·24	0·10
MnO	0·03	0·05	—	0·17	0·05	0·06	—	0·07	0·03
Other Constituents					$ZrO_2 = 0 \cdot 10$ $BaO = 0 \cdot 08$ $S = 0 \cdot 15$		$F = 0 \cdot 07$	$BaO = 0 \cdot 07$	
					100·49		100·26		
Less O = Cl, F, S					0·07		0·02		
	100·20	100·17	100·46	99·93	100·42	100·49	100·24	99·78	99·74

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

b. $CaO = 1\% - 2\%$

$K_2O/Na_2O > 1 \cdot 25$

	10	11	12	13	14	15	16	17	18
Rock Name	Granite *Esmeralda Granite*	Granite	Granite	Granite	Adamellite *Prices Springs Granite*	Granodiorite	Adamellite *McKinlay Granite*	Adamellite *McKinlay Granite*	Hornblende-biotite Granite
Locality	15 miles S.E. of Croydon, Qld.	Torrington, N.S.W.	Eyre Pen., S.A.	T1 Power Station, Cabramurra, N.S.W.	Near Burrundie, N.T.	5 miles E. of Wantabad-gery, Wagga Area, N.S.W.	100 miles S.E. of Darwin, N.T.	100 miles S.E. of Darwin, N.T.	Bathurst, N.S.W.
Refer-ence	**95**	**372**, 88	**216**, 14; **220**, 68	**95**	**95**	**535**, 202	**95**	**95**	**236**, 499
Analyst	S. Baker	W. G. Stone	W. S. Chapman	A.M.D.L.	S. Baker	T.G.Vallance	S. Baker	S. Baker	J. C. H. Mingaye
Remarks	*Loss on ignition	*Loss on ignition			*Loss on ignition		*Loss on ignition	*Loss on ignition	
Sp. Gr.	—	—	—	—	—	—			2·85—2·93
SiO_2	68·94	68·80	68·31	68·30	67·90	67·74	67·72	67·04	66·69
Al_2O_3	15·99	10·55	15·21	15·10	15·81	14·77	15·51	16·42	17·03
Fe_2O_3	0·53	3·10	0·53	0·30	0·63	1·31	0·96	0·29	3·15
FeO	2·39	2·07	3·73	4·65	3·20	4·52	2·58	2·61	0·69
MgO	0·33	0·79	0·65	1·65	0·86	1·62	1·09	0·96	2·50
CaO	1·94	1·26	1·99	1·15	1·78	1·58	1·51	1·91	1·82
Na_2O	3·18	2·50	3·14	1·27	3·16	1·97	3·05	3·07	1·21
K_2O	5·20	3·77	4·68	4·55	4·19	4·44	5·37	5·31	6·26
H_2O+	0·58*	2·06*	0·44	2·15	0·91*	0·89	1·08*	1·40*	—
H_2O-	0·02		0·08	0·07	0·02	0·26	0·03	0·02	0·43
CO_2	—	—	—	—	—	—	—	—	—
TiO_2	0·13	pnd.	0·53	0·70	0·40	0·70	0·48	0·50	tr.
P_2O_5	0·10	pnd.	0·29	0·17	0·16	—	0·19	0·22	tr.
MnO	0·09	0·15	0·04	0·05	0·08	0·05	0·09	0·10	tr.
Other Con-stituents		$SnO_2 = 4 \cdot 95$	$FeS_2 = 0 \cdot 09$ $Cl = 0 \cdot 10$						SO_3 = tr.
			99·81						
Less O = Cl, F, S			0·02						
	99·42	100·00	99·79	100·11	99·10	99·85	99·66	99·85	[99·78]

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

b. $CaO = 1\% - 2\%$

	$K_2O/Na_2O >$ 1·25	$K_2O/Na_2O = 1·25 - 0·75$				$K_2O/Na_2O <$ 0·75
	19	20	21	22	23	24
Rock Name	Granodiorite	Granite Porphyry	Granodiorite *Kalkadoon Granite*	Granite *Mareeba Granite*	Granite *Sybella Granite*	Granodiorite
Locality	South Morang, Vic.	Hartley, N.S.W.	30 miles S.W. of Mt. Isa, Qld.	Near Mossman, N.W. of Cairns, Qld.	Yaringa Ck., S. of Mt. Isa, Qld.	Omeo, Vic.
Reference	**137**, 31	**258**, 134	**95**	**332**	**95**	**183**, 201
Analyst	A. B. Edwards	G. A. Joplin	S. Baker	S. Baker	S. Baker	Not Stated
Remarks	(Marginal phase)		*Loss on ignition	*Loss on ignition	*Loss on ignition	
Sp. Gr.	2·67	2·66	—	—	—	—
SiO_2	66·30	69·78	69·46	69·20	68·94	65·59
Al_2O_3	16·42	18·99	14·61	15·85	15·38	17·46
Fe_2O_3	0·52	0·21	1·76	1·18	0·83	4·21
FeO	3·00	1·06	1·98	2·13	— 2·90	0·10
MgO	1·05	0·58	0·43	0·66	0·75	2·35
CaO	1·85	1·24	1·99	1·82	1·99	1·03
Na_2O	2·65	3·65	3·98	3·71	3·29	4·10
K_2O	6·00	3·42	4·77	4·42	4·11	2·89
H_2O+	0·42	0·48	0·61*	0·38*	0·70*	1·98
H_2O-		0·13	0·03	0·03	0·06	—
CO_2	—	—	—	—	—	—
TiO_2	0·44	0·23	0·15	0·03	0·24	—
P_2O_5	1·12	0·19	0·07	0·04	0·35	—
MnO	0·05	0·01	0·05	0·09	0·08	—
Other Constituents						
	99·82	99·97	99·89	99·54	99·62	99·71

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

c. $CaO = 2\% - 3\%$

$K_2O/Na_2O > 1 \cdot 25$

	1	2	3	4	5	6	7	8	9
Rock Name	Granodiorite	Granite	Granite	Granodiorite *Callemondah Granodiorite*	Adamellite	Adamellite Porphyry	Adamellite *Stewartfields Adamellite*	Granite	Granite
Locality	Tallanga-look, Vic.	Hillgrove, N.S.W.	Sodwalls, N.S.W.	Boboyan, N.W. of Cooma, A.C.T.	Trawool, Vic.	Encounter Bay, S.A.	4 miles S. of Yaouk, near Cooma, N.S.W.	Koetong Mass, near Tallangatta, Vic.	Near Cabramurra, N.S.W.
Reference	**548**	**11**, 215; **82**, 45	**365**, 103	**472**, 194	**225**, 335 **500**, 268	**278**, 212	**472**, 194	**507**, 38	**95**
Analyst	P. G. W. Bayly	J. C. H. Mingaye	W. G. Stone	Rudowski & Unwin	A. G. Hall	A. W. Kleeman	Rudowski & Unwin	C. M. Tattam	A.M.D.L.
Remarks			Rubble						
Sp. Gr.	—	2·658	—	—	2·666	—	2·71	—	—
SiO_2	69·76	69·55	69·36	69·21	69·19	69·06	69·05	68·92	68·9
Al_2O_3	13·00	14·16	13·46	13·46	13·45	14·28	13·66	16·21	14·6
Fe_2O_3	8·28	0·60	3·00	0·99	2·71	0·71	0·71	0·57	0·86
FeO	—	3·33	0·81	3·77	2·78	3·23	3·32	2·42	3·20
MgO	1·02	1·45	0·86	1·93	1·06	1·46	1·65	1·04	1·05
CaO	2·52	2·20	2·20	2·35	2·04	2·11	2·79	2·31	2·30
Na_2O	2·65	3·14	3·78	1·94	2·89	2·69	2·58	2·43	2·20
K_2O	3·26	4·09	4·29	3·35	3·94	4·59	4·05	4·36	3·25
H_2O+	—	0·30	1·82	1·46	0·77	0·46	1·36	0·93	2·35
H_2O-	—	0·20		0·06	0·16	0·11	0·09	0·08	0·45
CO_2	—	0·04	—	0·07	0·07	—	0·05	—	—
TiO_2	—	0·54	0·50	0·66	0·51	0·70	0·62	0·52	0·48
P_2O_5	—	0·12	nd.	0·17	0·18	0·13	0·17	0·30	0·11
MnO	—	0·23	0·14	0·09	0·14	0·05	0·06	0·03	0·04
Other Constituents		$SO_3 = 0 \cdot 11$ BaO = 0·07 SrO = tr. Cr_2O_3 = tr.			Li_2O = tr. Cl = tr.	$ZrO_2 = 0 \cdot 17$ BaO = 0·12 S = 0·14		BaO = 0·04	
						100·01			
Less O = Cl, F, S						0·06			
	100·49	100·13	[100·22]	99·51	99·89	99·95	100·16	100·16	99·79

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

c. $CaO = 2\% - 3\%$

$K_2O/Na_2O > 1 \cdot 25$

	10	11	12	13	14	15	16	17	18
Rock Name	Granodiorite *Bolairo Granodiorite*	Granodiorite *Clear Range Granodiorite*	Granite *Wonga Granite*	Porphyritic Granite	Granite	Granodiorite *Gingera Granite*	Granodiorite *Clear Range Granodiorite*	Granite	Granodiorite *Bolairo Granodiorite*
Locality	S.W. of Shannons Flat, near Cooma, N.S.W.	Fitz's Hill, A.C.T.	14 miles S.W. of Quamby, Qld.	Hartley, N.S.W.	T2 Power Station W. Cabramurra, N.S.W.	W.S.W. Shannons Flat, near Cooma, N.S.W.	S.W. of Bredbo, N. Cooma, N.S.W.	7 miles S.S.W. of Cabramurra, N.S.W.	S.W. of Shannons Flat, near Cooma, N.S.W.
Reference	**472**, 194	**472**, 194	**262**, 56	**247**, 26	**95**	**472**, 194	**472**, 194	**95**	**472**, 194
Analyst	Rudowski & Unwin	Rudowski & Unwin	J. K. Burnett	G. A. Joplin	A.M.D.L.	Rudowski & Unwin	Rudowski & Unwin	A.M.D.L.	Rudowski & Unwin
Remarks			(Slightly gneissic)						
Sp. Gr.	—		2·772	2·703	—	2·72	—	—	—
SiO_2	68·85	68·63	68·63	68·60	68·6	68·46	68·44	68·3	68·26
Al_2O_3	13·44	14·70	15·18	15·33	14·4	13·66	13·86	14·6	14·29
Fe_2O_3	0·96	0·60	0·78	1·92	0·15	0·59	0·67	0·61	1·03
FeO	3·75	3·55	4·04	1·85	4·35	3·78	3·79	4·20	3·52
MgO	2·33	1·90	0·07	0·81	1·39	2·40	2·30	1·94	1·84
CaO	2·30	2·93	2·71	2·78	2·20	2·90	2·62	2·30	2·70
Na_2O	2·24	2·21	2·16	3·38	1·95	2·21	2·36	2·15	2·15
K_2O	3·62	3·40	3·71	4·52	4·75	3·23	3·61	3·35	3·39
H_2O+	1·82	1·11	0·87	0·50	1·64	1·44	1·15	1·41	1·61
H_2O-	0·20	0·05	0·04	0·11	0·08	0·08	0·07	0·10	0·09
CO_2	0·02	0·07	0·13	—	—	0·07	0·03	—	0·03
TiO_2	0·69	0·65	1·35	0·51	0·66	0·60	0·68	0·63	0·66
P_2O_5	0·17	0·08	abs.	0·22	0·21	0·16	0·23	0·13	0·17
MnO	0·05	0·06	abs.	0·04	0·06	0·06	0·05	0·05	0·08
Other Constituents									
	100·44	99·94	99·67	100·57	100·44	99·64	99·86	99·77	99·82

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

c. $CaO = 2\% - 3\%$

$K_2O/Na_2O > 1 \cdot 25$

	19	20	21	22	23	24	25	26	27
Rock Name	Granodiorite *Hermits Hill Complex*	Porphyritic Granite	Granodiorite *Willona Granodiorite*	Adamellite	Granite	Granophyre	Granodiorite	Granite *Nicholson Granite*	Granite
Locality	120 miles S.S.W. of Darwin, N.T.	Encounter Bay, S.A.	S.W. of Shannons Flat, near Cooma, N.S.W.	Mt. Gellibrand, Broadmeadow, Vic.	Cudgewa, Vic.	Red Hill, Tas.	Willans Hill, Wagga, N.S.W.	100 miles W. of Burketown, N.T.	Yackandandah Creek Basin, Vic.
Reference	**95**	**51**, 15; **220**, 68	**472**, 194	**225**, 335; **492** 177; **554**, 253	**142**, 82; **537**	**285**, 297	**95**	**95**	**507**, 38
Analyst	S. Baker	W. R. Browne	Rudowski & Unwin	H. C. Richards	F. F. Field	Avery & Anderson	A.M.D.L.	A. McClure	C. M. Tattam
Remarks	*Loss on ignition					(Red Hill Dolerite Dyke)		*Loss on ignition	
Sp. Gr.		2·673	—	2·68		2·704	—		—
SiO_2	68·20	68·20	67·90	67·75	67·67	67·62	67·50	67·29	67·25
Al_2O_3	16·53	15·99	13·97	16·11	14·50	12·31	14·50	14·78	16·46
Fe_2O_3	1·27	0·89	0·87	0·50	0·87	5·66	0·28	1·20	0·42
FeO	3·10	2·58	3·99	4·00	3·78	3·04	4·03	3·18	1·99
MgO	1·47	0·80	2·64	0·79	2·21	0·32	1·96	1·91	1·00
CaO	2·12	2·61	2·03	2·68	2·18	2·52	2·87	2·76	2·74
Na_2O	2·01	2·85	1·97	2·60	2·38	2·92	2·32	3·08	2·91
K_2O	4·11	4·60	3·16	3·42	3·42	3·38	3·31	4·11	5·64
H_2O+	0·66*	0·64	1·80	0·20	1·81	0·68	1·84	1·25*	0·48
H_2O-	0·01	0·21	0·09	0·96	0·11	0·62	0·24	0·04	0·20
CO_2	—	—	0·05	abs.	tr.	—	—	—	—
TiO_2	0·47	0·58	0·74	0·85	0·61	0·84	0·64	0·49	0·40
P_2O_5	0·01	0·14	0·24	0·09	tr.	0·24	0·17	0·08	0·19
MnO	0·07	0·04	0·06	tr.	tr.	0·11	0·07	0·01	0·02
Other Constituents		BaO = 0·04 FeS_2 = 0·11		Cl = tr.					BaO = 0·08 S = tr.
	100·03	100·28	99·51	99·95	99·54	100·26	99·73	100·18	99·78

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

c. CaO = 2% – 3%

	$K_2O/Na_2O > 1{\cdot}25$				$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$				
	28	29	30	31	32	33	34	35	36
Rock Name	Granodiorite	Ferrohypersthene Adamellite	Porphyritic Adamellite	Two mica Granite	Granite	Granodiorite	Granite *Woolshed Granite*	Granodiorite	Granite
Locality	Willans Hill, Wagga, N.S.W.	Musgrave Ra., S.A.	Albany, W.A.	Woomargama, N. of Albury, N.S.W.	4 miles N.W. of Hillgrove, N.S.W.	50 miles S. of Einasleigh, Qld.	Middleback Ra. Area, S.A.	Dandenong Ra., Vic.	Tumut Pond, near Cabramurra, N.S.W.
Reference	**535**, 202	**583**	**89**, 43; **526**, 39	**260**, 118 **535**, 202	**95**	**95**	**132**, 228	**134**, 131	**95**
Analyst	T. G. Vallance	W. H. Herdsman		G. A. Joplin	S. Baker	A. McClure	G. C. Carlos	G. C. Carlos	A.M.D.L.
Remarks					*Loss on ignition	*Loss on ignition			
Sp. Gr.	—	—	2·70		—	—	—	—	—
SiO_2	66·98	66·96	66·90	66·43	69·74	69·32	69·22	69·14	69·0
Al_2O_3	16·83	14·32	14·76	17·53	14·39	14·90	16·21	13·94	13·9
Fe_2O_3	1·18	1·78	0·32	0·15	1·00	1·46	1·31	2·24	0·50
FeO	3·58	3·85	5·01	3·76	2·70	1·97	1·81	2·71	4·50
MgO	1·84	1·12	0·93	1·91	1·82	1·07	0·72	1·17	0·81
CaO	2·88	2·06	2·46	2·55	2·12	2·74	2·14	2·97	2·80
Na_2O	2·12	2·73	2·42	2·37	3·30	3·25	3·49	3·60	2·75
K_2O	3·22	5·14	5·04	3·22	3·41	3·57	4·14	2·91	2·05
H_2O+	0·80	0·04	0·93	0·61	0·43*	0·42*	0·46	0·67	2·35
H_2O-	0·14	0·18	0·08	0·21	0·04	0·13	0·02	0·15	0·11
CO_2	—	—	abs.	—	—	—	tr.	tr.	—
TiO_2	0·67	0·97	0·63	1·10	0·30	0·49	0·30	0·36	0·80
P_2O_5	—	0·33	0·21	0·07	0·10	0·12	0·07	0·12	0·16
MnO	0·05	0·23	0·12	nd.	0·10	0·12	0·12	0·01	0·06
Other Constituents		BaO = 0·16					Cl = 0·01 SO_3 = tr.		
	100·29	99·87	99·81	99·91	99·45	99·56	100·02	99·99	99·79

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

c. CaO = 2% – 3%

$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$

	37	38	39	40	41	42	43	44	45
Rock Name	Biotite Adamellite	Granodiorite	Porphyritic Adamellite	Granodiorite	Granite	Granite *Nicholson Granite*	Granodiorite	Granodiorite	Granite
Locality	Gong Gong Ck., Ballarat, Vic.	Charlotte Pass, Mt. Kosciusko, N.S.W.	Dilling, near Corrigin, W.A.	Mundaring, W.A.	Greystones, Helena River, W.A.	50 miles W.N.W. of Doomadgee, Qld.	9 miles W. of Adelong, N.S.W.	Cowra, N.S.W.	Hillgrove, N.S.W.
Reference	**591**, 96	**489**, 92	**582**, 67	**582**, 67	**563**	**95**	**535**, 210	**489**, 92	**11**, 217; **554**, 215
Analyst	J. Clark	N. C. Stevens	Not Stated	Not Stated	C. R. Le Mesurier	S. Baker	T. G. Vallance	N. C. Stevens	J. C. H. Mingaye
Remarks		(Slightly gneissic)							
Sp. Gr.	—	—	—	2·71	2·71	—	—	—	—
SiO_2	68·99	68·93	68·65	68·56	68·56	67·90	67·67	67·64	67·64
Al_2O_3	15·34	15·80	14·75	16·64	16·64	14·93	16·02	14·54	15·66
Fe_2O_3	1·00	0·69	1·78	0·89	0·89	1·63	0·56	2·24	1·12
FeO	2·56	3·75	1·62	1·77	1·77	2·58	3·79	4·05	3·31
MgO	1·48	1·94	1·62	0·73	0·73	0·76	2·20	1·13	1·55
CaO	2·16	2·50	2·78	2·51	2·51	2·44	2·12	2·70	2·14
Na_2O	3·37	1·88	3·52	4·14	4·14	4·08	2·86	3·04	3·03
K_2O	3·54	2·37	3·56	3·24	3·24	4·30	3·41	3·12	3·58
H_2O+	1·03	0·65	0·54	0·97	0·97	0·79*	0·57	0·93	0·90
H_2O-	0·28	0·10	0·07	0·03	0·03	0·05	0·18	0·23	0·30
CO_2	—	—	0·15	abs.	abs.	—	—	—	abs.
TiO_2	0·45	0·90	0·41	0·24	0·24	0·17	0·71	0·94	0·62
P_2O_5	0·13	nd.	0·13	0·12	0·12	0·11	—	0·12	0·13
MnO	0·11	0·09	0·14	0·03	0·03	0·06	0·03	0·04	0·12
Other Constituents			$FeS_2 = 0{\cdot}06$ $V_2O_3 = 0{\cdot}25$ Cr_2O_3 = abs.	BaO = 0·06 $FeS_2 = 0{\cdot}02$ $ZrO_2 = 0{\cdot}01$	$ZrO_2 = 0{\cdot}01$ $FeS_2 = 0{\cdot}02$ BaO = 0·06				$SO_3 = 0{\cdot}12$ Cl = 0·02 BaO = 0·06
	100·44	99·60	100·03	99·96	99·96	99·80	100·12	100·72	100·30

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

c. $CaO = 2\% - 3\%$

	$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$							$K_2O/Na_2O < 0{\cdot}75$	
	46	47	48	49	50	51	52	53	54
Rock Name	Granophyre *Minnages Mt. Granophyre*	Granodiorite	Granodiorite	Granophyre *Monserrat Granophyre*	Granophyre *Monserrat Granophyre*	Granite	Granodiorite *Calyerup Granodiorite*	Soda Granite	Granite
Locality	Near Mt. Barney, Qld.	50 miles S. of Einasleigh, Qld.	Marysville, Vic.	Monserrat Lookout, Mt. Barney, Qld.	Monserrat, Mt. Barney, Qld.	25 miles N. of Port Augusta, S.A.	Near Jerramungup, W.A.	Buldania Rocks, W.A.	Greymare, Qld.
Reference	**486**; **487**	**95**	**198**, 163	**486**; **487**	**486**; **487**	**95**	**581**, 39	**304**, 9	**422**, 150
Analyst	E. L. P. Mercy	A. McClure	E. S. Hills	E. L. P. Mercy	E. L. P. Mercy	A. McClure	W. H. Herdsman	J. N. A. Grace	I. Sterne
Remarks		*Loss on ignition				*Loss on ignition			
Sp. Gr.	—	—	—	—	—	—	2·694	2·68	
SiO_2	67·4	67·37	67·07	66·0	65·8	65·59	65·54	69·88	69·70
Al_2O_3	13·2	15·27	15·55	12·9	14·9	16·14	15·78	15·18	17·70
Fe_2O_3	1·9	1·79	0·50	3·0	2·1	2·08	1·02	1·21	1·94
FeO	3·4	1·99	3·38	2·8	2·9	1·45	3·90	1·19	1·40
MgO	1·2	1·16	1·69	1·5	1·8	0·97	1·92	1·13	3·12
CaO	2·4	2·94	2·97	2·6	2·5	2·06	2·63	2·86	2·29
Na_2O	4·1	3·84	3·21	3·9	3·8	5·06	3·33	4·78	3·12
K_2O	3·9	3·44	3·80	3·7	3·7	5·06	3·62	2·15	1·36
H_2O+	1·2	0·52*	1·02	1·6	1·1	0·74*	1·02	0·60	0·72
H_2O-	—	0·06	0·15	—	—	0·20	0·09	0·06	
CO_2	—	—	0·12	—	—	—	0·20	0·04	—
TiO_2	1·0	0·58	0·61	1·1	1·1	0·21	0·58	0·31	—
P_2O_5	0·25	0·15	0·23	0·39	0·26	0·28	0·17	0·15	—
MnO	0·09	0·14	0·04	0·12	0·08	0·10	tr.	0·12	—
Other Constituents			S = 0·04					FeS_2 = tr.	
			100·38						
Less O = Cl, F, S			0·01						
	100·04	99·25	100·37	99·61	100·04	99·94	99·80	99·66	99·61

TABLE B — GRANITIC ROCKS — SiO_2<70%

c. CaO=2%–3%

K_2O/Na_2O = <0·75

	55	56	57	58	59	60	61	62
Rock Name	Granite *Dumbano Granite*	"Quartz-mica diorite"	Granodiorite	Granite *Dumbano Granite*	Granodiorite	Unakite	Granite	Granite in *Dargalong Metamorphics*
Locality	90 miles S.E. of Einasleigh, Qld.	Encounter Bay, S.A.	Morawa, W.A.	100 miles W. of Charters Towers, Qld.	Dunkeld, Vic.	Gilgarna, W.A.	Tibooburra, N.S.W.	S.W. of Chillagoe, Qld.
Reference	**95**	**51**, 17; **278**, 212	**563**	**95**	**548**	**563**	**95**	**95**
Analyst	S. Baker	C. E. Tilley	D. G. Murray	S. Baker	P. G. W. Bayly	D. G. Murray	S. Baker	S. Baker
Remarks	*Loss on ignition			*Loss on ignition	(Auriferous dyke)		*Loss on ignition	*Loss on ignition
Sp. Gr.	—	2·716	2·70	—	—	—	—	
SiO_2	69·14	68·60	68·07	66·18	66·07	65·72	65·62	65·34
Al_2O_3	16·11	14·30	15·57	18·04	16·47	16·85	17·00	16·94
Fe_2O_3	0·94	0·79	1·27	1·02	7·13	1·10	1·74	1·50
FeO	0·98	4·70	2·30	2·53	nd.	0·50	2·71	3·85
MgO	1·00	1·24	1·04	1·02	1·47	0·40	2·00	2·40
CaO	2·46	2·88	2·95	2·88	2·70	2·28	2·45	2·35
Na_2O	5·09	3·40	4·48	5·44	3·59	7·28	4·14	3·60
K_2O	2·53	2·28	2·04	2·28	2·00	3·44	2·53	2·02
H_2O+	0·95*	0·87	1·29	0·75*	0·43	0·32	0·98*	1·03*
H_2O-	0·04	0·24	0·11	0·02		0·04	0·02	0·08
CO_2	—	—	0·04	—		1·09	—	—
TiO_2	0·06	0·59	0·47	0·15		0·13	0·25	0·11
P_2O_5	0·09	tr.	0·17	0·09	tr.	0·06	0·05	0·03
MnO	0·09	—	0·14	0·04		0·13	0·14	0·16
Other Constituents			FeS_2=tr.		SO_3=tr.	FeS_2=0·11 F=0·13		
						99·58		
Less O = Cl, F, S						0·05		
	99·48	99·89	99·94	100·44	99·86	99·53	99·63	99·41

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

d. $CaO = 3\% - 4\%$

$K_2O/Na_2O > 1 \cdot 25$

	1	2	3	4	5	6	7	8	9
Rock Name	Granite	Granite *Braidwood Granite*	Granophyre	Granite	Porphyritic Adamellite	"Quartz-mica-diorite"	Granite	Granodiorite	Granodiorite
Locality	Blue Tier, Tas.	6 miles N.E. of Braid-wood, N.S.W.	Red Hill, Tas.	Amosfield, N.S.W.	Near Jibberding, W.A.	Encounter Bay, S.A.	T1 Power Station, near Cabramurra, N.S.W.	Bulla, Vic.	N.E. of Kingston, S.A.
Refer-ence	**417**, 18	**352**, 198; **554**, 329 & 349	**285**, 297	**81**, 90; **554**, 215	**582**, 67	**278**, 212	**95**	**225**, 335	**317**, 240
Analyst	Tas. Dept. Mines	N.S.W. Dept. Mines	Avery & Anderson	W. A. Greig	Not Stated	A. W. Kleeman	A.M.D.L.	F. Watson	Parkin & Segnit
Remarks	*Loss on ignition			*Spectro-scopic					
Sp. Gr.	—	2·710	2·671	2·698	2·74	—	—	—	—
SiO_2	69·44	69·38	68·94	68·25	67·29	67·10	67·00	66·13	66·08
Al_2O_3	15·22	12·56	11·27	14·41	12·06	14·32	15·20	16·83	13·41
Fe_2O_3	3·29	2·40	3·80	2·00	1·72	1·51	0·30	1·11	0·73
FeO	1·16	2·25	4·03	2·07	4·60	2·84	4·45	4·17	5·08
MgO	1·59	1·47	0·35	1·08	1·09	1·50	1·37	1·83	1·22
CaO	3·00	3·72	3·20	3·06	3·43	3·26	3·00	3·26	3·86
Na_2O	2·59	2·77	2·50	3·19	3·15	3·05	2·40	2·25	2·46
K_2O	4·11	3·75	3·20	4·74	4·10	4·23	4·30	3·14	4·16
H_2O+	0·30*	1·05	0·89	0·35	0·53	0·56	1·31	0·23	0·38
H_2O-		0·09	1·03	0·19	0·05	0·04	0·03	1·68	0·19
CO_2		0·01	—	0·05	0·37	—	—	tr.	0·10
TiO_2	0·40	0·52	0·79	0·36	0·87	0·89	0·72	tr.	1·14
P_2O_5		0·12	0·18	0·15	0·76	0·17	0·20	tr.	0·56
MnO		0·04	0·14	0·16	0·35	0·06	0·06	0·07	0·03
Other Con-stituents		BaO = 0·10	F = 0·05	SrO = pres.* BaO = 0·03 CuO = 0·01 Li_2O = pres.*	FeS_2 = 0·21 ZrO_2 = tr. B_2O_3 = tr.	ZrO_2 = 0·12 BaO = 0·07 S = 0·25			BaO = 0·04 ZrO_2 = 0·04 S = 0·12 F = 0·14 Cr_2O_3 = abs.
						100·07			99·74
Less O = Cl, F, S			0·02			0·10			0·10
	100·00	100·23	100·35	100·10	100·58	99·97	100·34	100·70	99·64

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

d. $CaO = 3\% - 4\%$

	$K_2O/Na_2O >$ 1·25	$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$							
	10	11	12	13	14	15	16	17	18
Rock Name	Adamellite *Everard Adamellite*	Porphyritic Granite	Granodiorite *Quarry Hill Granodiorite*	Granite (Granite Porphyry)	Granodiorite	Granodiorite *Yarraman Granodiorite*	Granite	Granodiorite	Granite
Locality	Everard Ra., S.A.	Brogo, N.S.W.	South Morang, Vic.	Near Walcha Road Railway Station, N.S.W.	Hesket, Mt. Macedon, Vic.	Yarraman, Qld.	Cobargo District, N.S.W.	Mt. Leinster, Vic.	Tingha, N.S.W.
Reference	**581**, 39	**554**, 102	**13**, 200	**11**, 211; **349**, 177; **554**, 215	**142**, 82; **468**, 20; **537**, 61	**490**	**380**, 263	**45**, 239	**554**, 243
Analyst	W. H. Herdsman	A. A. Pain	F. J. Watson	W. A. Greig	A. G. Hall	T. R. Lowth	J. H. Pyle	E. Broadhurst	E. Hamilton
Remarks									
Sp. Gr.	2·685	—	2·66	2·696	2·688	—	—	—	—
SiO_2	65·17	69·44	69·17	69·14	68·92	68·55	68·38	67·71	67·39
Al_2O_3	17·34	12·10	15·95	14·74	15·26	15·97	14·97	14·80	15·22
Fe_2O_3	1·60	4·65	0·88	0·70	0·80	0·92	1·61	2·63	1·08
FeO	2·09	2·13	3·64	1·98	3·30	2·18	2·17	3·06	3·36
MgO	0·49	1·52	1·12	1·58	1·64	0·65	1·54	1·30	1·49
CaO	3·35	3·03	3·04	3·14	3·04	3·07	3·59	3·59	3·24
Na_2O	3·48	2·57	2·64	3·36	2·71	3·82	3·52	2·68	4·44
K_2O	5·43	3·00	3·07	4·13	2·93	3·25	2·75	3·20	3·33
H_2O+	0·10	0·65	0·36	0·18	1·04	1·34	0·55	0·69	0·49
H_2O-	0·05	0·19		0·38	0·22	0·20	0·12		0·09
CO_2	—	—	—	0·23	abs.	—	abs.	—	0·11
TiO_2	0·56	0·55	0·77	0·36	0·70	0·52	0·56	0·33	0·48
P_2O_5	0·23	0·32	0·02	0·18	0·19	0·12	0·18	abs.	0·28
MnO	0·18	—	0·03	tr.	tr.	0·07	0·08	0·02	—
Other Constituents	BaO = 0·19			BaO = 0·03 Cl = 0·04		NiO = N.D.	ZrO_2 = 0·06 BaO = 0·05 BeO = 0·02 Cr_2O_3 = tr. V_2O_3 = tr.		
				100·15					
Less O = Cl, F, S				0·01					
	100·26	100·15	100·69	100·14	100·75	100·66	100·15	100·01	101·00

d. $CaO = 3\% - 4\%$

$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$

	19	20	21	22	23	24	25	26	27
Rock Name	Biotite Microadamellite	Granodiorite	Granite	Porphyritic Granite	Microadamellite	Hypersthene Adamellite	Granophyre *Minnages Mt Granophyre*	Granite	Granite
Locality	Kulgera Hills, N.T.	Belgrave, Vic.	Amosfield, N.S.W.	Wyangala, near Cowra, N.S.W.	E.N.E. of Ernabella, S.A.	Musgrave Ra., S.A.	Minnages Mt. near Mt. Barney, Qld.	40 miles S.W. of Armidale, N.S.W.	Tenterfield, N.S.W.
Reference	**580**, 76	**134**, 131	**81**, 84; **353**, 191; **554**, 349	**489**, 92	**95**	**583**	**486; 487**	**95**	**11**, 203; **554**, 253
Analyst	W. H. Herdsman	M. K. Evans	H. P. White	J. H. Pyle	S. Baker	W. H. Herdsman	E. L. P. Mercy	S. Baker	J. C. H. Mingaye
Remarks			*Spectroscopic	(Gneissic)	*Loss on ignition			*Loss on ignition	
Sp. Gr.	—		2·711	—	—	—	—	—	2·71
SiO_2	67·28	67·27	67·24	66·71	66·26	65·92	65·8	65·74	65·36
Al_2O_3	16·02	14·96	14·20	15·52	16·96	14·38	13·7	15·80	16·37
Fe_2O_3	1·71	1·10	1·50	0·63	2·10	1·81	3·1	3·00	1·80
FeO	3·06	3·13	2·88	3·74	2·00	4·16	2·3	1·72	2·68
MgO	1·42	2·22	1·39	0·76	0·95	1·24	2·0	2·30	1·81
CaO	3·08	3·63	3·24	3·83	3·38	3·23	3·0	3·38	3·82
Na_2O	2·96	2·92	3·98	2·86	3·18	3·33	3·8	3·82	3·40
K_2O	3·68	3·22	4·07	3·58	3·92	4·16	3·7	3·66	3·75
H_2O+	0·24	0·78	0·50	0·56	0·37*	0·14	1·4	0·60*	0·33
H_2O-	abs.	0·10	0·12	0·14	0·04	0·16	—	0·06	0·09
CO_2	0·15	abs.	0·06	—	—	abs.	—	—	abs.
TiO_2	0·44	0·59	0·65	1·25	0·30	0·88	1·0	0·30	0·36
P_2O_5	0·09	tr.	0·11	nd.	0·13	0·38	0·23	0·09	0·16
MnO	0·13	tr.	0·06	0·05	0·13	0·16	0·08	0·09	0·16
Other Constituents		SO_3 = tr. Cl = tr.	SrO = pres.* BaO = 0·07 Li_2O = pres.*						Cl = 0·05 F = 0·14 BaO = 0·14
									100·42
Less O = Cl, F, S									0·07
	100·26	99·92	100·07	99·63	99·72	99·95	100·11	100·56	100·35

TABLE B — GRANITIC ROCKS — SiO_2<70%

d. CaO=3%–4%								
	K_2O/Na_2O<0·75							
	28	29	30	31	32	33	34	35
Rock Name	Granite Porphyry	Granodiorite	Granodiorite	Quartz Diorite	Granodiorite	Granodiorite	Granodiorite	Granodiorite
Locality	S.W. of Moruya, N.S.W.	Ravens-thorpe, W.A.	Omeo, Vic.	Mt. Williams, near Stawell, Vic.	Grassy, King Island, Tas.	80 miles E.S.E. of Einasleigh, Qld.	Dandenong Ra., Vic.	Kookynie, W.A.
Refer-ence	**47**, 182	**447**, 20; **4ɔ1**, 21; **521**, 666	**548**	**213**; **465**, 53; **554**, 401	**139**, 59	**95**	**134**, 131	**447**, 20; **273**, 23; **456**, 26
Analyst	I. A. Brown	J. H. Brooking	F. F. Field	H. C. Jenkins	G. C. Carlos	S. Baker	G. C. Carlos	E. S. Simpson
Remarks						*Loss on ignition		
Sp. Gr.	2·711	2·74	2·71	—	2·695	—	—	2·77
SiO_2	69·33	68·11	66·92	66·86	66·46	65·42	65·12	65·02
Al_2O_3	15·23	15·77	17·32	14·91	16·35	16·70	15·52	16·07
Fe_2O_3	0·97	0·11	1·12	4·06	0·98	1·80	0·74	0·86
FeO	2·56	2·99	2·41	3·65	2·48	2·50	4·21	4·94
MgO	1·01	1·75	2·08	1·28	1·45	1·97	2·45	1·15
CaO	3·74	3·79	3·92	3·25	3·37	3·00	3·86	3·77
Na_2O	2·73	4·58	3·25	4·22	4·31	4·50	3·76	4·76
K_2O	1·42	0·76	1·63	1·49	2·78	3·26	2·60	1·40
H_2O+	1·56	0·86	1·01	0·58	0·96	0·50*	0·81	1·01
H_2O-	0·18	0·11	0·15	0·09	0·17	abs.	0·06	0·25
CO_2	—	0·21	abs.	—	0·04	—	0·02	0·01
TiO_2	0·94	0·74	0·36	—	0·24	0·08	0·69	0·66
P_2O_5	0·06	0·28	abs.	—	0·14	0·05	0·11	0·31
MnO	0·11	0·16	tr.	tr.	0·24	0·10	0·06	0·21
Other Con-stituents		FeS_2=0·17	Cl=tr. Li_2O=pnd. SO_3=abs.		Cl=0·03 SO_3=0·04			FeS_2=0·02
					100·04			
Less O= Cl, F, S					0·01			
	99·84	100·39	100·17	100·39	100·03	99·88	100·01	100·44

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

e. $CaO = 4\% - 5\%$

	$K_2O/Na_2O > 1 \cdot 25$		$K_2O/Na_2O = 1 \cdot 25 - 0 \cdot 75$						
	1	2	3	4	5	6	7	8	9
Rock Name	Granite	Granodiorite	Granite	Granite	Adamellite	Granodiorite	Biotite Granite	Biotite Granite	Granodiorite
Locality	4 miles S.E. of Kiandra, N.S.W.	Moruya, N.S.W.	Almaden, Qld.	E. of Nimmitabel, N.S.W.	Coles Bay, Tas.	4 miles E.N.E. of Jerangle, N.S.W.	S.E. of Kiandra, N.S.W.	Golconda District, Tas.	Hartley, N.S.W.
Reference	**95**	**47**, 182	**95**	**351**, 184; **554**, 369	**482**	**399**	**352**, 198; **554**, 369	**416**, 11	**247**, 29
Analyst	A.M.D.L.	I. A. Brown	A. McClure	Not Stated	W. St C. Manson	J. H. Pyle	N.S.W. Dept. Mines	Not Stated	G. A. Joplin
Remarks			*Loss on ignition						
Sp. Gr.	—	2·741	—	2·718	—	—	2·725	—	2·742
SiO_2	66·6	65·83	66·76	66·58	66·50	66·03	65·94	65·80	65·33
Al_2O_3	14·1	16·44	15·32	14·36	15·23	14·53	15·10	17·91	16·20
Fe_2O_3	1·55	1·03	1·36	1·53	0·79	1·74	1·20	6·29	2·43
FeO	3·00	3·33	2·92	3·19	3·28	3·38	2·34	—	2·38
MgO	2·50	2·00	2·02	1·70	2·06	1·91	2·53	1·66	1·28
CaO	4·05	4·24	4·23	4·18	4·50	4·56	4·48	4·00	4·02
Na_2O	2·80	2·25	3·11	3·09	2·53	2·78	3·09	2·65	3·02
K_2O	3·60	3·40	3·22	3·37	3·00	2·82	3·73	2·59	3·28
H_2O+	0·72	0·67	0·80	0·79	1·30	1·08	0·80	—	0·58
H_2O-	0·18	0·10	0·11	0·17	0·06	0·26	0·11	—	0·10
CO_2	—	—	—	0·04	—	0·07	0·12	—	—
TiO_2	0·58	0·78	0·29	0·65	0·55	0·52	0·55	0·20	0·72
P_2O_5	0·16	0·21	0·17	0·10	0·19	0·18	0·21		0·22
MnO	0·06	0·08	0·10	0·07	0·06	0·09	0·04		0·03
Other Constituents				BaO = 0·04		V_2O_3 = tr. SrO = N.D. BaO = 0·05	BaO = 0·13		
	99·90	100·36	100·41	99·86	100·05	100·00	100·37	101·10	99·59

TABLE B — GRANITIC ROCKS — $SiO_2 < 70\%$

e. CaO = 4% – 5%						f. CaO > 5%		
	K_2O/Na_2O = 1·25 – 0·75	K_2O/Na_2O < 0·75				K_2O/Na_2O < 0·75		
	10	11	12	13	14	1	2	3
Rock Name	Granodiorite	Granodiorite	Granodiorite	Granodiorite	Granodiorite	Granite	Granodiorite	Oligoclase Pegmatite
Locality	Jeremiah Ck., Burrinjuck, N.S.W.	Charters Towers, Qld.	Ballarat, Vic.	Near Cowra, N.S.W.	Moruya, N.S.W.	Moruya, N.S.W.	Dunkeld, Vic.	Cue, W.A.
Reference	**590**	**418**, 69	**591**, 96	**489**, 92	**47**, 182	**282**, 42; **554**, 267	**548**	**521**, 666; **588**, 53; **447**, 20
Analyst	H. Yates	F. E. Connah	H. Yates	N. C. Stevens	I. A. Brown	A. Liversidge	P. G. W. Bayly	C. C. Williams
Remarks							(Auriferous Dyke)	
Sp. Gr.	2·74	—	—	—	2·729	2·678	—	2·70
SiO_2	65·00	66·18	65·94	65·75	65·72	67·56	66·56	66·43
Al_2O_3	18·07	17·01	15·37	16·63	17·63	16·39	16·77	16·22
Fe_2O_3	0·17	1·60	1·27	1·41	0·42	1·25	3·66	0·54
FeO	2·95	2·74	3·28	3·29	2·80	1·86	nd.	1·17
MgO	1·76	1·82	2·92	0·90	1·73	1·48	1·26	1·60
CaO	4·44	4·70	4·18	4·08	4·36	5·08	5·32	5·88
Na_2O	3·26	3·06	3·60	4·90	3·14	3·54	3·86	6·35
K_2O	2·50	1·66	1·72	1·30	2·12	1·77	2·06	0·35
H_2O+	0·69	0·58	0·84	0·59	1·03	—	0·34	0·26
H_2O-	0·06	0·08	abs.	0·19	0·06	0·17		0·20
CO_2	—	tr.	—	—	abs.	—	—	abs.
TiO_2	1·02	0·26	0·62	1·23	0·41	—	—	0·68
P_2O_5	0·19	0·17	0·11	nd.	0·19	—	tr.	0·40
MnO	—	0·07	—	0·20	0·08	0·79	—	abs.
Other Constituents		S = 0·02 F = abs.			ZrO_2 = 0·19 $S(FeS_2)$ = 0·13		SO_3 = abs.	FeS_2 = 0·04
		[99·95]						
Less O = Cl, F, S		0·01						
	100·11	[99·94]	99·85	100·47	100·01	99·89	99·83	100·12

TABLE AB[1] — METAMORPHOSED GRANITIC ROCKS

	1	2	3	4
Rock Name	Crushed Granite	Quartz-mica Schist	Crushed Soda Granite	Hornfelsed Micro-adamellite
Locality	Leonora, W.A.	Coodardy, W.A.	Edjudina, W.A.	Kulgera Hills, Central Australia, N.T.
Reference	**222**, 19	**563**	**447**, 40; **300**, 7; **456**, 7	**580**
Analyst	C. C. Williams	H. P. Rowledge	C. C. Williams	W. H. Herdsman
Remarks		(Crushed Granodiorite)		
Sp. Gr.	2·81	—	2·67	—
SiO_2	76·71	72·82	71·55	67·78
Al_2O_3	20·08	15·61	14·82	15·72
Fe_2O_3	1·70	1·95	0·77	0·90
FeO	—	0·03	1·58	3·59
MgO	0·06	0·37	1·07	1·36
CaO	0·56	0·06	1·79	2·48
Na_2O	0·07	tr.	4·98	3·17
K_2O	0·11	5·71	1·56	3·66
H_2O+	0·24	2·10	0·55	0·66
H_2O-	0·21	0·09	0·21	abs.
CO_2	—	abs.	abs.	0·17
TiO_2	0·66	1·50	0·74	0·43
P_2O_5	—	tr.	—	0·07
MnO	—	abs.	0·39	0·12
Other Constituents		FeS_2=0·30 V_2O_3=0·14 Cr_2O_3=abs.	FeS_2=0·28	
	100·40	100·68	100·29	100·11

TABLE AB[2] — METASOMATIZED AND DEUTERICALLY ALTERED GRANITIC ROCKS

	1	2	3	4	5	6	7	8	9
Rock Name	Chinastone	Quartz-hematite Rock	Granite	Aplite	Granite	Quartz-mica Rock	Tourmaline Granite	Slightly Metasomatized Granite	Metasomatized Granite
Locality	Kangaroo Island, S.A.	Inverell, N.S.W.	Whipstick, N.S.W.	Niagara, W.A.	Whipstick, N.S.W.	Inverell, N.S.W.	Rossarden, Tas.	Inverell, N.S.W.	Boodalyerri, Pilbara Area, W.A.
Reference	**218**, 41	**99**, 225	**10**, 156; **358**, 196	**447**, 14; **456**, 7; **273**, 24	**10**, 156; **358**, 196	**99**, 225	**38**, 28	**99**, 225	**167**, 3; **301**, 20 & 33; **303**, 12; **554**, 791
Analyst	W. S. Chapman	L. A. Cotton	H. P. White	E. S. Simpson	W. A. Greig	L. A. Cotton	W. St C. Manson	L. A. Cotton	E. S. Simpson
Remarks		(Part of vein in granite)		(Dyke)		(Part of vein in granite)	*Loss on ignition	*Calculated from S.	
Sp. Gr.	—	—	2·646	2·60	2·666			—	2·69
SiO_2	98·70	98·11	87·66	84·11	83·54	78·47	75·72	75·42	69·97
Al_2O_3	0·92	0·75	7·32	8·64	9·13	11·50	11·51	12·98	18·74
Fe_2O_3	0·07	0·43	0·30	tr.	0·50	2·64	4·58	1·66	1·04
FeO	—	—	—	0·14	0·36	1·05	nd.	0·58	0·43
MgO	0·07	abs.	0·08	0·14	0·30	0·49	0·30	0·23	0·81
CaO	0·12	abs.	abs.	0·19	0·46	tr.	1·20	0·10	0·15
Na_2O	abs.	—	3·58	1·03	3·51	1·99	0·50	3·05	0·59
K_2O	abs.	—	0·20	5·93	1·14	1·17	2·03	1·62	5·82
H_2O+	abs.	0·04	0·36	0·12	1·14	0·23	1·36*	0·47	1·79
H_2O-	0·05	0·02	0·02	0·03	0·10	1·17		1·31	0·05
CO_2	pnd.		0·05	abs.	—	—	—	—	abs.
TiO_2	abs.		abs.	0·03	tr.	0·22	0·23	0·15	0·64
P_2O_5	—		0·02	0·13	0·05	—	nd.		—
MnO	—		tr.	tr.		—	0·08		tr.
Other Constituents	Cl=abs.		Cl=tr. BaO=tr. SrO=p. Bi=0·54 MoS_2=tr. S(FeS_2)=0·16	FeS_2=abs.	Cl=0·04 SrO=p. SO_3=0·04 MoO=tr.	F=pnd. SnO_2=0·08 MoS_2=0·80 *		F=pnd. SnO_2=0·22 MoS_2=1·69 *	FeS_2=abs.
	99·93	99·35	100·29	100·49	100·31	99·81	97·51	99·48	100·03

TABLE AB[2] — METASOMATIZED AND DEUTERICALLY ALTERED GRANITIC ROCKS

	10	11	12	13	14	15
Rock Name	Tin Granite	Tin Granite	Tin Granite	Zeolitized Granite	Deuteric Vein in Granite	Talcose Granite
Locality	Blue Tier, Tas.	Blue Tier, Tas.	Blue Tier, Tas.	Maldon, Vic.	Ashgrove, Qld.	Cobargo District, N.S.W.
Reference	**417**, 113	**417**, 113	**417**, 113	**548**	**177**, 64	**380**, 263
Analyst	Tas. Dept. Mines	Tas. Dept. Mines	Tas. Dept. Mines	J. C. Watson	Qld. Gov. Anal.	J. H. Pyle
Remarks	*Loss on ignition	*Loss on ignition	*Loss on ignition			
Sp. Gr.	—	—	—	—	—	—
SiO_2	59·80	59·00	58·40	56·55	53·67	28·45
Al_2O_3	25·11	27·74	26·81	17·30	16·46	20·69
Fe_2O_3	2·72	1·27	1·86		—	2·24
FeO	1·40	0·64	1·40		3·92	13·00
MgO	0·88	0·59	1·00		3·42	22·48
CaO	abs.	abs.	abs.	8·30	5·50	0·41
Na_2O	0·98	0·10	2·30		1·30	0·33
K_2O	3·48	2·75	3·92	—	2·58	0·08
H_2O+	6·10*	8·20*	4·50*	15·55	4·33	10·82
H_2O-	—	—	—	2·90	0·40	0·34
CO_2	—	—	—		4·40	abs.
TiO_2	0·40	tr.	0·40		0·80	0·82
P_2O_5	—	—	—		0·37	0·31
MnO	tr.	—	tr.		0·28	0·06
Other Constituents			SnO=tr.		FeS_2=2·22	ZrO_2=0·06 Cr_2O_3=0·01 Cl=0·01 F=0·02
						100·13
Less O= Cl, F, S						0·01
	100·87	100·29	100·59	100·60	99·65	100·12

TABLE AB[3] — WEATHERED GRANITIC ROCKS

	1	2	3	4	5	6	7	8	9
Rock Name	Cornish Stone	Cornish Stone	Kaolinized Igneous Rock	Altered Pegmatite	Altered Pegmatite	Altered Pegmatite	Kaolinized Aplite	Albitite Pegmatite	Cornish Stone
Locality	Kanowna, W.A.	Kanowna, W.A.	Muloowurtie Yorkes Pen., S.A.	Adelaide, S.A.	Adelaide, S.A.	Adelaide, S.A.	Near Ardrossan, S.A.	Balhannah, S.A.	Kalgoorlie, W.A.
Reference	**44**, 216	**44**, 216	**170**, 76	**221**, 27	**221**, 27	**221**, 27	**170**, 69; **223**, 149; **434**, 95	**170**, 69	**44**, 216
Analyst	Gillies	Rowledge	S.A. Dept. Mines	W. S. Chapman	W. S. Chapman	W. S. Chapman	T. W. Dalwood	Not Stated	Gillies
Remarks		*Alunite in Sol. Salts =0·06							
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	77·23	77·21	72·44	71·68	71·34	70·94	69·92	69·44	69·41
Al_2O_3	15·96	15·17	15·14	16·34	16·80	16·92	17·95	18·30	21·08
Fe_2O_3	tr.	0·13	0·32	1·56	1·56	2·20	0·35	1·46	0·24
FeO		—	—	—	—	—	0·01	—	abs.
MgO		0·15	0·51	0·10	abs.	tr.	0·33	1·01	tr.
CaO		abs.	abs.	0·50	0·54	abs.	0·06	0·50	0·02
Na_2O	0·14	1·00	1·30	4·13	4·66	5·92	1·20	3·38	0·14
K_2O	2·74	2·41	6·62	5·97	4·98	4·16	0·42	0·55	2·91
H_2O+	3·36	2·63	2·49	0·05	0·04	0·06	6·21	4·08	5·32
H_2O-		0·10	0·98	0·14	0·13	0·18	1·64	0·20	0·42
CO_2		—	—				—	—	abs.
TiO_2		0·24	0·07				0·13	0·74	0·14
P_2O_5			—				—	—	nd.
MnO			—				—	—	abs.
Other Constituents		NaCl=0·79 SO_3=0·01* Water Sol. Salts=0·25	Cl=0·66				SO_3=0·54 Cl=2·01	Cl=0·01	NaCl=0·31 Water Sol. Salts=0·07
			100·53				100·77		
Less O = Cl, F, S			0·14				0·45		
	99·43	100·09	100·39	100·47	100·05	100·38	100·32	99·67	[100·06]

TABLE AB[3] — WEATHERED GRANITIC ROCKS

	10	11	12	13
Rock Name	Kaolinized Granodiorite	Cornish Stone	China Stone	Pegmatite
Locality	Mt. Gellibrand, Vic.	Kanowna, W.A.	Kangaroo Island, S.A.	Beechwood, Vic.
Reference	**169**, 10	**44**, 216	**218**, 41	**548**
Analyst	A. J. Gaskin	Gillies	W. S. Chapman	F. F. Field
Remarks		*Alunite in Sol. Salts =0·08		
Sp. Gr.	—	—	—	—
SiO_2	67·38	66·94	66·10	65·31
Al_2O_3	16·21	21·96	20·28	19·07
Fe_2O_3	3·45	0·15	0·84	} 1·00
FeO	0·48	—	—	
MgO	0·29	0·03	abs.	tr.
CaO	0·71	abs.	0·12	0·38
Na_2O	0·86	0·67	2·58	2·63
K_2O	2·35	2·19	8·76	11·23
H_2O+	5·72	6·70	0·30	0·38
H_2O-	0·88	0·26	0·20	0·20
CO_2	tr.	abs.	abs.	
TiO_2	1·40	0·20	abs.	tr.
P_2O_5	0·07	nd.		
MnO	0·02	—		
Other Constituents	Cl=tr.	NaCl=0·88 SO_3=0·05* Water Sol. Salts=0·25	Cl=abs.	SO_3=tr.
	99·82	100·28	99·18	100·20

TABLE AB[4] — PARTIAL ANALYSES OF GRANITIC ROCKS

	1	2	3	4	5	6	7	8	9
Rock Name	Greisenized Soda Granophyre	Greisenized Soda Granophyre	Granite (Aplitic)	Kaolinized Aplite	Granodiorite *Bolairo Granodiorite*	Granite with Quartz veins	Altered Granite	Altered Granite	Altered Granite
Locality	Encounter Bay, S.A.	Encounter Bay, S.A.	Nambucca, N.S.W.	Broad-meadow, Vic.	Near Shannons Flat, N.S.W.	N. of Colinton, N.S.W.	Golconda District, Tas.	Golconda District, Tas.	Golconda District, Tas.
Reference	**51**, 32	**51**, 32	**74**, 188; **191**, 13; **360**, 183	**548**	**472**, 194	**374**, 99	**416**, 11	**416**, 11	**416**, 11
Analyst	W. R. Browne	W. R. Browne	N.S.W. Dept. Mines	F. F. Field	N. J. Snelling	N.S.W. Dept. Mines	Tas. Dept. Mines	Tas. Dept. Mines	Tas. Dept. Mines
Remarks					(Biotite analysed)				
Sp. Gr.	2·696	2·635	—	—	—	—	—	—	—
SiO_2	78·60	78·25	76·50	69·66	68·21	68·20	62·10	60·20	57·00
Al_2O_3	14·64	nd.	7·74	21·79	15·27	17·96	22·35	25·17	21·83
Fe_2O_3			0·50	0·11	0·85	1·60	5·15	3·00	9·15
FeO			0·56		3·93			1·29	1·55
MgO				abs.	2·21		1·08	0·29	0·29
CaO				0·06	2·67			0·20	0·08
Na_2O	1·74	5·00	3·43						
K_2O	3·21	0·90	3·94						
H_2O+	1·37	0·88		7·01					
H_2O-				0·90					
CO_2									
TiO_2				abs.	0·78	tr.	0·30	0·40	0·30
P_2O_5					—				
MnO					0·03				
Other Constituents									
				99·53					

TABLE AB[5] — OLD ANALYSES OF GRANITIC ROCKS

	1	2	3	4
Rock Name	Granite	Granite	Granite	Granite
Locality	Pomeroy, N.S.W.	Hartley, N.S.W.	Preston Vale, Vic.	Gunning, N.S.W.
Reference	**282**, 42	**282**, 41	**443**, 94	**282**, 41
Analyst	A. Liversidge	A. Liversidge	(?) J. C. Newbery	A. Liversidge
Remarks				
Sp. Gr.	2·60	2·712	—	2·779
SiO_2	72·200	70·302	70·18	69·793
Al_2O_3	11·399	18·845	10·99	14·693
Fe_2O_3	6·172	0·730	7·67	3·148
FeO	abs.	1·855		3·371
MgO	tr.	tr.	1·43	tr.
CaO	2·000	1·336	2·66	4·861
Na_2O	3·910	3·174	5·93	1·970
K_2O	4·490	3·361	3·18	2·610
H_2O+			0·51	—
H_2O-		0·257		0·269
CO_2				
TiO_2				
P_2O_5				
MnO	tr.	tr.		tr.
Other Constituents				
	100·171	99·860	102·55	100·715

TABLE C — ALBITITES

a. $CaO < 1\%$

$K_2O/Na_2O < 0{\cdot}75$

	1	2	3	4	5	6	7	8	9
Rock Name	Albitite	Albitite	"Soda Pegmatite"	"Albite Porphyry"	Albitite	Albitite	"Albite-mica Syenite"	Albitite	"Albite Syenite"
Locality	Meekatharra, W.A.	Cape Willoughby, Kangaroo I., S.A.	Moolyella, Pilbara Area, W.A.	Meekatharra, W.A.	May Downs, Mt. Isa, Qld.	Eyre Peninsula, S.A.	Encounter Bay, S.A.	Eyre Peninsula, S.A.	Boolcoo-matta Hills, S.A.
Reference	**155**, 231	**263**, 82; **523**, 330	**263**, 82; **303**, 7; **459**, 50; **521**, 666; **447**, 20	**155**, 222 & 299	**262**, 54; **263**, 82; **266**, 47	**216**, 16; **263**, 82	**51**, 23; **263**, 23	**216**, 16	**440**, 111
Analyst	H. Bowley	C. E. Tilley	C. C. Williams	H. Bowley	G. A. Joplin	W. S. Chapman	W. R. Browne	W. S. Chapman	E. R. Segnit
Remarks				*Loss on ignition					
Sp. Gr.	—	—	2·64	—	2·595	—	2·635	—	
SiO_2	68·85	68·39	68·36	68·19	67·84	66·13	64·60	62·74	62·18
Al_2O_3	17·95		18·74	19·47	20·42	19·92	20·37	19·26	16·91
Fe_2O_3	0·79		abs.	0·08	0·01	0·60	0·31	0·08	8·19
FeO	—		1·15	0·24	0·32	0·19	0·67	0·54	3·29
MgO	0·14		0·54	0·13	0·14	0·12	1·15	0·16	0·68
CaO	0·19	0·65	0·39	0·21	0·67	0·57	0·41	abs.	0·76
Na_2O	10·40	11·22	10·22	11·60	9·54	10·83	9·94	13·48	7·99
K_2O	0·02	0·21	0·07	0·06	0·51	1·02	0·16	1·46	0·10
H_2O+	1·38	0·45	0·03	0·26*	0·07	0·30	0·85	0·40	0·25
H_2O-	0·09		abs.		0·06	0·14	0·15	abs.	0·01
CO_2	—		abs.		—	0·40	tr.	abs.	—
TiO_2	0·12		0·07		0·18	0·31	1·04	0·03	—
P_2O_5	tr.		—		tr.	0·09	0·22	0·07	0·34
MnO	abs.		0·45		tr.	—	—	abs.	—
Other Constituents	FeS_2=0·04		FeS_2=abs.			FeS_2=0·05 Cl=0·03	ZrO_2=0·03	Cl=0·04 FeS_2=0·03 BaO=2·04	BaO=0·04 S=abs.
						100·70		100·33	
Less O= Cl, F, S						0·01		0·01	
	99·97		100·02	100·24	99·76	100·69	99·90	100·32	100·74

TABLE C — ALBITITES

b. CaO = 1%–2%

$K_2O/Na_2O < 0{\cdot}75$

	1	2	3
Rock Name	"Porphyrite"	"Soda Syenite"	"Albite Rock"
Locality	Meekatharra, W.A.	Waratah District, Tas.	Steatite Hill, Gumeracha, S.A.
Reference	**447**, 20	**383**, 39	**111**, 38
Analyst	H. Bowley	Tas. Dept. Mines	T. W. Dalwood
Remarks		*Loss on ignition †Quoted as MnO_2	
Sp. Gr.	2·65	—	2·85
SiO_2	67·18	66·56	63·02
Al_2O_3	17·34	15·90	15·79
Fe_2O_3	0·79	5·58	2·59
FeO	1·36		0·63
MgO	2·12	2·31	2·84
CaO	1·43	1·55	1·22
Na_2O	9·74	5·86	7·54
K_2O	tr.	abs.	0·24
H_2O+	0·15	2·64*	0·76
H_2O-	0·40		0·07
CO_2		—	—
TiO_2		—	3·89
P_2O_5		—	0·76
MnO		0·22†	—
Other Constituents			Cl = 0·02
	100·51	100·62	99·37

TABLE D — DIORITIC ROCKS

a. CaO<3%						b. CaO=3%–4%		
	K_2O/Na_2O > 1·25	K_2O/Na_2O = 1·25–0·75	K_2O/Na_2O <0·75			K_2O/Na_2O >1·25		
	1	2	3	4	5	1	2	3
Rock Name	"Granite"	Granodiorite	"Biotite Granite"	Granodiorite	Lamprophyric Rock	Granodiorite	Granodiorite	Quartz Augite Diorite
Locality	Whyalla, S.A.	Mosquito Ck., Pilbara, W.A.	Omeo, Vic.	70 miles S.E. of Einasleigh Qld.	Yerranderie, N.S.W.	Bethanga, Vic.	5 miles N.W. of Forsayth, Qld.	Walhalla, Vic.
Reference	**219**, 32	**303**, 7; **554**, 357; **447**, 20	**548**	**95**	**368**, 143	**548**	**95**	**548**
Analyst	W. S. Chapman	J. H. Brooking	F. F. Field	S. Baker	W. A. Greig	Vic. Dept. Mines	S. Baker	F. F. Field
Remarks				*Loss on ignition			*Loss on ignition	
Sp. Gr.	—	2·71	2·68	—	2·735	2·73	—	2·70
SiO_2	63·15	63·08	62·98	61·50	61·12	64·55	63·56	60·70
Al_2O_3	17·68	15·10	18·22	19·75	15·73	16·45	16·10	15·28
Fe_2O_3	2·27	1·72	0·63	4·00	2·30	0·73	0·90	1·57
FeO	2·43	4·45	3·41	2·30	4·50	4·16	3·60	5·96
MgO	0·32	2·67	2·57	3·77	3·35	2·10	3·00	2·07
CaO	2·37	2·83	1·95	2·83	2·42	3·69	3·00	3·78
Na_2O	4·27	4·37	4·54	3·80	4·50	2·60	4·21	2·86
K_2O	5·68	3·86	1·72	0·63	2·73	3·30	5·32	3·63
H_2O+	0·34	0·58	2·33	1·00*	2·41	1·06	0·41*	2·32
H_2O-	0·10	0·10	0·32	abs.	0·17	0·18	0·05	0·22
CO_2	0·16	0·11	0·85	—	abs.	tr.	—	abs.
TiO_2	0·37	0·68	0·46	0·20	0·65	0·92	0·10	1·31
P_2O_5	0·28	—	tr.	0·15	0·12	0·35	0·10	0·54
MnO	0·04	0·23	tr.	0·20	0·19	0·03	0·05	tr.
Other Constituents	Cl=0·02 FeS_2=0·09	FeS_2=0·17	Cl=tr. Li_2O=pnd.	Cr_2O_3<0·20	Cl=0·02 BaO=0·04 V_2O_3=0·01	Cl=tr. Li_2O=tr. CuO=tr. NiO=tr.		SO_3=abs.
	99·57	99·95	99·98	100·33	100·26	99·85	100·40	100·24

b. CaO = 3% – 4%

	K_2O/Na_2O > 1·25	K_2O/Na_2O = 1·25 – 0·75							
	4	5	6	7	8	9	10	11	12
Rock Name	Tonalite *Allia Creek Granite*	Granodiorite	Porphyritic Adamellite	Feldspathic Diorite	Granophyre	Granodiorite	Granodiorite	Granophyre	Granophyre
Locality	120 miles S. of Darwin, N.T.	Warburton, Vic.	Near Jitarning, W.A.	Near Mt. Barney, Qld.	Summit of O'Briens Hill, Tas.	Mt. Macedon, Vic.	15 miles N.E. of Glen Innes, N.S.W	Gretna, Tas.	Summit Red Hill, Tas.
Reference	**95**	**115**, 177	**581**, 39; **582**, 67	**486** **487**	**285**, 297	**468**, 20; **537**, 61; **554**, 369	**95**	**285**, 304	**285**, 297
Analyst	S. Baker	A. B. Edwards	H. P. Rowledge	E. L. P. Mercy	I. McDougall	R. J. Lewis	S. Baker	Avery & Anderson	Avery & Anderson
Remarks	*Loss on ignition			(Focal Complex)	(Red Hill Dolerite Dyke)		*Loss on ignition		(Red Hill Dolerite Dyke)
Sp. Gr.	—	—	2·77	—	2·754	2·722	—	—	2·789
SiO_2	60·30	64·87	64·76	64·4	64·29	64·04	64·00	63·48	63·22
Al_2O_3	19·27	16·24	13·99	14·5	11·82	15·58	16·47	11·27	10·92
Fe_2O_3	0·73	1·03	2·07	3·0	6·31	0·80	2·00	6·48	7·89
FeO	5·66	4·80	3·52	2·3	4·46	4·47	2·68	4·85	3·77
MgO	1·61	2·62	1·41	1·3	0·44	2·64	2·12	0·74	0·66
CaO	3·54	3·20	3·86	2·5	3·43	3·52	3·89	3·82	3·44
Na_2O	2·33	2·83	3·42	5·8	2·70	2·42	3·92	2·68	2·80
K_2O	3·73	2·49	3·46	4·5	3·08	2·80	3·28	2·70	2·88
H_2O+	1·30*	0·50	0·59	0·51	1·22	2·25	0·46*	1·83	1·23
H_2O-	0·03	0·12	0·03	—	0·47	0·38	abs.	0·77	1·08
CO_2	—	nd.	0·16	—	—	abs.	—	—	—
TiO_2	0·85	0·73	0·97	0·91	1·28	0·80	0·28	0·96	1·08
P_2O_5	0·12	0·16	0·47	0·21	0·31	0·18	0·13	0·40	0·64
MnO	0·07	abs.	0·27	0·08	0·13	tr.	0·08	0·15	0·14
Other Constituents		ZrO_2 = 0·05 Cl = 0·07 S = 0·10	ZrO_2 = tr. BaO = 0·12 FeS_2 = 0·49 V_2O_3 = 0·30			Cl = tr. Li_2O = tr.			
		99·81							
Less O = Cl, F, S		0·05							
	99·54	99·76	99·89	100·01	99·94	99·88	99·31	100·13	99·75

TABLE D — DIORITIC ROCKS

b. CaO = 3%–4%								c. CaO = 4%–5%	
	K_2O/Na_2O = 1·25–0·75		K_2O/Na_2O < 0·75					K_2O/Na_2O > 1·25	
	13	14	15	16	17	18		1	2
Rock Name	Quartz Diorite or Monzonite	"Granite" *Sybella Granite*	"Biotite Granite"	Granodiorite *Kalkadoon Granite*	Quartz-mica Diorite	(?) Quartz Diorite		Ferrohypersthene Granodiorite	Charnockite
Locality	Mt. Cooroy, Qld.	Yaringa Ck., S.W. of Mt. Isa, Qld.	Bonnie Vale, Coolgardie, W.A.	30 miles N.E. of Mt. Isa, Qld.	Ensay, Vic.	Mt. Stavely, Vic.		Musgrave Ra., S.A.	Mawson, Ant.
Reference	**232**, 168; **554**, 349	**95**	**563**	**95**	**207**, 99; **554**, 807	**548**		**583**	**441**, 693
Analyst	H. I. Jensen	S. Baker	B. W. Stenhouse	S. Baker	A. W. Howitt	Vic. Dept. Mines		A. F. Wilson	Hemingway & Lewis
Remarks	*Loss on ignition	*Loss on ignition		*Loss on ignition					
Sp. Gr.	2·70		2·88	—	2·74	—		—	—
SiO_2	62·09	60·28	64·71	63·62	62·43	62·20		63·52	63·12
Al_2O_3	14·45	18·06	17·08	14·57	17·88	18·46		16·76	14·29
Fe_2O_3	3·46	2·39	1·76	4·19	1·78	2·74		0·96	0·97
FeO	4·00	3·91	2·87	3·30	3·53	4·20		3·97	6·12
MgO	0·94	1·83	2·65	1·61	4·50	2·70		0·91	2·07
CaO	3·15	3·46	3·45	3·82	3·43	3·94		4·51	4·32
Na_2O	4·45	4·75	3·73	3·61	3·10	3·85		3·88	2·96
K_2O	4·56	4·04	1·67	2·40	2·75	0·46		4·01	4·14
H_2O+	0·34*	0·63*	1·21	1·56*	1·37	1·13		0·13	0·26
H_2O-	0·24	0·07	0·37	0·10	—	0·38		0·06	0·17
CO_2	0·11	—	0·02	—	—	—		abs.	—
TiO_2	1·30	0·30	0·51	0·43	tr.	—		0·84	1·48
P_2O_5	0·56	0·10	0·17	0·25	tr.	tr.		0·52	0·41
MnO	0·38	0·07	0·04	0·18	—	—		0·09	tr.
Other Constituents	Cl = 0·05 S(FeS_2) = 0·05 NiO = 0·09 100·22					SO_3 = tr. Cl = tr.		BaO = 0·12 ZiO_2 = 0·08 Cl = 0·07 S = 0·11 100·54	SO_3 = 0·02 Cl = 0·03 100·36
Less O = Cl, F, S	0·03							0·06	0·01
	100·19	99·89	100·24	99·64	100·77	100·06		100·48	100·35

c. CaO = 4% – 5%

	$K_2O/Na_2O > 1 \cdot 25$		$K_2O/Na_2O = 1 \cdot 25 - 0 \cdot 75$					$K_2O/Na_2O < 0 \cdot 75$	
	3	4	5	6	7	8	9	10	11
Rock Name	Porphyritic Pyroxene Adamellite *Jerramungup Adamellite*	"Granite" *Nimbuwah Granite*	Fayalite Granophyre	Quartz-mica Diorite	Granodiorite	Granodiorite	Granophyre	Quartz Diorite	Granite*
Locality	Jerramungup, W.A.	170 miles E.N.E. of Darwin, N.T.	Hickmans Hill, Tas.	Murrum-bucka, near Cooma, N.S.W.	12 miles S.S.E. of Einasleigh, Qld.	Samford Area, Qld.	N.W. of Summit of Red Hill, Tas.	50 miles S.S.W. of Einasleigh, Qld.	Wilsons Downfall, N.S.W.
Refer-ence	**581**, 39; **582**, 67	**95**	**285**, 297	**257**, 172	**95**	**60**, 128; **178**	**285**, 297	**95**	**11**, 209
Analyst	W. H. Herdsman	S. Baker	I. McDougall	G. A. Joplin	A. McClure	G. R. Patten	I. McDougall	A. McClure	J. C. H. Mingaye
Remarks		*Loss on ignition	(Red Hill Dolorite Dyke)		*Loss on ignition		(Red Hill Dolerite Dyke)	*Loss on ignition	*Excluding Phenocrysts
Sp. Gr.	2·785	—	2·759	2·75	—	2·74	2·805	—	2·705
SiO_2	62·08	60·42	63·80	63·35	62·61	61·54	61·39	64·79	64·20
Al_2O_3	15·94	18·20	11·92	16·92	15·96	19·03	12·26	16·38	16·94
Fe_2O_3	0·76	2·10	3·86	1·23	1·95	abs.	5·58	2·17	2·00
FeO	3·56	2·50	7·03	4·58	4·95	5·04	6·36	2·46	2·44
MgO	2·88	1·65	0·59	3·03	2·93	2·97	1·09	1·78	2·03
CaO	4·32	4·51	4·24	4·45	4·75	4·90	4·78	4·11	4·56
Na_2O	3·56	3·80	2·74	1·90	2·90	2·84	2·56	4·32	4·00
K_2O	5·12	6·96	3·12	2·28	2·77	2·76	2·62	2·82	2·76
H_2O+	0·58	0·30*	0·94	0·86	0·84*	0·35	1·02	0·86*	0·47
H_2O-	abs.	abs	0·76	0·09	0·07	0·10	0·17	0·13	0·14
CO_2	abs.	—	—	—	—	—	—	—	0·01
TiO_2	0·54	0·10	1·21	0·84	0·46	0·72	1·48	0·36	0·39
P_2O_5	0·51	0·05	0·27	tr.	0·18	0·08	0·28	0·17	0·22
MnO	0·08	0·07	0·10	—	0·09	—	0·19	0·07	0·07
Other Con-stituents									$SO_3 = 0 \cdot 12$ (NiCo)0 = 0·01 CuO = 0·01 BaO = 0·02
	99·93	100·66	100·58	99·53	100·46	100·33	99·78	100·42	100·39

TABLE D — DIORITIC ROCKS

c. CaO = 4% – 5%

$K_2O/Na_2O < 0{\cdot}75$

	12	13	14	15	16	17	18	19	20
Rock Name	Trondhjemite	Granodiorite	Granodiorite	Granodiorite	Granodiorite	Tonalite	"Biotite Granite"	Diorite	Diorite
Locality	Kholo Creek Area, Qld.	4 miles N. of Packenham, Vic.	Dandenong, Vic.	Charters Towers, Qld.	50 miles N. of Chillagoe, Qld.	Hartley, N.S.W.	Golconda, Tas.	Por. 39, Par. of Talmo, Burrinjuck, N.S.W.	Bigga, N.S.W.
Reference	**179**, 12	**134**, 131	**183**, 201; **554**, 807	**418**, 69	**332**	**247**, 53	**416**, 11	**590**	**194**, 450
Analyst	W. H. Herdsman	F. F. Field	H. C. Jenkins	H. T. McGillivray	S. Baker	G. A. Joplin	Not Stated	H. Yates	S. M. Hasan
Remarks				*Loss on ignition	*Loss on ignition			(Marginal phase of Porphyrite)	
Sp. Gr.	—	2·73	—	—	—	2·764	—	2·76	—
SiO_2	64·05	63·61	63·38	63·20	62·74	62·06	61·60	61·27	57·00
Al_2O_3	16·82	15·09	17·36	23·05	16·66	18·25	14·71	14·51	14·88
Fe_2O_3	1·07	0·93	1·61		1·81	2·91	7·00	0·46	0·68
FeO	4·37	4·56	1·98		3·16	2·94	2·97	4·93	7·53
MgO	2·63	2·82	1·80	0·71	2·06	1·71	2·68	1·71	5·70
CaO	4·48	4·52	4·18	4·95	4·67	4·90	4·80	4·80	4·97
Na_2O	2·74	4·06	4·07	5·72	3·73	3·12	4·05	4·18	3·47
K_2O	1·40	2·66	0·31	2·03	2·15	1·61	1·72	2·64	2·58
H_2O+	1·30	1·01	0·54	0·95*	2·15*	1·34	—	1·79	0·54
H_2O-	0·30	0·13	—	—	—	0·16	—	0·07	0·03
CO_2	abs.	abs.	1·13	—	—	—	—	2·37	nd.
TiO_2	0·46	0·90	—	—	0·25	0·60	0·20	1·18	2·15
P_2O_5	0·17	0·18	—	—	0·04	0·24	—	0·33	0·85
MnO	tr.	tr.	—	—	0·08	0·09	—	—	tr.
Other Constituents		Li_2O = tr. Cl = tr.	FeS_2 = 3·38						
	99·79	100·47	99·74	[100·61]	99·50	99·93	—	100·24	100·38

TABLE D — DIORITIC ROCKS

d. CaO = 5% – 6%

	$K_2O/Na_2O > 1 \cdot 25$				$K_2O/Na_2O = 1 \cdot 25 - 0 \cdot 75$			$K_2O/Na_2O < 0 \cdot 75$	
	1	2	3	4	5	6	7	8	9
Rock Name	Tonalite *Murrumbucka Tonalite*	Granodiorite	Granodiorite *Inkamulla Granodiorite*	Quartz Monzonite	Quartz-mica Diorite	Diorite (Tonalite)	Lamprophyre	Quartz-mica Diorite "Gneiss"	Tonalite
Locality	Murrumbucka, N. Cooma, N.S.W.	2 miles E. of Braidwood N.S.W.	Inkamulla Bore, Harts Ra., N.T.	Dianas Lagoon, Tas.	N. of Cooma, N.S.W.	Mt. Lofty Ra., S.A.	Jenolan Caves, N.S.W.	Ensay South, Vic.	Palmer Area, S.A.
Reference	**472**, 194	**95**	**243**, 41	**482**	**257**, 171	**145**, 14	**358**, 196; **504**, 360; **554**, 851	**507**, 38	**1**, 21
Analyst	Rudowski & Unwin	A.M.D.L.	Avery & Anderson	W. St C. Manson	Burnard & Wallace	H. N. England	W. G. Stone	C. M. Tattam	A. R. Alderman
Remarks									
Sp. Gr.	—	—	—	—	—	2·80	2·775	—	2·792
SiO_2	63·67	63·40	63·38	63·06	64·43	60·56	50·05	64·61	63·88
Al_2O_3	14·81	14·90	18·50	14·88	18·61	15·57	19·56	16·14	16·37
Fe_2O_3	1·04	1·86	0·80	1·15	1·52	1·40	0·90	2·15	1·99
FeO	4·73	3·77	2·70	4·77	2·14	5·70	6·48	2·61	2·96
MgO	3·70	2·67	1·55	3·19	2·13	2·58	6·30	2·41	2·24
CaO	5·13	5·21	5·34	5·45	5·20	5·19	5·20	5·07	5·18
Na_2O	1·94	2·45	3·34	2·10	2·47	3·06	2·49	2·59	3·66
K_2O	2·69	3·21	3·44	2·40	1·87	2·31	3·09	1·72	1·61
H_2O+	1·38	1·13	0·24	1·63	1·06	0·78	3·09	2·18	0·45
H_2O-	0·08	0·14	0·08	0·16	0·26	0·08	0·43	0·07	0·21
CO_2	0·03	—	—	—	—	nd.	0·32	—	abs.
TiO_2	0·69	0·70	0·54	0·64	0·10	1·58	0·55	0·46	0·86
P_2O_5	0·15	0·18	0·26	0·21	0·11	0·72	0·38	0·40	0·23
MnO	0·07	0·08		0·12	—	0·07	0·09	0·08	0·07
Other Constituents						$FeS_2 = 0 \cdot 12$ $BaO = 0 \cdot 06$	$SO_3 = 0 \cdot 03$ $BaO = 0 \cdot 15$ $V_2O_3 = 0 \cdot 05$	$BaO = 0 \cdot 04$ $S = 0 \cdot 01$	
	100·11	99·70	100·17	99·76	99·90	99·78	[99·16]	100·54	99·71

TABLE D — DIORITIC ROCKS

d. CaO = 5% – 6%						
	$K_2O/Na_2O < 0{\cdot}75$					
	10	11	12	13	14	15
Rock Name	Granodiorite	Tonalite	"Granite" *Enoggera Granite*	Quartz Diorite	Porphyrite Microdiorite	Quartz Diorite
Locality	Cue, W.A.	Moruya, N.S.W.	Enoggera, Qld.	Stirling Ra., W.A.	Mt. Alford, Qld.	Mt. Morgan, Qld.
Reference	**171**, 14; **447**, 20; **588**, 53	**47**, 182	**60**, 128	**89**, 51	**490**	**20**, 2
Analyst	E. S. Simpson	I. A. Brown	E. W. Muir	W. H. Herdsman	W. H. Herdsman	P. J. Sinnott
Remarks						
Sp. Gr.	2·76	2·768	2·71	—	—	—
SiO_2	63·62	61·44	61·10	59·64	57·48	56·70
Al_2O_3	14·38	17·61	19·24	13·83	16·33	17·10
Fe_2O_3	3·29	1·86	1·24	1·67	1·99	2·57
FeO	3·47	3·59	3·42	9·58	6·78	4·36
MgO	3·13	3·09	2·56	2·08	1·26	4·34
CaO	5·43	5·88	5·25	5·66	5·03	5·78
Na_2O	4·40	2·03	3·82	3·15	4·12	3·66
K_2O	1·20	1·03	1·68	0·92	2·54	1·72
H_2O+	0·06	1·17	1·31	1·26	1·51	2·35
H_2O-	0·22	0·10	0·64	0·22	0·51	
CO_2	abs.	—	—	abs.	0·79	0·25
TiO_2	0·72	1·42	—	1·18	0·92	0·80
P_2O_5	—	0·33	—	0·32	0·62	0·14
MnO	0·28	0·09	—	0·23	0·16	0·11
Other Constituents	FeS_2 = abs.					S = pnd.
	100·20	99·64	100·26	99·74	100·04	99·88

e. CaO = 6% – 7%

	K_2O/Na_2O > 1·25	K_2O/Na_2O = 1·25 – 0·75					K_2O/Na_2O < 0·75		
	1	2	3	4	5	6	7	8	9
Rock Name	Minette	Granodiorite	Fayalite Granophyre	Fayalite Granophyre	Monzonitic Quartz Diorite	Quartz-mica Diorite	Quartz Diorite	Diorite	Granodiorite *Dido Granodiorite*
Locality	Attunga, N.S.W.	Eskdale, Qld.	N. Red Hill, Tas.	N. flank Red Hill, Tas.	Hartley, N.S.W.	Tambo River, Noyang, Vic.	Bigga, N.S.W.	Mt. Lofty Ra., S.A.	45 miles S.E. of Einasleigh, Qld.
Reference	**28**, 706	**244**	**285**, 297	**285**, 297	**247**, 53	**206**, 31; **554**, 807	**194**, 450	**145**, 14	**95**
Analyst	W. N. Benson	J. B. Jones	I. McDougall	Avery & Anderson	G. A. Joplin	A. W. Howitt	S. M. Hasan	H. N. England	S. Baker
Remarks			(Red Hill Dolerite Dyke)	(Red Hill Dolerite Dyke)					*Loss on ignition
Sp. Gr.	—	—	2·776	2·768	2·807	2·779	—	2·70	—
SiO_2	52·06	60·56	60·40	60·37	58·37	57·69	63·45	61·09	59·98
Al_2O_3	13·36	17·86	14·59	13·77	18·38	15·65	15·63	15·75	18·17
Fe_2O_3	1·26	} 6·78	1·37	2·00	2·80	7·42	2·31	2·94	3·20
FeO	5·24	}	8·08	8·20	4·43	2·41	2·80	1·77	2·99
MgO	6·75	2·52	0·78	0·83	2·79	3·10	2·65	4·55	3·50
CaO	6·73	6·01	6·14	6·14	6·29	6·92	6·07	6·43	6·33
Na_2O	1·38	3·46	2·58	2·82	2·52	2·33	3·02	4·69	3·29
K_2O	6·03	2·70	2·30	2·42	2·56	2·37	2·42	0·73	1·26
H_2O+	0·98	nd.	2·15	1·26	0·56	1·59	0·90	0·51	0·48*
H_2O-	0·14	0·61	0·41	0·52	0·16	—	0·14	0·08	0·05
CO_2	2·20	—	—	—	—	—	nd.	nd.	—
TiO_2	2·08	0·61	0·93	1·13	0·52	0·03	0·50	0·87	0·30
P_2O_5	0·91	0·05	0·33	0·33	0·26	0·22	0·45	0·33	0·09
MnO	0·11	0·21	0·14	0·17	0·06	tr.	tr.	0·21	0·10
Other Constituents	FeS_2 = 0·17 BaO = 0·12 SiO = tr. Cr_2O_3 = tr.								
	99·52	101·37	100·20	99·96	99·70	99·73	100·34	99·95	99·74

TABLE D — DIORITIC ROCKS

e. CaO = 6% – 7%

$K_2O/Na_2O < 0{\cdot}75$

	10	11	12	13	14	15	16	17	18
Rock Name	Granodiorite	Quartz-mica Diorite	Granodiorite *Dido Granodiorite*	Quartz Diorite	Quartz Diorite	Lamprophyre	"Patchy" Dioritic Rock	Diorite	Diorite
Locality	Glenrock Falls, Marulan, N.S.W.	Moruya, N.S.W.	55 miles S.E. of Einasleigh, Qld.	Noosa Head, Qld.	Charters Towers, Qld.	Por. 17, Par. of Bolaro, N.S.W.	Mt. Barney, Qld.	Near Junction Shaft, Snowy Mts., N.S.W.	Por. 38, Par. of Talmo, Burrinjuck, N.S.W.
Reference	**589**, 797	**47**, 182	**95**	**232**, 169; **554**, 513	**418**, 75	**368**, 143	**486**, **487**	**264**, 129	**590**
Analyst	G. J. Burrows	I. A. Brown	S. Baker	H. I. Jensen	P. Mansini	W. A. Greig	E. L. P. Mercy	G. A. Joplin	H. Yates
Remarks			*Loss on ignition						(Marginal phase of porphyrite)
Sp. Gr.	—	2·808	—	2·78	—	2·807	—	2·879	—
SiO_2	59·94	58·58	58·56	57·66	56·56	56·08	54·0	53·82	53·14
Al_2O_3	15·61	18·33	18·33	21·17	16·73	15·98	14·5	15·59	15·08
Fe_2O_3	1·55	1·96	3·15	0·05	3·54	2·60	3·9	1·55	0·69
FeO	6·25	5·01	4·40	5·11	2·54	4·77	5·2	6·24	5·97
MgO	2·53	3·69	2·86	1·70	4·68	3·41	4·7	7·12	3·35
CaO	6·65	6·14	6·58	6·57	6·80	6·56	6·7	6·72	6·87
Na_2O	2·88	1·99	3·30	3·81	4·65	4·78	4·5	3·17	5·50
K_2O	2·06	1·28	1·20	1·73	2·05	3·12	2·6	1·69	0·66
H_2O+	0·57	1·44	0·45*	1·00	1·18	1·21	1·2	1·72	2·79
H_2O-	0·39	0·09	0·08	0·05	0·24	0·15	—	0·13	0·12
CO_2	—	—	—	0·11	—	abs.	—	0·31	4·04
TiO_2	1·08	1·06	0·30	0·88	0·59	0·70	2·6	1·22	1·54
P_2O_5	0·64	0·30	0·11	tr.	0·29	0·45	0·48	0·46	0·48
MnO	—	0·19	0·14	0·11	0·12	0·18	0·11	nd.	—
Other Constituents				$S(FeS_2)$ = 0·05 NiO = 0·04	FeS_2 = 0·23 Cr_2O_3 = tr.	SO_3 = 0·24 Cl = tr. BaO = 0·07 V_2O_3 = 0·02			
	100·15	100·06	99·46	100·04	100·20	100·32	100·49	99·74	99·83

TABLE D — DIORITIC ROCKS

e. CaO = 6% – 7%		f. CaO = 7% – 8%						
	$K_2O/Na_2O <$ 0·75	$K_2O/Na_2O >$ 1·25	K_2O/Na_2O = 1·25 – 0·75					$K_2O/Na_2O <$ 0·75
	19	1	2	3	4	5	6	7
Rock Name	Diorite	Lamprophyre	Diorite	Granodiorite	Quartz Monzonite	Monzonite Porphyry	Appinite	Diorite
Locality	Navigation Ck., Noyang, Vic.	Dilling, Avon District W.A.	W. of Wee Jasper, N.S.W.	South Marulan, N.S.W.	Kiandra, N.S.W.	Kiandra, N.S.W.	Hamersley Siding, W.A.	Wyalong, N.S.W.
Reference	**206**, 53 **554**, 833	**456**, 26; **560**	**590**	**390**, 127; **391**, 113	**56**, 270; **365**, 103	**56**, 270; **365**, 103	**242**, 60	**556**, 14
Analyst	A. W. Howitt	D. G. Murray	H. Yates	W. H. Herdsman	W. A. Greig	W. A. Greig	W. H. Herdsman	N.S.W. Dept. Mines
Remarks		(Dyke)						
Sp. Gr.	2·893	2·89	2·84	2·82	2·927	2·937	—	—
SiO_2	47·63	53·61	59·69	57·66	57·18	57·08	53·02	58·93
Al_2O_3	17·20	13·56	16·84	17·36	14·13	13·62	18·68	17·48
Fe_2O_3	3·60	0·69	2·08	0·94	1·90	1·30	3·98	1·73
FeO	8·09	4·84	4·46	6·54	5·85	6·21	3·09	5·01
MgO	6·25	6·28	2·68	4·07	7·00	8·07	3·09	4·33
CaO	6·42	7·49	7·11	7·28	7·64	7·54	7·56	7·08
Na_2O	4·65	2·18	2·14	1·56	2·36	2·50	3·62	2·91
K_2O	1·31	6·22	2·16	1·38	2·30	2·50	3·68	1·34
H_2O+	2·71	0·65	1·86	2·24	0·45	0·19	0·97	0·73
H_2O-	0·73	0·03		0·20	0·07	0·05	0·10	0·13
CO_2	0·44	0·43	—	abs.	—	—	abs.	—
TiO_2	1·39	1·20	1·32	0·55	0·60	0·65	1·12	0·52
P_2O_5	tr.	1·24	0·17	0·14	0·21	0·21	0·71	0·14
MnO	—	0·19	—	0·04	0·11	0·14	0·14	tr.
Other Constituents	FeS_2 = 0·53	BaO = 0·27 FeS_2 = 0·98 Cr_2O_3 = 0·02 V_2O_3 = 0·03 ZrO_2 = tr. F = 0·37			V_2O_3 = 0·04 Cr_2O_3 = 0·03 (Co.Ni)O = tr BaO = 0·04 SrO = tr. Cl = tr. SO_3 = 0·11	V_2O_3 = 0·07 Cr_2O_3 = 0·02 (Co.Ni)O = tr BaO = 0·04 SrO = tr. SO_3 = 0·05 Cl = tr.		SO_3 = abs. V_2O_3 = tr.
		100·28						
Less O = Cl, F, S		0·16						
	100·95	100·12	100·51	99·96	100·02	100·24	99·76	100·33

TABLE D — DIORITIC ROCKS

f. CaO = 7% – 8%

$K_2O/Na_2O < 0{\cdot}75$

	8	9	10	11	12
Rock Name	Quartz-mica Diorite	Hornblende Diorite	Spotted "Diorite"	Quartz Diorite	Quartz Diorite
Locality	Ben Bullen, N.S.W.	70 miles S.E. of Einasleigh, Qld.	Near Junction Shaft, Snowy Mts., N.S.W.	Near Queenstown, Vic.	Dargo, Vic.
Reference	**252**, 140	**95**	**264**, 129	**268**, 123	**208**, 141
Analyst	G. A. Joplin	S. Baker	G. A. Joplin	N. R. Junner	A. W. Howitt
Remarks		*Loss on ignition			
Sp. Gr.	2·83		2·915	2·81	2·855
SiO_2	55·30	53·18	53·09	52·53	52·03
Al_2O_3	20·87	13·65	14·53	18·78	20·57
Fe_2O_3	3·62	4·68	2·49	1·52	1·60
FeO	5·20	5·17	6·51	6·60	6·97
MgO	2·75	9·23	7·64	3·02	5·39
CaO	7·44	7·91	7·93	7·21	7·80
Na_2O	2·49	4·20	2·24	2·54	2·37
K_2O	0·82	0·40	1·55	1·73	1·34
H_2O+	0·76	0·40*	1·71	2·24	1·27
H_2O-	0·08	abs.		0·53	0·26
CO_2	—	—	1·37	0·39	—
TiO_2	0·90	0·30	1·08	2·16	nd.
P_2O_5	0·41	0·20	0·41	0·32	—
MnO	0·10	0·10	nd.	0·14	—
Other Constituents		$Cr_2O_3 < 0{\cdot}20$		(NiCo)O = tr.	
	100·74	99·62	100·55	99·71	99·60

TABLE D — DIORITIC ROCKS

g. CaO > 8%

	$K_2O/Na_2O >$ 1·25	$K_2O/Na_2O =$ 1·25–0·75		$K_2O/Na_2O <$ 0·75					
	1	2	3	4	5	6	7	8	9
Rock Name	Hornblende Lamprophyre	Quartz Diorite *Gracemere Granite*	Diorite	Diorite	Diorite	Quartz-mica Diorite	Quartz-mica Diorite	Diorite	Quartz-augite Diorite
Locality	Hillgrove, N.S.W.	Near Rockhampton, Qld.	Mt. Lofty Ra., S.A.	Hillgrove, N.S.W.	Mt. Lofty Ra., S.A.	Hartley, N.S.W.	Cox's River, Hartley, N.S.W.	Mt. Lofty Ra., S.A.	Colac, Vic.
Reference	**11**, 228; **554**, 851	**490**	**145**, 14	**11**, 214; **554**, 627	**145**, 14	**247**, 53	**248**, 146	**145**, 14	**142**, 82
Analyst	J. C. H. Mingaye	G. Hall	H. N. England	J. C. H. Mingaye	H. N. England	G. A. Joplin	G. A. Joplin	H. N. England	F. F. Field
Remarks									
Sp. Gr.	2·800	2·92	2·88	2·814	3·04	2·861	2·836	2·99	—
SiO_2	45·88	52·32	59·93	55·05	54·95	54·37	52·41	51·78	50·79
Al_2O_3	13·22	17·00	14·07	14·15	15·88	19·64	20·11	15·53	16·40
Fe_2O_3	3·20	4·09	0·75	1·80	0·68	4·30	4·18	4·77	2·11
FeO	5·31	7·44	2·87	5·31	5·85	4·87	5·59	6·91	6·26
MgO	12·05	4·75	5·02	8·07	5·06	2·94	4·12	5·42	5·68
CaO	8·18	9·78	11·77	9·36	10·09	8·07	9·06	8·42	8·31
Na_2O	1·62	1·56	3·72	2·82	3·76	2·55	2·28	2·82	3·42
K_2O	2·07	1·84	0·36	0·72	0·76	1·01	0·88	0·72	1·37
H_2O+	2·80	0·52	0·15	1·46	0·41	0·96	0·36	0·69	3·59
H_2O-	2·24	0·13	0·06	0·22	0·22	0·11	0·16	0·20	0·28
CO_2	1·36	—	nd.	0·02	abs.	—	tr.	abs.	0·30
TiO_2	0·72	0·48	0·79	0·57	1·80	1·14	0·78	1·94	1·43
P_2O_5	0·35		0·76	0·06	0·24	0·34	0·32	0·51	tr.
MnO	0·15		0·06	0·22	0·04	0·07	0·19	0·23	tr.
Other Constituents	SO_3=0·49 NiO=0·05 Cr_2O_3=0·04 BaO=0·15 V_2O_3=0·02 Sb_2O_3=0·03			SO_3=0·01 Cl=0·02 Cr_2O_3=0·01 V_2O_3=0·01 CuO=0·01 S_2O=tr.					FeS_2=0·34
	99·93	99·91	100·33	99·89	99·74	100·37	100·46	99·94	100·28

TABLE D — DIORITIC ROCKS

g. CaO >8%

K_2O/Na_2O <0·75

	10	11	12	13	14	15	16	17	18
Rock Name	Dioritic Rock	Diorite-gabbro	Diorite	Diorite	Diorite Rock	Diorite Porphyrite	Diorite	Diorite	Quartz-bearing Pyroxene Diorite
Locality	Focal Complex, Mt. Barney, Qld.	Moruya, N.S.W.	Hillgrove, N.S.W.	Woods Point, Vic.	Focal Complex, Mt. Barney, Qld.	Charters Towers, Qld.	Samford—Mt. Nebo Area, Qld.	Charters Towers, Qld.	Ben Bullen, N.S.W.
Reference	**486**; **487**	**47**, 182	**11**, 216	**522**, 9	**486**; **487**	**418**, 88	**178**, 17	**418**, 83	**249**, 101; **253**, 80
Analyst	E. L. P. Mercy	I. A. Brown	J. C. H. Mingaye	A. W. Hounslow	E. L. P. Mercy	P. Mansini	R. Gradwell	P. Mansini	G. A. Joplin
Remarks						(Dyke)			
Sp. Gr.	—	2·932	2·977	—	—	—	2·88	—	2·92
SiO_2	50·7	50·44	50·04	50·04	49·9	49·82	49·00	48·08	47·95
Al_2O_3	18·3	17·05	18·68	16·65	17·4	19·38	19·19	14·84	21·20
Fe_2O_3	1·3	2·43	0·80	0·53	2·2	3·09	4·60	1·55	1·69
FeO	5·3	5·24	6·91	9·30	5·7	3·55	5·97	7·27	8·85
MgO	5·5	10·85	7·79	5·09	6·3	4·85	5·44	6·02	4·95
CaO	8·6	9·80	9·88	8·06	9·1	9·82	9·33	14·20	9·50
Na_2O	4·6	1·51	2·35	2·88	4·2	5·56	3·52	4·57	1·70
K_2O	1·2	0·92	0·12	0·88	1·1	0·69	0·77	1·70	0·76
H_2O+	2·6	0·65	1·74	3·03	1·8	0·46	0·21	0·60	0·60
H_2O-	—	0·06	0·28	0·07	—	0·46	0·06	0·06	0·02
CO_2	—	—	0·27	0·76	—	—	—	—	0·74
TiO_2	1·8	1·10	0·80	1·65	2·2	0·78	1·52	0·75	1·59
P_2O_5	0·32	0·43	0·16	0·60	0·40	0·33	0·42	0·22	0·38
MnO	0·09	0·11	0·14	0·21	0·12	0·20	0·10	0·32	0·18
Other Constituents			SO_3=0·49 BaO=tr. CuO=0·08 SrO=tr. Cr_2O_3=0·02 V_2O_3=0·03	FeS_2=0·29		FeS_2=1·16 Cr_2O_3=tr.		FeS_2=0·56	
	100·31	100·59	100·58	100·04	100·42	100·15	100·13	100·74	100·11

TABLE D — DIORITIC ROCKS

g. CaO > 8%

$K_2O/Na_2O < 0{\cdot}75$

	19	20	21	22
Rock Name	Lampro-phyre	Hornblende Lampro-phyre	Quartz Diorite	Diorite-gabbro
Locality	Cobargo District, N.S.W.	Mannum, S.A.	Murrum-bidgee R., below Bur-rinjuck, N.S.W.	Cox's River, Hartley, N.S.W.
Refer-ence	**380**, 263	**2**, 254; **176**	**590**	**248**, 146
Analyst	J. H. Pyle	B. F. Goode	H. Yates	G. A. Joplin
Remarks				
Sp. Gr.	—	3·03	2·97	2·967
SiO_2	47·82	46·79	46·78	46·49
Al_2O_3	15·64	18·09	18·69	19·22
Fe_2O_3	2·47	4·07	3·81	6·68
FeO	7·42	7·05	6·86	6·02
MgO	7·44	7·31	6·18	5·89
CaO	10·92	9·67	11·44	10·88
Na_2O	2·88	3·38	1·56	2·16
K_2O	0·39	0·77	1·02	0·65
H_2O+	2·18	0·40	2·44	0·96
H_2O-	0·42		—	0·17
CO_2	abs.	—	—	tr.
TiO_2	1·84	1·99	0·94	0·92
P_2O_5	0·32	0·46	0·31	0·40
MnO	0·17	—	—	0·20
Other Con-stituents	ZrO_2=0·03 Cl=tr. S=0·19 V_2O_3=tr.			
	100·13			
Less O= Cl, F, S	0·09			
	100·04	99·98	100·03	100·64

TABLE D[2] — METASOMATIZED AND DEUTERICALLY ALTERED DIORITIC ROCKS

	1	2	3	4	5	6	7	8	9
Rock Name	Carbonated Aplite	Altered Monzonite	Altered Monzonite	Altered Monzonite	Augite Lampro-phyre	Hydrated Diorite	Lampro-phyre (Kersantite)	Propylitized Quartz Diorite	Pyritous Diorite
Locality	Gaffneys Creek, Walhalla Area, Vic.	Near Junc-tion Shaft, Snowy Mts., N.S.W.	Near Junc-tion Shaft, Snowy Mts., N.S.W.	Near Junc-tion Shaft, Snowy Mts., N.S.W.	Jenolan Caves, N.S.W.	Westonia, W.A.	Adelong, N.S.W.	Woods Point, Vic.	Gilbert District, Qld.
Refer-ence	**270**, 188	**264**, 129	**264**, 129	**264**, 129	**358**, 196; **504**, 364; **554**, 851	**156**, 283; **447**, 64	**359**, 225; **534**, 190	**142**, 82; **268**, 123	**103**, 303
Analyst	N. R. Junner	J. K. Burnett	J. K. Burnett	J. K. Burnett	W. G. Stone	H. Bowley	W. A. Greig	N. R. Junner	R. Daintree
Remarks	*Mainly K_2O				(Dyke)	(Dyke)			
Sp. Gr.	—	—	—	—	2·892		—	2·91	—
SiO_2	56·91	56·65	55·73	55·56	53·62	51·46	49·66	49·65	47·465
Al_2O_3	13·31	15·80	17·65	17·97	12·10	11·43	17·44	16·73	19·485
Fe_2O_3	0·08	4·78	3·12	2·01	2·00	1·38	1·00	0·31	1·570
FeO	5·33	4·46	3·98	4·74	6·30	8·21	6·75	8·99	11·735
MgO	3·66	3·98	3·55	4·21	7·07	12·33	4·71	5·88	5·670
CaO	3·38	7·61	6·66	6·36	11·64	10·83	7·10	7·87	7·400
Na_2O	3·76*	1·64	2·99	2·65	1·84	1·40	2·69	3·10	2·725
K_2O		2·94	2·98	2·34	1·52	0·58	3·85	0·80	0·280
H_2O+	1·19	0·62	1·69	0·45	1·86	1·71	1·53	2·50	1·150
H_2O-	0·13	0·06	0·14	0·09	0·22	0·03	0·09	0·14	0·350
CO_2	9·75	0·94	1·25	3·60	1·12	abs.	3·00	1·08	1·461
TiO_2	1·40	0·69	0·53	0·82	0·50	0·58	1·22	2·81	—
P_2O_5	abs.	abs.	abs.	abs.	0·29	0·25	0·22	0·04	—
MnO	0·23	0·07	0·10	0·06	0·17	0·30	0·11	0·14	—
Other Con-stituents	FeS_2=0·85				SO_3=0·02 BaO=0·04 V_2O_3=0·02	FeS_2=0·03 Cr_2O_3=0·08 V_2O_3=0·04	V_2O_3=0·04 SO_3=0·42 BaO=0·01 Cl=0·12	NiO=tr.	S=0·335
	99·98	100·24	100·37	100·86	100·33	100·64	99·96	100·04	99·626

TABLE D[2] — METASOMATIZED AND DEUTERICALLY ALTERED DIORITIC ROCKS

	10	11	12	13
Rock Name	Vein-altered Lamprophyre	Altered Diorite	Altered Diorite	Bleached Diorite
Locality	Walhalla, Vic.	Woods Point, Vic.	Walhalla, Vic.	Woods Point, Vic.
Reference	**270**, 188	**185**, 31; **554**, 1011	**548**	**522**, 9
Analyst	N. R. Junner	F. E. A. Stone	Not Stated	A. W. Hounslow
Remarks		*Loss on ignition mainly S	(Dyke)	
Sp. Gr.	—	—	—	—
SiO_2	42·73	41·66	41·12	40·57
Al_2O_3	10·86	17·46	23·75	14·19
Fe_2O_3	0·60	} 10·40	12·84	0·75
FeO	6·46	}		6·91
MgO	10·14	4·54	0·73	4·25
CaO	6·16	8·54	4·26	9·21
Na_2O	1·84	0·44	2·96	1·73
K_2O	1·80	0·74	3·90	2·78
H_2O+	0·81	14·76*	8·88	1·69
H_2O-	0·28	0·76	0·52	0·08
CO_2	16·05			14·80
TiO_2	1·22			1·40
P_2O_5	—			0·60
MnO	—			0·15
Other Constituents	FeS_2=0·54	Loss & undet =0·70		FeS_2=1·19
	99·49	100·00	98·96	100·30

TABLE E — NORITES, GABBROS, AND ASSOCIATED ULTRAMAFIC ROCKS

a. CaO < 10%

$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$

	1	2	3	4	5	6
Rock Name	Biotite Norite	Biotite Norite	Banded Hornblende Gabbro	Norite	Hornblende Norite	Gabbro
Locality	South Black Hill, S.A.	S.W. of Tjatja, Musgrave Ra., S.A.	Ben Bullen, N.S.W.	Black Bluff, Broken Hill, N.S.W.	Canbelego, N.S.W.	Brogo, N.S.W.
Reference	**1**, 23	**584**	**265**	**53**, 333; **362**, 187	**9**, 39	**554**, 662
Analyst	A. R. Alderman	W. H. Herdsman	G. A. Joplin	J. C. H. Mingaye	J. C. H. Mingaye	A. A. Pain
Remarks	(Stock)				(Some alteration to talc)	
Sp. Gr.	3·128	—	—	3·191	3·001	
SiO_2	53·37	51·92	49·60	48·36	46·66	45·15
Al_2O_3	14·25	15·88	18·90	11·96	18·50	13·40
Fe_2O_3	2·55	1·32	2·91	2·40	0·77	2·97
FeO	7·44	8·83	8·45	14·59	6·93	13·19
MgO	5·04	7·48	4·65	10·60	9·76	4·23
CaO	8·87	9·42	9·97	8·98	9·88	9·79
Na_2O	2·50	2·96	2·06	0·78	1·44	2·47
K_2O	2·96	1·01	0·69	0·27	0·27	0·49
H_2O+	0·19	0·07	0·95	0·50	4·88	0·39
H_2O+	0·22	0·18	0·12	0·34	0·20	2·41
CO_2	abs.	—	0·12	—	0·09	—
TiO_2	1·70	0·64	1·29	0·75	0·65	5·04
P_2O_5	1·24	0·08	abs.	0·11	0·07	0·12
MnO	0·15	0·23	0·30	0·31	0·22	0·19
Other Constituents	FeS_2 = tr.	BaO = 0·04		S(FeS_2) = 0·01 Cr_2O_3 = 0·01 CuO = 0·08 (NiCo)O = 0·02	Cr_2O_3 = 0·02 Cl = 0·03 V_2O_3 = 0·01 FeS_2 = 0·03 NiO = 0·03 BaO = 0·02 SrO = abs.	
	100·48	100·06	100·01	100·07	100·46	99·84

TABLE E — NORITES, GABBROS, AND ASSOCIATED ULTRAMAFIC ROCKS

b. CaO>10%

	K_2O/Na_2O >1·25	K_2O/Na_2O = 1·25—0·75		K_2O/Na_2O <0·75					
	1	2	3	4	5	6	7	8	9
Rock Name	Hornblende Gabbro	Hornblendite	Gabbro,	Norite	Norite	Olivine Norite	Norite	Hornblendite	Norite
Locality	Moruya, N.S.W.	Honeybugle, S.E. of Hermidale, N.S.W.	65 miles S.E. of Einasleigh, Qld.	Norseman, W.A.	Adelong, N.S.W.	Cavanagh Ra., W.A.	Ora Banda, W.A.	Near Monteagle, 26 miles N. of Boorowa, N.S.W.	Norseman, W.A.
Reference	**47**, 182	**399**	**95**	**67**, 119; **447**, 30; **554**, 660	**359**, 225; **534**, 193	**447**, 30; **457**, 271; **520**; **554**, 669	**271**, 48; **447**, 26	**377**	**67**; **447**, 30; **554**, 66; **582**, 76
Analyst	I. A. Brown	J. H. Pyle	S. Baker	J. H. Brooking	H. P. White	G. J. Burrows	H. Bowley	J. H. Pyle	C. C. Williams
Remarks			*Loss on ignition	(Dyke)		(Dyke)			(Dyke)
Sp. Gr.	2·989	—	—	2·96	2·986	—	—	—	2·95
SiO_2	49·38	49·69	46·30	52·72	52·54	51·55	50·82	50·80	50·55
Al_2O_3	13·89	6·82	14·44	17·37	16·94	18·85	13·98	8·99	17·16
Fe_2O_3	1·89	4·45	9·08	1·73	2·10	0·32	1·07	2·19	1·04
FeO	6·30	6·94	7·20	5·53	4·77	6·77	4·45	6·41	3·40
MgO	15·82	12·22	7·90	7·42	9·05	7·09	14·33	12·99	9·97
CaO	10·12	14·33	11·50	10·94	10·44	14·04	13·04	13·60	14·77
Na_2O	0·54	1·50	tr.	2·93	2·92	0·63	0·80	1·14	1·62
K_2O	0·69	1·19	tr.	0·65	0·44	0·08	0·20	0·37	0·11
H_2O+	0·58	1·13	2·51*	0·22	0·45	0·11	0·20	2·06	0·36
H_2O-	0·13	0·07	0·02	0·09	0·07	0·04	0·14	0·08	0·12
CO_2	—	0·03	—	0·04	0·11	abs.	abs.	abs.	abs.
TiO_2	0·96	1·17	0·24	0·61	0·40	0·53	0·10	0·65	0·05
P_2O_5	0·30	0·25	0·08	—	0·04	tr.	0·08	0·41	—
MnO	0·14	0·24	0·18	0·30	0·12	0·13	0·38	0·13	0·19
Other Constituents		V_2O_3=0·01 S=tr. Cr_2O_3=0·04 NiO_2=tr. BaO=0·03 SrO=tr.	NiO=tr. Cr_2O_3=nd.	FeS_2=tr.	V_2O_3=tr.	FeS_2=abs.	FeS_2=0·19 Cr_2O_3=0·21 V_2O_3=0·04	ZrO_2=0·13 Cl=0·04 F=0·06 S=0·10	FeS_2=0·17
	100·74	100·11	99·47	100·55	100·39	100·14	100·03		99·51

TABLE E — NORITES, GABBROS, AND ASSOCIATED ULTRAMAFIC ROCKS

b. CaO > 10%

$K_2O/Na_2O < 0{\cdot}75$

	10	11	12	13	14	15	16	17	18
Rock Name	Biotite Norite	Norite	Hornblende Gabbro	Perknite Hornblende-pyroxene Rock	Quartz Norite	Hornblende Gabbro	Cortlandite	Hornblende Norite (Feldspathic Band)	Banded Hornblende Gabbro
Locality	Ombagunda, Musgrave Ra., S.A.	Cue, W.A.	Near Trial Harbour, Tas.	Walhalla, Vic.	Black Bluff, Broken Hill, N.S.W.	Tumleo, New Guinea, TP & NG	Jenolan District, N.S.W.	Ben Bullen, N.S.W.	Ben Bullen, N.S.W.
Reference	**584**	**171**, 15; **447**, 24; **554**, 663; **588**, 53	**482**	**270**, 174	**85**, 400	**17**, 25; **432**, 445; **554**, 669	**366**, 97	**253**, 75	**265**
Analyst	W. H. Herdsman	E. S. Simpson	W. St C. Manson	N. R. Junner	H. N. Mills & A. Morris	E. Ludwig	W. G. Stone	G. A. Joplin	G. A. Joplin
Remarks						Pebble not *in situ*			
Sp. Gr.	—	3·02	—	—	3·11	—	3·181	2·97	—
SiO_2	50·38	50·12	49·14	47·24	46·50	46·09	45·96	45·36	45·15
Al_2O_3	16·46	14·90	13·81	6·63	14·22	12·76	8·02	21·12	16·40
Fe_2O_3	2·14	1·66	3·51	1·53	1·30	2·65	3·60	4·19	6·27
FeO	8·49	7·01	9·34	8·05	14·21	4·50	8·37	7·01	8·48
MgO	7·86	10·00	7·65	18·69	10·63	14·42	18·91	6·85	7·04
CaO	10·32	13·04	10·75	12·92	10·71	16·65	11·06	12·19	11·31
Na_2O	2·47	1·95	2·00	0·55	0·76	0·60	1·44	0·99	3·47
K_2O	0·68	0·08	0·87	0·24	0·40	abs.	0·65	0·37	1·21
H_2O+	0·11	0·03	2·24	2·69	0·50	2·43	0·81	0·62	} 0·99
H_2O-	0·07	0·13	0·03	0·74	0·25	—	0·11	0·15	
CO_2	abs.	0·03	—	abs.	0·11	—	0·17	abs.	—
TiO_2	0·95	0·26	0·59	0·65	0·98	0·45	0·50	1·64	—
P_2O_5	0·14	—	0·14	—	—	—	0·10	0·07	0·25
MnO	0·26	0·29	0·19	0·22	0·34	—	0·21	0·10	
Other Constituents		FeS_2 = 0·13		Cr_2O_3 = 0·19 (NiCo)O = 0·07 S = 0·09			Cr_2O_3 = 0·30 V_2O_3 = 0·01 (NiCo)O = 0·03 BaO = 0·02		
	100·33	99·63	100·26	100·50	100·91	100·55	100·27	100·66	100·57

TABLE E — NORITES, GABBROS, AND ASSOCIATED ULTRAMAFIC ROCKS

b. CaO > 10%

$K_2O/Na_2O < 0{\cdot}75$

	19	20	21	22
Rock Name	Hornblende Gabbro (Epidote-rich band)	Hornblende-olivine Norite	Hornblende Gabbro	Hornblendite
Locality	Ben Bullen, N.S.W.	Ben Bullen, N.S.W.	Broken Hill, N.S.W.	Hartley, N.S.W.
Reference	**265**	**253**, 73	**53**, 334; **364**, 77	**247**, 53
Analyst	G. A. Joplin	G. A. Joplin	W. A. Greig	G. A. Joplin
Remarks			*Less 0·02 = 100·06	(Vein in gabbro)
Sp. Gr.	—	3·02	3·351	3·000
SiO_2	44·14	43·15	42·80	41·82
Al_2O_3	27·98	20·45	10·85	11·79
Fe_2O_3	2·56	3·79	5·10	8·64
FeO	5·29	7·98	16·38	11·68
MgO	3·08	7·82	7·24	8·68
CaO	12·19	14·03	10·70	12·14
Na_2O	1·32	0·71	1·71	0·53
K_2O	0·70	0·15	0·40	0·25
H_2O+	1·12	0·58	1·35	0·47
H_2O-	0·01	0·15	0·21	0·16
CO_2	0·60	tr.	0·02	0·53
TiO_2	1·26	1·37	2·35	2·26
P_2O_5	0·18	0·10	0·22	0·42
MnO	0·06	0·12	0·43	0·20
Other Constituents			$SO_3 = 0{\cdot}06$ Cl = 0·11 $V_2O_3 = 0{\cdot}15$	
	100·49	100·40	100·08*	[99·57]

TABLE F — XENOLITHS AND INCLUSIONS IN GRANITIC ROCKS

	1	2	3	4	5	6	7	8	9
Rock Name	Large Xenolith	Microgranite Xenolith	Sedimentary Inclusion	Biotized Sandstone	Xenolith	Hornfels phase of Inclusion	Albitized Diopsidic Xenolith	Granitized Metabasalt	Quartz-plagioclase-epidote-chlorite Xenolith
Locality	Wertigo Rock Hole, Middleback Ra., S.A.	Rossarden, Tas.	Encounter Bay, S.A.	Marysville, Vic.	Marysville, Vic.	Encounter Bay, S.A.	Marysville, Vic.	Marysville, Vic.	Lawnswood, W.A.
Reference	**132**, 229	**38**, 28	**278**, 212	**198**, 163	**198**, 163	**278**, 212	**198**, 163	**198**, 163	**290**, 64
Analyst	G. C. Carlos	W. St C. Manson	A. W. Kleeman	E. S. Hills	E. S. Hills	A. W. Kleeman	E. S. Hills	E. S. Hills	J. R. H. McWhae
Remarks	(adjacent to granite)	*Loss on ignition (in granite)	(in granite)	(Sandstone-igneous contact)	(in granodiorite)	(in granite)	(in granodiorite)	(in granodiorite)	(in granite gneiss)
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	81·15	75·78	72·90	65·45	63·99	63·55	62·23	61·64	59·23
Al_2O_3	8·28	12·92	13·74	17·03	17·27	16·55	16·84	15·73	16·18
Fe_2O_3	1·70	1·43	0·04	0·33	0·97	0·97	0·36	0·46	1·48
FeO	1·36	nd.	3·29	3·88	3·65	4·67	2·47	6·19	5·63
MgO	0·58	0·17	1·85	1·62	2·81	3·12	1·93	3·54	4·24
CaO	3·27	0·20	2·12	3·29	0·48	3·11	7·16	2·94	9·58
Na_2O	1·25	2·57	3·02	2·79	1·06	3·33	6·88	2·84	0·65
K_2O	1·40	5·46	1·99	3·21	5·42	3·24	0·89	3·64	0·10
H_2O+	0·33	0·48*	0·46	0·70	2·30	0·50	0·32	1·10	1·71
H_2O-	0·02		0·11	0·08	0·58	0·10	0·23	0·07	0·20
CO_2	abs.	—	—	0·03	tr.	0·19	0·15	0·02	—
TiO_2	0·44	0·12	0·56	0·93	1·08	0·86	0·56	1·14	0·61
P_2O_5	tr.	nd.	0·15	0·70	0·11	0·19	0·12	0·15	0·19
MnO	0·11	0·01	nd.	0·05	0·03	0·09	0·04	0·09	0·13
Other Constituents	Cl=abs. SO_3=abs.			S=0·01		ZrO_2=tr. BaO=0·05 S=0·19	S=0·01	S=tr.	S=0·03
						100·52			
Less O= Cl, F, S						0·08			
	99·89	99·14	100·23	100·10	99·75	100·44	100·19	99·55	99·96

TABLE F — XENOLITHS AND INCLUSIONS IN GRANITIC ROCKS

	10	11	12	13	14	15	16	17	18
Rock Name	Quartz-mica Diorite Xenolith	Carbonated Inclusion	Biotite-rich patch	Core of Xenolith	Margin of Xenolith	Micaceous Xenolith	Xenolith	Sillimanite-cordierite-spinel Xenolith	Pyroxene Granulite
Locality	Moruya, N.S.W.	Cue, W.A.	5 miles E. of Wantabadgery, N.S.W.	Eskdale, Qld.	Eskdale, Qld.	Mt. Wagra, Vic.	Samford, Qld.	Near Hume Weir, Thurgoona, Albury, N.S.W.	Near Hume Weir, Thurgoona, Albury, N.S.W.
Reference	**47**, 182	**447**, 52; **588**, 53	**535**, 202	**244**	**244**	**507**, 35	**178**, 14	**260**, 109	**260**, 90
Analyst	I. A. Brown	C. C. Williams	T. G. Vallance	J. B. Jones	J. B. Jones	C. M. Tattam	R. Gradwell	G. A. Joplin	G. A. Joplin
Remarks	(in granodiorite)	(in granodiorite)	(in granodiorite)	(in granodiorite)	(in granodiorite)	(in granite)	(in granodiorite)	(in gneiss)	(in gneiss)
Sp. Gr.	2·808	2·70	—	—	—	—	2·83	—	2·83
SiO_2	58·58	57·25	54·86	53·98	54·51	54·22	52·44	52·36	52·23
Al_2O_3	18·33	15·15	18·32	21·62	20·22	21·01	19·89	25·81	22·16
Fe_2O_3	1·96	0·84	2·01	9·76	7·72	1·79	2·03	1·78	0·72
FeO	5·01	3·51	8·01			5·61	5·13	7·03	8·50
MgO	3·69	2·88	4·16	2·08	3·28	2·43	4·91	3·41	4·75
CaO	6·14	6·49	1·95	7·68	8·82	0·49	8·40	1·49	7·29
Na_2O	1·99	2·19	2·46	3·18	3·50	1·75	4·35	1·15	0·43
K_2O	1·28	2·90	5·22	0·89	1·56	7·41	1·11	4·11	1·70
H_2O+	1·44	1·05	1·30	nd.	nd.	2·46	0·31	0·99	0·73
H_2O-	0·09	0·12	0·22	0·29	0·26	0·36	0·06	0·39	0·01
CO_2	—	5·21	—	—	—	—	—	—	—
TiO_2	1·06	0·52	1·18	0·78	0·44	1·78	1·20	1·38	0·76
P_2O_5	0·30	0·23	—	0·32	0·11	0·31	0·24	tr.	0·46
MnO	0·19	0·23	0·14	0·44	0·13	0·14	0·09	nd.	0·11
Other Constituents		FeS_2=0·95							
	100·06	99·52	99·83	101·02	100·55	99·76	100·16	99·90	99·85

TABLE F — XENOLITHS AND INCLUSIONS IN GRANITIC ROCKS

	19	20	21	22	23	24	25	26	27
Rock Name	Andalusite-spinel-cordierite-plagioclase Xenolith	Modified Xenolith	Biotite-epidote Xenolith	Schistose Plagioclase Amphibolite Xenolith	Hornblende Granulite	"Amphibolite" Xenolith	Quartz-plagioclase Amphibolite Xenolith	"Trachytic Rock"	Basalt Xenolith
Locality	Marulan, N.S.W.	Marulan, N.S.W.	Bredbo, near Cooma, N.S.W.	Toodyay, W.A.	Cooma, N.S.W.	Murrumbucka, near Cooma, N.S.W.	Toodyay, W.A.	Near Hume Weir, Thurgoona, Albury, N.S.W.	Kittys Plain, Mt. Isa, Qld.
Reference	**390**, 127	**390**, 127	**600**	**402**, 105	**256**, 172	**534**, 186	**402**, 105	**367**, 105	**262**, 51
Analyst	W. H. Herdsman	W. H. Herdsman	Rudowski & Unwin	R. T. Prider	G. A. Joplin	G. A. Joplin	R. T. Prider	W. A. Greig	G. A. Joplin
Remarks	(in granodiorite)	(in granodiorite)	(in Tonalite)	(in granite)	(in gneiss)	(in Tonalite)	(in granite)	(in gneiss)	(in microgranite)
Sp. Gr.	2·72	2·75	—	—	3·06	—		2·814	3·001
SiO_2	51·68	51·37	50·76	50·20	49·50	49·07	49·05	48·76	48·66
Al_2O_3	25·86	22·96	23·10	15·00	16·47	21·76	15·03	14·96	17·36
Fe_2O_3	0·48	1·70	1·66	3·83	0·72	3·44	3·16	1·91	1·96
FeO	6·63	5·92	5·27	8·93	9·10	8·74	9·08	6·75	8·88
MgO	3·29	4·31	3·01	6·04	7·47	3·65	6·96	7·34	6·88
CaO	0·61	2·02	5·85	10·65	14·79	10·32	10·47	10·00	9·13
Na_2O	2·82	3·38	3·63	1·90	0·47	1·03	1·70	1·03	3·28
K_2O	5·18	4·77	3·64	0·07	0·32	0·37	0·95	0·95	1·29
H_2O+	2·28	2·65	1·48	1·62	0·57	0·62	1·43	2·97	0·58
H_2O-	0·10	0·10	0·09	0·07	0·03	0·14	0·25	0·35	0·06
CO_2	0·12	abs.	0·03	—	—	—	—	3·40	—
TiO_2	0·72	0·59	0·80	1·06	0·75	0·69	1·07	0·65	1·46
P_2O_5	0·06	0·12	0·10	0·12	0·05	tr.	0·08	0·13	nd.
MnO	tr.	tr.	0·08	0·16	0·16	nd.	0·09	0·17	0·11
Other Constituents				FeS_2=nd.			FeS_2=0·13	SO_3=0·95 Cl=tr. FeS_2=0·14 SrO=tr.	
	99·83	99·89	99·50	99·65	100·40	99·83	99·45	100·46	99·65

TABLE F — XENOLITHS AND INCLUSIONS IN GRANITIC ROCKS

	28	29	30	31	32	33	34	35
Rock Name	"Basic Rock"	Ultrabasic Inclusion	"Amphibolite" Xenolith	Basic Xenolith	Cordierite-spinel-sillimanite Xenolith	Hornblende-pyroxene Granulite	Epidote-biotite Xenolith	Hornblende-epidote-biotite hornfels Xenolith
Locality	Near Hume Weir, Thurgoona, Albury, N.S.W.	6 miles E.S.E. of Wantabadgery, N.S.W.	Murrumbucka, near Cooma, N.S.W.	Cardup, W.A.	Cowra, N.S.W.	Cooma, N.S.W.	Canning Dam, W.A.	Armadale, W.A.
Reference	**260**, 90	**535**, 206	**471**, 44	**518**, 271	**488**, 140	**256**, 172	**403**, 140	**400**, 36
Analyst	G. A. Joplin	T. G. Vallance	Rudowski & Unwin	B. P. Thomson	N. C. Stevens	G. A. Joplin	R. T. Prider	C. R. Le Mesurier
Remarks	(large inclusion in gneiss)	See R^1 b2 (in granite)	(in tonalite)	(in gneiss)		(in gneiss)	(in hybrid gneiss)	(in gneiss)
Sp. Gr.	2·81	—	3·02	2·94	2·89	—	3·00	—
SiO_2	48·23	46·44	45·53	44·95	43·11	42·66	41·42	40·09
Al_2O_3	16·67	10·12	17·82	17·70	32·61	20·48	16·55	14·01
Fe_2O_3	2·66	3·98	4·76	3·12	0·68	1·15	2·21	6·05
FeO	6·09	8·30	8·17	11·32	7·51	10·16	14·28	14·42
MgO	7·65	21·32	5·44	6·08	3·93	5·64	8·41	4·34
CaO	9·22	6·54	10·95	3·08	2·90	16·70	3·95	9·89
Na_2O	1·67	0·78	0·63	3·03	0·77	0·57	2·36	0·46
K_2O	0·84	0·28	1·83	6·38	6·01	0·21	5·68	3·78
H_2O+	3·17	1·41	2·24	1·41	0·62	0·41	2·14	1·97
H_2O-	0·25	0·08	0·21	0·12	0·25	0·16	0·26	0·07
CO_2	1·88	abs.	0·02	—	—	—	—	0·08
TiO_2	0·78	0·20	1·59	1·36	2·06	1·66	1·92	2·76
P_2O_5	0·26	—	0·25	0·95	pnd.	nd.	0·53	1·24
MnO	0·15	0·12	0·15	0·14	0·10	0·15	0·15	0·38
Other Constituents							FeS_2=0·64	FeS_2=0·77 Fe_7S_8=0·02 V_2O_3=0·03
	99·52	99·57	99·59	99·64	100·55	99·95	100·50	100·36

TABLE G — HYBRID AND CONTAMINATED ROCKS

a. HYBRID ROCKS — Both parents igneous

	1	2	3	4	5	6	7	8	9
Rock Name	Hybrid vein in Tonalite	Basified Microgranite	Hybrid Rock	Hybrid Rock	Hetero-genous Amphibolite	Tonalite	Hybrid Rock	Basified Albitite	Biotite-rich Spotted Hybrid
Locality	Hartley, N.S.W.	Near Mt. Isa, Qld.	South Marulan, N.S.W.	South Marulan, N.S.W.	Cooma, N.S.W.	Hartley, N.S.W.	Beaconsfield, Tas.	Near Mt. Isa, Qld.	Near Wellington, N.S.W.
Refer-ence	**258**, 134	**262**, 59	**391**, 113	**391**, 113	**255**, 96	**258**, 134	**508**, 29	**262**, 54	**21**, 186
Analyst	G. A. Joplin	G. A. Joplin	W. H. Herdsman	W. H. Herdsman	G. A. Joplin	G. A. Joplin	C. Penman	G. A. Joplin	E. M. Basnett
Remarks	Granite Porphyry/ Diorite	Granite/ Basalt *Corrected	Quartz Porphyrite/ Granodiorite	Quartz Porphyrite/ Granodiorite	Granite/ (?) Norite	Granite Porphyry/ Diorite	Granite/ Pyroxenite	Albitite/ Basalt	Kerato-phyre/ Dolerite
Sp. Gr.	2·76	—	2·771	2·773	2·821	2·764	—	2·649	2·80
SiO_2	66·65	63·98	63·95	63·86	62·12	62·06	61·96	61·95	58·20
Al_2O_3	16·89	16·75	15·24	15·84	10·51	18·25	15·04	22·02	20·43
Fe_2O_3	1·11	0·95*	1·03	0·49	1·62	2·91	1·44	0·82	0·35
FeO	1·67	3·84	4·87	5·31	3·89	2·94	6·30	0·51	4·17
MgO	1·46	1·59	2·53	2·42	9·16	1·71	3·55	3·98	1·77
CaO	3·02	5·10	5·32	5·53	10·06	4·90	2·80	3·02	3·34
Na_2O	3·14	4·05	2·40	1·96	0·87	3·12	1·36	6·13	5·86
K_2O	4·54	1·67	2·17	2·13	0·61	1·61	3·74	0·45	3·41
H_2O+	0·58	0·30	1·53	1·37	0·29[1]	1·34	1·94	0·80	0·59
H_2O-	0·13	0·06	0·12	0·33	0·24	0·16	0·06	0·09	0·08
CO_2	—	0·69	tr.	abs.	—	—	—	—	—
TiO_2	0·42	1·09	0·52	0·66	0·32	0·60	1·45	0·51	0·85
P_2O_5	0·29	0·34	0·09	0·08	abs.	0·24	0·23	nd.	0·44
MnO	0·02	0·11	0·09	0·04	0·11	0·09	0·10	0·01	0·07
Other Con-stituents					Cr_2O_3=tr.				
	99·92	100·52	99·86	100·02	99·80	99·93	99·97	100·29	99·56

TABLE G — HYBRID AND CONTAMINATED ROCKS

a. HYBRID ROCKS — Both parents igneous

	10	11	12	13	14	15	16	17
Rock Name	Hornblende-rich Spotted Hybrid	Leucocratic Hybrid Rock	Basified Syenite	Slightly hybridized Dolerite	Melanocratic Hybrid Rock	Basic Hybrid Rock	Melanocratic Hybrid Rock	"Reaction"-Gabbro
Locality	Near Wellington, N.S.W.	Regatta Point, Port Cygnet, Tas.	Regatta Point, Port Cygnet, Tas.	Near Wellington, N.S.W.	Regatta Point, Port Cygnet, Tas.	Near Mt. Isa, Qld.	Regatta Point, Port Cygnet, Tas.	Hartley, N.S.W.
Reference	**21**, 186	**129**, 109	**129**, 109	**21**, 186	**129**, 109	**262**, 54	**129**, 109	**248**, 146
Analyst	E. M. Basnett	A. B. Edwards	A. B. Edwards	E. M. Basnett	A. B. Edwards	B. E. Williams	A. B. Edwards	G. A. Joplin
Remarks	Keratophyre /Dolerite	Syenite/ Dolerite	Syenite/ Dolerite	Keratophyre/ Dolerite	Syenite/ Dolerite	Albitite/ Basalt	Syenite/ Dolerite	"Diorite"/ Gabbro
Sp. Gr.	2·85	—	—	3·02	—	2·995	—	3·004
SiO_2	56·52	56·10	55·90	50·21	49·85	49·82	49·10	45·31
Al_2O_3	19·47	17·37	19·08	19·53	8·35	14·46	16·70	19·39
Fe_2O_3	3·16	3·80	2·78	0·90	10·96	4·78	4·60	5·33
FeO	3·57	2·16	2·88	8·03	4·75	6·75	5·04	7·81
MgO	1·92	1·32	1·59	4·54	5·56	5·42	2·52	6·93
CaO	5·09	5·65	5·85	9·03	9·25	9·86	9·25	11·67
Na_2O	5·57	2·30	0·71	2·25	1·84	4·98	1·90	1·22
K_2O	2·20	8·87	9·29	2·29	5·42	0·44	6·61	0·35
H_2O+	0·61	0·23	0·32	1·14	0·65	0·81	0·52	0·69
H_2O-	0·09	0·43	0·30	0·05	0·42	0·05	0·38	0·08
CO_2	—	abs.	abs	abs.	abs.	—	abs.	tr.
TiO_2	0·94	1·17	0·48	1·13	1·08	2·33	1·41	1·33
P_2O_5	0·93	0·10	0·20	0·29	1·27	1·02	1·43	0·31
MnO	0·15	0·11	0·36	0·18	0·26	0·14	0·21	0·17
Other Constituents								
	100·22	99·61	99·74	99·57	99·66	100·86	99·67	100·59

TABLE G — HYBRID AND CONTAMINATED ROCKS

b. CONTAMINATED ROCKS — One parent sedimentary

	1	2	3	4	5	6	7	8	9
Rock Name	Contaminated Albitite	"Adamellite Porphyry"	"Quartz-mica-diorite"	"Quartz-mica-diorite"	Hybrid Gneiss	Modified Granodiorite	Soda Hybrid	Contaminated Albitite	Contaminated Diorite
Locality	Near Mt. Isa, Qld.	Encounter Bay, S.A.	Encounter Bay, S.A.	Encounter Bay, S.A.	Armadale, W.A.	Marulan, N.S.W.	South Para River, S.A.	110 miles S.S.E. Darwin, N.T.	Ben Bullen, N.S.W.
Reference	**262**, 54	**278**, 212	**51**, 17; **278**, 212	**278**, 212	**400**, 36; **582**, 73	**390**, 127	**4**, 172	**263**, 83	**249**, 105
Analyst	J. K. Burnett	A. W. Kleeman	C. E. Tilley	A. W. Kleeman	C. R. Le Mesurier	W. H. Herdsman	A. R. Alderman	G. A. Joplin	G. A. Joplin
Remarks	Quartzite/ Albitite	Granite/ hornfels	Granite/ hornfels	Granite/ hornfels	Granite/ Slate	Granodiorite/ Slate	Granite/ Schist	Albitite/ Limestone	Diorite/ Limestone
Sp. Gr.	2·639	—	2·712	—	—	2·76	—	2·753	2·98
SiO_2	76·67	69·56	68·60	67·10	66·52	61·96	59·26	54·23	51·49
Al_2O_3	13·29	13·98	14·30	14·32	13·22	15·82	22·94	27·80	18·83
Fe_2O_3	0·42	0·60	0·79	1·51	4·99	1·56	2·41	0·42	1·46
FeO	0·56	3·75	4·70	2·84	3·29	4·60	1·49	0·23	4·59
MgO	0·01	1·76	1·24	1·50	0·58	3·26	1·00	0·09	3·27
CaO	0·17	1·92	2·88	3·26	2·84	4·84	0·63	8·94	12·97
Na_2O	4·34	2·65	3·40	3·05	3·45	2·17	7·13	6·48	3·33
K_2O	3·27	4·27	2·28	4·23	2·95	2·48	3·42	0·37	1·02
H_2O+	0·26	0·66	0·87	0·56	0·50	2·25	1·33	0·28	0·46
H_2O-	0·09	0·10	0·24	0·04	abs.	0·16	—	0·30	0·09
CO_2	—	—	—	—	0·03	abs.	—	—	0·55
TiO_2	1·16	0·79	0·59	0·89	0·66	0·52	0·49	0·03	1·26
P_2O_5	tr.	0·07	tr.	0·17	0·10	0·15	—	0·49	0·56
MnO	0·01	0·05	—	0·06	0·15	0·05	—	tr.	0·11
Other Constituents		ZrO_2=0·10 BaO=0·08 S=0·15		ZrO_2=0·12 BaO=0·07 S=0·25	BaO=0·53 FeS_2=0·07 V_2O_3=0·04				
	[100·25]	100·49	99·89	99·97	99·92	99·82	100·10	99·66	99·99

TABLE G — HYBRID AND CONTAMINATED ROCKS

b. CONTAMINATED ROCKS — One parent sedimentary

	10	11	12
Rock Name	Clinozosite-albite-diopside Rock	Diopside-zoisite-plagioclase Rock	Pyroxene-spinel-chlorite Rock
Locality	Ben Bullen, N.S.W.	Ben Bullen, N.S.W.	Ben Bullen, N.S.W.
Reference-	**249**, 109	**252**, 142	**252**, 147
Analyst	G. A. Joplin	G. A. Joplin	G. A. Joplin
Remarks	Diorite/ Limestone	Diorite/ Magnesian Limestone	Diorite/ Magnesian Limestone
Sp. Gr.	3·12	3·00	3·29
SiO_2	51·10	47·62	29·66
Al_2O_3	18·61	18·21	24·51
Fe_2O_3	2·50	0·72	3·99
FeO	1·93	6·46	3·27
MgO	2·78	5·47	14·56
CaO	16·08	13·67	18·05
Na_2O	3·04	2·49	0·14
K_2O	0·49	1·16	0·13
H_2O+	0·89	1·81	2·02
H_2O-	0·03	0·12	0·05
CO_2	0·11	0·43	1·91
TiO_2	1·47	1·36	0·90
P_2O_5	0·42	0·23	0·31
MnO	0·04	0·12	0·17
Other Constituents	S=0·14	Cl=0·03	
	99·63	99·90	99·67

TABLE H — RHYOLITIC ROCKS

a. CaO < 1%

$K_2O/Na_2O > 1 \cdot 25$

	1	2	3	4	5	6	7	8	9
Rock Name	Volcanic Lapilli	Rhyolite	Quartz Porphyry	Quartz-orthoclase Porphyry	Porphyry	Rhyolite	Rhyolite	Rhyolite	Rhyolite
Locality	Buchan, Vic.	Mt. Wellington, Vic.	Mt. Wellington, Vic.	Cobar, N.S.W.	Rossarden, Tas.	Mt. Bright, Pokolbin, N.S.W.	Gloucester, N.S.W.	Eilah, N.S.W.	Florida, near Canbelego, N.S.W.
Reference	**204**, 137	**511**, 266	**511**, 266; **554**, 71	**8**, 65; **354**, 198; **554**, 55	**38**, 28	**57**, 398	**364**, 77; **501**, 257	**366**, 97	**9**, 34; **554**, 59
Analyst	A. W. Howitt	G. Ampt	G. Ampt	W. A. Greig	W. St C. Manson	J. C. H. Mingaye	W. G. Stone	W. A. Greig	H. P. White
Remarks	(in Buchan Limestone)								
Sp. Gr.			—	2·589	—		2·582	2·603	2·625
SiO_2	79·62	78·64	78·47	78·16	77·98	77·82	77·76	77·58	77·39
Al_2O_3	9·99	9·85	10·68	11·01	14·01	11·46	9·94	11·63	9·50
Fe_2O_3	3·22	0·54	0·18	0·10	1·57	0·30	1·15	0·90	0·30
FeO	—	2·00	2·23	0·63	nd.	0·09	0·59	0·27	1·08
MgO	0·22	0·10	tr.	0·15	0·38	0·23	0·18	0·24	0·17
CaO	0·37	0·80	0·66	0·30	tr.	0·22	0·24	0·40	0·42
Na_2O	2·64	2·03	3·29	0·36	0·20	0·86	0·86	2·58	1·72
K_2O	3·94	5·16	4·15	7·97	3·38	7·19	7·75	4·68	6·54
H_2O+	—	0·40	0·20	0·17	2·46	1·40	1·00	0·95	2·14
H_2O-	—	0·14	0·09	0·21		0·36	0·38	0·37	0·08
CO_2	—	—	—	abs.	—	0·03	0·03	abs.	tr.
TiO_2	—	0·67	0·59	0·32	0·02	0·02	0·15	0·17	0·45
P_2O_5	—	tr.	tr.	0·07	—	0·04	0·03	0·04	0·06
MnO	—	—	—	tr.	0·04	tr.	0·02	tr.	tr.
Other Constituents				Cl = 0·04 BaO = 0·18 CuO = tr. $S(FeS_2)$ = 0·45		BaO = 0·02 SO_3 = 0·07	BaO = 0·02	Cl = 0·02 BaO = 0·07	Cl = tr. BaO = 0·04
				100·12					
Less O = Cl, F, S				0·01					
	100·00	100·33	100·54	100·11	100·04	100·11	100·10	99·90	99·89

TABLE H — RHYOLITIC ROCKS

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	10	11	12	13	14	15	16	17	18
Rock Name	Quartz Porphyry	Rhyolite Porphyry	Sodi-potassic Rhyolite	Rhyolite Porphyry	Rhyolite	Quartz Porphyry	Rhyolite Porphyry	Rhyolite	Rhyolite
Locality	Moogerah, Mt. Moon Area, Qld.	30 miles S. of Einasleigh, Qld.	Moina, Tas.	55 miles S. of Einasleigh, Qld.	50 miles S. of Einasleigh, Qld.	Por. 58, Par. of Childowla, Burrinjuck, N.S.W.	50 miles S. of Einasleigh, Qld.	Eildon, Vic.	Mt. Burrowya Vic.
Reference	**490**	**95**	**482**	**95**	**95**	**590**	**95**	**517**, 36	**142**, 82
Analyst	Avery & Anderson	A. McClure	W. St C. Manson	A. McClure	A. McClure	H. Yates	A. McClure	Field & Clark	F. F. Field
Remarks		*Loss on ignition		*Loss on igniton	*Loss on ignition		*Loss on ignition		
Sp. Gr.	—	—	—	—	—	2·62	—	2·640	—
SiO_2	77·30	77·20	77·16	76·98	76·93	76·78	76·46	76·24	75·98
Al_2O_3	13·34	12·63	12·78	12·43	13·13	12·39	12·88	12·86	12·75
Fe_2O_3	0·15	0·89	1·10	0·62	0·75	0·58	0·52	0·51	0·58
FeO	0·14	0·12	0·93	0·61	0·14	0·35	0·69	0·71	0·65
MgO	0·66	abs.	0·25	abs.	0·14	0·11	0·06	0·07	tr.
CaO	0·45	0·20	0·68	0·58	0·14	0·29	0·49	0·77	0·68
Na_2O	2·41	3·50	2·38	3·88	2·88	2·98	3·67	2·15	3·15
K_2O	4·30	4·74	3·58	4·96	5·20	5·68	4·65	4·95	5·47
H_2O+	0·64	0·58*	1·04	0·42*	0·49*	0·61	0·66*	0·82	0·40
H_2O-	0·68	0·14	0·42	0·02	0·24	abs.	0·07	0·12	0·04
CO_2	—	—	—	—	—	—	—	abs.	tr.
TiO_2	0·11	0·05	0·03	0·04	0·12	0·10	0·05	0·24	tr.
P_2O_5	0·04	0·05	0·18	0·03	0·03	nd.	0·08	0·08	abs.
MnO	tr.	0·01	0·04	0·03	abs.	—	0·06	tr.	tr.
Other Constituents								Cl=tr. SO_3=abs.	
	100·22	100·11	[101·57]	100·60	100·19	99·87	100·34	99·52	99·70

TABLE H—RHYOLITIC ROCKS

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	19	20	21	22	23	24	25	26	27
Rock Name	Rhyolite	Pitchstone	Cordierite Nevadite	Rhyolite	Rhyolite	Quartz Porphyry	Perlite	Porphyry	Rhyolite
Locality	Deua R., 11 miles from Moruya, N.S.W.	Nuthernugie, Barrier Ranges, N.S.W.	Eildon, Vic.	Eildon, Vic.	Twofold Bay, N.S.W.	Mt. Bischoff, Tas.	7 miles N.E. of Mur-willumbah, N.S.W.	Walwa, Near Vic.	Morna Point, Port Stephens N.S.W.
Reference	**49**, 476	**226**, 40; **554**, 79	**517**, 36	**517**, 36	**49**, 476	**414**, 91	**379**, 118	**142**, 82	**370**, 135; **502**, 185
Analyst	I. A. Brown	H. P. White	Field & Clark	Field & Clark	I. A. Brown	A. D. Mackay	J. H. Pyle	F. F. Field	W. A. Grieg
Remarks									
Sp. Gr.		2·62	2·632	2·627		—	—	—	2·600
SiO_2	75·91	75·57	75·46	75·40	75·34	75·12	74·92	74·80	74·74
Al_2O_3	11·89	10·57	12·62	12·88	11·89	20·18	12·65	12·53	11·89
Fe_2O_3	1·58	3·30	0·86	1·30	1·54	1·50	1·85	1·02	1·50
FeO	0·96	0·96	1·20	0·78	1·60	—	—	0·91	0·27
MgO	0·47	0·27	0·36	0·20	0·28	0·58	0·17	tr.	0·83
CaO	0·26	0·67	0·86	0·36	0·16	abs.	0·71	0·78	0·74
Na_2O	2·23	tr.	2·33	2·75	2·06	0·50	2·76	3·06	2·96
K_2O	5·59	6·75	4·82	4·80	3·82	1·29	5·56	5·95	5·23
H_2O+	0·58	1·60	0·89	1·02	1·18	0·24	0·59	0·81	1·14
H_2O-	0·09	—	0·05	0·12	0·16		0·53	0·14	0·60
CO_2	—	—	abs.	abs.	1·60		—	tr.	—
TiO_2	0·28	—	0·17	0·12	0·31		0·25	0·21	0·17
P_2O_5	—	tr.	0·07	0·17	—		0·06	tr.	0·02
MnO	tr.	0·23	0·03	tr.	tr.		0·03	tr.	tr.
Other Constituents			Cl=tr. SO_3=abs.	Cl=tr. SO_3=abs.		SnO_2=0·23	Cl=0·03		BaO=0·07 SO_3=0·02 Cl=0·01
							100·11		
Less O= Cl, F, S							0·01		
	99·84	99·92	99·72	99·90	[99·94]	99·64	100·10	100·21	100·28

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	28	29	30	31	32	33	34	35	36
Rock Name	Porphyritic Rhyolite	Ignimbrite	Rhyolite	Porphyry "Queen Bee Porphyry"	Rhyolite *Chillingham Volcanics*	"Felsite"	"Felsite"	Rhyolite	Potash Soda Aporhyolite
Locality	Newcastle Range, Einasleigh Area, Qld.	Eborac Island, Qld.	Narbethong, Vic.	Cobar, N.S.W.	3 miles N. of Mt. Warning near Murwillumbah	Upper Cape Diggings, Qld.	Pambula, N.S.W.	Fingal Head, Port Stephens N.S.W.	Mt. Monster, near Keith, S.A.
Reference	**95**	**246**, 38; **431**	**114**, 65; **269**, 276	**381**	**286**	**103**, 307	**595**, 64 **596**, 116	**370**, 135; **502**, 185	**315**, 200; **318**, 219; **319**, 267
Analyst	S. Baker	S. A. Trout	N. R. Junner	J. M. Pyle	J. H. Pyle	R. Daintree	N.S.W. Dept. Mines	W. A. Greig	W. B. Dallwitz
Remarks	*Loss on ignition	*Loss on ignition		nd. =not detected		(Dyke)			
Sp. Gr.	—	2·738	2·49	—		2·451	—	2·611	—
SiO_2	74·72	74·45	74·39	74·36	74·18	74·000	74·00	73·96	73·77
Al_2O_3	9·96	15·43	14·28	12·61	13·84	16·137	15·92	12·65	13·06
Fe_2O_3	3·50	0·59	0·52	0·92	0·52	0·963	0·92	1·85	0·72
FeO	1·36	0·38	1·09	0·45	1·05	—	—	0·40	1·43
MgO	0·45	tr.	0·27	0·24	0·09	0·627	0·83	0·50	0·12
CaO	0·70	0·44	0·24	0·43	0·21	—	0·70	0·64	0·89
Na_2O	3·60	0·97	2·78	2·26	3·87	0·987	0·63	3·18	3·55
K_2O	4·55	5·87	5·33	6·87	5·41	3·791	5·32	5·07	5·44
H_2O+	0·72*	2·47*	0·22	1·07	0·61	0·750	0·70	1·33	0·57
H_2O-	0·17		0·56	0·12	0·07	2·650	0·40	0·45	0·11
CO_2	—	—	—	abs.	abs.	—	—	—	0·16
TiO_2	0·11	0·10	0·29	0·33	0·17	—	—	0·20	0·18
P_2O_5	0·06	abs.	tr.	0·20	tr.	—	tr.	0·07	0·08
MnO	0·07	abs.	nd.	0·02	0·01	—	tr.	tr.	0·05
Other Constituents				$BaO = 0 \cdot 14$ V_2O_3 =nd. Cr_2O_3 =nd.	$ZrO_2 = 0 \cdot 02$ $BaO = 0 \cdot 04$		$FeS_2 = 0 \cdot 82$	$BaO = 0 \cdot 04$	$BaO = 0 \cdot 06$ $SrO = 0 \cdot 01$ $ZrO_2 = 0 \cdot 01$ $S = 0 \cdot 02$ $F = 0 \cdot 04$
									100·27
Less O= Cl, F, S									0·02
	99·97	100·70	99·97	100·02	100·09	99·905	100·24	100·34	100·25

TABLE H — RHYOLITIC ROCKS

a. $CaO < 1\%$

$K_2O/Na_2O > 1 \cdot 25$

	37	38	39	40	41	42	43	44	45
Rock Name	Potash Rhyolite	Potash Rhyolite	Porphyritic Rhyolite	Rhyolite	Feldspar Porphyry	Rhyolite	Perlite	Pantellerite	Rhyolite
Locality	Rosebery, Tas.	Near Mt. Jukes, Tas.	Newcastle Range, Einasleigh Area, Qld.	Canbelego, N.S.W.	Moonta, S.A.	Por. 294, Par. of Bowning, Burrinjuck N.S.W.	7 miles N.E. of Mur-willumbah, N.S.W.	Ngun-Ngun, Glass House Mts., Qld.	Wee Jasper Rd., E. of Taemas, N.S.W.
Reference	**165**; **482**, 281	**474**, 49	**95**	**9**, 34; **554**, 215	**127**, 114; **217**, 26	**590**	**379**, 118	**232**, 168; **422**, 150	**590**
Analyst	Tas. Dept. Mines	Tas. Dept. Mines	S. Baker	H. P. White	W. S. Chapman	H. Yates	J. H. Pyle	H. I. Jensen	H. Yates
Remarks			*Loss on ignition					(Vesicular) *Loss on ignition	
Sp. Gr.	—	—	—	2·648	—	2·65	—	2·47	2·65
SiO_2	73·76	73·44	73·38	73·33	73·02	72·87	72·60	72·38	72·34
Al_2O_3	14·50	14·18	12·17	12·43	13·39	13·97	12·37	12·21	12·58
Fe_2O_3	4·08	1·46	2·80	0·10	1·87	0·09	0·27	3·36	2·06
FeO	0·97	0·55	0·41	2·43	1·40	1·94	1·36	0·69	1·01
MgO	0·58	0·43	0·72	0·59	0·55	0·12	0·13	0·17	0·19
CaO	0·10	nd.	0·60	0·98	0·42	0·09	0·66	0·18	0·29
Na_2O	0·33	0·16	3·39	2·71	2·38	3·84	2·68	3·52	2·26
K_2O	4·83	8·05	4·99	5·66	4·89	5·98	5·36	5·20	7·02
H_2O+	2·30	1·38	0·72*	1·41	0·06	0·46	3·75	0·86*	1·63
H_2O-		0·08	0·11	0·09	0·70	0·17	0·59	0·69	0·24
CO_2	—	0·38	—	tr.	abs.	—	—	—	—
TiO_2	0·05	0·33	0·19	0·23	0·52	0·68	0·25	0·25	0·58
P_2O_5	0·01	0·10	0·02	0·11	0·07	0·07	0·05	tr.	0·08
MnO	—	tr.	0·04	tr.	0·02	—	0·03	0·70	—
Other Constituents				BaO = 0·06	Cl = 0·03 FeS_2 = 0·20 CuO = 0·05		Cl = 0·03	Cl = 0·01 NiO = 0·04	
							100·13		
Less O = Cl, F, S							0·01		
	[101·51]	100·54	99·54	100·13	99·57	100·28	100·12	100·26	100·28

TABLE H — RHYOLITIC ROCKS

a. CaO < 1%

$K_2O/Na_2O > 1 \cdot 25$

	46	47	48	49	50	51	52	53	54
Rock Name	Per-Potassic Rhyolite	Pitchstone	Quartz Porphyry	Porphyry	Rhyolite Glass	Porphyry	Feldspar Porphyry	"Mica-quartz Rock"	Per-Potassic Rhyolite
Locality	Por. 295, Par. of Bowning, N.S.W.	MacPhersons Range, Qld.-N.S.W.	Mt. Bischoff, Tas.	Paney Bluff, S.A.	Buladelah, N.S.W.	Bore at 385′, Braeside, W.A.	Corunna Station, S.A.	Golconda District, Tas.	Narrangullen Mt., Burrinjuck, N.S.W.
Reference	**590**	**421**, 142	**414**, 91	**215**, 15; **220**, 68; **554**, 151	**346**, 143; **554**, 91	**563**	**217**, 27; **219**, 32	**416**, 12	**590**
Analyst	H. Yates	J. C. H. Mingaye	A. D. Mackay	W. S. Chapman	White & Greig	H. P. Rowledge	W. S. Chapman	Tas. Dept. Mines	H. Yates
Remarks									
Sp. Gr.	2·60	2·347	—	—	2·282	—	—	—	2·60
SiO_2	72·02	71·98	71·80	71·48	71·35	70·75	68·90	67·94	65·25
Al_2O_3	14·49	12·02	14·45	14·73	12·80	15·09	14·43	19·09	16·51
Fe_2O_3	0·57	1·20	4·15	1·14	0·80	1·36	1·91	7·06	2·17
FeO	0·22	1·08	—	1·16	0·36	nd.	2·80	—	0·43
MgO	0·08	0·16	2·17	0·25	0·13	0·50	0·33	2·82	0·13
CaO	0·07	0·64	0·43	0·54	0·68	0·61	0·92	tr.	0·06
Na_2O	0·36	3·04	1·69	2·74	2·26	2·20	3·07	1·20	0·82
K_2O	10·93	5·07	2·68	5·68	3·54	8·08	5·70	2·52	11·46
H_2O+	0·58	3·86	—	1·08	6·54		0·87	—	2·80
H_2O-	0·21	1·02	—	0·32	1·87		0·29	—	0·16
CO_2	—	0·01	—	0·12	—		0·23	—	—
TiO_2	0·61	0·13	—	0·35	abs.	0·81	0·69	0·85	0·48
P_2O_5	0·07	0·02	—	0·04	0·03		0·19	—	0·05
MnO	—	0·06	—	0·10	0·04	nd.	0·03	—	—
Other Constituents		0·19		Cl = 0·04 FeS_2 = 0·14		Undet. = 0·60	Cl = 0·03 FeS_2 = 0·15		
	100·21	100·48	97·37	99·91	100·40	100·00	100·54	101·48	100·32

TABLE H — RHYOLITIC ROCKS

a. CaO < 1%

$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$

	55	56	57	58	59	60	61	62	63
Rock Name	Rhyolite	Comendite	Rhyolite	Comendite	Rhyolite	Rhyolite	Rhyolite	Rhyolite	Sodi-potassic Rhyolite
Locality	Por. 167, Par. of Bowning, Burrinjuck, N.S.W.	Mt. Coolum, Yandina, Qld.	Taggerty, Vic.	Mt. Conowrin, Glass House Mts., Qld.	Carroll Trig. Station, Burrinjuck, N.S.W.	50 miles S. of Einasleigh, Qld.	W. Slope of Carroll Range, Burrinjuck, N.S.W.	Springbrook, Qld.	Mt. Lyell-Comstock Tramline, Tas.
Reference	**590**	**232**, 168	**197**, 188	**232**, 168 **422**, 150	**590**	**95**	**590**	**408**; **421**, 142; **554**, 147	**474**, 49
Analyst	H. Yates	H. I. Jensen	E. S. Hills	H. I. Jensen	H. Yates	A. McClure	H. Yates	G. R. Patten	Tas. Dept. Mines
Remarks						*Loss on ignition			
Sp. Gr.	2·63	2·70	—	2·62	2·66	—	2·67	2·38	—
SiO_2	74·86	74·78	74·72	74·20	73·57	73·50	73·33	73·10	72·88
Al_2O_3	13·58	11·94	13·05	11·75	13·15	14·15	13·19	13·09	13·76
Fe_2O_3	0·42	2·46	0·52	1·92	0·76	0·09	0·12	1·19	0·89
FeO	1·01	0·88	1·42	1·30	1·67	0·84	2·29	1·43	3·44
MgO	0·17	0·16	0·41	0·30	0·21	0·23	0·18	0·43	0·94
CaO	tr.	0·07	0·66	0·19	0·89	0·64	0·57	0·87	0·16
Na_2O	4·20	4·77	3·62	4·25	4·22	4·21	3·65	4·03	2·86
K_2O	4·46	3·99	4·31	5·00	4·46	4·70	4·99	4·92	2·63
H_2O+	0·68	0·28	0·61	0·27	0·68	0·55*	1·08	0·54	2·04
H_2O-	0·29	0·19	0·13	0·06	0·02	0·08	0·04	abs.	0·06
CO_2	—	nd.	0·08	0·01	—	—	—	—	0·31
TiO_2	0·42	0·17	0·16	0·13	0·54	0·17	0·64	0·39	0·37
P_2O_5	0·07	tr.	0·38	abs.	0·11	0·10	0·08	0·11	0·09
MnO	—	0·08	—	0·02	—	0·05	—	abs.	0·02
Other Constituents		NiO = 0·03	Cl = tr. F = nd.	ZrO_2 = 0·38 Cl = 0·17 F = 0·02 $S(FeS_2)$ = 0·10 NiO = 0·03					
				[100·10]					
Less O = Cl, F, S				0·05					
	100·16	99·80	100·07	[100·05]	100·28	99·31	100·16	100·10	[100·45]

TABLE H — RHYOLITIC ROCKS

a. CaO < 1%

$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$

	64	65	66	67	68	69	70	71	72
Rock Name	Rhyolite	Rhyolite	Rhyolite	Rhyolite	Perlite Glass	Aegerine-bearing Pantellerite	Quartz Porphyry	Toscanite	Sodi-potassic Rhyolite
Locality	The Devils Pass, near Burrinjuck, N.S.W.	Por. 269. Par. of Bowning, Burrinjuck, N.S.W.	Por. 167, Par. of Bowning, Burrinjuck, N.S.W.	E. of Barren Jack Ck., Burrinjuck, N.S.W.	Binna Burra, Qld.	Glass House Mts., Qld.	Mt. Bischoff, Tas.	Lilydale, Vic.	Rosebery, Tas.
Reference	**590**	**590**	**590**	**590**	**62**, 59	**232**, 168; **554**, 339	**414**, 92	**537**, 66	**165**; **482**, 281
Analyst	H. Yates	H. Yates	H. Yates	H. Yates	Not Stated	H. I. Jensen	A. D. Mackay	Not Stated	Tas. Dept. Mines
Remarks						*Loss on ignition		*CaO low for Toscanite	
Sp. Gr.	2·63	2·64	2·66	2·69	—	2·71	—	—	—
SiO_2	72·81	72·75	72·39	71·95	71·70	71·56	71·28	70·30	70·00
Al_2O_3	14·41	15·77	14·67	13·89	14·14	11·94	15·28	15·34	17·81
Fe_2O_3	0·64	0·52	0·29	1·07	0·56	4·68	0·96	1·98	1·86
FeO	1·37	1·15	1·58	1·39	0·46	0·46	—	2·15	2·95
MgO	0·47	0·19	0·21	0·47	0·09	0·32	0·29	0·10	1·45
CaO	0·18	0·23	0·32	0·79	0·40	0·28	0·48	0·20*	0·15
Na_2O	4·38	4·32	4·68	4·12	4·28	4·88	1·65	2·84	1·65
K_2O	4·35	4·08	4·52	4·82	5·16	5·03	1·76	3·46	2·92
H_2O+	0·95	0·92	0·86	0·84	3·40	0·40*	0·40	2·22	2·50
H_2O-	0·02	0·07	0·12	0·06	0·10	0·33		0·39	
CO_2	—	—	—	—	—	—	—	abs.	—
TiO_2	0·70	0·49	0·48	0·48	—	0·17	—	0·25	0·22
P_2O_5	0·07	0·07	0·07	0·07	—	tr.	—	—	0·03
MnO	—	—	—	—	0·05	tr.	—	—	—
Other Constituents						NiO = 0·01	SO_3 = 0·17 SnO_2 = 0·29 FeS_2 = 7·59	SO_3 = tr.	
	100·35	100·56	100·19	99·95	100·34	100·06	100·15	99·23	[101·54]

TABLE H — RHYOLITIC ROCKS

a. CaO < 1%

	$K_2O/Na_2O = 1{\cdot}25-0{\cdot}75$			$K_2O/Na_2O < 0{\cdot}75$					
	73	74	75	76	77	78	79	80	81
Rock Name	Rhyolite	Sodi-potassic Rhyolite	Fragmental Porphyry	"Quartz Porphyrite"	"Felsite"	Porphyry	Keratophyre	Albite Porphyry	"Quartz Porphyrite"
Locality	Por. 56, Par. of Mylora, Burrinjuck N.S.W.	Rosebery, Tas.	Nanima, near Yass, N.S.W.	Noyang, Vic.	Nuthernugie, Barrier Ranges, N.S.W.	Norseman, W.A.	Norseman, W.A.	Meekatharra, W.A.	Noyang, Vic.
Reference	**590**	**165**, **482**, 281	**444**, 74	**206**, 46; **554**, 163	**226**, 39; **554**, 77	**447**, 44	**67**, 119; **447**, 18; **554**, 77	**155**, 221	**206**, 41; **554**, 163
Analyst	H. Yates	Tas. Dept. Mines	K. Sherrard	A. W. Howitt	J. C. H. Mingaye	C. C. Williams	C. C. Williams	H. Bowley	A. W. Howitt
Remarks							(Dyke)	*Loss on ignition (Dyke)	
Sp. Gr.		—	—	2·614	2·51	2·70	2·68		2·634
SiO_2	68·40	67·69	66·54	78·77	78·64	77·88	77·81	77·78	77·66
Al_2O_3	15·53	13·72	16·05	12·44	12·79	12·05	12·89	11·87	12·30
Fe_2O_3	0·78	0·66	0·64	0·95	nd.	abs.	tr.	0·49	0·61
FeO	1·71	2·72	5·29	nd.	1·14	0·93	0·90	0·32	0·17
MgO	1·34	3·90	1·04	0·02	tr.	0·62	0·88	0·40	0·73
CaO	0·74	—	0·74	0·53	tr.	tr.	0·05	0·50	0·16
Na_2O	4·30	2·33	3·75	6·79	6·10	3·16	4·18	6·82	6·96
K_2O	4·78	2·10	4·13	0·24	0·80	2·36	2·39	0·18	0·19
H_2O+	1·60	2·84	1·26	0·26	0·41	0·69	0·44	0·59*	0·46
H_2O-			0·08	0·14	—	0·06	0·09		0·33
CO_2	—	—	abs.		tr.	abs.	abs.		—
TiO_2	0·74	0·50	0·19		—	0·04	0·41		—
P_2O_5	0·10	0·07	0·14		0·14	—	—		tr.
MnO	—	0·06	—		tr.	abs.	0·08		—
Other Constituents					$SO_3 = 0{\cdot}22$	$FeS_2 = 1{\cdot}35$	$FeS_2 = 0{\cdot}21$	$FeS_2 = 0{\cdot}34$ $AsS_2 = 0{\cdot}85$	
	100·02	[96·59]	99·85	100·14	100·24	99·14	100·33	100·14	99·57

TABLE H — RHYOLITIC ROCKS

a. CaO < 1%

$K_2O/Na_2O < 0{\cdot}75$

	82	83	84	85	86	87	88	89	90
Rock Name	Soda Rhyolite	Rhyolitic Quartz Porphyry	Quartz Keratophyre	Spherulitic, Porphyritic Rhyolite	Rhyolite	Soda Rhyolite	Soda Rhyolite	Quartz Keratophyre	Soda Rhyolite
Locality	Florida, near Canbelego, N.S.W.	Tampi, W.A.	Mt. Remarkable, S.A.	Newcastle Range, Einasleigh Area, Qld.	Por. 45, Par. of Bookham, N.S.W.	Raymond Terrace, N.S.W.	Warburton, Vic.	Gloucester, N.S.W.	Por. 101, Par. of Wolgarlo, Burrinjuck, N.S.W.
Reference	**9**, 34; **554**, 97	**273**, 19	**512**, 583	**95**	**590**	**52**, 412; **105**, 116; **554**, 163	**115**, 177	**364**, 77; **501**, 255	**590**
Analyst	J. C. H. Mingaye	E. S. Simpson	E. O. Thiele	S. Baker	H. Yates	W. A. Greig	A. B. Edwards	W. G. Stone	H. Yates
Remarks				*Loss on ignition					
Sp. Gr.	2·633	2·65	2·59	—	2·69	2·604	—	2·622	2·68
SiO_2	77·08	77·04	76·26	75·66	75·16	75·06	74·70	74·56	74·41
Al_2O_3	11·59	11·70	12·40	14·29	12·21	14·21	14·73	12·87	14·70
Fe_2O_3	0·20	0·93	1·64	0·06	0·67	1·31	1·00	1·80	0·24
FeO	1·44	1·08	2·60	0·40	2·16	0·27	1·13	0·36	1·22
MgO	0·64	0·18	tr.	0·10	1·72	0·09	0·32	0·29	0·07
CaO	0·84	0·98	0·28	0·47	0·65	0·42	0·92	0·28	0·78
Na_2O	4·63	4·30	6·27	4·67	3·28	6·88	4·13	4·91	6·90
K_2O	1·57	3·08	0·41	2·97	2·11	0·58	1·54	3·43	0·70
H_2O+	1·04	0·21	0·02	0·55*	1·79	0·62	0·66	0·91	0·56
H_2O-	0·24	0·03	0·12	0·11	0·08	0·56	0·28	0·35	0·02
CO_2	0·48	0·66	—	—	—	—	nd.	0·01	—
TiO_2	0·35	0·10	0·50	0·01	0·45	abs.	0·19	0·40	0·64
P_2O_5	0·01	0·01	tr.	0·03	0·07	0·03	0·36	0·04	0·07
MnO	0·13	0·15	—	0·09	—	0·04	0·05	0·03	—
Other Constituents	FeS_2 = 0·05 BaO = 0·04 ZrO_2 = 0·02	FeS_2 = 0·11				SO_3 = 0·11	BaO = 0·01 Cl = 0·03 ZrO_2 = 0·02	BaO = 0·04	
	100·35	100·56	100·50	99·41	100·35	100·18	100·07	100·28	100·31

TABLE H — RHYOLITIC ROCKS

a. $CaO < 1\%$

$K_2O/Na_2O < 0{\cdot}75$

	91	92	93	94	95	96		98	99
Rock Name	Rhyolite	Quartz Keratophyre	Quartz Keratophyre	Quartz Keratophyre	Comendite	Spheruloid in Perlitic Glass	Ke [illegible] hyre	Rhyolite Tuff	Arfvedsonite Comendite
Locality	Silverwood, Qld.	Rosebery, Tas.	Nowa Nowa, Vic.	Navigation Ck., Noyang, Vic.	Mt. Canobolas, Orange, N.S.W.	Binna Burra, Qld.	K [illegible] d, V	Tooloom, N.S.W.	Devils Hole, Mt. Canobolas, Orange, N.S.W.
Reference	**428**, 298; **429**, 118; **430**, 95	**165**	**514**, 121	**206**, **115**, 177; **514**, 125	**347**, 153; **503**, 191; **554**, 161	**62**, 59	[illegible]	**601**, 198; **554**, 801	**396**
Analyst	G. R. Patten	Not Stated	E. O. Teall	A. W. Howitt	H. P. White	Not Stated	[illegible]	W. G. Stone	R. E. Penrose
Remarks							[illegible]		
Sp. Gr.	2·628	—	—	—	—	—	—	—	2·51
SiO_2	73·93	73·84	72·41	72·39	72·06	72·00	71·40	71·33	70·65
Al_2O_3	16·85	15·02	14·38	14·42	13·86	14·93	15·56	14·77	16·57
Fe_2O_3	0·60	1·28	2·94	0·56	1·90	1·41		tr.	1·17
FeO	0·10	1·15	0·85	0·30	1·71	0·32		2·47	0·96
MgO	0·43	1·45	1·18	1·85	0·19	0·10		0·52	0·26
CaO	0·63	0·40	0·87	0·85	0·18	0·40	0·29	0·81	0·34
Na_2O	3·61	4·06	6·86	5·93	5·84	5·46	7·15	4·18	4·85
K_2O	1·88	1·43	0·13	1·23	3·69	3·74	abs.	3·47	3·35
H_2O+	0·47	1·44	0·67	1·13	0·21	1·20		1·25	0·95
H_2O-	0·15		0·04	—	0·33	0·80		0·20	0·35
CO_2	—	—	—	—	0·03	—		—	—
TiO_2	0·45	0·22	0·26	—	0·12	—		—	0·10
P_2O_5	0·07	—	0·17	tr.	0·06	—		0·08	—
MnO	0·02	—	0·09	0·01	0·07	0·05		0·04	0·02
Other Constituents									
	[99·19]	[100·29]	100·85	98·67	100·25	100·41		99·12	99·57

TABLE H — RHYOLITIC ROCKS

a. $CaO < 1\%$

$K_2O/Na_2O < 0{\cdot}75$

	100	101	102	103	104	105
Rock Name	"Felsite"	Comendite	Albite Porphyrite or Keratophyre	Albite Porphyry	Rhyolite	Feldspar Porphyry
Locality	Rockhampton, Qld.	Mt. Canobolas, Orange, N.S.W.	Kalgoorlie, W.A.	Kalgoorlie, W.A.	Barren Jack Mt., N.S.W.	Mt. Macedon, Vic.
Reference	**103**, 308	**503**, 191; **554**, 161	**157**, 56; **447**, 42; **496**, 33; **554**, 821	**521**, 659	**590**	**443**, 94
Analyst	R. Daintree	H. I. Jensen	H. Bowley	E. S. Simpson	H. Yates	Not Stated
Remarks	(Dyke)					
Sp. Gr.	—	—	—	2·60	2·71	—
SiO_2	69·900	69·23	69·02	68·12	68·08	65·97
Al_2O_3	12·737	14·58	15·92	15·97	14·27	18·11
Fe_2O_3	4·413	2·54	0·58	1·09	1·66	tr.
FeO	—	0·67	1·90	2·27	2·78	4·82
MgO	0·130	0·30	2·63	0·92	1·85	tr.
CaO	—	0·44	0·29	0·71	0·97	0·98
Na_2O	6·539	6·82	7·48	6·03	4·54	10·17
K_2O	0·600	3·95	abs.	1·29	2·89	tr.
H_2O+	3·500	0·94	1·02	0·29	1·71	0·56
H_2O-			0·28	0·17	0·12	
CO_2		—	0·14	1·13	—	
TiO_2		0·13	0·57	0·62	0·81	
P_2O_5		—	0·28	—	0·17	
MnO		tr.	0·09	tr.	—	
Other Constituents	CuO = 1·875	NiO = 0·05	FeS_2 = 0·11 B_2O_3 = tr.	FeS_2 = tr.		
	99·694	99·65	100·31	98·61	99·85	100·61

TABLE H — RHYOLITIC ROCKS

b. CaO = 1%–2%

$K_2O/Na_2O > 1 \cdot 25$

	1	2	3	4	5	6	7	8	9
Rock Name	Perlitic Pitchstone	Quartz Porphyry	Rhyolite	Quartz Porphyry (Rhyolite)	Rhyolite	Rhyolite Porphyry	Toscanite	Rhyolite	Rhyolite Porphyry
Locality	Mt. Lindsay, Tweed River, N.S.W./Qld.	Cudgewa, Vic.	Esk, Qld.	Near Grand Arch, Jenolan Caves, N.S.W.	Mt. Barney, Qld.	50 miles S. of Einasleigh, Qld.	Round Head, Port Stephens, N.S.W.	Lilydale-Healesville Rd., Vic.	50 miles S. of Einasleigh, Qld.
Reference	**7**, 240; **469**, 311	**142**, 82	**407**; **421**, 142 **554**, 91	**357**, 217; **504**, 357; **554**, 801	**408**; **421**, 142; **554**, 147	**95**	**370**, 135; **502**, 185	**134**, 121	**95**
Analyst	J. C. H. Mingaye	A. B. Edwards	A. T. Jefferies	W. G. Stone	G. R. Patten	A. McClure	W. A. Greig	A. B. Edwards	A. McClure
Remarks						*Loss on ignition			*Loss on ignition
Sp. Gr.	2·47	—	2·37	2·654	2·50	—	2·613	—	
SiO_2	75·51	74·67	74·28	74·18	74·10	74·09	73·90	73·85	73·60
Al_2O_3	14·30	12·18	11·27	11·15	12·08	13·71	11·95	14·45	13·52
Fe_2O_3	1·01	1·56	1·93	0·90	2·02	1·02	1·70	0·61	1·37
FeO		1·03	0·58	1·31	0·86	0·86	0·99	1·20	1·00
MgO	0·24	tr.	0·44	0·62	0·64	0·31	0·55	0·83	0·40
CaO	1·81	1·04	1·15	1·35	1·10	1·96	1·50	1·40	1·71
Na_2O	1·21	3·28	2·74	1·00	3·32	3·21	3·10	2·09	3·50
K_2O	2·89	5·34	4·77	5·86	4·98	4·25	4·74	5·19	4·65
H_2O+	2·84	0·32	1·01	1·27	0·81	0·70*	1·37	0·21	0·55*
H_2O-		0·07	0·70	0·15	0·34	0·03	0·21	0·10	0·02
CO_2	—	abs.	—	2·00	—	—	—	abs.	—
TiO_2	—	tr.	0·25	0·25	0·21	0·07	0·20	0·28	0·07
P_2O_5	—	tr.	0·07	0·15	0·07	0·21	0·05	tr.	0·25
MnO	—	0·03	0·02	0·02	0·05	0·03	0·06	0·10	0·04
Other Constituents				BaO = 0·10 $S(FeS_2)$ = 0·01			BaO = 0·06		
	99·81	99·52	99·21	100·32	100·58	100·45	100·38	100·31	100·68

b. CaO = 1% – 2%

$K_2O/Na_2O > 1 \cdot 25$

	10	11	12	13	14	15	16	17	18
Rock Name	"Quartz Porphyrite"	Dellanite	Rhyolite	Rhyodacite	"Dacite"	Rhyolite Porphyry	Pitchstone	Porphyry *Queen Bee Porphyry*	Feldspar Porphyry
Locality	Marulan, N.S.W.	Mt. Gilmore, Clarence-town Area, N.S.W.	Barren Jack Trig. Station, Burrinjuck, N.S.W.	Mt. Tara, Vic.	Rosebrook, N.S.W.	50 miles S. of Einas-leigh, Qld.	Mt. Lindsay, N.S.W./Qld.	Cobar Area, N.S.W.	Paneys Bluff, S.A.
Refer-ence	**554**, 71; **589**, 799	**368**, 143; **388**, 131	**590**	**514**, 125	**366**, 97	**95**	**408**; **421**, 142; **554**, 147	**381**	**215**, 15; **220**, 68; **554**, 91
Analyst	L. A. Cotton	W. A. Greig	H. Yates	E. O. Teale	W. A. Greig	A. McClure	G. R. Patten	J. M. Pyle	W. S. Chapman
Remarks					*Spectro-scopic	*Loss on ignition			
Sp. Gr.		2·642	2·68	—	2·608	—	2·39		—
SiO_2	73·54	73·04	72·97	72·55	72·40	72·36	72·35	72·27	72·22
Al_2O_3	10·95	13·86	12·82	11·74	14·06	13·89	10·96	12·68	14·35
Fe_2O_3	1·08	1·60	0·69	2·54	1·30	1·03	2·60	1·25	1·22
FeO	4·39	0·45	1·46	0·46	0·36	1·06	1·50	1·72	1·69
MgO	0·08	0·48	0·24	0·68	0·44	0·56	0·17	0·72	0·30
CaO	1·68	1·44	1·23	1·85	1·26	1·91	1·03	1·07	1·22
Na_2O	2·79	3·40	3·72	3·46	3·41	2·96	3·26	2·72	2·50
K_2O	4·80	4·39	4·94	4·41	5·17	4·82	4·87	5·39	5·12
H_2O+	0·21	0·79	0·88	0·41	1·02	0·80*	3·50	1·19	0·68
H_2O-	0·08	0·25	0·08	0·06	0·20	0·03	0·35	0·08	0·12
CO_2	—	abs.	—	1·80	0·02	—	—	0·46	0·22
TiO_2	0·60	0·22	0·77	0·17	0·30	0·08	abs.	0·29	0·42
P_2O_5	—	0·04	0·07	0·14	0·05	0·28	0·09	0·12	0·07
MnO	tr.	0·07	—	—	0·06	0·02	0·03	0·06	0·02
Other Con-stituents		BaO = 0·04			Cl = 0·05 BaO = 0·09 SrO = tr.*			BaO = 0·04 Cr_2O_3 = N.D. V_2O_3 = N.D.	Cl = 0·02 FeS_2 = 0·06
					100·19				
Less O = Cl, F, S					0·01				
	100·20	100·07	99·87	100·27	100·18	99·80	100·71	100·06	100·23

TABLE H — RHYOLITIC ROCKS

b. CaO = 1% – 2%

$K_2O/Na_2O > 1 \cdot 25$

	19	20	21	22	23	24	25	26	27
Rock Name	Rhyolite	"Quartz Porphyry" (Tuff)	Rhyolite	Porphyry	Sodi-potassic Rhyolite	Toscanite	Orthoclase Porphyry	Fragmental Toscanite	Sodi-potassic Rhyolite
Locality	Cobar, N.S.W.	Mt. Stromlo, A.C.T.	Cathedral Range, Vic.	Hill 32, Warburton Ra., W.A.	Rosebery, Tas.	Old Healesville Road, Vic.	Cobar, N.S.W.	Marysville, Vic.	Rosebery, Tas.
Reference	**357**, 217; **554**, 215	**297**, 54; **444**, 74	**197**, 191	**563**	**482**, 281	**134**, 116	**8**, 66; **354**, 198; **554**, 167	**198**, 162	**165**; **482**, 281
Analyst	W. A. Greig	A. G. Hall	E. S. Hills	H. P. Rowledge	W. St. C. Manson	G. C. Carlos	W. A. Greig	E. S. Hills	Tas. Dept. Mines
Remarks									
Sp. Gr.	2·643	—	—	2·72	—	—	2·649	—	—
SiO_2	71·92	71·68	70·81	70·67	70·00	69·98	69·90	69·86	69·20
Al_2O_3	13·83	13·57	15·73	6·88	17·35	14·91	14·09	14·82	17·67
Fe_2O_3	1·00	1·28	0·76	8·92	0·93	1·15	0·88	1·47	0·43
FeO	1·62	1·94	1·97	1·63	2·77	2·60	2·33	1·33	3·09
MgO	0·54	1·37	1·30	0·53	0·65	0·36	0·98	1·18	0·79
CaO	1·28	1·88	1·68	1·85	1·48	1·31	1·10	1·88	1·50
Na_2O	2·67	2·22	1·75	3·24	2·58	3·00	2·35	2·57	2·22
K_2O	5·61	3·87	5·44	4·66	4·15	4·26	5·99	4·24	4·97
H_2O+	0·95	1·24	0·54	0·42	1·50	1·06	1·00	2·00	3·60
H_2O-	0·11	0·29	0·10	0·10		0·16	0·10	0·44	
CO_2	0·35	0·08	—	0·13		0·12	0·40	0·04	—
TiO_2	0·28	0·33	0·09	0·74	0·25	0·79	0·40	0·28	0·27
P_2O_5	0·09	0·03	0·22	0·12	0·08	0·09	0·19	0·51	0·05
MnO	0·02	0·13	—	0·08	—	0·09	0·02	0·03	—
Other Constituents	BaO = 0·05					Cl = 0·02 SO_3 = 0·03	Cl = 0·03 BaO = 0·02 CuO = 0·01 $S(FeS_2)$ = 0·02	S = 0·01	
	100·32	99·91	[100·39]	99·97	[101·74]	99·93	99·81	100·66	[103·79]

b. $CaO = 1\% - 2\%$

$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$

	28	29	30	31	32	33	34	35	36
Rock Name	Rhyolite	"Quartz Felsite"	Rhyolite or Toscanite	Rhyodacite	Rhyolite	Rhyolite	Rhyolite	Rhyolite	Rhyolite
Locality	Montville, Qld.	Hill End, N.S.W.	Par. of Childowla, Burrinjuck, N.S.W.	3 miles N.N.E. of Mt. Tara, Vic.	Esk, Qld.	Par. of Childowla, Burrinjuck, N.S.W.	Par. of Childowla, Burrinjuck, N.S.W.	Limestone Ck., Burrinjuck, N.S.W.	55 miles S. of Einasleigh, Qld.
Reference	**427**, 34; **428**, 299	**354**, 198; **554**, 149	**590**	**514**, 125	**408**; **421**, 142; **422**, 150; **554**, 161	**590**	**590**	**590**	**95**
Analyst	G. R. Patten	W. G. Stone	H. Yates	E. O. Teall	G. R. Patten	H. Yates	H. Yates	H. Yates	A. McClure
Remarks		*Spectroscopic							*Loss on ignition
Sp. Gr.	2·545		2·71	—	2·43	2·70	2·69	2·68	—
SiO_2	85·13	76·10	73·51	73·41	72·73	72·58	72·45	71·66	70·85
Al_2O_3	5·43	11·60	13·33	12·30	13·57	13·67	13·33	13·68	14·35
Fe_2O_3	0·48	0·15	0·41	2·09	0·69	0·26	1·54	0·62	1·13
FeO	2·72	1·48	1·38	2·13	1·43	1·87	1·67	1·94	1·43
MgO	0·37	0·54	0·42	0·14	0·42	0·22	0·49	0·37	0·84
CaO	1·04	1·39	1·98	1·08	1·00	1·38	1·41	1·03	1·81
Na_2O	2·05	3·76	3·58	3·71	4·98	3·78	4·24	3·96	3·64
K_2O	1·54	4·03	3·94	4·04	3·74	4·60	4·32	4·62	4·10
H_2O+	0·50	0·32	0·72	1·51	0·95	0·72	0·46	1·34	1·40*
H_2O-	0·32	0·18	0·03	0·10	0·50	0·10	—	0·06	0·01
CO_2	—	0·36	—	—	—	—	—	—	—
TiO_2	0·19	0·20	0·57	0·16	tr.	0·63	0·48	0·61	0·15
P_2O_5	0·17	0·12	0·07	tr.	0·07	0·07	0·07	0·07	0·09
MnO	0·02	0·03	—	—	0·04	—	—	—	0·05
Other Constituents		SrO = pnd. Li_2O = pnd.*							
	99·96	100·26	99·94	100·67	100·12	[99·88]	100·46	99·96	99·85

TABLE H — RHYOLITIC ROCKS

b. CaO = 1% – 2%

K_2O/Na_2O = 1·25 – 0·75

	37	38	39	40	41	42	43	44	45
Rock Name	Toscanite	Toscanite	Toscanite	Rhyolite	Toscanite	Dacite	Augite Toscanite	Dacite	Toscanite
Locality	Carroll Trig. Station, Burrinjuck, N.S.W.	Lilydale, Vic.	Par. of Woolgarlo, Burrinjuck, N.S.W.	Par. of Mylora, Burrinjuck, N.S.W.	Quarry, Par. of Yering, Vic.	Mt. Johnstone, Clarencetown, N.S.W.	Upper Barren Jack Ck., Burrinjuck, N.S.W.	Dandenong, Vic.	Near L. De Burgh, Burrinjuck, N.S.W.
Reference	**590**	**333**, 352; **500**, 284	**590**	**590**	**333**, 353; **500**, 284	**388**, 127	**590**	**548**	**590**
Analyst	H. Yates	Not Stated	H. Yates	H. Yates	Not Stated	G. D. Osborne	H. Yates	Not Stated	H. Yates
Remarks									
Sp. Gr.	2·68	—	2·70	2·70	—		2·74	—	2·73
SiO_2	70·73	69·93	68·39	68·36	68·19	67·76	66·73	65·81	65·14
Al_2O_3	13·89	15·14	15·66	16·28	14·98	12·89	15·05	16·60	18·69
Fe_2O_3	0·15	1·30	0·02	1·28	0·74		1·41	3·71	0·15
FeO	2·85	2·33	1·98	1·95	2·74		2·46	2·06	1·89
MgO	0·31	0·26	0·58	1·10	0·29		1·72	1·13	0·81
CaO	1·94	1·80	1·91	1·08	1·95	1·16	1·61	1·06	1·88
Na_2O	4·14	3·36	4·84	4·44	3·34	2·32	4·55	1·96	4·16
K_2O	3·48	3·55	4·10	3·50	3·64	1·88	3·44	2·23	4·78
H_2O+	1·64	0·83	1·01	1·36	1·40		1·70	1·92	1·36
H_2O-	0·07	0·07	0·08	0·12	0·14		0·04	0·42	0·14
CO_2	—	abs.	—	—	1·93		—	—	—
TiO_2	0·60	0·20	0·99	0·73	0·20		0·92	tr.	0·89
P_2O_5	0·09	0·03	0·12	0·10	0·05		0·12	0·31	nd.
MnO	—	0·05	—	—	0·08		—	—	—
Other Constituents		Cl = tr. BaO = 0·30			BaO = 0·27			SO_3 = 0·06 Cl = tr.	
	99·89	99·15	99·68	100·30	99·94		99·75	97·27	99·89

b. CaO = 1%–2%

$K_2O/Na_2O < 0{\cdot}75$

	46	47	48	49	50	51	52	53	54
Rock Name	Quartz Keratophyre	Quartz Keratophyre	Keratophyre	Keratophyre	Rhyolite	Rhyolite	"Feldspathic Rock"	"Feldspathic Rock"	Rhyolite Glass
Locality	Papineau Rocks, S.A.	Marcollat, S.A.	Cue, W.A.	Marble Bar, W.A.	Esk, Qld.	Silverwood, Qld.	Stawell, Vic.	Stawell, Vic.	Gloucester Buckets, N.S.W.
Reference	**315**, 194	**315**, 194	**447**, 14; **588**, 53	**301**, 12; **303**, 7; **447**, 14; **554**, 24	**408**, **421**, 142 **554**, 161	**430**, 95	**537**, 63; **554**, 817	**537**, 63; **554**, 817	**351**, 184; **554**, 97
Analyst	W. B. Dallwitz	E. R. Smith	E. S. Simpson	J. H. Brooking	G. R. Patten	F. Galley	Not Stated	Not Stated	N.S.W. Dept. Mines
Remarks	*Det. by E. R. Segnit		(Dyke)	(Dyke)		(Dyke)	(Dyke)		
Sp. Gr.	—	—	2·63	2·69	2·61	2·644	2·671	2·665	2·262
SiO_2	76·40	75·22	74·86	72·77	72·02	71·97	71·19	71·16	70·62
Al_2O_3	11·94	12·29	14·01	13·87	12·60	14·17	16·66	16·19	11·54
Fe_2O_3	1·28	1·25	1·12	tr.	0·32	1·19	0·11	0·36	1·20
FeO	1·33	1·73	0·36	2·79	3·29	1·91	0·77	0·68	0·18
MgO	0·39	0·28	0·42	0·40	0·55	0·19	0·83	0·60	0·26
CaO	1·30	1·38	1·18	1·60	1·95	1·04	1·80	1·77	1·72
Na_2O	5·50	6·13	4·33	4·18	4·84	5·13	4·79	4·73	3·52
K_2O	0·69	0·48	3·07	2·81	2·82	2·49	1·47	2·03	1·45
H_2O+	0·57	0·75	0·13	0·29	0·20	2·54	1·13	2·17	7·24
H_2O-	0·08	0·09	0·24	0·02	0·30		0·19	0·22	2·42
CO_2	0·05	—	0·03	0·24	abs.	—	0·78	—	0·02
TiO_2	0·32	0·30	0·13	0·55	0·69	0·29	0·10	0·11	0·04
P_2O_5	0·08	0·03	0·15	—	0·11	—	tr.	tr.	0·08
MnO	0·09	—	0·19	0·22	0·04	—	abs.	tr.	0·01
Other Constituents	F = 0·05*		FeS_2 = 0·04	FeS_2 = tr.			Cl = tr.	SO_3 = tr. Cl = tr.	BaO = 0·05 SrO = tr. SO_3 = tr.
	100·07								
	0·02								
Less O = Cl, F, S	100·05	99·93	100·26	99·74	99·73	100·92	99·82	100·02	100·35

TABLE H — RHYOLITIC ROCKS

b. CaO = 1% – 2%

$K_2O/Na_2O < 0{\cdot}75$

	55	56	57	58	59	60	61
Rock Name	Quartz Keratophyre	Quartz Keratophyre (Glassy)	Keratophyre	Obsidian	Obsidian	Quartz Keratophyre	Rhyolite
Locality	West Queen River, Tas.	Gloucester, N.S.W.	Boulder, Kalgoorlie, W.A.	Tuluman Volcano, Manus Island, N.G.	Tuluman Volcano, Manus Island, N.G.	Williams River, near Clarencetown, N.S.W.	Por. of Wolgarlo, Burrinjuck, N.S.W.
Reference	**474**, 49	**364**, 77; **501**, 254	**447**, 42; **460**, 61; **554**, 821	**95**	**95**	**388**, 128	**590**
Analyst	Tas. Dept. Mines	W. G. Stone	H. Bowley	S. Baker	S. Baker	G. D. Osborne	H. Yates
Remarks				(Cone 3) *Water low for glass	*Loss on ignition Low (?)		
Sp. Gr.	—	—	2·72		—	—	2·69
SiO_2	70·60	69·82	69·41	68·67	67·92	67·06	65·48
Al_2O_3	13·31	12·41	15·87	14·07	14·16	15·95	16·39
Fe_2O_3	1·54	1·10	0·24	0·26	0·62	1·78	0·33
FeO	2·36	0·54	1·58	3·36	3·76	2·37	3·28
MgO	1·75	0·29	1·14	0·91	0·65	1·87	0·28
CaO	1·68	1·86	1·75	1·85	1·80	1·98	1·08
Na_2O	4·44	4·63	3·42	6·40	8·34	4·62	6·34
K_2O	2·03	1·67	2·44	3·04	1·17	2·01	3·68
H_2O+	1·46	6·74	0·75	0·02*	0·35*	0·65	1·13
H_2O-	0·06	0·86	0·16	—	—	0·44	0·09
CO_2	0·73	0·03	2·52	—	—	abs.	—
TiO_2	0·40	0·25	0·20	0·30	0·50	0·40	1·51
P_2O_5	0·08	0·05	0·55	nd.	nd.	0·28	0·10
MnO	0·05	0·03	0·16	0·16	0·10	0·39	—
Other Constituents	S = 0·07	BaO = 0·02	BaO = 0·08 FeS_2 = 0·07 ZrO_2 = tr.				
	100·56	100·30	100·34	99·04	99·37	99·80	99·69

TABLE H — RHYOLITIC ROCKS

c. CaO = 2% – 3%

	$K_2O/Na_2O > 1·25$							$K_2O/Na_2O = 1·25 – 0·75$	
	1	2	3	4	5	6	7	8	9
Rock Name	Rhyolite	Rhyolite or Toscanite	Toscanite	Dacitic Flow Breccia	Toscanite	Dacite	Rhyodacite	Toscanite	Rhyolite Porphyry
Locality	Par. of Bowning, Burrinjuck, N.S.W.	Par. of Mylora, Burrinjuck, N.S.W.	Par. of Talmo, Burrinjuck, N.S.W.	Near Yass, N.S.W.	Road between the Basin & Bayswater, Vic.	Monbulk, Vic.	Marysville, Vic.	Par. of Childowla, Burrinjuck, N.S.W.	50 miles S. of Einasleigh, Qld.
Reference	**590**	**590**	**590**	**444**, 74	**134**, 116	**134**, 125	**198**, 162	**590**	**95**
Analyst	H. Yates	H. Yates	H. Yates	K. Sherrard	G. C. Carlos	G. C. Carlos	E. S. Hills	H. Yates	A. McClure
Remarks									*Loss on ignition
Sp. Gr.	2·77	2·68	2·65	—	—	—	—		—
SiO_2	75·07	73·29	69·71	69·23	67·74	67·45	67·17	72·99	72·55
Al_2O_3	13·13	14·02	14·13	15·35	14·58	15·54	14·86	13·40	14·63
Fe_2O_3	1·18	0·16	0·34	1·77	2·51	1·90	0·43	0·58	0·92
FeO	0·65	1·65	2·65	2·11	2·35	3·62	3·87	1·18	1·18
MgO	0·28	0·26	0·98	1·59	0·54	0·92	1·61	0·21	0·36
CaO	2·84	2·03	2·31	2·98	2·42	2·99	2·84	2·20	2·01
Na_2O	1·06	3·10	2·84	2·01	2·85	2·18	2·48	3·48	3·32
K_2O	3·36	4·42	4·41	3·10	5·24	3·63	3·77	3·70	4·11
H_2O+	1·93	0·81	1·54	1·64	0·09	0·65	0·90	1·67	0·38*
H_2O-	0·26	0·02	0·10	0·06	1·40	0·06	0·12	0·06	0·01
CO_2	—	—	—	abs.	0·01	abs.	0·20	—	—
TiO_2	0·38	0·45	0·60	0·12	0·26	0·75	0·87	0·38	0·08
P_2O_5	0·07	0·07	0·14	0·11	0·08	0·28	0·53	0·07	0·29
MnO	—	—	—	—	0·08	0·04	0·07	—	0·04
Other Constituents					Cl = tr.		S = 0·02		
	100·21	100·28	99·75	100·07	[100·15]	100·01	99·74	99·92	99·88

TABLE H — RHYOLITIC ROCKS

c. CaO = 2% – 3%

K_2O/Na_2O = 1·25 – 0·75

	10	11	12	13	14	15	16	17	18
Rock Name	Rhyodacite	Porphyry	Quartz Porphyrite *Talmo Quartz Porphyrite*	Toscanite	"Andesite"	Quartz Porphyry	Biotite Rhyodacite	Perlitic Pitchstone	Toscanite
Locality	Violet Town, Strathbogie Ra., Vic.	Marda, W.A.	Par. Talmo, Burrinjuck, N.S.W.	Lilydale, Vic.	50 miles S. of Einasleigh, Qld.	Tintaldra, Vic.	Snobs Ck., Eildon, Vic.	Nandewar Mts., Boggabri, N.S.W.	Par. of Wolgarlo, Burrinjuck, N.S.W.
Reference	**514**, 125	**37**, 157; **447**, 44	**590**	**134**, 116	**95**	**142**, 82	**517**	**235**, 903; **554**, 103	**590**
Analyst	G. Ampt	E. S. Simpson	H. Yates	A. B. Edwards	A. McClure	F. F. Field	Field & Clark	H. I. Jensen	H. Yates
Remarks					*Loss on ignition			*Loss on ignition	
Sp. Gr.	2·77	2·72	—	—	—	—	2·698	—	2·70
SiO_2	70·51	69·93	68·99	68·57	68·08	67·72	67·29	66·68	66·05
Al_2O_3	14·36	13·92	13·93	15·05	15·88	13·62	16·91	13·39	17·60
Fe_2O_3	0·33	1·04	0·26	0·92	1·54	0·88	0·51	0·91	0·65
FeO	1·95	2·80	3·70	2·74	1·60	2·44	2·48	0·21	1·80
MgO	1·08	1·02	1·39	0·42	0·90	1·39	1·96	abs.	0·57
CaO	2·98	2·21	2·36	2·63	2·60	2·91	2·93	2·72	2·29
Na_2O	3·17	3·87	2·96	3·01	4·22	3·04	2·20	2·23	4·58
K_2O	3·15	3·18	3·61	3·71	4·55	3·64	2·15	2·51	4·64
H_2O+	1·18	1·16	1·54	0·68	0·46*	1·65	0·10	10·05*	1·03
H_2O-	—	0·04	0·11	0·15	0·16	0·26	0·14	—	
CO_2	abs.	0·16	—	1·80	—	1·95	abs.	tr.	—
TiO_2	1·20	0·28	0·71	0·20	0·48	0·45	0·65	0·38	1·01
P_2O_5	0·12	0·15	0·15	0·08	0·09	tr.	0·10	—	0·10
MnO	—	0·26	0·04	0·08	0·13	tr.	tr.	—	—
Other Constituents	NiO = 0·08 Cr_2O_3 = tr.	FeS_2 = 0·02	ZrO_2 = 0·55 S = 0·08	BaO = 0·30 SO_3 = tr.		Cl = tr.	Cl = tr.		
	100·11	100·04	100·38	100·34	100·69	99·95	97·42	99·08	100·32

c. CaO = 2% – 3%

	K_2O/Na_2O = 1·25 – 0·75	K_2O/Na_2O < 0·75							
	19	20	21	22	23	24	25	26	27
Rock Name	Keratophyre	Quartz Keratophyre	Rhyolite Tuff	Rhyolite	Porphyry	Dellanite	Toscanite Glass	Quartz Keratophyre	Feldspar Porphyry
Locality	Kalgoorlie, W.A.	Mt. Read, Tas.	Lucky Valley, Qld.	Nanima-Bedulluck Area, near Yass, N.S.W.	Norseman, W.A.	Paterson, N.S.W.	Port Stephens N.S.W.	Nemingha, N.S.W.	Mt. Catherine Ra., N. Coolgardie, W.A.
Reference	**445**, 73; **447**, 42; **496**, 30;	**531**, 46; **554**, 97	**429**, 118; **430**, 95	**444**, 74	**67**, 119; **447**, 44; **554**, 817	**388**, 131	**370**, 135; **502**, 185	**31**, 602	**521**, 666
Analyst	C. G. Gibson	W. F. Ward	G. R. Patten	K. Sherrard	J. H. Brooking	G. D. Osborne	W. A. Greig	W. N. Benson	E. S. Simpson
Remarks					(Dyke)				
Sp. Gr.	2·72	—	2·652	—	2·69	2·652	2·443	—	2·64
SiO_2	65·51	75·73	73·87	73·52	73·13	72·98	71·72	71·52	70·82
Al_2O_3	18·12	12·70	12·92	11·94	12·21	12·58	11·50	11·76	15·56
Fe_2O_3	tr.	2·25	—	3·39	1·17	0·28	2·30	1·52	0·51
FeO	2·39		2·32	1·46	1·68	1·66	0·63	3·44	1·73
MgO	0·38	0·60	0·83	0·61	0·65	0·49	0·41	1·18	0·87
CaO	2·10	2·00	2·83	2·07	2·81	2·81	2·56	2·72	2·20
Na_2O	4·27	3·48	3·23	3·49	3·52	4·80	3·40	5·05	5·57
K_2O	3·28	2·04	1·07	2·24	1·98	2·99	2·53	0·26	1·94
H_2O+	0·46	1·20	0·43	0·95	0·28	0·79	4·51	1·25	0·27
H_2O-	0·07		0·09	0·14	0·21	0·43	0·35	0·14	0·05
CO_2	2·41	—	1·75	tr.	0·88	abs.	—	0·38	0·40
TiO_2	tr.	nd.	0·32	0·66	0·85	0·40	0·15	0·28	0·35
P_2O_5	—	nd.	0·03	0·12	—	0·08	0·03	0·20	tr.
MnO	0·05	—	0·04	—	0·67	0·03	0·11	0·04	0·13
Other Constituents	FeS_2 = 0·06				FeS_2 = 0·20		SO_3 = 0·06 BaO = 0·05 Cl = 0·10 100·41	FeS_2 = 0·12	FeS_2 = 0·20
Less O = Cl, F, S							0·02		
	99·10	100·00	99·73	100·59	100·24	100·32	100·39	99·86	100·60

TABLE H — RHYOLITIC ROCKS

c. CaO = 2%–3%						
	$K_2O/Na_2O < 0{\cdot}75$					
	28	29	30	31	32	33
Rock Name	"Quartz Felsite"	Hypersthene Dacite	Quartz Porphyry	Quartz Porphyry	Toscanite	Keratophyre
Locality	Jenolan Caves, N.S.W.	Mt. Dandenong North, Vic.	Charters Towers, Qld.	2 miles N. of Cooma, N.S.W.	Par. of Wolgarlo, Burrinjuck, N.S.W.	Binduli, W.A.
Reference	**357**, 217; **504**, 381; **554**, 797	**134**, 127	**418**, 76	**351**, 184; **554**, 357	**590**	**200**, 60; **447**, 42
Analyst	W. G. Stone	G. C. Carlos	P. Mansini	J. C. H. Mingaye	H. Yates	A. J. Robertson
Remarks		(Chilled base)				
Sp. Gr.	2·688	—	—	2·731	2·75	2·65
SiO_2	70·40	69·26	67·88	67·33	66·46	66·38
Al_2O_3	13·13	16·34	14·91	14·03	15·74	16·41
Fe_2O_3	1·25	1·14	2·48	1·86	1·72	1·52
FeO	1·75	3·33	1·15	2·88	2·01	0·99
MgO	0·64	1·08	0·91	2·47	1·01	1·01
CaO	2·74	2·07	2·80	2·72	2·82	2·32
Na_2O	3·47	3·30	5·68	4·36	5·12	6·18
K_2O	2·22	2·00	2·26	1·71	3·03	2·28
H_2O+	1·35	0·26	1·29	1·76	1·34	2·62
H_2O-	0·15	0·01	0·08	0·10	0·05	0·09
CO_2	2·83	tr.	—	0·03	—	0·10
TiO_2	0·30	0·81	0·29	0·65	1·04	—
P_2O_5	0·08	0·29	0·10	0·22	0·10	—
MnO	0·04	0·08	0·20	0·03	—	—
Other Constituents	BaO = 0·04 CuO = tr. SO_3 = tr. Cl = tr.		S = 0·39	BaO = 0·04 SrO = tr. (NiCo)O = tr.		
	100·39	99·97	100·42	100·19	100·44	99·90

d. CaO = 3% – 4%

$K_2O/Na_2O > 1 \cdot 25$

	1	2	3	4	5	6	7	8	9
Rock Name	Dacite	Porphyrite	Quartz Dacite	Hypersthene Dacite	β-Quartz-biotite-hypers-thene Dacite	Porphyrite	Porphyry *Moonabie Porphyry*	Dacite	Toscanite
Locality	Mt. Macedon, Vic.	Near Lysterfield Hills, Vic.	Healesville, Vic.	Between the Basin & Sassafras, Vic.	Narbethong, Vic.	Burrinjuck, N.S.W.	32 miles N.N.E. of Franklin Harbour, S.A.	Between the Basin & Sassafras, Vic.	Near Lake De Burgh, Burrinjuck, N.S.W.
Reference	**548**	**134**, 134	**114**, 65	**134**, 127	**114**, 65	**590**	**95**	**134**, 125	**590**
Analyst	L. G. Benjamin	G. C. Carlos	M. K. Evans	G. C. Carlos	A. B. Edwards	H. Yates	A. McClure	G. C. Carlos	H. Yates
Remarks		(Dyke)		(Chilled base)			*Loss on ignition		
Sp. Gr.	—		2·679		2·71	2·77	—	—	2·81
SiO_2	74·45	68·80	67·85	66·91	66·17	65·89	65·86	65·26	65·08
Al_2O_3	15·16	14·32	14·65	15·17	14·75	15·69	14·31	16·38	15·08
Fe_2O_3	2·27	1·19	0·64	1·96	0·30	1·76	3·26	1·36	1·62
FeO	—	2·57	3·40	3·59	4·73	2·74	2·43	3·70	2·91
MgO	abs.	1·11	1·39	1·84	1·71	1·39	1·38	1·67	0·96
CaO	3·71	3·98	3·05	3·11	3·31	3·05	3·31	3·45	3·83
Na_2O	1·35	2·51	2·12	2·58	2·45	3·54	3·18	2·63	2·74
K_2O	2·21	3·80	3·19	3·39	3·53	3·64	4·02	3·92	4·30
H_2O+	0·74	0·75	2·25	0·33	0·66	1·08	1·01*	0·29	1·94
H_2O-	0·17	0·07	0·15	0·08	0·01	0·05	0·08	0·04	0·12
CO_2	—	abs.	—	abs.	nd.	—	—	0·06	—
TiO_2	—	0·57	0·63	0·74	0·97	0·85	0·48	0·57	1·10
P_2O_5	abs.	0·26	0·32	0·28	1·15	0·14	0·32	0·30	0·11
MnO	—	0·07	—	0·05	0·20	0·04	0·13	0·09	—
Other Constituents				$SO_3 = 0 \cdot 02$	S = 0·13 Cl = 0·04	S = 0·13		$SO_3 = 0 \cdot 04$	
					100·11				
Less O = Cl, F, S					0·06				
	100·06	100·00	99·64	100·05	100·05	99·99	99·77	[99·76]	99·79

TABLE H — RHYOLITIC ROCKS

d. CaO = 3% – 4%

	$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$								$K_2O/Na_2O < 0{\cdot}75$
	10	11	12	13	14	15	16	17	18
Rock Name	Hornblende Porphyrite	Hypersthene Dacite	Quartz Dacite	α-Quartz-biotite Dacite	Fragmental Toscanite	Toscanite	Dacite	Hornblende Andesite	Trachytoid Quartz Keratophyre
Locality	Lysterfield Area, Vic.	Good Hope, N.S.W.	Between Lilydale & Evelyn, Vic.	Warburton, Vic.	Eildon, Vic.	Por. 44, Par. of Bookham, Burrinjuck, N.S.W.	Mt. Dandenong, Vic.	Hudsons Peak, near Maitland, N.S.W.	Currabubula, N.S.W.
Reference	**134**, 134	**350**, 185; **554**, 349	**114**, 65; **333**, 358; **500**, 284	**115**, 177	**517**, 36	**590**	**114**, 65; **333**, 352; **500**, 284	**366**, 97	**52**, 413; **388**, 128
Analyst	G. C. Carlos	J. C. H. Mingaye	F. F. Field	A. B. Edwards	Field & Clark	H. Yates		W. G. Stone	H. Yates
Remarks	(Dyke)			*MnO_2					
Sp. Gr.	—	2·705	—	—	2·729	2·76	—	2·656	—
SiO_2	69·49	69·24	68·73	68·68	67·47	67·23	65·83	65·28	67·71
Al_2O_3	14·72	12·88	13·16	14·61	16·56	16·82	14·89	13·71	15·24
Fe_2O_3	1·34	0·20	1·17	0·81	0·10	0·16	0·73	2·60	1·48
FeO	2·71	4·05	2·74	4·33	2·91	2·45	4·63	2·97	1·89
MgO	1·02	2·21	1·22	1·14	0·96	0·78	1·88	2·16	0·46
CaO	3·33	3·10	3·03	3·01	3·03	3·82	3·13	3·08	3·00
Na_2O	2·98	2·94	2·30	3·15	2·59	3·88	2·12	3·93	5·87
K_2O	2·44	3·66	2·59	2·48	2·05	3·20	2·34	3·95	1·81
H_2O+	0·77	0·80	1·86	0·32	2·14	1·23	2·41	1·33	1·89
H_2O-	0·14	0·06	0·09	0·44	0·06	0·03	0·17	0·49	0·39
CO_2	0·06	0·04	1·50	nd.	0·46	—	0·47	tr.	abs.
TiO_2	0·65	0·55	0·50	0·60	1·00	0·78	0·89	0·60	0·47
P_2O_5	0·27	0·23	0·17	0·12	0·06	0·10	0·16	0·15	tr.
MnO	0·07	0·06	0·09	0·03*	0·08	—	0·10	0·10	—
Other Constituents	SO_3=0·01 Cl=0·01	BaO=0·04 SrO=tr.	BaO=0·20 S=0·18 NiO=0·01	ZrO_2=0·02 Cl=0·04 S=0·17 BaO=0·01	Cl=tr. SO_3=abs.		BaO=0·13 NiO=0·01 S=0·10	BaO=0·03 V_2O_3=tr. Cl=tr.	
			99·54	99·96			[99·99]		
Less O = Cl, F, S			0·07	0·08			0·04		
	100·01	100·06	99·47	99·88	99·47	100·48	[99·95]	100·38	100·21

d. CaO = 3% – 4%				e. CaO > 4%				
	$K_2O/Na_2O < 0{\cdot}75$			$K_2O/Na_2O > 1{\cdot}25$		$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$		$K_2O/Na_2O < 0{\cdot}75$
	19	20	21	1	2	3	4	5
Rock Name	Feldspar Porphyrite	Dacite	Dacite	Dacite	Hornblende Porphyrite	Hypersthene Porphyry	Dacite	Feldspar Porphyry
Locality	Mt. Dandenong, Vic.	Mt. Dandenong, Vic.	Healesville, Vic.	Wombeyan Rd., Wollondilly R., N.S.W.	Monbulk, Vic.	St. Marys Pass, Tas.	Par, of Childowla, Burrinjuck, N.S.W.	Warrawoona, W.A.
Reference	**134**, 134	**183**, 201	**183**, 201; **114**, 65, **554**, 267	**73**, 261; **554**, 369	**134**, 134	**482**	**590**	**302**, 66; **303**, 164
Analyst	G. C. Carlos	H. C. Jenkins	H. C. Jenkins	J. C. H. Mingaye	G. C. Carlos	W. St C. Manson	H. Yates	E. S. Simpson
Remarks	(Plug or Dyke)				(Dyke)			
Sp. Gr.	—	—	2·71	2·726	—	—	2·75	2·73
SiO_2	67·66	67·25	65·80	66·06	65·84	67·36	67·01	69·14
Al_2O_3	15·36	16·38	16·87	15·25	15·26	15·24	16·54	14·71
Fe_2O_3	0·74	4·62	3·97	1·10	1·77	0·57	1·90	3·47
FeO	3·84	1·30	1·08	3·69	3·26	3·74	1·31	0·78
MgO	1·52	1·76	1·76	2·27	2·12	1·81	0·84	1·09
CaO	3·24	3·05	3·16	4·86	4·17	4·15	4·79	4·83
Na_2O	3·02	2·56	3·45	2·16	2·34	2·60	2·74	4·24
K_2O	2·24	1·36	2·54	2·77	3·67	3·00	3·16	1·00
H_2O+	1·42	0·30	1·05	0·94	0·75	0·51	0·89	0·08
H_2O-	0·04	—	—	0·30	0·11	0·10	0·12	0·04
CO_2	tr.	1·56	—	0·07	abs.	—	—	0·40
TiO_2	0·62	—	—	0·70	0·48	0·58	0·60	0·30
P_2O_5	0·24	—	—	0·11	0·27	0·18	—	—
MnO	0·06	0·33	tr.	0·02	0·09	0·06	—	0·21
Other Constituents	$Cl = 0{\cdot}01$ $SO_3 = 0{\cdot}01$			$ZrO_2 = 0{\cdot}03$ $S = 0{\cdot}06$ $V_2O_3 = 0{\cdot}03$ $NiO = 0{\cdot}02$ $Cl = 0{\cdot}01$ $BaO = 0{\cdot}06$			$ZrO_2 = 0{\cdot}14$	FeS_2 = tr.
				100·51				
Less O = Cl, F, S				0·03				
	100·02	100·47	99·68	100·48	100·13	99·90	100·04	100·29

TABLE H — RHYOLITIC ROCKS

e. CaO>4%				
	$K_2O/Na_2O<0·75$			
	6	7	8	9
Rock Name	Glassy Andesite	Hornblende-Quartz Porphyrite	Hornblende-Quartz Porphyrite	Porphyrite
Locality	Martins Ck., N.S.W.	Bergalia, near Moruya, N.S.W.	Kalgoorlie, W.A.	Dandenong, Vic.
Reference	**388**, 125	**47**, 182	**447**, 42; **460**, 62; **496**, 30; **554**, 837	**183**, 201; **554**, 837
Analyst	G. D. Osborne	I. A. Brown	E. S. Simpson	H. C. Jenkins
Remarks		(Dyke)		MgO? K_2O?
Sp. Gr.	—	2·719	2·75	—
SiO_2	66·38	66·11	65·66	65·05
Al_2O_3	—	17·26	13·55	10·04
Fe_2O_3	—	0·63	1·63	8·47
FeO	—	2·68	1·56	5·14
MgO	—	1·41	1·56	tr.
CaO	4·11	4·72	5·46	4·80
Na_2O	3·55	2·11	5·00	3·39
K_2O	1·72	1·02	1·96	0·02
H_2O+	4·56	1·72	0·46	0·56
H_2O-	1·04	0·10	0·10	—
CO_2	—	1·22	1·58	1·53
TiO_2	—	0·49	0·50	—
P_2O_5	—	0·13	0·54	—
MnO	—	0·12	0·23	—
Other Constituents			$ZrO_2=0·02$ $BaO=0·03$ $FeS_2=0·02$ $V_2O_3=0·01$ $Cr_2O_3=0·01$	$FeS=1·35$
		99·72	99·88	100·35

TABLE H[1] — METAMORPHOSED RHYOLITES AND PORPHYRIES

	1	2	3	4	5	6	7	8
Rock Name	Foliated Porphyry	Sheared & Sericitized Porphyry	Rhyolite (Slightly sheared)	Altered Felsite	Graphitic Schist (altered porphyry)	Sheared & Carbonated Porphyry	Schistose Felsite	Nodule in Schistose Felsite
Locality	Niagara, W.A.	5 miles S.E. of Mt. Mortimer, W.A.	S. of Bredbo, N.S.W.	Broken Hill, N.S.W.	Whim Well, Pilbara Goldfield, W.A.	Cue, W.A.	Moonta, S.A.	Moonta, S.A.
Reference	**447**, 14	**519**, 165; **447**, 38	**257**, 165	**362**, 187	**175**, 44	**171**, 15; **554**, 817; **588**, 53	**127**, 114; **217**, 26	**217**, 26
Analyst	A. J. Robertson	C. C. Williams	G. A. Joplin	W. A. Greig	W.A. Chem. Lab.	C. C. Williams	W. S. Chapman	W. S. Chapman
Remarks								
Sp. Gr.	2·63	2·73	2·66	2·818	2·75	2·74	—	—
SiO_2	77·95	76·80	75·66	73·14	72·73	68·46	62·87	55·22
Al_2O_3	11·69	13·91	14·42	12·45	17·45	12·25	13·97	21·43
Fe_2O_3	0·95	abs.	1·21	0·50	abs.	2·27	3·38	5·64
FeO	0·34	1·00	nd.	3·42	0·43	3·20	5·92	0·56
MgO	0·07	0·77	0·59	1·02	0·44	2·08	4·49	1·74
CaO	1·22	0·24	0·09	8·00	0·11	2·63	0·15	0·36
Na_2O	2·70	1·16	1·34	0·25	0·62	4·01	1·26	0·15
K_2O	4·42	3·04	4·74	0·13	4·14	2·05	4·12	11·89
H_2O+	0·29	1·88	1·91	0·58	1·52	0·83	1·94	2·38
H_2O-	0·03	0·07	—	0·08	0·11	0·05	0·30	0·56
CO_2	abs.	0·08	—	abs.	0·12	2·00	0·22	abs.
TiO_2	0·17	0·14	0·20	0·36	0·35	0·61	0·68	0·11
P_2O_5	tr.	0·33	0·11	0·07	0·38	—	0·10	0·13
MnO	abs.	0·26	nd.	0·18	abs.	tr.	0·04	abs.
Other Constituents		FeS_2=0·07		Cl=0·04	C=0·16 FeS_2=1·23	FeS_2=0·15	Cl=0·10 FeS_2=0·05 CuO=0·01	Cl=0·03 FeS_2=0·13
				100·22			99·60	100·33
Less O= Cl, F, S				0·01			0·02	0·01
	99·83	99·75	100·27	100·21	99·79	100·59	99·58	100·32

TABLE H[2] — METASOMATIZED AND DEUTERICALLY ALTERED RHYOLITES AND PORPHYRIES

	Carbonated							Silicified	
	1	2	3	4	5	6	7	8	9
Rock Name	Carbonated Rhyolite	Carbonated Porphyry	Carbonated Quartz Keratophyre	Carbonated Porphyry	Carbonated Porphyry	Carbonated Kerotophyre	Carbonated Porphyry	Silicified Rock	Silicified Rhyolite
Locality	Tampi, W.A.	Bamboo Ck., Pilbara Goldfield, W.A.	Edjudina, W.A.	Warra-woona, W.A.	Binduli, W.A.	Boulder, Kalgoorlie, W.A.	Boulder, Kalgoorlie, W.A.	Meekathara, W.A.	Pambula, N.S.W.
Refer-ence	**563**	**301**, 12; **303**, 7; **447**, 38; **554**, 797	**300**, 7; **447**, 40	**563**	**200**, 58 & 60 **447**, 44	**445**, 73; **447**, 60; **496**, 33; **554**, 819	**563**	**447**, 38	**597**, 148
Analyst	E. S. Simpson	E. S. Simpson	C. C. Williams	E. S. Simpson	H. Bowley	C. G. Gibson	J. N. A. Grace	H. Bowley	N.S.W. Dept. Mines
Remarks		(Flow)			(Dyke)	(Dyke)			
Sp. Gr.	2·65	2·67	2·64	2·73	—	2·72	2·73	2·37	—
SiO_2	77·04	70·92	70·82	69·14	65·10	62·16	61·91	89·87	83·18
Al_2O_3	11·70	12·77	15·56	14·71	16·99	14·98	13·66	3·32	6·77
Fe_2O_3	0·93	tr.	0·51	3·47	1·09	0·39	0·81	0·09	—
FeO	1·08	4·62	1·73	0·78	1·46	3·03	2·69	0·50	—
MgO	0·18	0·33	0·87	1·09	1·05	1·32	1·85	0·62	0·26
CaO	0·98	1·46	2·20	4·83	2·59	4·03	4·11	0·28	abs.
Na_2O	4·30	3·32	5·57	4·24	2·60	6·18	5·03	0·18	abs.
K_2O	3·08	3·92	1·94	1·00	5·26	1·59	1·82	0·20	1·86
H_2O+	0·21	0·54	0·27	0·08	2·71	0·25	0·58	1·96	1·80
H_2O-	0·03	0·08	0·05	0·04	0·09	0·07	0·02	0·28	
CO_2	0·66	0·85	0·40	0·40	1·64	5·65	6·14	0·18	
TiO_2	0·10	0·56	0·35	0·30	0·10	0·16	0·47	1·31	
P_2O_5	0·01	—	—	—	—	—	0·16	0·03	
MnO	0·15	0·17	0·13	0·21	—	0·51	0·02	abs.	
Other Con-stituents	FeS_2=0·11	FeS_2=0·10	FeS_2=0·20	FeS_2=tr.		FeS_2=0·60	FeS_2=0·09 BaO=0·01 V_2O_3=tr.	ZrO_2=0·02 FeS_2=0·20 Cr_2O_3=0·12 BaO=0·14	FeS_2=5·70
	100·56	99·64	100·60	100·29	100·68	100·92	99·37	[99·30]	99·57

TABLE H[2] — METASOMATIZED AND DEUTERICALLY ALTERED RHYOLITES AND PORPHYRIES

	Silicified		Sericitized		Mineralized & Metosomatized				
	10	11	12	13	14	15	16	17	18
Rock Name	Altered Quartz Porphyry	Silicified Rhyolite	Sericitized Feldspar Porphyry	Sericitized Quartz Porphyry	Altered Quartz Porphyry	Altered Quartz Porphyry	Metasomatically altered Keratophyre	Topazitized Porphyry	Altered Quartz Porphyry
Locality	Mt. Bischoff, Tas.	Mt. Gahan, Pambula, N.S.W.	Aberfeldy, Vic.	Niagara, W.A.	Mt. Bischoff, Tas.	Mt. Bischoff, Tas.	Meekatharra, W.A.	Mt. Bischoff, Tas.	Mt. Bischoff, Tas.
Reference	**414**, 92	**595**; 63 **596**, 116	**294**, 44	**273**, 26; **447**, 40	**188**, 388; **414**, 90	**414**, 92	**563**	**188**, 388; **414**, 31	**414**, 90
Analyst	A. D. Mackay	N.S.W. Dept. Mines	F. Moss	A. J. Robertson	H. Sommerland	A. D. Mackay	H. Bowley	H. Sommerland	A. D. Mackay
Remarks			(Dyke)						(Brown Face Dyke)
Sp. Gr.	—	—	—	2·62	—	—	—	3·014	—
SiO_2	81·48	81·40	74·98	69·90	79·69	77·80	77·78	76·68	76·56
Al_2O_3	12·85	11·20	14·54	15·20	13·49	15·23	11·87	19·99	16·99
Fe_2O_3	2·15	1·60	2·70	1·27	0·14	2·57	0·49	—	1·10
FeO	—	—	abs.	0·42	2·08	—	0·32	—	0·15
MgO	0·79	0·54	tr.	1·45	0·60	0·29	0·40	tr.	0·46
CaO	0·28	0·80	tr.	1·63	0·46	1·05	0·50	1·19	0·26
Na_2O	—	0·34	2·15	4·66	0·08	0·09	6·82	abs.	1·55
K_2O	—	2·78	3·01	2·27	2·71	1·75	0·18	abs.	1·54
H_2O+	2·30	1·35	2·27	1·33		1·80	—		0·31
H_2O-		0·30	0·26	0·19			—		0·07
CO_2			abs.	1·33			—		0·37
TiO_2	tr.		0·18	0·32			—		—
P_2O_5		tr.	tr.	0·12			—	tr.	—
MnO		tr.	abs.	tr.			tr.		—
Other Constituents	SO_3=0·17			FeS_2=0·15			Fe=0·29 S=0·17 As=0·39 FeS_2=0·34	F=6·48	SnO_2=0·44 F=0·55
								104·34	100·35
Less O= Cl, F, S								2·72	0·23
	100·02	100·31	100·09	100·24	99·25	100·58	99·55	101·62	100·12

TABLE H[2] — METASOMATIZED AND DEUTERICALLY ALTERED RHYOLITES AND PORPHYRIES

	Mineralized and Metasomatized								
	19	20	21	22	23	24	25	26	27
Rock Name	Altered Porphyry	Quartz Porphyry	Quartz Porphyry	Altered Quartz Porphyry	Altered Keratophyre	Altered Quartz Porphyry	Quartz Porphyry	Altered Quartz Porphyry	Crushed & Metasomatized Porphyry
Locality	Diamond Creek Area, Vic.	Mt. Bischoff, Tas.	Mt. Bischoff, Tas.	Mt. Bischoff, Tas.	Kalgoorlie, W.A.	Mt. Bischoff, Tas.	Mt. Bischoff, Tas.	Mt. Bischoff, Tas.	Burraga, N.S.W.
Reference	**267**, 340	**414**, 91	**414**, 91	**414**, 91	**563**	**414**, 90	**414**, 91	**414**, 90	**80**, 123
Analyst	N. R. Junner	A. D. Mackay	A. D. Mackay	A. D. Mackay	Not Stated	A. D. Mackay	A. D. Mackay	A. D. Mackay	E. G. Ritchie
Remarks				(Stanhope Dyke)		(Brown Face Dyke)	(White Face Dyke)	(Queen Dyke)	
Sp. Gr.	2·72	—	—	—	—	—	—	—	—
SiO_2	76·25	76·20	75·88	75·28	69·02	67·79	67·40	66·30	64·0
Al_2O_3	15·12	8·63	16·56	13·22	15·92	16·88	21·08	17·78	11·0
Fe_2O_3	1·86	0·47	3·43	1·50	0·58	9·04	4·15	1·26	—
FeO	tr.	—	—	—	1·90	0·19	—	0·33	—
MgO	0·18	0·43	0·30	0·22	2·63	0·83	0·14	0·97	3·6
CaO	tr.		0·90		0·29	0·24	—	0·21	2·0
Na_2O	1·37		—		7·48	1·58	0·67	0·50	
K_2O	3·10		—		abs.	1·57	abs.	2·81	
H_2O+	1·61		—		1·02	1·54	—	0·20	
H_2O-	0·10		—		0·28	0·17	—	—	
CO_2	—		—		0·14	0·10	—	0·04	
TiO_2	—		tr.		0·57	—	—	—	
P_2O_5	—		—		0·28	—	—	—	
MnO	tr.		abs.		0·09	—	—	—	
Other Constituents	S=0·92 Sb_2S_3=pnd.	FeS_2=13·36		SnO_2=0·71 FeS_2=7·63	FeS_2=0·11	SnO_2=0·11 F=0·39	SnO_2=0·41 FeS_2=2·36 F=3·65	SnO_2=0·40 FeS_2=8·81 F=0·23	S=6·6 Fe=7·6 Cu=3·7
	100·51					100·43	99·86	99·84	
Less O= Cl, F, S	0·34					0·16	1·53	0·11	
	100·17	99·09	97·07	98·56	100·31	100·27	98·33	99·73	

TABLE H[2] — METASOMATIZED AND DEUTERICALLY ALTERED RHYOLITES AND PORPHYRIES

	Mineralized and Metasomatized						
	28	29	30	31	32	33	34
Rock Name	Pyritic Quartz Porphyry	Altered Quartz Porphyry	Mineralized Porphyry	Quartz Porphyry	Tourmaline Rock	Crushed & Metasomatized Porphyry	Quartz-feldspar Porphyry
Locality	Mt. Bischoff, Tas.	Mt. Bischoff, Tas.	Mt. Bischoff, Tas.	Mt. Bischoff, Tas.	Binduli, W.A.	Burraga, N.S.W.	Mt. Bischoff, Tas.
Reference	**414**, 90	**414**, 90	**414**, 92	**414**, 92	**200**, 69; **447**, 62	**80**, 124	**414**, 92
Analyst	A. D. Mackay	A. D. Mackay	A. D. Mackay	A. D. Mackay	H. Bowley	E. G. Ritchie	Tas. Dept. Mines
Remarks		(Stanhope Dyke)			(Altered Dyke)		(Brown Face Dyke)
Sp. Gr.	—	—	—	—	—	—	—
SiO_2	63·58	63·16	60·00	57·68	52·56	49·00	48·00
Al_2O_3	19·34	16·46	23·09	10·44	20·83	12·80	32·17
Fe_2O_3	0·96	3·02	5·43	0·30	—	—	4·43
FeO	1·40	0·58	—	—	6·31	33·00	—
MgO	0·87	0·84	2·82	0·86	5·18	0·70	2·31
CaO	0·38	0·27	abs.	0·60	0·57	2·80	0·43
Na_2O	2·27	2·30	1·52	0·37	1·14		3·61
K_2O	2·17	1·68	3·48	2·19	0·10		3·98
H_2O+	0·20	0·10	3·70	1·55	3·05		4·30
H_2O-	0·27	0·16			0·06		
CO_2	0·29	0·08		—	0·10		
TiO_2	—	—		tr.	2·09		
P_2O_5	—	—		—	2·08		
MnO	—	—		—	abs.		
Other Constituents	SnO_2=0·09 FeS_2=8·04 F=0·08 Cu=tr.	SnO_2=0·10 FeS_2=10·90 F=0·12 Cu=0·21	SO_3=0·72	FeS_2=26·73	FeS_2=0·26 B_2O_3=5·93	S=0·40 Cu=0·70	SnO_2=0·95
Less O= Cl, F, S	99·94	99·98	—				
	0·03	0·05					
	99·91	99·93	100·76	100·72	100·26	99·40	100·18

TABLE H[3] — WEATHERED PORPHYRIES, ETC.

NOTE—Similar Rocks containing less alkalies are included in Part II with Clays.

	1	2	3	4	5	6	7	8	9
Rock Name	Felsite Porphyry	Quartz Porphyry (Clay)	Mica-Quartz Porphyry	(? Clay)	Lava Flow	Quartz Porphyry (Clay)	Albite Porphyry	Quartz Porphyry (Clay)	Porphyry
Locality	Yilgarn, W.A.	Mt. Bullen-garook, W. of Gisborne, Vic.	Golconda District, Tas.	Chow Chow Dyke, Mary-borough, Vic.	Bangemall, W.A.	Stawell, Vic.	Kalgoorlie, W.A.	Stawell, Vic.	Balfour Downs, W.A.
Refer-ence	**37**, 156	**593**, 33	**416**, 12	**593**, 38	**519**, 161; **447**, 38; **554**, 817	**593**, 38	**445**, 73; **496**, 33	**593**, 38	**563**
Analyst	D. G. Murray	F. F. Field	Not Stated	W. L. Robertson	D. G. Murray	W. L. Robertson	E. S. Simpson	J. C. Watson	H. Bowley
Remarks		(Dyke)		(Dyke)		(Dyke)	(Somewhat weathered)	(Dyke)	
Sp. Gr.	—	—	—		2·60		2·60	—	2·66
SiO_2	81·00	71·90	69·60	69·13	68·60	68·58	68·12	66·98	60·89
Al_2O_3	15·09	17·72	20·56	22·06	10·18	20·34	15·97	22·30	15·95
Fe_2O_3	0·25	0·57	6·32	1·00	1·34	0·46	1·09	0·72	2·46
FeO	0·20	—	—	0·13	3·65	0·22	2·27	0·19	1·24
MgO	0·10	abs.	2·56	0·23	4·46	0·16	0·92	0·20	2·35
CaO	abs.	abs.	0·60	tr.	1·59	tr.	0·71	abs.	2·01
Na_2O	0·04	0·87		0·09	0·79	0·69	6·03	0·07	3·86
K_2O	0·14	1·73		1·63	2·76	1·22	1·29	1·46	6·46
H_2O+	2·92	2·53		5·07	2·38	1·73	0·29	0·72	1·16
H_2O-	0·20	4·70		1·20	0·24	6·37	0·17	6·99	0·21
CO_2	abs.	—		—	1·32	—	1·13	—	2·60
TiO_2	0·61	0·10	0·80	0·42	1·56	0·20	0·62	0·15	0·14
P_2O_5	0·07	—		—	0·15	abs.	—	—	0·26
MnO	abs.	—		—	0·13	—	tr.	—	0·19
Other Con-stituents	SO_3=tr.	SO_3=0·30 S=0·20		Cl=0·06	FeS_2=0·06	SO_3=tr. Cl=0·22			FeS_2=abs.
		100·62		101·02		100·19			
Less O= Cl, F, S		0·08		0·01		0·05			
	100·62	100·54	100·44	101·01	99·21	100·14	98·61	99·78	99·78

TABLE H[4] — PARTIAL AND INCOMPLETE ANALYSES OF RHYOLITIC ROCKS

	1	2	3	4	5	6	7
Rock Name	Porphyry	Porphyry	Porphyry	Keratophyre	Quartz Porphyry	"Felsite"	Sericite-albite Porphyry
Locality	Port Stephens, N.S.W.	Port Stephens, N.S.W.	Mt. Morgan, Qld.	Ravens-thorpe, W.A.	Mt. Bischoff, Tas.	Paddy's Gully, Qld.	Boulder, Kalgoorlie, W.A.
Refer-ence	**370**, 135	**370**, 135	**337**, 442	**447**, 18	**414**, 91	**103**, 307	**445**, 73; **496**, 33
Analyst	W. A. Greig	W. A. Greig	Not Stated	E. S. Simpson	A. D. Mackay	R. Dain-tree	C. C. Williams
Remarks				(Dyke)			
Sp. Gr.	—	—	—	2·68		—	2·70
SiO_2	73·90	73·64	71·5	71·01	71·00	70·800	70·60
Al_2O_3			19·0		14·51	19·186	
Fe_2O_3			3·0		2·13	1·164	
FeO							1·48
MgO			1·0		0·65	0·827	
CaO			2·0			—	
Na_2O	3·50	3·42		8·50	0·89	1·208	2·31
K_2O	4·04	4·59		0·52	2·89	1·826	3·33
H_2O+						3·250	
H_2O-						1·425	
CO_2							4·44
TiO_2							
P_2O_5							
MnO							
Other Con-stituents					FeS_2 = 6·25		
					98·32	99·686	

TABLE H[5] — OLD ANALYSES OF RHYOLITIC ROCKS

	1		2	3	4	5
Rock Name	Felsite		Quartz Porphyry	Felsite	Quartz Porphyry	"Lava"
Locality	Mt. Wheeler, Qld.		Gurraganga-more, N.S.W.	Two-mile Flat, Cudge-gong Ra., N.S.W.	Lumley Creek, N.S.W.	New Ireland T.P. & N.G.
Refer-ence	**103**, 304		**282**, 44	**282**, 44	**282**, 43	**594**, 49
Analyst	A. M. Thomson		A. Liversidge	A. Liversidge	A. Liversidge	A. Liversidge
Remarks	Undecom-posed in HCl =96·75%	Decomposed in HCl = 3·25%	(Slightly weathered)			
Sp. Gr.	2·564		2·58		2·67	2·694
SiO_2	76·28	36·54	75·195	72·120	67·714	67·664
Al_2O_3	12·64	23·97	17·603	9·750	18·530	15·402
Fe_2O_3	0·92	11·59		4·105	4·488	1·963
FeO	0·85	abs.		3·224	tr.	3·491
MgO	tr.	tr.	tr.	tr.	tr.	tr.
CaO	0·33	1·57	1·313	2·989	2·857	2·963
Na_2O	4·59	2·00	4·016	3·420	3·230	6·010
K_2O	3·30	1·14	2·343	2·756	2·920	1·220
H_2O+	0·16	19·98				
H_2O-				0·104		0·402
CO_2						tr.
TiO_2						
P_2O_5						
MnO				1·833	tr.	0·762
Other Con-stituents						
	99·07	96·79	100·470	100·301	[99·739]	99·877

TABLE I — ANDESITIC ROCKS — $SiO_2 < 65\%$

a. $CaO < 3\%$

	$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$								$K_2O/Na_2O <$ 0·75
	1	2	3	4	5	6	7	8	9
Rock Name	Quartz Porphyry	Keratophyre	Trachyandesite	Feldspar Porphyry	Trachyandesite	Hornblende Trachyandesite	Trachyandesite	Trachyandesite	"Quartz Porphyry"
Locality	Nanima, near Yass, N.S.W.	Wuuluman, near Wellington, N.S.W.	Wee Jasper Rd., E. of Taemas, N.S.W.	Murrumbidgee R., near Yass, N.S.W.	Par. of Bowning, Burrinjuck, N.S.W.	Wellington Area, N.S.W.	Timor Ledges, Warrumbungle Mts., N.S.W.	Forked Mt., Warrumbungle Mts., N.S.W.	Yerranderie, N.S.W.
Reference	**444**, 74	**21**, 186	**590**	**189**, 31; **554**, 275	**590**	**94**, 192	**233**, 616; **554**, 445	**233**, 616; **554**, 445	**369**, 104
Analyst	K. Sherrard	E. M. Basnett	H. Yates	H. P. White	H. Yates	M. J. Colditz	H. I. Jensen	H. I. Jensen	W. A. Greig
Remarks									
Sp. Gr.	—	2·69	2·69	2·629	2·69	2·74	—	—	2·737
SiO_2	64·29	64·27	64·02	63·94	63·82	62·55	58·95	58·32	64·64
Al_2O_3	17·83	17·33	19·12	16·77	19·09	17·46	17·04	18·04	14·84
Fe_2O_3	1·55	2·65	0·19	1·80	0·94	2·37	2·80	3·27	0·60
FeO	3·33	2·04	2·45	1·98	2·09	2·03	4·66	4·28	3·15
MgO	2·25	0·85	1·69	1·61	1·36	1·43	0·57	0·58	1·90
CaO	1·09	0·91	1·14	0·92	0·92	2·55	2·49	2·52	2·50
Na_2O	4·20	5·52	4·78	5·34	5·26	4·99	4·51	4·52	4·00
K_2O	3·74	5·01	4·16	4·97	4·06	4·78	6·39	6·21	2·47
H_2O+	2·06	0·34	1·67	1·79	1·26	0·85	1·28	0·95	0·70
H_2O-	0·04	0·09	0·17	0·41	0·03	0·08	0·59	0·35	0·20
CO_2	abs.	—	—	0·02	—	—	0·06	—	4·62
TiO_2	0·15	0·49	0·81	0·15	0·81	0·52	0·76	1·25	0·45
P_2O_5	0·13	0·16	0·16	0·27	0·12	tr.	abs.	pnd.	0·11
MnO	—	0·09	—	0·07	—	0·44	0·05	0·06	0·07
Other Constituents				BaO = 0·09			ZiO_2 = 0·17 Cl = tr. SO_3 = tr. NiO = 0·01	NiO = tr.	Cl = tr. CuO = tr. SiO = tr. V_2O_3 = tr.
	100·66	99·75	100·36	100·13	99·76	100·05	100·33	100·35	100·25

TABLE I — ANDESITIC ROCKS — $SiO_2 < 65\%$

a. $CaO < 3\%$

$K_2O/Na_2O < 0{\cdot}75$

	10	11	12	13	14
Rock Name	Dacite	Keratophyre	Porphyrite	Keratophyre	Magnetite Keratophyre
Locality	Mt. Macedon, Vic.	Binduli, W.A.	Ararat, Vic.	Hanging Rock, Nundle, N.S.W.	Nundle, N.S.W.
Reference	**183**, 201	**200**, 63; **447**, 44	**548**	**30**, 139	**30**, 139
Analyst	R. J. Lewis	A. R. Robertson	P. G. W. Bayly	W. N. Benson	W. N. Benson
Remarks					
Sp. Gr.	—	2·52	—	—	—
SiO_2	64·38	64·32	62·69	60·39	56·95
Al_2O_3	13·62	18·46	14·83	18·40	17·87
Fe_2O_3	9·17	5·24	2·57	1·03	4·49
FeO	—	0·19	7·93	3·50	6·00
MgO	2·18	0·05	1·76	1·27	0·93
CaO	1·99	0·09	2·34	1·53	2·30
Na_2O	6·28	9·01	6·52	8·79	8·80
K_2O	3·51	0·32	0·63	0·46	0·38
H_2O+		1·82	0·73	1·37	0·71
H_2O-		0·27	—	0·20	0·38
CO_2		abs.	—	1·70	0·91
TiO_2		—	—	0·80	0·89
P_2O_5		—	tr.	0·12	tr.
MnO		—	—	0·08	0·08
Other Constituents			Cl = tr.	$FeS_2 = 0{\cdot}02$	$FeS_2 = 0{\cdot}04$
	101·13	99·77	100·00	99·66	100·73

b. CaO=3%–4%

	K_2O/Na_2O>1·25					K_2O/Na_2O=1·25–0·75			
	1	2	3	4	5	6	7	8	9
Rock Name	"Quartz Porphyry"	Dacite	Feldspar-hornblende Porphyrite (Dacite)	Trachy-andesite	"Quartz-Felsite"	Dacite	Andesite	Quartz Dacite	Trachyandes-ite (black glass)
Locality	Canberra Rd., 25 miles from Queanbeyan, A.C.T.	Par. of Talmo, Burrinjuck, N.S.W.	Warburton Area, Vic.	50 miles S.S.W. of Einasleigh, Qld.	Yerranderie, N.S.W.	Hesket, Vic.	Martins Creek, N.S.W.	Lilydale, Vic.	Near Taradale, Vic.
Reference	**361**, 168	**590**	**115**, 177	**95**	**352**, 198; **554**, 797	**500**, 265	**366**, 97; **388**, 125	**134**, 121	**295**, 128
Analyst		H. Yates	A. B. Edwards	A. McClure		A. G. Hall	W. G. Stone	F. F. Field	F. F. Field
Remarks				*Loss on ignition					
Sp. Gr.	2·735	2·72	2·73	—	2·701	2·708	—	2·70	2·57
SiO_2	64·64	64·63	64·03	63·59	63·54	64·48	64·20	64·06	63·67
Al_2O_3	14·49	14·06	16·52	16·27	15·07	15·07	16·88	17·86	15·83
Fe_2O_3	2·30	0·32	1·70	3·39	1·90	0·60	1·90	1·78	1·39
FeO	3·69	4·37	3·80	1·19	3·51	5·19	2·52	2·90	4·06
MgO	2·93	2·71	2·37	0·47	2·82	2·17	0·66	1·49	2·15
CaO	3·42	3·55	3·80	3·36	3·10	3·31	3·14	3·01	3·88
Na_2O	1·37	2·28	2·50	2·54	2·49	2·55	4·41	2·44	3·57
K_2O	2·76	3·68	3·44	4·20	3·15	3·04	3·52	3·01	3·69
H_2O+	2·66	3·22	0·43	1·88*	2·40	2·01	1·79	1·63	0·02
H_2O-	0·52	0·23	0·16	0·22	0·22	0·13	0·31	0·20	0·15
CO_2	—	—	nd.	1·84	1·32	tr.	0·03	0·18	abs.
TiO_2	0·65	0·60	0·78	0·64	0·55	0·90	0·65	0·68	1·27
P_2O_5	0·11	0·12	0·29	0·22	0·13	0·22	0·13	0·16	0·02
MnO	0·12	—	abs.	0·19	0·08	0·11	—	tr.	0·43
Other Constituents	(NiCo)O=0·01 SO_3=0·08 SrO=tr. V_2O_3=tr. Cr_2O_3=tr. BaO=0·06		ZrO_2=0·01 Cl=0·14		BaO=0·11 SrO=tr. V_2O_3=tr. Li_2O=p.	NiO=0·01 CoO=0·01		FeS_2=0·11	(NiCo)O=0·01
			99·97						
Less O=Cl, F, S			0·07						
	99·81	99·77	99·90	100·00	100·39	[99·80]	100·14	[99·59]	100·14

TABLE I — ANDESITIC ROCKS — $SiO_2 < 65\%$

b. $CaO = 3\% - 4\%$

	$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$		$K_2O/Na_2O < 0{\cdot}75$			
	10	11	12	13	14	15
Rock Name	Dacite	Dacite	Andesite (Lithoidal variety)	Feldspathic Dacite	Porphyrite	Andesite
Locality	Mt. Macedon, Vic.	Glass House Mts., Qld.	Martins Creek, N.S.W.	The Basin, Vic.	Berserker Ra., Rock-hampton, Qld.	Mt. Alford, Qld.
Reference	**114**, 65; **468**, 17; **537**, 61; **554**, 369	**232**, 169; **554**, 399	**388**, 125	**134**, 121	**103**, 303	**490**
Analyst	A. G. Hall	H. I. Jensen	G. D. Osborne	G. C. Carlos	Not Stated	W. H. Herdsman
Remarks						
Sp. Gr.	2·781	2·61		—	2·712	—
SiO_2	62·54	62·15	64·88	64·75	61·433	61·05
Al_2O_3	16·66	16·73	16·18	15·47	20·293	14·18
Fe_2O_3	1·04	2·90	1·52	1·08	1·220	2·81
FeO	5·54	3·22	2·43	4·75	3·260	7·22
MgO	2·68	2·70	1·21	2·36	1·566	0·49
CaO	3·92	3·98	3·00	3·94	3·233	3·89
Na_2O	2·66	3·58	5·41	3·01	6·173	4·37
K_2O	2·47	2·81	2·79	2·10	1·686	2·91
H_2O+	0·46	1·06	1·63	1·11	0·725	0·77
H_2O-	0·17	0·14	0·50	0·41	0·300	0·59
CO_2	abs.	0·04	tr.	abs.	—	0·63
TiO_2	1·20	0·83	0·89	0·80	—	0·74
P_2O_5	0·20	pnd.	tr.	0·26	—	0·24
MnO	tr.	0·12	0·05	0·05	—	0·14
Other Constituents	Li_2O = tr. Cl = tr.	ZrO_2 = tr. NiO = 0·08 $3(FeS_2)$ = 0·11		SO_3 = 0·03		
	99·54	100·45	100·49	100·12	[99·889]	100·03

TABLE I — ANDESITIC ROCKS — $SiO_2 < 65\%$

c. CaO = 4% – 5%

	$K_2O/Na_2O > 1 \cdot 25$						$K_2O/N_2O = 1 \cdot 25$-$0 \cdot 75$		
	1	2	3	4	5	6	7	8	9
Rock Name	Dacite	Pyroxene Andesite	Trachyandesite (Black glass)	"Felsite"	Hypersthene Dacite	Quartz Andesite	Andesite	Biotite-hypersthene Dacite	Hypersthene Dacite
Locality	Manus Island, T.P. & N.G.	Par. of Talmo, Burrinjuck, N.S.W.	S.W. of Lauriston, Vic.	Near Jenolan Caves, N.S.W.	Lilydale, Vic.	Nowa Nowa, Vic.	Port Stephens, N.S.W.	Near Sassafras, Vic.	Near Upwey, Vic.
Reference	**392**, 195	**590**	**120**, 260	**358**, 196; **504**, 383; **554**, 825	**134**, 127	**93**, 106	**370**, 135; **502**, 185	**134**, 127	**114**, 65; **420**, 533 **554**, 369
Analyst	Avery & Anderson	H. Yates	A. B. Edwards	W. G. Stone	F. F. Field	G. W. Cochrane	W. A. Greig	A. B. Edwards	H. C. Richards
Remarks									
Sp. Gr.	—	2·79	—	—	2·77	—	2·694	—	—
SiO_2	67·31	64·90	64·75	63·22	62·73	60·33	63·92	63·45	63·27
Al_2O_3	14·22	13·82	15·42	13·57	17·41	18·48	15·37	14·99	16·50
Fe_2O_3	0·90	1·54	1·03	1·50	0·45	1·20	2·90	1·21	0·68
FeO	4·68	3·47	4·59	2·07	5·17	3·83	2·34	5·18	5·10
MgO	2·55	2·83	1·89	1·80	2·94	1·76	2·60	2·81	2·48
CaO	4·30	4·25	4·01	4·56	4·25	4·74	4·28	4·40	4·18
Na_2O	2·70	2·42	3·32	0·98	2·03	2·39	3·39	3·18	2·36
K_2O	2·80	3·64	4·26	3·82	3·39	3·98	3·02	2·88	2·68
H_2O+	abs.	2·07	0·14	2·10	0·66	1·39	1·65	0·41	0·52
H_2O-	abs.	0·12	0·09	0·26	0·16	0·19	0·41	0·08	0·09
CO_2	—	—	abs.	6·01	abs.	—	—	abs.	abs.
TiO_2	0·53	0·65	0·37	0·50	0·93	0·48	0·05	1·12	1·30
P_2O_5	—	0·12	0·03	—	0·23	0·18	0·16	0·15	0·15
MnO	0·28	—	0·08	0·09	tr.	0·12	0·07	0·02	0·03
Other Constituents			Cl = 0·01 S = 0·04		$FeS_2 = 0 \cdot 30$		Cl = 0·07 BaO = 0·04		$FeS_2 = 0 \cdot 16$
			100·03				100·27		
Less O = Cl, F, S			0·01				0·01		
	100·27	99·83	100·02	100·48	[100·65]	[99·07]	100·26	99·88	99·50

TABLE I — ANDESITIC ROCKS — $SiO_2 < 65\%$

c. CaO = 4% – 5%

$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$

	10	11	12	13	14	15	16	17	18
Rock Name	Dacite	Dacite	Hypersthene Dacite	Pyroxene Andesite	Hypersthene Trachyandesite	Quartz Porphyrite	Augite Porphyry	Hypersthene Trachyandesite	Andesite
Locality	Mt. Macedon, Vic.	Mt. Macedon, Vic.	Mt. Juliet, near Black Spur, Vic.	Hudsons Peak, near Maitland, N.S.W.	S.W. of Lauriston, Vic.	Jenolan Caves, N.S.W.	Aberfeldy District, Vic.	Spring Hill, Vic.	Eumundi, Qld.
Reference	**468**, 17; **537**, 61; **554**, 401	**468**, 17; **537**, 61; **554**, 401	**114**, 65	**366**, 97	**120**, 260	**357**, 217; **504**, 372; **554**, 817	**294**, 44	**120**, 260	**232**, 169; **554**, 847
Analyst	A. G. Hall	A. G. Hall	M. K. Evans	H. P. White	A. B. Edwards	W. G. Stone	F. F. Field	A. B. Edwards	H. I. Jensen
Remarks							(Dyke)		
Sp. Gr.	2·773	2·789	2·779	—	—	2·796	—	—	2·625
SiO_2	62·56	62·04	61·43	61·10	61·03	60·95	60·09	59·05	54·24
Al_2O_3	16·60	16·50	15·95	16·20	14·15	15·04	15·36	14·58	15·41
Fe_2O_3	1·02	0·66	1·21	2·00	4·21	2·60	2·00	3·19	2·34
FeO	5·98	6·67	5·64	3·78	2·94	3·69	4·95	4·14	5·92
MgO	2·70	3·06	2·83	3·55	3·39	2·82	3·35	2·81	3·31
CaO	4·30	4·56	4·98	4·90	4·38	4·30	4·80	4·80	4·84
Na_2O	2·98	2·27	2·96	3·42	3·82	3·22	2·66	3·85	3·34
K_2O	2·57	2·14	2·26	2·83	3·18	3·00	2·53	3·18	2·62
H_2O+	0·68	0·54	0·81	1·03	0·37	2·08	2·78	1·00	1·67
H_2O-	0·18	0·16	0·12	0·53	0·52	0·17	0·86	1·04	0·72
CO_2	abs.	abs.	—	abs.	0·23	0·80	tr.	abs.	4·44
TiO_2	1·10	1·16	1·13	0·55	1·25	0·65	0·81	1·25	1·57
P_2O_5	0·17	0·19	0·53	0·21	0·29	0·26	tr.	0·91	tr.
MnO	tr.	tr.	—	tr.	0·09	0·08	tr.	0·07	tr.
Other Constituents	Cl = tr. Li_2O = tr.			Cl = tr. SrO = tr. BaO = tr. V_2O_3 = tr.	BaO = 0·04 Cl = 0·02	Cl = tr. SrO = p. BaO = 0·13 V_2O_3 = 0·02 SO_3 = 0·02 CuO = tr.		S = 0·04	Cl = 0·01 $S(FeS_2)$ = 0·24 NiO = 0·05 ZrO_2 = pnd.
	[100·84]	99·95	99·85	100·10	99·91	99·83	100·19	99·91	[100·72]

TABLE I — ANDESITIC ROCKS — $SiO_2 < 65\%$

c. CaO = 4% – 5%

$K_2O/Na_2O < 0{\cdot}75$

	19	20	21	22	23	24	25	26
Rock Name	Biotite-hypersthene Dacite	Quartz Porphyrite	Albite Porphyry	Dacite	Keratophyre	Augite-hornblende Andesite	Akerite	Porphyrite
Locality	Junction of Ferny Ck. & Sherbrook Forest Rds., Vic.	Jenolan Caves, N.S.W.	Boulder, Kalgoorlie, W.A.	Dandenong, Vic.	Lake Margaret Tram, near Queenstown, Tas.	Wellington, N.S.W.	Nandewar Mts., N.S.W.	Mt. Dryden, Grampian Mts., Vic.
Reference	**134**, 127	**357**, 217; **504**, 378; **554**, 817	**496**, 33	**548**	**474**, 49	**94**, 192	**235**, 903; **554**, 463	**548**
Analyst	G. C. Carlos	W. G. Stone	J. N. A. Grace	Not Stated	Tas. Dept. Mines	M. J. Colditz	H. I. Jensen	P. G. W. Bayly
Remarks								
Sp. Gr.	—	2·753	2·73	—	—	2·77	—	—
SiO_2	64·50	62·85	61·91	60·85	56·80	56·65	56·63	56·36
Al_2O_3	14·94	13·58	13·66	17·51	17·11	20·37	17·71	16·96
Fe_2O_3	1·15	1·95	0·81	4·64	2·12	1·24	3·61	4·50
FeO	5·09	5·45	2·69	4·00	5·26	3·28	4·64	6·71
MgO	2·78	1·92	1·85	1·69	3·61	3·20	1·47	4·97
CaO	4·01	4·10	4·11	4·31	4·20	4·31	4·06	4·10
Na_2O	3·29	3·32	5·03	2·94	4·47	5·65	5·11	3·11
K_2O	2·46	0·88	1·82	0·81	2·75	2·75	3·65	0·59
H_2O+	0·24	2·50	0·58	0·09	2·58	1·43	0·70	1·99
H_2O-	0·29	0·20	0·02	0·20	0·04	0·11	0·49	—
CO_2	abs.	1·85	6·14	abs.	0·44	—	0·01	—
TiO_2	0·99	0·90	0·47	pnd.	0·35	0·67	2·00	—
P_2O_5	0·26	0·18	0·16	0·29	0·35	0·29	pnd.	tr.
MnO	0·03	0·14	0·02	—	0·28	0·08	0·03	—
Other Constituents	SO_3 = 0·01	BaO = 0·10	FeS_2 = 0·09 V_2O_3 = tr.	SO_3 = abs.			ZrO_2 = 0·06	Cl = tr.
	100·04	99·92	[99·36]	97·33	[100·36]	100·03	100·17	99·29

TABLE I — ANDESITIC ROCKS — $SiO_2 < 65\%$

d. CaO = 5% – 6%

	$K_2O/Na_2O > 1{\cdot}25$				$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$				$K_2O/Na_2O < 0{\cdot}75$
	1	2	3	4	5	6	7	8	9
Rock Name	Dacite	Dacite	Augite Andesite	Augite Andesite	Augite Andesite	Andesite	Pyroxene Andesite	Andesite	Hornblende Andesite
Locality	Yerranderie, N.S.W.	Dandenong, Vic.	Par. of Childowla, Burrinjuck, N.S.W.	N.E. of Barren Jack Mountain, N.S.W.	50 miles S. of Einasleigh, Qld.	Tweed Heads, N.S.W./Qld.	Par. of Talmo, Burrinjuck, N.S.W.	S. of Omeo, Vic.	Par. of Childowla, Burrinjuck, N.S.W.
Reference	366, 97	**548**	**590**	**590**	**95**	**408**	**590**	**544**, 77	**590**
Analyst	W. G. Stone	Not Stated	H. Yates	H. Yates	A. McClure	N. H. Christensen	H. Yates	A. G. Hall	H. Yates
Remarks					*Loss on ignition			(Dyke)	
Sp. Gr.	2·777	—	2·84	2·88	—	2·57	2·78	2·79	2·71
SiO_2	64·00	63·86	60·97	58·79	61·97	61·24	61·12	57·14	64·69
Al_2O_3	14·52	15·44	14·39	19·20	17·03	14·33	13·14	14·71	14·76
Fe_2O_3	1·85	9·20	0·30	1·88	2·64	1·81	0·85	3·26	3·46
FeO	4·18		5·07	3·17	2·52	6·09	5·27	4·24	2·15
MgO	2·64	2·48	4·43	2·22	1·80	3·45	4·85	4·69	1·78
CaO	5·10	5·04	5·43	5·67	5·16	5·07	5·18	5·73	5·02
Na_2O	2·59	0·24	2·08	2·34	2·98	3·75	3·10	2·48	3·62
K_2O	2·94	2·75	3·68	3·66	2·98	3·13	2·34	2·27	2·54
H_2O+	0·85	0·12	2·61	2·23	1·03*	0·28	3·19	2·48	1·02
H_2O-	0·13	0·19	0·04	0·09	0·10	0·17	0·19	0·46	0·08
CO_2	0·24	—	—	—	—	—	—	0·84	—
TiO_2	0·80	—	0·64	0·76	0·81	0·52	0·63	0·79	0·86
P_2O_5	0·15	tr.	0·19	0·22	0·14	0·51	0·17	0·15	0·15
MnO	0·13	—	—	—	0·19	tr.	—	0·37	—
Other Constituents	V_2O_3 = tr. Cr_2O_3 = tr. BaO = tr. (NiCo)O = 0·04 Cr_2O_3 = tr. SrO = tr.	S = 0·11						Cl = 0·04 Cr_2O_3 = 0·04 (NiCo)O = 0·04 S = 0·15	
		99·43						99·88	
Less O = Cl, F, S		0·05						0·07	
	100·16	99·38	99·83	100·23	99·35	100·35	100·03	99·81	100·13

d. CaO = 5% – 6%

K_2O/Na_2O < 0·75

	10	11	12	13	14	15	16	17	18
Rock	Porphyrite	Andesite	Andesite Pitchstone	Pumiceous Bomb	Andesite	Andesite	Porphyrite	Quartz Porphyrite	Hornblende Andesite
Locality	N. of Dandenong, Vic.	Mt. Lamington, T.P. & N.G.	Currabubula, N.S.W.	Mt. Lamington, T.P. & N.G.	Mt. Lamington, T.P. & N.G.	Mt. Lamington, T.P. & N.G.	Point Arkwright, Qld.	Mt. Stavely, Heathcote, Vic.	Mt. Lamington, T.P. & N.G.
Reference	**183**, 201	**509**, 82	**52**, 417; **544**, 399	**509**, 82	**509**, 82	**509**, 82	**232**, 169	**548**	**509**, 82
Analyst	H. C. Jenkins	A. W. Dye & Co.	W. N. Benson	A. A. Debnam	A. W. Dye & Co.	A. W. Dye & Co.	H. I. Jensen	Not Stated	A. W. Dye & Co.
Remarks		(Eruption Jan. 1953)		(Eruption 21|1|51)	(Eruption July, 1951)	(Eruption Feb., 1952)	*Chiefly from Sea Water		
Sp. Gr.	—	—	—	—	—	—	2·86	—	—
SiO_2	64·00	60·32	60·26	59·82	59·82	59·76	59·27	58·64	58·57
Al_2O_3	19·11	17·51	16·46	18·14	17·27	16·83	17·80	15·68	16·29
Fe_2O_3	2·22	2·72	1·15	2·97	4·64	2·56	2·46	2·51	2·39
FeO	2·80	2·02	4·87	2·95	0·50	2·30	3·39	6·04	1·87
MgO	2·17	3·24	3·09	2·74	3·37	3·43	2·39	3·54	3·01
CaO	5·13	5·70	5·25	5·85	5·84	5·89	5·39	5·37	5·21
Na_2O	1·12	4·33	4·23	4·58	4·22	4·41	4·87	3·18	3·58
K_2O	0·14	2·30	0·98	1·98	2·63	2·43	2·51	0·65	1·65
H_2O+	1·01	tr.	2·22	0·12	tr.	tr.	1·18	2·20	1·40
H_2O-	—	0·21	0·22	0·31	0·04	abs.	0·31	0·86	1·09
CO_2	1·71	abs.	abs.	nd.	abs.	nd.	0·69	—	abs.
TiO_2	—	0·87	0·84	0·44	0·79	1·30	0·62	—	1·01
P_2O_5	—	0·76	0·29	0·31	0·79	0·64	0·44	0·12	1·02
MnO	—	0·11	0·08	0·09	0·11	0·09	0·10	—	0·09
Other Constituents	FeS_2 = 1·58	SO_3 = 0·17 Cl = 0·15	S = 0·03		SO_3 = 0·16 Cl = 0·10	SO_3 = 0·11 Cl = 0·15	ZrO_2 = 0·05 ($SFeS_2$) = 0·33 NiO = 0·01 Cl = 0·07*	SO_3 = abs. Cl = tr.	SO_3 = 2·88 Cl = 0·09
		100·41	99·97		100·28	99·90	101·88		100·15
Less O = Cl, F, S		0·03	0·01		0·02	0·03	0·15		0·02
	[100·99]	100·38	99·96	100·30	100·26	99·87	101·73	98·79	100·13

TABLE I — ANDESITIC ROCKS — $SiO_2 < 65\%$

d. CaO = 5% – 6%

$K_2O/Na_2O < 0{\cdot}75$

	19	20	21	22	23	24	25
Rock Name	Andesite Ash	Andesite	Hornblende Porphyrite	Hypersthene-augite Andesite	Augite Andesite	Andesite	Porphyrite
Locality	Mt. Lamington, T.P. & N.G.	Tambourine Plateau, Qld.	Charters Towers, Qld.	40 miles N. of Chillagoe, Qld.	Esk, Qld.	Silverwood, Qld.	Good Dog Mt., N.S.W.
Reference	**509**, 82	**408**; **421**, 164 **554**, 349	**418**, 89	**332**	**408**; **421**, 164 **554**, 513	**429**, 118; **430**, 95	**190**, 330; **75**, 132
Analyst	A. H. Debnam	G. R. Patten	P. Mansini	S. Baker	G. R. Patten	G. R. Patten	H. P. White
Remarks	(Eruption 21/1/51)			*Loss on ignition			(Collective Sample from Series of Dykes)
Sp. Gr.	—	2·64	—	—	2·75	2·753	2·669
SiO_2	— 57·92	57·62	57·28	57·06	56·52	54·25	52·16
Al_2O_3	19·48	13·63	17·58	17·12	17·55	19·46	17·61
Fe_2O_3	2·74	5·41	4·73	2·27	3·14	3·16	2·55
FeO	2·71	5·15	0·94	4·51	4·86	4·27	4·75
MgO	3·09	— 2·86	1·26	3·62	2·51	2·75	2·88
CaO	5·65	5·57	5·81	5·52	5·50	5·81	5·85
Na_2O	4·28	3·38	5·45	5·22	4·82	3·56	4·25
K_2O	2·03	3·07	2·57	1·26	1·90	0·62	2·69
H_2O+	0·77	1·54	2·68	2·19*	2·45	2·19	2·75
H_2O-	0·36	abs.	0·76	0·02	0·25	0·22	0·35
CO_2	nd.	—	—	—	—	1·97	2·89
TiO_2	0·39	1·75	0·57	0·58	tr.	1·82	0·76
P_2O_5	0·33	0·40	0·33	0·07	0·22	0·21	0·39
MnO	0·08	0·26	0·37	0·24	0·13	0·10	0·29
Other Constituents			FeS_2 = 0·22				V_2O_3 = tr. SO_3 = 0·22 $S(FeS_2)$ = 0·15 Cl = 0·04 BaO = 0·08 SrO = tr.
							100·66
Less O = Cl, F, S							0·07
	[99·83]	100·64	100·55	99·68	99·85	100·39	100·59

TABLE I — ANDESITIC ROCKS — SiO_2<65%

e. CaO=6%–7%

	K_2O/Na_2O=1·25–0·75	K_2O/Na_2O<0·75							
	1	2	3	4	5	6	7	8	9
Rock Name	Porphyrite	Andesite Glass	"Quartz Dolerite"	Hornblende Andesite	Andesite	Andesite	Andesite	Porphyrite	Andesite
Locality	Mt. Edgar, W.A.	Port Stephens N.S.W.	Cape Vogel, T.P. & N.G.	Crown Hill, near Queens-town, Tas.	Mt. Lamington, T.P. & N.G.	Mt. Lamington, T.P. & N.G.	Mt. Lamington, T.P. & N.G.	Moyston, Vic.	Tumleo, New Guinea, T.P. & N.G.
Refer-ence	**303**, 110; **447**, 22	**370**, 135; **502**, 185	**95**	**474**, 49	**509**, 82	**509**, 82	**509**, 82	**548**	**17**, 33; **432**, 445; **554**, 399
Analyst	C. C. Williams	W. A. Greig	A. McClure	Tas. Dept. Mines	A. W. Dye & Co.	A. W. Dye & Co.	A. W. Dye & Co.	P. G. W. Bayly	E. Ludwig
Remarks	(Dyke)		*Loss on ignition		(Eruption Jan., 1953)	(Eruption July, 1951)			
Sp. Gr.	2·78	2·524	—	—	—	—	—	—	—
SiO_2	58·16	63·17	62·22	61·58	60·26	59·85	59·72	59·41	59·39
Al_2O_3	15·06	15·10	15·01	16·96	15·78	16·29	16·19	13·03	16·73
Fe_2O_3	4·37	2·20	5·94	1·75	2·62	2·83	3·67	6·13	5·03
FeO	2·66	2·16	1·69	2·85	2·36	2·05	1·58	5·10	1·60
MgO	4·62	2·35	1·79	3·67	3·54	3·58	3·42	2·19	3·48
CaO	6·06	6·38	6·89	6·28	6·04	6·21	6·04	6·54	6·98
Na_2O	3·83	2·20	1·97	3·94	4·02	4·19	4·23	5·06	3·18
K_2O	2·91	0·66	0·71	1·28	2·31	2·36	2·33	tr.	1·32
H_2O+	1·00	4·73	2·38*	1·30	0·12	tr.	tr.	2·11	1·52
H_2O-	0·20	0·47	1·36		0·03	0·06	0·07	—	—
CO_2	abs,	abs.	—	0·25	nd.	abs.	nd.	—	—
TiO_2	0·80	0·50	0·69	0·49	1·46	1·61	1·04	—	0·72
P_2O_5	—	0·14	0·10	—	0·86	0·99	1·54	tr.	tr.
MnO	0·25	0·10	0·08	—	0·11	0·14	0·10	—	0·10
Other Con-stituents	FeS_2=0·09	Cl=0·11 BaO=0·03			SO_3=0·18 Cl=0·10	SO_3=0·21 Cl=0·14	SO_3=0·21 Cl=0·13	SO_3=tr.	
		100·30			99·79	100·51	100·27		
Less O= Cl, F, S		0·02			0·02	0·03	0·03		
	100·01	100·28	100·83	100·35	99·77	100·48	100·24	99·57	100·05

TABLE I — ANDESITIC ROCKS — $SiO_2 < 65\%$

e. CaO = 6%–7%

$K_2O/Na_2O < 0{\cdot}75$

	10	11	12	13	14	15	16	17
Rock Name	Magnetite-lamprobolite Andesite	Andesitic Ash	Andesitic Pitchstone	Andesite	Hornblende Porphyrite	Andesitic Ash	Andesite	Andesite
Locality	Mt. Lamington, T.P. & N.G.	Mt. Lamington, T.P. & N.G.	Pokolbin, N.S.W.	Mt. Lamington, T.P. & N.G.	Mt. Monger, W.A.	Port Moresby, (from Mt. Lamington), T.P. & N.G.	Mt. Lamington, T.P. & N.G.	Silverwood, Qld.
Reference	**509**, 82	**509**, 82	**57**, 404	**509**, 82	**151**, 60; **554**, 837	**509**, 82	**509**, 82	**428**; **429**, 118 **430**, 95
Analyst	A. W. Dye & Co.	A. H. Debnam	W. R. Browne	A. W. Dye & Co.	Not Stated	C.S.R.I.O. D.I.C.	A. W. Dye & Co.	G. R. Patten
Remarks		(Basal layer 21/1/51)		(Eruption July, 1951)			(Eruption Jan., 1953)	
Sp. Gr.	—	—	—	—	—	—	—	2·747
SiO_2	59·03	58·88	58·79	58·45	57·56	57·38	56·92	55·49
Al_2O_3	16·52	18·20	17·51	16·24	11·89	17·91	16·05	18·63
Fe_2O_3	2·70	2·91	2·11	3·17	2·97	3·15	2·67	1·89
FeO	2·31	2·52	3·87	2·30	4·85	3·02	3·12	5·41
MgO	3·76	2·96	2·23	4·05	1·86	3·77	4·96	3·28
CaO	6·22	6·45	6·18	6·71	6·15	6·86	6·93	6·09
Na_2O	4·36	5·25	4·84	4·09	4·46	4·83	3·88	4·11
K_2O	2·58	1·98	0·68	2·39	1·46	1·86	2·21	0·11
H_2O+	0·09	0·28	2·61	tr.	1·54	—	0·11	2·16
H_2O-	0·06	0·34	0·71	0·01	0·23	—	0·07	0·17
CO_2	abs.	nd.	tr.	abs.	2·80	—	nd.	1·19
TiO_2	1·30	0·38	1·21	1·14	2·95	0·66	1·22	1·70
P_2O_5	1·12	0·33	—	0·81	0·71	—	1·11	0·14
MnO	0·11	0·11	—	0·12	0·30	—	0·12	0·09
Other Constituents	SO_3=0·12 Cl=0·22			SO_3=0·13 Cl=0·15	FeS_2=0·06 C=0·30		SO_3=0·14 Cl=0·11	
	100·50			99·76			99·62	
Less O = Cl, F, S	0·05			0·03			0·02	
	100·45	100·59	100·74	99·73	100·09	[99·44]	99·60	[100·46]

TABLE I — ANDESITIC ROCKS — $SiO_2 < 65\%$

f. $CaO = 7\% - 8\%$

	$K_2O/Na_2O >$ 1·25	$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$			$K_2O/Na_2O < 0{\cdot}75$			
	1	2	3	4	5	6	7	8
Rock Name	Biopyribole Andesite	Pyroxene Andesite	Augite Porphyrite	Augite Andesite	Hypersthene Andesite	Porphyrite	Magnetite-lamprobolite Andesite	Andesite
Locality	Goropu Mts., T.P. & N.G.	Mt. Lamington, T.P. & N.G.	Molong, N.S.W.	Near Molong, N.S.W.	Blair Duguid, N.S.W.	Boulder, Kalgoorlie, W.A.	Mt. Lamington, T.P. & N.G.	Springbrook, Qld.
Reference	**14**, 23 **17**, 33	**509**, 82	**94**, 192	**94**, 192	**58**, 377; **369**, 104	**447**, 26; **460**, 61; **496**, 30; **554**, 521	**509**, 82	**408**; **421**, 164; **554**, 625
Analyst	F. F. Field	A. W. Dye & Co.	R. Brewer	D. G. Moye	H. P. White	E. S. Simpson	A. W. Dye & Co.	G. R. Patten
Remarks	(lapilli)							
Sp. Gr.	—	—	2·92	2·80	2·74	2·80	—	2·79
SiO_2	55·83	55·19	50·85	50·71	59·20	59·04	56·38	54·10
Al_2O_3	16·23	15·69	16·07	17·92	15·98	15·74	15·64	13·42
Fe_2O_3	abs.	2·72	4·58	5·14	3·30	0·60	1·70	4·06
FeO	4·13	3·02	6·45	4·73	3·69	3·66	3·44	7·43
MgO	7·91	5·52	4·23	4·67	3·10	4·48	5·82	4·43
CaO	7·87	7·36	7·83	7·28	7·02	7·59	7·37	7·97
Na_2O	2·30	3·36	2·57	2·49	3·31	4·90	3·86	3·81
K_2O	3·80	3·35	2·03	2·16	1·26	1·47	2·12	1·15
H_2O+	1·01	tr.	2·41	1·96	1·13	0·39	tr.	0·88
H_2O-		0·82	0·16	0·62	0·73	0·04	0·62	abs.
CO_2	—	abs.	0·79	0·48	0·48	0·14	nd.	—
TiO_2	1·14	1·84	1·30	1·04	0·55	0·61	2·12	2·35
P_2O_5	nd.	1·44	0·33	0·35	0·17	0·68	1·08	0·46
MnO	0·11	0·14	0·09	0·09	0·30	0·18	0·09	0·30
Other Constituents		$SO_3 = 0{\cdot}13$ $Cl = 0{\cdot}09$			Cl = tr.	$ZrO_2 = 0{\cdot}03$ $FeS_2 = 0{\cdot}15$ $V_2O_3 = 0{\cdot}03$ $Cr_2O_3 = 0{\cdot}02$ $BaO = 0{\cdot}05$	$SO_3 = 0{\cdot}06$ $Cl = 0{\cdot}09$	
		100·67					100·39	
Less O = Cl, F, S		0·02					0·02	
	100·33	100·65	99·69	99·64	100·22	99·80	100·37	100·36

TABLE I — ANDESITIC ROCKS — $SiO_2 < 65\%$

g. $CaO > 8\%$

	$K_2O/Na_2O = 1{\cdot}25-0{\cdot}75$	$K_2O/Na_2O < 0{\cdot}75$							
	1	2	3	4	5	6	7	8	9
Rock Name	Andesitic Basalt	Andesite	Andesite	Hornblende Porphyrite	Andesite	Amygdaloidal Quartz-pyroxene Andesite	Olivine Andesite	Labradorite Porphyrite	Diorite Porphyrite
Locality	Taggerty, Vic.	Pokolbin, N.S.W.	Tumleo, New Guinea, T.P. & N.G.	Chatsworth, Vic.	Buchan, Vic.	Newcastle Ra., Einasleigh Area, Qld.	Aberfeldy District, Vic.	Tintaldra, Vic.	Charters Towers, Qld.
Reference	**198**, 162	**57**, 403	**17**, 33; **432**, 445; **554**, 269	**548**	**205**, 18	**95**	**294**, 44	**142**, 82	**418**, 88
Analyst	E. S. Hills	A. B. Walkom	E. Ludwig	A. G. Hall	A. W. Howitt	S. Baker	M. K. Evans	A. B. Edwards	P. Mansini
Remarks					*Not in Total	*Loss on ignition	(Pipe)		(Dyke)
Sp. Gr.	—	—	—	2·886	2·814	—	—	—	
SiO_2	56·42	55·20	54·02	53·70	53·39	49·72	47·89	46·90	40·56
Al_2O_3	13·92	20·14	14·82	14·76	15·23	16·75	16·16	16·54	21·61
Fe_2O_3	2·59	3·55	7·12	2·52	8·73	4·94	2·00	4·66	5·09
FeO	5·12	3·46	2·67	5·63	3·61	1·44	8·88	9·19	4·72
MgO	6·17	1·10	5·64	7·97	4·12	1·32	6·23	7·29	9·05
CaO	8·37	9·17	9·07	8·45	8·46	12·04	10·39	10·32	8·10
Na_2O	2·75	4·80	2·63	1·57	3·60	3·18	3·37	2·59	4·60
K_2O	2·13	0·96	0·71	0·97	1·84	1·20	1·47	1·36	2·01
H_2O+	1·10	1·25	1·92	3·07	1·14	4·83*	1·34	0·55	1·51
H_2O-	0·29	0·10	—	0·26	0·60*	0·02	0·15	0·15	0·12
CO_2	0·03	abs.	—	tr.	0·22	3·50	abs.	tr.	—
TiO_2	1·06	1·17	1·60	0·84	—	0·38	1·75	0·52	1·90
P_2O_5	0·24	tr.	tr.	0·13	0·16	0·03	0·78	0·02	0·59
MnO	0·16	0·09	tr.	0·06	—	0·10	0·19	0·03	0·11
Other Constituents				NiO=0·02 CoO=tr. Cl=tr.	FeS_2=0·16*	SO_3=tr. Cr_2O_3=tr.			Cr_2O_3=tr. FeS_2=0·45
	100·35	100·99	100·20	99·95	100·50	[99·45]	100·60	100·12	100·42

TABLE I[1] — METAMORPHOSED ANDESITIC ROCKS

	1	2	3	4	5	6	7
Rock Name	Amphibolite	Amphibolite	Meta-andesite	Meta-tuff	Contact altered Porphyrite	Crushed Porphyrite	Meta-andesite
Locality	Southern Cross, W.A.	Rocky-Whyte River Junction, Tas.	Marysville, Vic.	Corinna, Tas.	Hartley, N.S.W.	Binduli, W.A.	Marysville, Vic.
Reference	**150**, 90; **447**, 62	**479**, 4	**198**, 162	**482**	**251**, 35	**152**, 63; **447**, 62	**198**, 162
Analyst	H. Bowley	W. St C. Manson	E. S. Hills	W. St C. Manson	G. A. Joplin	A. J. Robertson	E. S. Hills
Remarks							
Sp. Gr.	—	—	—	—	2·802	2·75	—
SiO_2	63·20	62·64	61·65	57·68	57·54	57·22	54·97
Al_2O_3	14·55	13·87	16·45	12·88	18·81	15·91	14·30
Fe_2O_3	0·07	1·18	0·37	3·69	3·88	1·93	0·95
FeO	4·01	3·17	4·89	6·41	3·49	4·66	7·11
MgO	4·84	6·33	2·36	5·63	2·54	5·66	5·13
CaO	4·73	6·16	5·88	4·75	8·00	3·59	8·47
Na_2O	5·51	4·99	3·26	3·04	2·66	3·98	2·70
K_2O	0·04	0·93	2·15	1·70	0·88	1·60	2·08
H_2O+	0·51	1·12	1·00	2·84	0·70	3·20	1·23
H_2O-	0·33	abs.	0·14	0·36	0·09	0·21	0·15
CO_2	0·14	—	0·09	—	0·79	1·49	tr.
TiO_2	1·06	0·10	0·80	0·74	0·53	0·85	2·96
P_2O_5	0·65	abs.	0·55	0·15	0·30	0·14	0·90
MnO	0·23	0·11	0·12	0·13	0·18	0·22	0·27
Other Constituents	FeS_2=0·26		S=0·01		S(FeS_2)=0·18	FeS_2=0·11	S=abs.
					100·57		
Less O=Cl, F, S					0·07		
	100·13	100·60	99·72	100·00	100·50	100·77	[101·22]

TABLE I[2] — METASOMATIZED AND DEUTERICALLY ALTERED ANDESITIC ROCKS

	Albitized			Carbonated					
	1	2	3	4	5	6	7	8	9
Rock Name	Albitized Porphyrite	Albitized hypersthene Andesite	Chloritic "Kerato-phyre"	Carbonated Porphyrite	Altered Porphyrite	Foliated & Carbonated Porphyrite	Carbonated Porphyrite	Carbonated Albite Porphyrite	Altered Porphyrite
Locality	Kalgoorlie, W.A.	Blair Duguid, Allandale, N.S.W.	Coolgardie, W.A.	Kalgoorlie, W.A.	Boulder, Kalgoorlie, W.A.	Kalgoorlie, W.A.	Kalgoorlie W.A.	Kalgoorlie, W.A.	Mt. Monger, W.A.
Reference	**445**, 74; **521**, 657	**58**, 377; **369**, 104	**563**	**445**, 74; **447**, 60	**496**, 40	**447**, 60	**447**, 60	**157**, 50; **496**, 56	**563**
Analyst	C. C. Williams	H. P. White	C. R. Le Mesurier	C. C. Williams	D. G. Murray	C. C. Williams	C. G. Gibson	H. P. Webb	Not Stated
Remarks				(Dyke)		(Dyke)			
Sp. Gr.	2·75	2·59	—	2·75	2·77	2·76	2·71	—	—
SiO_2	63·05	61·12	60·97	63·05	61·07	60·73	60·01	60·62	57·56
Al_2O_3	14·04	18·71	17·40	14·04	14·89	12·93	17·82	10·96	11·89
Fe_2O_3	—	1·65	—	—	0·77	—	0·54	0·73	2·97
FeO	5·36	1·08	1·43	5·36	2·53	3·67	1·65	2·04	4·85
MgO	1·58	1·77	0·81	1·58	1·86	1·98	1·69	5·57	1·86
CaO	5·92	3·84	2·20	5·92	4·61	5·86	5·86	5·32	6·15
Na_2O	6·74	6·13	9·73	6·74	0·60	2·32	2·79	1·86	4·46
K_2O	0·62	2·11	0·05	0·62	4·00	1·54	1·85	1·56	1·46
H_2O+	0·26	1·23	0·52	0·26	1·95	1·08	1·65	2·05	1·54
H_2O-	0·04	1·39	0·10	0·04	0·18	0·29	0·15	0·22	0·23
CO_2	1·47	abs.	1·48	1·47	6·66	8·32	5·50	8·32	2·80
TiO_2	0·97	0·65	0·22	0·97	0·67	0·33	0·05	0·38	2·45
P_2O_5	—	0·23	0·17	—	0·23	—	—	0·16	0·71
MnO	0·02	0·21	0·06	0·02	0·08	0·13	0·09	0·37	0·30
Other Constituents			Fe=3·05 S=2·11		FeS_2=0·04 V_2O_3=0·08 B_2O_3=tr.		FeS_2=1·88	FeS_2=0·32 Cr_2O_3=0·01	FeS_2=0·06 C=0·30
	100·07	100·12	100·30	100·07	[100·22]	99·18	101·53	100·49	99·59

TABLE I[2] — METASOMATIZED AND DEUTERICALLY ALTERED ANDESITIC ROCKS

	Carbonated								Chloritized
	10	11	12	13	14	15	16	17	18
Rock Name	Carbonated & Chloritized Porphyrite	Vein-altered Dyke Rock	Carbonated Porphyrite	Carbonated Porphyrite	Altered Basic Porphyrite	Basic Porphyrite	Diorite Porphyrite	Diorite Porphyrite	Propylitized Dacite
Locality	Mt. Monger, W.A.	Walhalla, Vic.	Sherlock River, Pilbara Area, W.A.	Ora Banda, W.A.	Boulder, Kalgoorlie, W.A.	Kalgoorlie, W.A.	Walhalla, Vic.	Walhalla, Vic.	Hesket, Vic.
Reference	**151**, 61; **447**, 56	**270**, 188	**175**, 32; **447**, 50; **554**, 903	**271**, 96; **447**, 56	**496**, 40	**496**, 40	**270**, 188	**270**, 188	**468**, 40
Analyst	A. J. Robertson	N. R. Junner	H. Bowley	E. S. Simpson	D. G. Murray	D. G. Murray	J. C. Watson	N. R. Junner	A. G. Hall
Remarks			(Dyke)	(Dyke)	*MnO_2	*MnO_2	(Vein alteration)	(Vein alteration)	
Sp. Gr.	2·70	—	2·85	2·781	2·83	2·79	—	—	2·708
SiO_2	56·96	56·91	52·10	49·20	48·08	45·52	44·45	39·92	64·48
Al_2O_3	15·19	13·31	16·35	16·12	14·13	13·19	16·17	14·81	15·07
Fe_2O_3	1·13	0·08	1·18	2·31	1·64	0·04	1·95	0·61	0·60
FeO	4·17	5·33	7·91	2·90	4·53	6·73	6·62	5·81	5·19
MgO	3·75	3·66	3·71	3·72	4·94	5·32	3·70	6·80	2·17
CaO	5·40	3·38	7·35	8·67	8·20	8·85	4·98	8·28	3·31
Na_2O	3·79	—	3·30	5·82	1·68	4·94	2·57	1·41	2·55
K_2O	0·65	3·76	0·68	1·13	2·76	0·20	2·76	3·51	3·04
H_2O+	4·71	1·19	2·36	1·30	1·76	1·76	1·68	1·03	2·01
H_2O-	0·07	0·13	0·12	0·11	0·18	0·06	0·31	0·23	0·13
CO_2	3·43	9·75	2·49	5·15	11·33	12·16	11·23	16·38	tr.
TiO_2	0·74	1·40	2·08	1·55	0·84	0·93	2·10	1·26	0·90
P_2O_5	0·20	abs.	0·45	0·17	0·33	0·13	0·70	—	0·22
MnO	0·68	0·23	0·35	0·25	0·13*	0·14*	0·15	0·09	0·11
Other Constituents	FeS_2=tr. $FeAs_2$=abs. Fe_7S_8=abs.	FeS_2=0·85	FeS_2=0·17	Fe_7S_8=2·07 Cr_2O_3=0·02 V_2O_3=0·11 NiO=tr. Cu=tr.	FeS_2=0·07 V_2O_3=0·10 B_2O_3=0·02	FeS_2=0·02 V_2O_3=0·06 B_2O_3=tr.	(NiCo)O=abs. Cl=tr. FeS_2=0·93 SO_3=tr.	FeS_2=tr. (NiCo)O=tr.	(NiCo)O=0·01
	100·87	99·98	100·60	100·60	100·72	[100·05]	[100·30]	100·14	99·79

TABLE I[2] — METASOMATIZED AND DEUTERICALLY ALTERED ANDESITIC ROCKS

	Chloritized					Iron Enriched			
	19	20	21	22	23	24	25	26	27
Rock Name	Chloritized Hornblende Porphyrite	Propylitized Diorite Porphyrite	Propylitized Diorite Porphyrite	Propylitized Mica-hornblende Lamprophyre	Chloritoid Propylite	Diabase Porphyrite	Porphyrite	"Ingeous Rock"	Altered Basic Porphyrite
Locality	Kalgoorlie, W.A.	Walhalla, Vic.	Walhalla, Vic.	Walhalla, Vic.	Kalgoorlie, W.A.	Near Mt. Lyell, Tas.	Mt. Lyell, Tas.	Lynchford, near Mt. Lyell, Tas.	Boulder, Kalgoorlie, W.A.
Reference	**496**, 40	**270**, 188	**270**, 188	**270**, 188	**563**	**186**, 187; **474**, 49	**186**, 187	**186**, 187	**496**, 58
Analyst	H. P. Rowledge	N. R. Junner	F. Moss	N. R. Junner	H. P. Rowledge	A. S. Wesley		A. S. Wesley	J. N. Grace
Remarks							(Dyke) *Loss on ignition	*Loss on ignition	
Sp. Gr.	2·82	—	—	—	2·95	—	—	—	2·82
SiO_2	49·86	49·65	48·47	48·06	44·93	72·7	63·2	59·8	53·97
Al_2O_3	14·93	16·73	17·50	19·86	14·66	15·6	20·58	17·84	14·80
Fe_2O_3	3·22	0·31	0·61	0·54	2·68				0·48
FeO	4·34	8·99	8·55	7·52	20·12				0·10
MgO	4·04	5·88	4·51	3·13	4·63	0·89	1·0	3·6	1·90
CaO	6·05	7·87	8·41	6·86	2·17	0·36	tr.	2·6	3·57
Na_2O	4·24	3·10	2·73	3·96	0·02	2·79	0·86	1·34	7·30
K_2O	1·65	0·80	1·23	0·99	0·16	0·79	2·35	2·67	0·88
H_2O+	1·40	2·50	3·10	2·21	6·16		3·75*	2·5*	0·37
H_2O-	0·06	0·14	0·07	0·30	0·11				0·05
CO_2	8·64	1·08	0·90	3·33	3·34				4·86
TiO_2	0·40	2·81	2·45	1·82	0·90				1·55
P_2O_5	0·41	0·04	0·32	0·10	0·09				0·21
MnO	0·15	0·14	tr.	0·12	0·38				0·10
Other Constituents	FeS_2=0·11 V_2O_3=0·10 B_2O_3=tr.	(NiCo)O=	Cl=tr. FeS_2=0·81	Cr_2O_3=0·03 (NiCo)O=tr. BaO=0·05 FeS_2=0·92		Fe=4·2	Fe=6·6	Fe=6·8	FeS_2=9·04 Cr_2O_3=0·05 V_2O_3=0·40
	99·60	100·04	[99·66]	99·80	100·35		98·34		99·63

TABLE I[2] — METASOMATIZED AND DEUTERICALLY ALTERED ANDESITIC ROCKS

	Iron Enriched		Other types of Alteration						
	28	29	30	31	32	33	34	35	36
Rock Name	Diabase Porphyrite	Altered Porphyrite	Altered Porphyrite	Altered Porphyrite	Feldspar "Porphyry"	Altered Andesite (Diabase)	Micacised Porphyrite	Uralitized Porphyrite	Altered Augite Porphyrite
Locality	Near Mt. Lyell, Tas.	Ora Banda, W.A.	Mt. Monger, W.A.	Lockyers Gap, N.W. Division, W.A.	Golconda District, Tas.	Buchan, Vic.	Ora Banda, W.A.	Ora Banda, W.A.	Park Point, near Smithton, Tas.
Reference	**186**, 187	**271**, 96; **447**, 56	**151**, 59; **447**, 42	**175**; **447**, 50	**416**, 12	**205**, 25	**271**, 96; **447**, 56	**271**, 96; **447**, 56	**384**, 72
Analyst	A. S. Wesley	E. S. Simpson	H. Bowley	H. Bowley	Not Stated	A. W. Howitt	E. S. Simpson	H. Bowley	Not Stated
Remarks	*Loss on ignition	(Shear-zone in dyke)			*Loss on ignition		(Slightly weathered)	(Dyke)	(Dyke) *Loss on ignition
Sp. Gr.	—	2·925	—	2·88	—	2·870	2·901	3·042	
SiO_2	49·5	43·31	64·54	51·23	49·80	48·48	47·76	47·46	46·64
Al_2O_3	20·06	17·85	12·65	9·89	33·63	14·57	15·88	15·10	23·45
Fe_2O_3		3·68	2·33	1·07	2·57	11·68	2·64	4·09	9·00
FeO		5·93	2·12	9·07		2·83	7·70	9·99	1·80
MgO	1·98	3·72	2·72	13·37	1·09	5·55	4·13	5·46	3·26
CaO	0·3	1·79	4·92	6·43		9·56	10·20	10·10	10·91
Na_2O		0·50	3·78	2·16	2·12	3·33	3·02	1·40	2·09
K_2O	2·07	5·25	2·12	0·84	5·08	1·77	1·33	0·66	0·50
H_2O+	7·28*	2·51	1·83	3·52	6·10*	1·72	2·00	2·80	3·00*
H_2O-		0·14	0·08	0·25		(0·85)	0·10	0·10	
CO_2		3·40	abs.	0·20		1·27	2·98	0·14	
TiO_2		1·29	0·77	0·54	0·40		1·30	1·69	0·54
P_2O_5		0·38	1·74	0·53		0·45	0·36	0·38	0·09
MnO		0·41	abs.	0·41			0·45	0·32	
Other Constituents	Fe=15·4 S=3·4	$FeAs_2$=0·34 FeS_2=7·16 Fe_7S_8=2·02 SO_3=0·14 Cr_2O_3=0·02 Cu=tr. NiO=tr. B_2O_3=0·30 V_2O_3=0·41	FeS_2=0·13	FeS_2=0·13			Fe_7S_8=0·88 $FeAs_2$=abs. Cr_2O_3=0·02 V_2O_3=0·06 Cu=tr. NiO=tr. SO_3=tr.	FeS_2=0·06 Cr_2O_3=0·01 V_2O_3=0·09 NiO=tr. Cu=tr.	S=0·27
	99·99	[100·55]	99·73	99·64	100·79	101·21	100·81	99·85	101·55

TABLE I[2] — METASOMATIZED AND DEUTERICALLY ALTERED ANDESITIC ROCKS

	Other Types of Alteration
	37
Rock Name	Altered Dolerite Porphyrite
Locality	Park Point, near Smithton, Tas.
Reference	**384**, 72
Analyst	Not Stated
Remarks	*Loss on ignition
Sp. Gr.	
SiO_2	45·00
Al_2O_3	24·64
Fe_2O_3	7·58
FeO	3·48
MgO	6·30
CaO	9·07
Na_2O	1·06
K_2O	0·46
H_2O+	3·20*
H_2O-	
CO_2	
TiO_2	0·32
P_2O_5	0·05
MnO	
Other Constituents	S = tr.
	101·16

TABLE I[5] — OLD ANALYSES OF ANDESITIC ROCKS

	1	2	3
Rock Name	"Quartz Porphyry"	"Lava"	"Lava"
Locality	Mt. Lambie, Rydal, N.S.W.	New Britain, T.P. & N.G.	New Britain, T.P. & N.G.
Reference	**282**, 44	**594**, 50	**594**, 51
Analyst	A. Liversidge	A. Liversidge	A. Liversidge
Remarks	(Dyke)		
Sp. Gr.	2·727	2·738	2·359
SiO_2	61·504	57·465	56·566
Al_2O_3	16·792	19·200	17·820
Fe_2O_3	3·483	3·833	2·910
FeO	2·225	3·223	2·645
MgO	1·958	0·487	tr.
CaO	5·436	9·353	5·106
Na_2O	4·780	2·470	3·094
K_2O	2·380	1·358	2·610
H_2O+		0·390	5·975
H_2O-	0·355	0·119	2·025
CO_2		tr.	
TiO_2			
P_2O_5			
MnO	1·222	0·974	0·841
Other Constituents		SO_3 = 0·225	
	100·135	99·097	99·592

TABLE J — TRACHYTIC ROCKS

a. $CaO < 1\%$

	$K_2O/Na_2O < 1 \cdot 25$			$K_2O/Na_2O = 1 \cdot 25 - 0 \cdot 75$					
	1	2	3	4	5	6	7	8	9
Rock Name	Trachyte	Hematite Trachyte	Porphyritic Soda Trachyte	Bostonite	Trachyte	Trachyte	Arfvedsonite Trachyte	Arfvedsonite Trachyte	Trachyte
Locality	Coonabarabran, N.S.W.	Nandewar Mts., N.S.W.	Warrumbungle, Mts., N.S.W.	Yarrowyk, N.S.W.	Dubbo, N.S.W.	Gladstone, Port Curtis, Qld.	Warrumbungle Mts., N.S.W.	Nandewar Mts., N.S.W.	Mt. Beerwah, Glass House Mts., Qld.
Reference	**70**, 116; **554**, 149	**235**, 903	**233**, 616; **55**, 51	**377**, 47	**348**, 165; **554**, 149	**282**, 46	**233**, 616; **554**, 275	**235**, 903; **554**, 275	**232**, 168; **554**, 275
Analyst	J. C. H. Mingaye	H. I. Jensen	H. I. Jensen	J. H. Pyle	N.S.W. Dept. Mines	A. Liversidge	H. I. Jensen	H. I. Jensen	H. I. Jensen
Remarks		*Loss on ignition				(Dyke)			
Sp. Gr.	2·4	—	—	—	2·617	2·23	—	—	2·62
SiO_2	74·12	64·38	60·73	72·49	67·68	66·932	65·90	64·63	64·58
Al_2O_3	12·39	17·13	18·16	12·95	13·99	19·902	16·74	16·55	17·52
Fe_2O_3	0·31	5·62	4·63	0·89	3·20	2·410	1·72	2·93	2·56
FeO	0·21	0·28	0·20	2·69	1·98	tr.	1·99	1·16	0·96
MgO	0·42	0·03	0·31	0·30	0·34	tr.	0·06	0·16	0·22
CaO	0·30	0·61	0·10	0·17	0·84	0·797	0·09	0·46	0·39
Na_2O	3·22	4·59	4·88	3·56	5·30	4·820	6·35	5·23	6·41
K_2O	5·07	6·49	6·21	4·93	4·87	5·290	5·77	6·11	6·23
H_2O+	2·17	1·63*	1·33	1·78	1·05		0·43	1·35	0·30
H_2O-	2·22		0·72	0·38	0·65		0·27	1·05	0·11
CO_2	—		tr.	abs.	0·02		abs.	tr.	0·08
TiO_2	—	0·56	0·60	0·09	0·20		0·25	0·58	0·13
P_2O_5	tr.		abs.	0·04	0·04		abs.		tr.
MnO	tr.	—	0·10	0·04	0·02	tr.	0·06	0·08	0·08
Other Constituents	SO_3=tr.		NiO=tr. Cl=0·03 CoO=tr.		Li_2O=tr. Cl=tr. SrO=tr.		NiO=0·01 CoO=tr. ZrO_2=0·29 F=0·16	NiO=tr. ZrO_2=0·07 Cl=tr. $S(FeS_2)$=tr.	ZrO_2=0·21 Cl=0·08 S=0·08 NiO=0·03
			98·00				100·09		99·97
Less O= Cl, F, S			0·01				0·07		0·04
	(100·43)	101·32	97·99	100·31	100·18	100·151	100·02	100·36	99·93

a. $CaO < 1\%$

	$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$		$K_2O/Na_2O < 0{\cdot}75$						
	10	11	12	13	14	15	16	17	18
Rock Name	Arfvedsonite Aegerine Trachyte	Anorthoclase Trachyte	Quartz Bostonite	Bostonite (Orthophyre)	Porphyritic Soda Trachyte	Bostonite (Orthophyre)	Leucocratic Soda Trachyte	Sölvsbergite	Sölvsbergite
Locality	Warrumbungle Mts., N.S.W.	Mt. Macedon Vic.	14 miles N.N.E. of Coleraine, Vic.	Omeo, Vic.	Mt. Flinders, Qld.	Omeo, Vic.	Mt. Canobolas, Orange, N.S.W.	Hanging Rock, Mt. Macedon, Vic.	Brock's Monument, Mt. Macedon, Vic.
Reference	**233**, 616; **554**, 283	**468**, 25; **537**, 61; **554**, 149	**120**, 263	**212**, 38	**237**, 88	**183**, 201; **212**, 38	**396**	**468**, 22; **537**, 61; **554**, 161	**468**, 20; **537**, 61
Analyst	H. I. Jensen	A. G. Hall	P. G. W. Bayly	A. W. Howitt	H. I. Jensen	A. W. Howitt	R. E. Penrose	A. G. Hall	A. G. Hall
Remarks									
Sp. Gr.		2·504	—	—	—	—	2·50	2·559	2·646
SiO_2	63·82	62·56	70·42	69·36	69·32	69·04	69·03	67·06	66·86
Al_2O_3	17·85	17·89	16·83	16·17	16·06	18·14	17·53	17·40	16·34
Fe_2O_3	2·75	4·98	2·06	—	1·42	0·53	1·70	2·24	2·38
FeO	1·67	0·45	1·16	2·62	0·88	—	1·22	0·84	1·99
MgO	0·06	0·18	tr.	0·25	0·06	0·27	0·05	0·26	0·22
CaO	0·59	0·72	tr.	0·71	0·31	0·44	0·46	0·34	0·92
Na_2O	7·13	5·06	6·15	5·80	6·01	7·12	4·89	5·88	6·01
K_2O	5·51	5·13	1·15	3·57	4·23	5·10	3·53	4·10	4·07
H_2O-	0·20	0·73	1·86	0·97	1·09	0·35	0·70	0·62	0·41
H_2O-	0·66	1·30	0·66				0·39	0·71	0·18
CO_2	abs.	—	—		—		—	—	—
TiO_2	0·25	0·38	abs.		0·62		0·14	0·16	0·21
P_2O_5	abs.	0·11	tr.		—		tr.	tr.	tr.
MnO	0·04	tr.	—		—		0·02	tr.	tr.
Other Constituents	Cl = tr.	SO_3 = tr. Li_2O = tr.	S = 0·06	FeS_2 = 0·08				Cl = tr.	Cl = tr. Li_2O = tr.
			100·35						
Less O = Cl, F, S			0·02						
	100·53	99·49	100·33	99·53	100·00	100·99	99·66	99·61	99·59

TABLE J — TRACHYTIC ROCKS

a. CaO<1%			b. CaO=1%–2%					
K_2O/Na_2O>0·75			K_2O/Na_2O>1·25			K_2O/Na_2O=1·25–0·75		
	19	20	1	2	3	4	5	6
Rock Name	Trachyte	Sölvsbergite	Arfvedsonite Trachyte	Syenite Pegmatite	Trachyte	Sodi-potassic Trachyte	Anorthoclase Trachyte	Aegerine-augite Trachyte
Locality	Esk, Qld.	Camel's Hump, Mt. Macedon, Vic.	Nandewar Mts., N.S.W.	Port Cygnet, Tas.	Mt. Flinders, Qld.	Paloona Bridge, Tas.	Carapook, Coleraine, Vic.	Mount Canobolas, near Orange, N.S.W.
Reference	**408**; **421**, 154 **554**, 341	**468**, 22; **537**, 61; **554**, 283	**235**, 903; **554**, 275	**129**, 108	**237**, 91; **554**, 293	**482**	**109**, 13; **554**, 275	**396**
Analyst	G. R. Patten	A. G. Hall	H. I. Jensen	A. B. Edwards	H. I. Jensen	W. St C. Manson	J. Dennant	R. E. Penrose
Remarks								
Sp. Gr.	2·49	2·60	—	—	—	—	2·67	2·63
SiO_2	66·40	65·46	64·31	61·20	60·58	64·30	63·37	62·83
Al_2O_3	12·03	17·40	15·05	21·90	18·06	15·09	16·47	20·83
Fe_2O_3	8·23	3·00	3·39	1·77	3·05	1·61	4·45	0·76
FeO	0·64	1·60	2·33	0·57	1·38	3·24	1·21	1·72
MgO	0·40	0·09	0·14	0·60	0·23	3·16	0·51	1·12
CaO	0·62	0·76	1·54	1·00	1·74	1·78	1·27	1·37
Na_2O	5·26	6·51	4·77	2·20	5·01	3·66	5·88	5·42
K_2O	3·26	4·74	6·59	9·90	6·87	3·50	5·57	4·95
H_2O+	1·85	0·35	0·39	0·25	0·90	1·90	0·76	0·77
H_2O-	0·50	0·52	0·79	0·65	0·99	0·45	—	0·66
CO_2	abs.	—	abs.	abs.	—	—	—	—
TiO_2	0·82	0·24	1·25	tr.	0·83	0·75	—	0·11
P_2O_5	0·23	abs.	abs.	tr.	—	0·05	—	abs.
MnO	0·05	tr.	0·09	tr.	0·04	tr.	—	0·03
Other Constituents			NiO=0·03 ZrO_2=0·09 Cl=0·02 F=0·10		NiO=0·07			
			[100·88]					
Less O= Cl, F, S			0·05					
	100·29	100·67	[100·83]	100·04	99·75	99·49	99·49	100·57

b. CaO = 1%–2%

	K_2O/Na_2O = 1·25–0·75					K_2O/Na_2O < 0·75			
	7	8	9	10	11	12	13	14	15
Rock Name	Quartz Syenite	Alkaline Trachyte (Orthophyre)	Anorthoclase Trachyte	Anorthoclase Trachyte	Soda Trachyte	Syenite Porphyry	Trachyte	Soda Trachyte	Anorthoclase Trachyte
Locality	Tara Range, Vic.	Omeo, Vic.	Mt. Macedon, Vic.	Chatsworth, Vic.	Casterton, Vic.	Waratah District, Tas.	Mt. Jellore, near Mittagong, N.S.W.	Spicers Gap Main Ra., Qld.	Turritable Falls, Mt. Macedon, Vic.
Reference	**93**, 106	**462**, 185; **120**, 263	**468**, 25; **534**, 61; **554**, 293	**548**		**383**, 39	**510**, 341; **554**, 161	**237**, 98	**183**, 201; **468**, 25; **554**, 1113
Analyst	H. R. Samson	A. W. Howitt	A. G. Hall	A. G. Hall	Bayly & Watson	Tas. Dept. Mines	D. Mawson	H. I. Jensen	R. J. Lewis
Remarks						*Loss on ignition (Dyke)			Originally called "trachyphonolite"
Sp. Gr.	—	—	2·62	2·590	—	—	2·618	—	—
SiO_2	61·20	60·68	59·52	59·10	57·34	66·72	66·68	65·09	62·72
Al_2O_3	19·52	18·36	18·06	17·00	19·04	15·33	14·63	14·43	16·27
Fe_2O_3	2·05	1·59	3·76	3·07	3·93	5·43	2·18	3·21	6·83
FeO	2·88	3·58	2·27	3·74	3·28	—	2·31	0·13	nd.
MgO	2·89	1·15	0·78	0·63	0·66	2·89	0·30	0·10	nd.
CaO	1·34	1·25	1·98	1·68	1·89	1·50	1·88	1·18	1·06
Na_2O	3·52	5·16	5·38	5·83	6·08	4·56	6·12	7·26	8·47
K_2O	3·72	6·03	5·03	5·83	5·71	1·57	4·02	3·24	4·99
H_2O+	1·16	2·31	0·96	1·99	1·44	2·00*	0·83	2·42	nd.
H_2O-	0·37	0·72	0·88	0·46	0·43		0·38	—	
CO_2	—	—	—	abs.	tr.		0·05	—	
TiO_2	0·76	—	0·67	0·30	0·25		0·20	2·50	
P_2O_5	0·24	—	0·27	0·08	0·15		0·28	—	
MnO	0·13	—	tr.	0·11	0·20		0·49	—	
Other Constituents				Cl = tr. NiO = 0·02 CoO = tr.	0·18 0·01	MnO_2 = 0·22	ZrO_2 = tr. Cl = 0·03 Li_2O = tr. SO_3 = tr. S = 0·05		
					100·59		100·43		
Less O = Cl, F, S,					0·04		0·02		
	99·78	100·83	99·56	99·84	100·55	100·22	100·41	99·56	100·34

TABLE J — TRACHYTIC ROCKS

	b. CaO = 1%–2%			c. CaO = 2%–3%					
	K_2O/Na_2O < 0·75			K_2O/Na_2O > 1·25			K_2O/Na_2O = 1·25–0·75		
	16	17		1	2	3	4	5	6
Rock Name	Syenite Pegmatite	Trachyte		Ilmenite Syenite	Pulaskite Porphyry	Melanocratic Micro-syenite	Trachyte	Syenite	Soda Syenite
Locality	Engelsberg, Qld.	Mt. Adam, near Coleraine, Vic.		Mt. Lofty Ra., S.A.	Nandewar Mts., N.S.W.	Mt. Gibraltar, Bowral, N.S.W.	Cainbable Ck., Qld.	S. of Cooma, N.S.W.	Mt. Leinster, District, Vic.
Reference	**237**, 96; **554**, 429	**548**		**145**, 14	**235**, 903; **554**, 811	**510**, 341; **554**, 813	**408**; **421**, 154; **554**, 339	**366**, 97	**45**, 239
Analyst	H. I. Jensen	P. G. W. Bayly		H. N. England	H. I. Jensen	D. Mawson	G. R. Patten	W. A. Greig	E. Broadhurst
Remarks									
Sp. Gr.	—	—		2·72	—	2·706	2·40	2·643	—
SiO_2	62·25	60·50		60·62	58·90	55·86	65·31	63·02	61·33
Al_2O_3	15·49	22·76		14·94	16·48	15·25	12·08	16·73	17·97
Fe_2O_3	5·44	1·39		8·12	2·98	4·92	5·12	2·00	5·99
FeO	0·15	—		1·07	3·35	6·07	3·07	3·15	0·44
MgO	0·84	tr.		1·96	0·78	0·20	0·96	0·49	0·60
CaO	1·82	1·15		2·60	2·78	2·13	2·50	2·32	2·23
Na_2O	8·18	10·35		3·40	4·09	2·34	4·91	4·74	5·00
K_2O	2·57	2·30		6·16	6·05	9·28	4·72	5·79	5·07
H_2O+	1·26	0·58		0·33	0·34	0·50	0·57	0·73	0·84
H_2O-	—	0·48		0·13	0·82	0·70	0·47	0·23	—
CO_2	—	—		abs.	1·50	1·80	—	0·44	—
TiO_2	1·85	—		0·76	1·47	0·65	0·49	0·35	0·42
P_2O_5	—	tr.		0·44	pnd.	0·16	0·14	0·10	tr.
MnO	—	tr.		0·01	0·08	0·42	0·11	0·09	0·05
Other Constituents		SO_3 = tr. Cl = tr.		Cr_2O_3 = tr.	NiO = 0·05	F = 0·05 S = 0·09 BaO = tr. Li_2O = tr.		Cl = 0·06 BaO = 0·07 Li_2O = tr.	
						100·42		100·31	
Less O = Cl, F, S						0·03		0·01	
	99·85	99·51		100·54	99·67	100·39	100·45	100·30	99·94

c. CaO = 2% – 3%

K_2O/Na_2O = 1·25 – ·075

	7	8	9	10	11	12	13	14	15
Rock Name	Aegerine-augite Trachyte	Anorthoclase Trachyte	Syenite	Anorthoclase Trachyte	Trachyte	Trachyte	Trachyte	Trachyte	Leucocratic Microsyenite
Locality	Cave Bay Hill, Heard Is., Ant.	Mt. Macedon, Vic.	Mt. Goyder, near Mt. Bundy, N.T.	Mt. Macedon, Vic.	Coleraine, Vic.	Babbington Hill, Vic.	Blue Mt., near Trentham, Vic.	Par. Tylden, Vic.	Mt. Gibraltar, Bowral, N.S.W.
Reference	**530**, 48	**468**, 25; **537**, 61; **554**, 299	**95**	**468**, 25; **537**, 61; **554**, 299	**548**	**120**, 264	**295**, 128	**120**, 265	**510**, 341; **55**, 51; **554**, 813
Analyst	F. Herdsman	A. G. Hall	S. Baker	A. G. Hall	F. F. Field	A. B. Edwards	F. F. Field	A. B. Edwards	D. Mawson
Remarks			*Loss on ignition						
Sp. Gr.	—	2·651	—	2·590	2·53	—	2·63		2·675
SiO_2	60·60	60·10	59·76	59·44	57·97	57·63	57·49	57·08	55·16
Al_2O_3	18·96	18·38	16·56	17·98	16·77	18·61	19·14	18·64	16·67
Fe_2O_3	2·85	2·22	5·38	2·28	4·32	2·36	2·20	0·61	2·36
FeO	1·93	3·34	1·52	3·34	3·42	4·08	4·29	5·33	7·31
MgO	0·36	1·30	2·44	0·78	tr.	0·69	0·65	1·02	0·56
CaO	2·20	2·28	2·14	2·32	2·25	2·33	2·47	2·72	2·30
Na_2O	5·50	5·30	4·98	5·36	5·12	5·77	6·48	5·67	5·65
K_2O	6·00	4·57	5·52	4·77	5·63	5·38	4·90	5·41	6·97
H_2O+	0·10	0·43	0·94*	1·57	0·59	0·93	0·75	0·42	0·88
H_2O-	0·70	0·96	abs.	0·70	1·94	1·07	0·32	1·64	0·85
CO_2	abs.	—	—	—	1·34	abs.	abs.	0·14	1·50
TiO_2	0·25	0·69	0·15	0·79	0·55	0·55	0·59	0·41	0·60
P_2O_5	0·04	0·33	0·10	0·30	0·18	0·28	0·40	0·53	0·38
MnO	0·30	abs.	0·09	tr.	0·42	0·21	0·17	0·22	0·47
Other Constituents	BaO = 0·04 SrO = tr.	SO_2 = tr. Li_2O = tr.		Cl = tr. Li_2O = tr.	Cl = tr.	Cl = 0·05 BaO = 0·03		Cl = 0·05 BaO = 0·03	SO_3 = 0·25 Cl = tr. F = 0·15 BaO = tr. Li_2O = tr. S = 0·02
						99·97		99·92	[102·08]
Less O = Cl, F, S						0·01		0·01	0·07
	99·83	99·90	99·58	99·63	100·50	99·96	99·85	99·91	[102·01]

TABLE J — TRACHYTIC ROCKS

	c. CaO = 2% – 3%			d. CaO = 3% – 4%				
	$K_2O/Na_2O < 0{\cdot}75$			$K_2O/Na_2O > 1{\cdot}25$		$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$		
	16	17	18	1	2	3	4	5
Rock Name	Acmite-augite Trachyte	Trachyte	Augite Trachyte	Garnet-Orthoclasite	Garnet-mica Sölvsbergite	Syenite (Banatite)	Syenite Porphyry	Trachyte
Locality	Moraine, Heard I. Ant.	Esk, Qld.	Lynchford, Tas.	Port Cygnet, Tas.	Port Cygnet, Tas.	Mt. Dromedary, N.S.W.	Port Cygnet, Tas.	Blue Mt., near Trentham, Vic.
Reference	**419**, 262; **530**, 48	**408**; **421**, 154, **554**, 341	**474**, 49	**129**, 108	**394**; **554**, 287	**48**, 643	**129**, 108	**295**, 128
Analyst	R. Reinisch	G. R. Patten	Mt. Lyell Co.	A. B. Edwards	F. P. Paul	I. A. Brown	A. B. Edwards	F. F. Field
Remarks				(Dyke)				
Sp. Gr.	—	2·69	—			2·653	—	2·64
SiO_2	60·12	60·00	58·6	62·20	55·00	64·49	63·10	57·29
Al_2O_3	17·67	10·58	15·7	18·09	20·91	17·48	17·11	18·70
Fe_2O_3	3·75	6·18	8·9	0·72	2·05	1·64	1·04	1·57
FeO	3·40	4·72	nd.	1·15	3·73	1·69	3·02	4·67
MgO	0·53	1·97	3·6	0·53	0·63	0·66	1·15	0·68
CaO	2·40	2·88	2·8	3·60	3·32	3·28	3·65	3·02
Na_2O	6·78	6·58	5·8	2·83	2·80	4·16	3·94	5·61
K_2O	4·43	2·20	1·8	8·97	8·66	4·79	4·64	5·12
H_2O+	0·49	1·65	1·0	0·52	1·87	0·52	0·42	1·37
H_2O-	—	0·65		0·35	—	0·18	0·55	0·48
CO_2	—	—	0·7	abs.	0·33	0·71	0·24	abs.
TiO_2	—	1·56	nd.	0·16	0·35	0·46	0·82	0·65
P_2O_5	—	0·44	nd.	0·99	tr.	0·22	0·30	0·36
MnO		0·18	nd.	0·06	0·77	0·11	0·12	0·19
Other Constituents					S = 0·61	S = 0·06		
						100·45		
Less O = Cl, F, S						0·02		
	99·57	99·59	98·9	100·17	101·03	100·43	100·10	99·71

d. CaO = 3% – 4%			e. CaO = 4% – 5%					
K_2O/Na_2O = 1·25 – 0·75			K_2O/Na_2O > 1·25					
	6	7	1	2	3	4	5	6
Rock Name	Microsyenite	Syenite	Potash Trachyte	Potash Trachyte	Potash Trachyte	Potash Trachyte	Sodi-potassic Trachyte	Syenite
Locality	Bowral, N.S.W.	Plashett, near Jerry's Plains N.S.W.	Lorinna, Tas.	Lorinna, Tas.	Lorinna, Tas.	Lorinna, Tas.	Saddle Ck., Rosebery, Tas.	Mt. Goyder, near Mt. Bundy, N.T.
Reference	**341**, 61	**375**, 99	**482**, 281	**482**, 281	**482**, 281	**482**, 281	**165**; **482**, 281	**95**
Analyst	Not Stated	W. A. Greig	W. St C. Manson	W. St C. Manson	W. St C. Manson	W. St C. Manson	Not Stated	S. Baker
Remarks								*Loss on ignition
Sp. Gr.	—	2·559	—	—	—	—	—	—
SiO_2	57·14	55·58	65·16	64·14	64·08	63·20	62·29	60·40
Al_2O_3	16·13	17·92	14·67	14·53	15·37	14·36	14·75	17·21
Fe_2O_3	4·69	3·40	1·86	1·79	1·07	3·07	2·29	1·99
FeO	4·00	2·52	3·99	4·11	3·99	4·50	3·02	2·84
MgO	0·63	1·06	2·52	2·75	2·75	2·42	1·99	3·60
CaO	3·44	3·10	4·74	4·07	4·49	4·64	4·77	4·02
Na_2O	4·87	5·98	0·48	2·30	0·53	0·53	1·75	3·24
K_2O	5·07	5·32	4·54	3·84	5·45	3·89	2·90	4·70
H_2O+	1·52	3·61	1·58	1·39	1·44	1·87	5·55	0·92*
H_2O-	0·68	0·59	0·22	0·16	0·21	0·38	—	0·04
CO_2	1·42	0·49	—	—	—	—	—	—
TiO_2	abs.	0·42	0·65	0·60	0·75	0·73	0·65	0·35
P_2O_5	0·25	0·22	0·19	0·16	0·19	0·20	0·11	0·08
MnO	tr.	0·05	0·08	0·12	0·13	0·12	—	0·04
Other Constituents	NaCl = 0·04 SO_3 = 0·30	CoO = 0·05 BaO = 0·11						
	100·18	[100·42]	100·68	99·96	100·45	99·91	[100·07]	99·43

TABLE J — TRACHYTIC ROCKS

e. CaO = 4% – 5%

	$K_2O/Na_2O >$ 1·25	$K_2O/Na_2O = 1·25 – 0·75$			$K_2O/Na_2O <$ 0·75
	7	8	9	10	11
Rock Name	"Garnet Trachyte"	Trachyte	Syenite Porphyry	Anortho-clase-olivine Trachyte	Syenite
Locality	Between Port Cygnet and Lymington, Tas.	Einasleigh, Qld.	Port Cygnet, Tas.	N.E. of Woodend, Vic.	Savoy Hill, S. of Muswell-brook, N.S.W.
Refer-ence	**288**, 75	**95**	**129**, 108	**468**, 25	**372**, 88; **55**, 51; **409**
Analyst	Not Stated	A. McClure	A. B. Edwards	A. G. Hall	W. A. Greig
Remarks					
Sp. Gr.	—	—	—	2·722	2·666
SiO_2	55·87	62·75	61·25	54·06	60·76
Al_2O_3	18·21	16·21	18·59	17·13	14·23
Fe_2O_3	—	2·28	1·58	6·10	5·40
FeO	8·01	3·82	2·18	3·55	0·99
MgO	0·46	2·19	0·58	3·05	0·80
CaO	4·54	4·54	4·05	4·88	4·36
Na_2O	3·36	3·00	4·30	3·97	5·30
K_2O	5·75	2·90	4·06	3·29	3·67
H_2O+	2·28	0·93	0·42	1·00	1·47
H_2O-		0·13	0·60	0·80	0·35
CO_2		—	abs.	abs.	1·60
TiO_2		1·18	1·28	1·95	0·90
P_2O_5		0·05	0·61	0·48	0·26
MnO	2·61	0·21	0·42	0·20	0·18
Other Con-stituents				(NiCO)O = 0·03	Cl = tr.
	101·09	100·19	99·92	[100·49]	100·27

TABLE J — TRACHYTIC ROCKS

f. CaO > 5%	$K_2O/Na_2O > 1 \cdot 25$						$K_2O/Na_2O > 0 \cdot 75$	
	1	2	3	4	5	6	7	8
Rock Name	Potash Trachyte	Potash Trachyte	Hauyne-garnet Sanidine Porphyry	Hauyne-garnet Sanidine Porphyry	Syenitic Rock	Syenitic Rock	Trachytic Andesite	Olivine-anorthoclase Trachyte
Locality	Lorinna, Tas.	Lorinna, Tas.	Port Cygnet, Tas.	Port Cygnet, Tas.	Mt. Lofty Ra., S.A.	Mt. Lofty Ra., S.A.	Good Dog Mt., N.S.W.	Cobaw, Macedon District, Vic.
Reference	**482**	**482**	**129**, 108	**129**, 108	**145**, 14	**145**, 14	**75**, 132; **554**, 847	**468**, 25; **554**, 519
Analyst	W. St C. Manson	W. St C. Manson	A. B. Edwards	A. B. Edwards	H. N. England	H. N. England	H. P. White	A. A. Topp
Remarks							(Average of 9 spec. from Dykes)	
Sp. Gr.	—	—	—	—	2·99	2·95	2·667	2·79
SiO_2	66·36	63·24	58·50	54·70	53·31	52·08	52·16	51·52
Al_2O_3	12·57	15·59	19·81	19·15	15·79	15·67	17·61	16·58
Fe_2O_3	1·47	1·32	1·71	3·65	3·69	5·38	2·55	2·35
FeO	5·11	4·28	1·66	1·58	1·37	1·76	4·75	7·68
MgO	2·85	2·90	0·47	0·69	1·73	2·62	2·88	4·03
CaO	6·20	5·60	5·65	5·55	13·81	13·48	5·85	6·10
Na_2O	0·80	0·39	3·95	4·57	1·04	0·99	4·25	4·11
K_2O	2·72	4·44	7·57	7·62	4·15	4·31	2·69	2·99
H_2O+	1·14	1·10	0·11	0·65	0·51	0·53	2·75	0·22
H_2O-	0·16	0·15	0·15	0·38	0·21	0·18	0·35	1·39
CO_2	—	—	abs.	abs.	2·01	2·37	2·89	tr.
TiO_2	0·57	0·55	0·32	0·45	0·70	0·55	0·76	2·15
P_2O_5	0·16	0·16	0·30	0·24	1·20	0·40	0·39	0·82
MnO	0·18	0·08	0·12	0·21	0·45	0·27	0·29	0·13
Other Constituents					$FeS_2 = 0 \cdot 13$ $BaO = 0 \cdot 06$ $Cl = 0 \cdot 03$	$FeS_2 = 0 \cdot 17$ $BaO = 0 \cdot 06$	$SO_3 = 0 \cdot 22$ $Cl = 0 \cdot 04$ $BaO = 0 \cdot 08$ $S = 0 \cdot 15$	$Cl = 0 \cdot 05$ $NiO = 0 \cdot 06$
					100·19		100·66	
Less O = Cl, F, S					0·01		0·07	
	100·29	99·80	100·32	99·44	100·18	100·82	100·59	100·18

TABLE J[4] — INCOMPLETE ANALYSES OF TRACHYTIC ROCKS

	1	2	3	4
Rock Name	Trachyte	Trachyte	Granitite (Syenite)	Anorthoclase Trachyte
Locality	The Little Rock, Coleraine, Vic.	Gladstone, Qld.	Golconda, District, Tas.	Mt. Towong, Vic.
Reference	**109**, 11	**103**, 312	**416**, 12	**537**, 61
Analyst	J. Dennant	R. Daintree	Not Stated	A. G. Hall
Remarks	*Loss on ignition	(Dyke)		
Sp. Gr.		2·320	—	—
SiO_2	68·22	67·800	61·60	61
Al_2O_3	16·89	14·666	23·42	19
Fe_2O_3	2·75	5·350	6·58	
FeO			0·25	
MgO	tr.		0·57	
CaO	tr.		tr.	
Na_2O	5·30	4·600	1·54	4·53
K_2O	4·47	5·653	2·14	5·37
H_2O+	0·95*	0·700		0·81
H_2O-		0·600		1·06
CO_2				
TiO_2			0·30	
P_2O_5				0·37
MnO				
Other Constituents				
	98·58	99·369	[96·40]	

TABLE J[5] — OLD AND UNRELIABLE ANALYSES OF TRACHYTIC ROCKS

	1	2	3	4
Rock Name	Syenite	Sölvsbergite	Syenite	"Syenitic Granite"
Locality	Reevesdale, Bungonia, N.S.W.	Mt. Macedon, Vic.	Boro Creek, N.S.W.	Ravenswood, Qld.
Reference	**282**, 43	**336**, 127	**282**, 43	**103**, 300
Analyst	A. Liversidge	J. C. Newbury	A. Liversidge	A. Daintree
Remarks				
Sp. Gr.	2·64	—	2·74	—
SiO_2	66·876	65·97	64·27	60·066
Al_2O_3	19·640	18·11	16·40	21·180
Fe_2O_3	4·060	tr.	7·86	—
FeO	tr.	4·82	tr.	5·533
MgO	tr.	tr.	tr.	2·073
CaO	1·471	0·98	3·88	4·833
Na_2O	4·887	10·17	4·19	2·233
K_2O	2·677	tr.	3·16	2·120
H_2O+		0·56		1·305
H_2O-				0·650
CO_2				
TiO_2				
P_2O_5				
MnO	0·188		0·81	
Other Constituents				
	99·799	100·61	100·57	99·993

TABLE K — NEPHELINE- AND ANALCITE-BEARING TRACHYTIC ROCKS

a. CaO < 1%

	K_2O/Na_2O = 1·25–0·75	K_2O/Na_2O < 0·75			
	1	2	3	4	5
Rock Name	Phonolite	Sodalite Phonolite	Phonolite	Phonolite	Tinguaite
Locality	Virgin Rock, Springsure, Qld.	Atlas Cove, Heard Island, Ant.	Dubbo, N.S.W.	Omeo, Vic.	Porcupine Mt., Barigan, N.S.W.
Reference	**423**, 194; **428**, 299	**530**, 48	**73**, 260; **55**, 51; **349**, 117; **554**, 315	**120**, 265	**78**, 239; **79**, 152; **554**, 315, **55**, 51
Analyst	G. R. Patten	F. Herdsman	H. P. White	A. G. Hall	J. C. H. Mingaye
Remarks					
Sp. Gr.	2·519		2·593	2·62	2·577
SiO_2	67·32	62·40	59·49	57·75	53·62
Al_2O_3	15·10	17·12	19·56	20·28	22·78
Fe_2O_3	2·70	2·23	2·20	3·51	2·62
FeO	1·57	2·62	2·34	0·63	0·72
MgO	0·41	tr.	0·09	0·11	0·42
CaO	0·70	0·70	0·85	0·74	0·68
Na_2O	5·32	9·05	8·68	9·85	10·40
K_2O	5·29	4·80	5·29	4·70	5·22
H_2O+	0·35	0·10	1·36	1·25	2·44
H_2O-	0·55	0·65	0·18	0·17	0·22
CO_2	—	abs.	0·04	0·04	0·07
TiO_2	0·32	tr.	0·09	0·36	0·08
P_2O_5	0·08	abs.	0·04	tr.	0·03
MnO	tr.	0·30	tr.	0·34	0·05
Other Constituents	SO_3=0·07	Cl=0·21	ZrO_2=0·11 Cl=0·08 BaO=tr. SiO=tr.	Cl=0·40 BaO=0·02	ZrO_2=0·20 SO_3=0·05 Cl=0·19 F=tr.
		100·18	100·40	100·15	99·79
Less O= Cl, F, S		0·03	0·01	0·09	0·05
	99·78	100·15	100·39	100·06	99·74

b. CaO = 1%—2%

	$K_2O/Na_2O > 1·25$		$K_2O/Na_2O = 1·25$-$0·75$	$K_2O/Na_2O > 0·75$					
	1	2	3	4	5	6	7	8	9
Rock Name	Pseudo-leucite Nosean Phonolite	Phonolite	Nosean Phonolite	Trachy-phonolite	Trachy-phonolite	Tinguaite *Dhruwalgha Tinguaite*	Phonolite	Phonolite	Tinguaite
Locality	Warrum-bungle Mts., N.S.W.	Nandewar Mts., N.S.W.	Warrum-bungle Mts., N.S.W.	Mt. Wilson, near Bullar-to, Vic.	Mt. Wilson, near Bullar-to, Vic.	Minamurra River, N.S.W.	W. of Frenchman's Hill, Vic.	Dairy Mt., near Lue, N.S.W.	Jimmy Jimmy, Lue, N.S.W.
Refer-ence	**233**, 616; **554**, 275	**235**, 903; **554**, 293	**233**, 616; **554**, 283	**295**, 128	**295**, 128	**190**, 341; **299**, 41; **554**, 563 **55**, 51	**120**, 265	**349**, 177; **554**, 315	**78**, 239; **79**, 152; **554**, 315; **55**, 51
Analyst	H. I. Jensen	H. I. Jensen	H. I. Jensen	F. F. Field	F. F. Field	J. C. H. Mingaye	A. G. Hall	W. A. Greig	J. C. H. Mingaye
Remarks							(Dyke)		
Sp. Gr.	—	—	—	2·62	2·63	2·594	2·39	2·573	2·618
SiO_2	62·42	61·27	60·32	58·90	58·56	55·82	55·62	55·15	53·30
Al_2O_3	17·69	16·00	18·32	18·60	20·33	20·19	20·23	20·66	22·19
Fe_2O_3	2·72	2·59	3·55	3·70	1·71	3·70	1·80	1·90	3·58
FeO	2·19	4·04	1·96	2·30	2·81	1·17	2·09	3·06	1·55
MgO	0·20	0·39	0·01	0·41	0·60	0·25	0·22	0·36	0·24
CaO	1·53	1·93	1·12	1·47	1·85	1·02	1·08	1·58	1·36
Na_2O	5·93	4·25	7·01	6·74	6·56	9·57	7·67	8·10	9·73
K_2O	6·29	6·31	6·25	4·92	4·29	5·60	4·17	5·41	5·74
H_2O+	0·69	0·36	1·31	1·12	1·12	1·30	5·68	3·25	1·38
H_2O-	0·24	0·64	0·35	0·79	1·03	0·15	0·69	0·25	0·38
CO_2	abs.	0·16	tr.	abs.	abs.	0·04	0·28	0·09	0·02
TiO_2	0·35	1·02	0·25	0·13	0·14	0·01	0·25	0·06	abs.
P_2O_5	abs.	p.n.d.	abs.	0·09	0·06	0·07	tr.	0·16	0·08
MnO	0·08	0·10	0·03	0·13	0·19	0·36	0·26	tr.	0·47
Other Con-stituents	SO_3=0·05 NiO=tr. ZrO_2=0·20	NiO=tr.	NiO=0·05 CoO=tr. ZrO_2=0·38 SO_3=0·11	Cl=0·27	Cl=0·28	Cl=0·37 ZrO_2=0·09 SO_3=0·08 CuO=0·01	Cl=0·08 (NiCo)O=0·01	Cl=0·08 NiO=0·03	Cl=0·12 CuO=0·01 (NiCo)O=0·04 F=0·02 ZrO_2=0·11 SO_3=0·09
				99·57	99·53	99·80	100·13	100·14	100·41
Less O=Cl, F, S				0·04	0·04	0·07	0·02	0·02	0·04
	100·58	99·06	[101·02]	99·53	99·49	99·73	100·11	100·12	100·37

TABLE K — NEPHELINE- AND ANALCITE-BEARING TRACHYTIC ROCKS

	b. CaO = 1%—2%			c. CaO = 2%—3%				
	$K_2O/Na_2O < 0{\cdot}75$			$K_2O/Na_2O > 1{\cdot}25$		$K_2O/Na_2O = 1{\cdot}25—0{\cdot}75$		$K_2O/Na_2O <$ 0·75
	10	11	12	1	2	3	4	5
Rock Name	Tinguaite	Tinguaite	Tinguaite	Sanidine Tinguaite	Tinguaite	Soda Syenite	Nepheline Syenite	Phonolitic Trachyte
Locality	Mt. Kosciusko, N.S.W.	Mt. Kosciusko, N.S.W.	Mt. Kosciusko, N.S.W.	Port Cygnet, Tas.	Port Cygnet, Tas.	Bushrangers Hill, Dubbo, N.S.W.	Kangaroo Valley, N.S.W.	Mt. Flinders, Qld.
Reference	**107**, **55**, 51; **554**, 907	**107**; **554**, 907	**107**, **554**, 907	**129**, 108	**129**, 108	**350**, 185; **554**, 275	**355**, 198; **55**, 51; **554**, 445	**237**, 93; **554**, 429
Analyst	F. B. Gutherie	F. B. Gutherie	F. B. Gutherie	A. B. Edwards	A. B. Edwards	N.S.W. Dept. Mines	W. A. Greig	H. I. Jensen
Remarks	(N. side of dyke)	(S. side of dyke)	(Centre of dyke)					
Sp. Gr.	2·499	2·492	2·434	—	—	2·630	2·595	—
SiO_2	52·40	51·98	50·15	57·75	54·20	59·54	54·50	56·78
Al_2O_3	19·93	20·61	18·45	18·80	20·48	18·00	17·81	14·47
Fe_2O_3	3·83	4·08	4·71	6·05	4·90	3·30	1·70	2·80
FeO	1·51	1·32	1·24	0·84	1·26	1·62	5·30	6·05
MgO	0·32	0·38	0·37	1·01	0·40	0·18	1·09	0·34
CaO	1·34	1·12	1·39	2·35	2·85	2·08	2·64	2·47
Na_2O	11·71	11·69	12·02	3·33	4·03	5·97	5·39	8·67
K_2O	4·10	4·42	4·65	9·02	9·39	5·91	6·08	4·51
H_2O+	3·54	3·29	5·25	0·28	0·42	1·86	3·78	1·70
H_2O-	0·23	0·32	0·78	0·42	0·85	0·28	0·54	0·56
CO_2	0·21	0·44	0·52	abs.	abs.	0·30	0·30	—
TiO_2	—	—	—	0·10	0·20	0·36	0·44	2·00
P_2O_5	tr.	tr.	tr.	tr.	0·50	0·12	0·44	—
MnO	0·45	0·40	0·26	0·25	0·12	0·03	0·25	tr.
Other Constituents	Cl = 0·05	Cl = 0·09	Cl = tr.			Cl = 0·03 F = 0·09 ZrO_2 = 0·02 SO_3 = 0·06 BaO = 0·06 SrO = tr.	Cl = tr. SO_3 = 0·02	NiO = 0·05
	99·62	100·14				99·81		
Less O = Cl, F, S	0·01	0·02				0·04		
	99·61	100·12	99·79	100·20	[99·60]	99·77	100·28	100·40

TABLE K — NEPHELINE- AND ANALCITE-BEARING TRACHYTIC ROCKS

c. CaO = 2%—3%		d. CaO = 3%—4%					
	K_2O/Na_2O <0·75	K_2O/Na_2O = 1·25-0·75			K_2O/Na_2O < 0·75		
	6	1	2	3	4	5	6
Rock Name	Aplitic phase of Teschenite	Phonolitic Trachyte	Nepheline Syenite	Analcite "Syenite"	Analcite "Aplite"	Analcite "Syenite"	Analcite "Syenite"
Locality	Prospect, near Sydney, N.S.W.	Canobolas Mts., Orange, N.S.W.	Minamurra River, N.S.W.	Black Jack Mt., Gunnedah, N.S.W.	Prospect, near Sydney, N.S.W.	Prospect, near Sydney, N.S.W.	Prospect, near Sydney, N.S.W.
Reference	**238**, 504; **554**, 911; **55**, 66	**503**, 191	**190**, 339; **229**, 36; **554**, 905	**569**, 735; **570**, 23	**577**	**577**	**577**
Analyst	H. P. White	H. I. Jensen	H. P. White	J. F. Wilkinson	M. Chiba	M. Chiba	M. Chiba
Remarks		*Alkalies not reliable		Vein in Teschenite	Vein in Teschenite		
Sp. Gr.	2·665	—	2·569	—	2·57	2·47	2·49
SiO_2	58·82	57·39	51·48	50·71	55·41	55·22	54·07
Al_2O_3	16·91	16·88	17·07	16·72	17·41	16·00	15·78
Fe_2O_3	2·40	1·09	1·90	3·26	3·18	2·34	3·41
FeO	4·59	6·10	4·95	5·49	2·49	4·19	5·25
MgO	0·88	1·01	1·10	0·42	0·96	1·49	1·31
CaO	2·42	3·16	3·04	3·27	3·87	3·52	3·73
Na_2O	6·74	6·71*	5·65	6·42	6·47	5·81	6·14
K_2O	2·96	5·86*	5·22	5·75	4·02	3·84	2·74
H_2O+	1·98	0·11	3·25	4·07	4·17	4·30	2·42
H_2O-	0·56	0·49	0·67	0·49	0·99	1·07	0·88
CO_2	0·54	nd.	4·07	2·94	0·06	0·08	0·74
TiO_2	1·14	1·11	1·16	0·59	0·83	1·49	1·62
P_2O_5	0·34	—	0·41	0·12	0·24	1·31	0·92
MnO	0·13	0·05	0·26	0·01	0·10	0·08	0·16
Other Constituents	Cl = 0·01	NiO = 0·04	Cl = 0·11 BaO = 0·06				
			100·40				
Less O = Cl, F, S			0·02				
	100·42	100·00	100·38	100·26	100·20	100·74	99·17

TABLE K — NEPHELINE- AND ANALCITE-BEARING TRACHYTIC ROCKS

e. CaO = 4%—5%			
	K_2O/Na_2O >1·25	K_2O/Na_2O =1·25—0·75	K_2O/Na_2O <0·75
	1	2	3
Rock Name	Aplitic phase of Teschenite	Phonolitic Trachyte	Analcite "Syenite"
Locality	Prospect, near Sydney, N.S.W.	Nandewar Mts., N.S.W.	Prospect, near Sydney, N.S.W.
Refer-	**577**	**235**, 903; **554**, 907	**577**
Analyst	M. Chiba	H. I. Jensen	M. Chiba
Remarks	Centre of vein		
Sp. Gr.	2·86	—	2·56
SiO_2	54·82	51·98	51·30
Al_2O_3	17·70	22·46	16·72
Fe_2O_3	0·76	2·48	3·20
FeO	3·11	1·87	7·11
MgO	0·53	0·83	2·12
CaO	4·27	4·63	4·19
Na_2O	4·43	3·66	6·06
K_2O	7·24	3·93	2·35
H_2O+	4·40	2·06	3·26
H_2O-	0·46	1·08	0·61
CO_2	0·07	0·04	0·07
TiO_2	1·03	4·71	2·25
P_2O_5	0·90	—	0·77
MnO	0·07	0·08	0·14
Other Constituents		NiO = 0·04	
	99·79	99·85	100·15

TABLE L — BASALTIC ROCKS — $SiO_2 > 54\%$

a. CaO/Alk. <1

	$K_2O/Na_2O > 1{\cdot}25$					$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$			
	1	2	3	4	5	6	7	8	9
Rock Name	Latite *Cambewarra Latite*	Porphyritic Monzonite	Dolerite Aplite	Latite *Bumbo Latite*	Orthoclase Dolerite	Latite *Cambewarra Latite*	Acid Latite	Latite *Bumbo Latite*	Latite *Bumbo Latite*
Locality	Berry Mt., near Kiama, N.S.W.	Mt. Dromedary, N.S.W.	Prospect, near Sydney, N.S.W.	Kiama, N.S.W.	Billeranga Hills, Bowgoda Area, W.A.	Jamberoo, N.S.W.	Five Islands, Port Kembla, N.S.W.	Kiama, N.S.W.	N. of Jamberoo, N.S.W.
Reference	**75**, 111; **190**, 299; **229**, 18; **554**, 445	**48**, 647	**380**, 263	**399**	**563**	**229**, 18; **554**, 445	**83**, 37;	**399**	**190**, 306 **229**, 12; **554**, 463
Analyst	J. C. H. Mingaye	I. A. Brown	J. H. Pyle	J. H. Pyle	D. G. Murray	H. P. White	R. O. Chalmers	J. H. Pyle	J. C. H. Mingaye
Remarks									
Sp. Gr.	2·698	2·679	—	—	2·78	2·707	2·70	—	2·800
SiO_2	59·64	59·44	56·19	55·70	54·28	58·82	58·21	55·68	55·19
Al_2O_3	17·09	19·58	17·93	17·22	12·24	14·78	15·45	16·08	16·18
Fe_2O_3	2·45	0·31	0·80	4·55	12·43	3·90	2·38	3·55	3·52
FeO	3·21	3·91	3·80	2·64	0·53	3·24	3·82	3·85	3·94
MgO	1·66	1·27	1·71	2·57	1·47	2·26	2·89	2·92	3·04
CaO	3·88	3·95	2·39	4·95	2·25	3·09	3·03	6·18	4·68
Na_2O	3·52	3·21	4·93	3·85	0·80	4·67	5·16	3·55	5·09
K_2O	5·88	6·60	6·47	4·41	10·09	4·70	4·24	3·72	4·10
H_2O+	1·24	0·88	3·90	0·91	0·29	1·36	2·12	0·69	1·75
H_2O-	0·43	0·12	0·50	0·90	0·08	0·81	0·71	1·63	0·99
CO_2	0·47	0·49	abs.	0·12	2·46	0·05	0·14	0·28	0·28
TiO_2	0·42	0·54	1·23	1·05	2·55	1·78	0·88	0·91	0·89
P_2O_5	0·47	0·07	0·17	0·76	0·27	0·58	0·82	0·71	0·59
MnO	0·21	0·07	0·08	0·21	0·23	0·23	0·22	0·21	0·18
Other Constituents	$BaO = 0{\cdot}10$ $NiO = 0{\cdot}04$ $CuO = 0{\cdot}01$ $V_2O_3 = 0{\cdot}01$		$ZrO_2 = 0{\cdot}07$ $Cr_2O_3 = tr.$ $F = 0{\cdot}02$ $BaO = 0{\cdot}08$ $Li_2O = tr.$	$F = 0{\cdot}11$ $BaO = 0{\cdot}14$ $NiO = 0{\cdot}03$ $Cr_2O_3 = tr.$ $SO_3 = tr.$ $SrO = tr.$ $CuO = tr.$ $V_2O_3 = tr.$ $Cl = tr.$	$FeS_2 = 0{\cdot}06$	$BaO = 0{\cdot}12$ $NiO = 0{\cdot}02$ $V_2O_3 = 0{\cdot}02$	$NiO = 0{\cdot}12$ $Cl = tr.$	$F = 0{\cdot}13$ $BaO = 0{\cdot}12$ $Cr_2O_3 = tr.$ $NiO = 0{\cdot}01$	$NiO = tr.$ $BaO = 0{\cdot}07$ $V_2O_3 = 0{\cdot}03$ $CuO = 0{\cdot}01$ $SO_3 = 0{\cdot}05$ $Cl = 0{\cdot}02$
			100·27	100·12				100·22	
Less O = Cl, F, S			0·01	0·05				0·05	
	100·73	100·44	100·26	100·07	100·03	100·43	100·19	100·17	100·60

TABLE L — BASALTIC ROCKS — $SiO_2 > 54\%$

a. CaO/Alk. < 1					b. CaO/Alk = 1 – 2			
	$K_2O/Na_2O < 1 \cdot 25$	$K_2O/Na_2O < 0 \cdot 30$			$K_2O/Na_2O > 1 \cdot 25$	$K_2O/Na_2O = 1 \cdot 25 - 0 \cdot 75$		
	10	11	12	13	1	2	3	4
Rock Name	Latite *Bumbo Latite*	"Diabase"	"Diabase"	Albite Dolerite	Tachylyte	Porphyritic Dolerite	Pegmatitic Dolerite	Quartz Dolerite
Locality	Kiama, N.S.W.	Howqua, Vic.	Heathcote, Vic.	Nundle, N.S.W.	Inverell, N.S.W.	Loomberah, N.S.W.	Huon Road, near Red Hill, Tas.	O'Briens Hill, Tas.
Reference	**399**	**513**, 42	**513**, 42	**28**, 704; **554**, 897	**342**, 187; **544**, 515	**360**, 182; **32**, 368	**285**, 296	**285**, 297
Analyst	J. H. Pyle	E. O. Teale	E. O. Teale	W. N. Benson	Not Stated	J. C. H. Mingaye	Avery & Anderson	I. McDougall
Remarks		*Low (?)						(Red Hill Dyke)
Sp. Gr.	—	—	—	—	—	2·763	—	2·880
SiO_2	54·05	58·17	55·77	54·88	54·76	58·17	56·04	55·08
Al_2O_3	16·14	13·15	11·23	12·62	16·49	16·07	13·85	15·26
Fe_2O_3	4·25	3·18	1·82	3·02	0·80	2·60	2·61	3·43
FeO	3·67	8·61	10·11	7·11	10·71	3·96	7·47	9·06
MgO	3·23	0·91*	7·94	3·73	3·57	3·22	4·73	1·82
CaO	6·39	6·70	4·64	4·16	7·89	8·18	7·90	7·64
Na_2O	3·60	7·00	4·91	6·01	2·67	2·22	2·04	2·29
K_2O	3·72	0·41	0·73	1·10	2·03	1·90	2·07	1·84
H_2O+	1·08	0·33	0·55	1·76	0·59	1·78	1·34	1·42
H_2O-	1·46	1·34	1·91	0·23	0·11	0·22	0·48	0·50
CO_2	0·16	—	—	tr.		0·93	—	—
TiO_2	1·09	0·80	0·22	3·63		0·55	1·15	1·52
P_2O_5	0·98	—	—	—	0·32	0·16	0·17	0·19
MnO	0·19	—	—	0·25	tr.	0·18	0·18	0·16
Other Constituents	$F = 0 \cdot 09$ Cr_2O_3 = tr. $BaO = 0 \cdot 08$ $NiO = 0 \cdot 02$ V_2O_3 = tr. SrO = tr.			$NiO = 0 \cdot 05$ $FeS_2 = 0 \cdot 71$ $ZrO_2 = 0 \cdot 44$		$BaO = 0 \cdot 07$ $FeS_2 = 0 \cdot 07$ $V_2O_3 = 0 \cdot 02$ Cr_2O_3 = abs.		
	100·20							
Less O = Cl, F, S	0·04							
	100·16	[100·60]	[99·83]	99·70	99·94	100·30	100·03	100·21

TABLE L — BASALTIC ROCKS — $SiO_2 > 54\%$

b. CaO/Alk. = 1–2

	K_2O/Na_2O = 1·25–0·75	K_2O/Na_2O = 0·75–0·30					K_2O/Na_2O < 0·30
	5	6	7	8	9	10	11
Rock Name	Quartz Basalt	Leucocratic Dolerite	Fayalite Granophyre	"Lampro-phyre"	Quartz Dolerite	Quartz-bear-ing altered Gabbro	Spilite
Locality	Halls Creek Track, 9 mls. S. of Hard-man Ra., W.A.	Burnie, Tas.	O'Brien's Hill, Tas.	Good Dog Mt., near Nowra, N.S.W.	North West Bay, near Hobart, Tas.	Samford, Qld.	Silverwood, Qld.
Refer-ence	**140**, 89	**480**, 90; **482**	**285**	**75**, 120; **190**, 120; **554**, 515	**394**, 267; **125 505**, 154	**397**, 378	**428**; **430**, 95
Analyst	A. B. Edwards	W. St C. Manson	I. McDougall	H. P. White	R. Pohl	W. H. Herdsman	G. R. Patten
Remarks		Corrections **482** * In-cludes CO_2	(Red Hill Dyke)				
Sp. Gr.	—	—	2·811	2·744	2·906	—	2·792
SiO_2	54·40	58·32	57·70	57·64	56·74	54·36	54·10
Al_2O_3	14·34	15·03	15·16	18·28	15·46	19·14	16·45
Fe_2O_3	8·60	0·96	3·76	2·57	3·08	2·89	4·04
FeO	5·32	2·60	7·54	3·68	7·58	5·04	6·49
MgO	3·44	4·36	1·20	2·73	2·54	3·16	3·69
CaO	7·25	8·46	6·56	6·40	7·64	7·47	6·16
Na_2O	2·27	3·24	2·65	4·08	3·08	3·81	4·97
K_2O	1·95	1·41	1·82	2·03	1·59	1·43	1·01
H_2O+	0·34	5·09*	1·87	1·10	1·28	1·02	1·02
H_2O-	0·56	0·14	0·32	0·28		0·24	0·16
CO_2	0·20	p.	—	0·03	—	abs.	0·75
TiO_2	1·25	0·41	1·43	0·64	1·26	0·96	1·22
P_2O_5	0·30	0·12	0·21	0·31	0·15	0·45	0·26
MnO	0·21	0·11	0·20	0·25	tr.	0·12	0·06
Other Con-stituents				V_2O_3 = 0·02 SO_3 = 0·08 Cl = 0·02 NiO = 0·04 BaO = 0·09			
	100·43	100·25	100·42	100·27	100·40	100·09	100·37

TABLE L — BASALTIC ROCKS — $SiO_2 > 54\%$

c. CaO/Alk. = 2 – 3

$K_2O/Na_2O > 1 \cdot 25$		$K_2O/Na_2O = 1 \cdot 25 - 0 \cdot 75$		$K_2O/Na_2O = 0 \cdot 75 - 0 \cdot 30$					
	1	2	3	4	5	6	7	8	9
Rock Name	Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite "Diorite Stage"	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite
Locality	Detention R., Tas.	Mt. Nelson, near Hobart, Tas.	O'Briens Hill, Tas.	Summit of Mt. Wellington, Tas.	Mt. Nelson, Tas.	Snug River, Tas.	Mt. Wellington, Tas.	Port Cygnet, Tas.	Port Cygnet, Tas.
Reference	**480**, 90; **482**	**126**, 470	**285**, 297	**126**, 467	**126**, 470	**285**, 296	**126**, 467	**129**, 109	**129**, 109
Analyst	W. St C. Manson	A. B. Edwards	I. McDougall	A. B. Edwards	A. B. Edwards	I. McDougall	A. B. Edwards	A. B. Edwards	A. B. Edwards
Remarks	Locality corrected **482**		(Red Hill Dyke)			(Red Hill Dyke)		(Dyke)	Slightly Metamorphosed
Sp. Gr.	—	—	2·904	—	—	2·840	—	—	—
SiO_2	54·64	56·95	54·26	57·05	55·70	55·68	55·50	55·20	54·90
Al_2O_3	15·22	16·80	14·47	16·95	17·53	16·98	17·63	17·26	13·49
Fe_2O_3	1·17	0·06	1·23	2·60	0·23	2·04	0·05	4·23	4·40
FeO	7·81	9·94	11·14	8·64	9·21	7·08	9·94	5·90	6·12
MgO	5·39	1·63	2·41	1·77	2·79	2·61	2·35	4·76	5·70
CaO	7·96	8·75	8·35	8·60	9·50	9·37	8·70	8·20	9·65
Na_2O	1·69	2·17	2·18	2·09	2·29	2·28	2·17	1·94	2·53
K_2O	2·23	1·88	1·70	1·56	1·33	1·58	1·40	1·20	1·60
H_2O+	2·85	0·21	1·34	0·12	0·12	1·11	0·18	0·15	0·18
H_2O-	0·02	0·55	0·50	0·24	0·56	0·25	0·34	0·15	0·42
CO_2	—	abs.	—	abs.	abs.	—	abs.	abs.	abs.
TiO_2	0·68	1·00	2·00	0·75	0·85	0·72	1·14	1·32	0·88
P_2O_5	0·10	0·10	0·24	0·10	tr.	0·27	tr.	0·12	0·12
MnO	0·13	0·11	0·18	0·10	0·12	0·15	0·33	0·15	0·21
Other Constituents									
	99·89	[100·15]	100·00	100·57	100·23	100·12	99·73	100·58	100·20

TABLE L — BASALTIC ROCKS — $SiO_2 > 54\%$

	c. CaO/Alk. = 2–3					d. CaO/Alk. > 3			
	$K_2O/Na_2O = 0{\cdot}75–0{\cdot}30$					$K_2O/Na_2O = 1{\cdot}25–0{\cdot}75$	$K_2O/Na_2O = 0{\cdot}75–0{\cdot}30$		
	10	11	12	13		1	2	3	4
Rock Name	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite		Pegmatite Vein in Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite
Locality	Mt. Wellington, Tas.	Gunnings Sugarloaf, Tas.	Mt. Wellington, Tas.	North of Red Hill, Tas.		S. of Collins Vale, Tas.	Ouse, Tas.	Remarkable Cave, near Port Arthur, Tas.	Snug River Tas.
Reference	**126**, 467	**126**, 476	**126**, 467	**285**, 296		**126**, 478	**133**	**285**, 294	**285**, 294
Analyst	A. B. Edwards	A. B. Edwards	A. B. Edwards	Avery & Anderson		A. B. Edwards	W. St C. Manson	Avery & Anderson	I. McDougall
Remarks							Incipient weathering	(Chilled margin Sill)	(Chilled margin Red Hill Dyke)
Sp. Gr.	—	—	—	2·896		—	—		2·970
SiO_2	54·90	54·74	54·70	54·18		55·45	54·76	54·54	54·15
Al_2O_3	17·41	19·56	17·48	15·76		12·10	14·49	14·78	14·83
Fe_2O_3	0·56	0·27	0·25	1·56		4·69	2·76	0·27	0·50
FeO	8·50	8·13	8·91	8·40		8·92	7·72	8·96	8·95
MgO	3·33	2·34	2·86	3·75		5·68	4·85	6·80	6·76
CaO	9·75	10·98	9·70	9·82		9·80	8·50	11·12	10·65
Na_2O	2·17	2·15	2·33	2·46		1·32	1·71	1·80	1·98
K_2O	1·15	1·47	1·33	1·24		1·26	1·06	0·91	1·13
H_2O+	0·38	0·23	0·21	0·68		0·05	2·64	0·18	0·26
H_2O-	0·75	0·31	0·65	0·38		0·42	0·72	0·22	0·08
CO_2	abs.	abs.	tr.	—		abs.	tr.	—	—
TiO_2	0·50	0·66	0·95	0·94		0·80	0·80	0·72	0·71
P_2O_5	tr.	0·05	tr.	0·65		0·01	0·11	0·06	0·26
MnO	0·09	0·15	0·17	0·17		0·18	0·17	0·14	0·12
Other Constituents									
	99·49	[101·04]	99·54	99·99		100·68	100·29	100·50	100·38

TABLE L — BASALTIC ROCKS — $SiO_2 > 54\%$

d. CaO/Alk. > 3

	$K_2O/Na_2O = 0{\cdot}75 - 0{\cdot}30$			$K_2O/Na_2O < 0{\cdot}30$		
	5	6	7	8	9	10
Rock Name	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	"Tholeiite"	Diabase	"Tholeiite"
Locality	¾ mile N.E. of Longley, Tas.	Gunnings Sugarloaf, Tas.	Campbell-town District, Tas.	Cape Vogel, T.P. & N.G.	(?) Locality Tas.	Cape Vogel, T.P. & N.G.
Refer-ence	**285**, 294	**126**, 476	**133**, 27	**95**	**98**, 258	**95**
Analyst	I. McDougall	A. B. Edwards	W. St C. Manson	A. McClure	Not Stated	A. McClure
Remarks	(Chilled margin)		Core of Boulder	*Loss on ignition		*Loss on ignition
Sp. Gr.	2·936	—	—	—	2·838	—
SiO_2	54·13	54·10	54·04	56·74	56·60	54·09
Al_2O_3	15·31	18·49	16·78	12·41	12·50	8·39
Fe_2O_3	0·73	0·91	1·69	6·83	6·55	3·65
FeO	8·23	8·22	8·29	3·53	9·30	6·54
MgO	6·66	3·29	3·93	5·51	2·55	13·03
CaO	10·72	11·20	9·37	7·91	9·50	5·46
Na_2O	1·76	1·69	2·15	2·08	1·45	0·75
K_2O	0·95	1·25	0·93	0·08	0·35	0·41
H_2O+	0·50	0·05	1·72	1·98*	0·90	4·66*
H_2O-	0·36	0·34	0·16	2·35	—	2·70
CO_2	—	abs.	tr.	—	—	—
TiO_2	0·70	0·82	0·80	1·25	tr.	0·30
P_2O_5	0·09	0·01	0·11	0·15	tr.	0·07
MnO	0·16	0·18	0·12	0·07	—	0·15
Other Con-stituents					Cr_2O_3 = tr.	
	100·30	100·55	100·09	100·89	[99·70]	100·20

a. CaO/Alk. < 1

	$K_2O/Na_2O >$ ·125	$K_2O/Na_2O = 1·25-0·75$							
	1	2	3	4	5	6	7	8	9
Rock Name	Latite *Berkley Latite*	Latite *Bumbo Latite*	Latite *Bumbo Latite*	Hornblende Trachyandesite	Oligoclase Basalt (Trachybasalt)	"Basalt"	Latite *Bumbo Latite*	Dolerite	Orthoclase Basalt
Locality	Near Berkley Trig. Station near Wollongong, N.S.W.	Kiama, N.S.W.	Kiama, N.S.W.	Atlas Cove, Heard Island, Ant.	Melbourne Hill, near Lancefield, Vic.	Wyndham, W.A.	Near Kiama, N.S.W.	100 miles S.S.E. Oodnadatta, S.A.	Warrumbungle Mts., N.S.W.
Reference	**73**, 262; **190**, 295; **554**, 445	**190**, 405; **554**, 447	**399**	**530**, 42	**120**, 270	**447**, 22	**77**, 85; **190**, 306; **554**, 479	**95**	**233**, 616; **554**, 463
Analyst	H. P. White	H. P. White	J. H. Pyle	F. Herdsman	A. B. Edwards	C. G. Gibson	H. P. White	S. Baker	H. I. Jensen
Remarks				(Cobble)		(? Flow)		*Loss on ignition	
Sp. Gr.	2·698	2·715	—	—	—	2·87	2·722		—
SiO_2	51·07	53·80	53·34	53·05	53·03	52·58	52·42	52·26	51·88
Al_2O_3	17·52	15·79	17·52	18·28	16·59	10·56	18·05	15·70	14·20
Fe_2O_3	4·10	4·40	3·86	3·30	8·72	7·10	4·30	7·29	3·72
FeO	5·40	3·69	3·89	4·80	2·47	9·12	3·60	3·07	6·87
MgO	2·27	3·44	3·07	2·30	2·42	3·62	3·60	1·85	4·62
CaO	5·44	6·34	6·08	5·40	4·65	5·94	6·14	7·83	6·36
Na_2O	3·31	3·71	3·71	5·35	4·45	3·53	3·75	4·98	3·93
K_2O	5·53	4·25	3·92	4·22	4·15	2·80	4·14	4·55	3·27
H_2O+	2·50	1·93	1·19	0·20	0·61	1·33	1·07	0·90*	1·44
H_2O-	1·02	0·87	1·25	0·10	1·07	0·56	1·47	0·02	0·58
CO_2	0·17	0·10	0·10	abs.	—	abs.	0·04	—	0·29
TiO_2	0·80	0·85	1·16	1·80	0·93	2·62	1·16	0·48	3·54
P_2O_5	0·88	0·81	0·70	0·71	0·98	—	0·34	0·30	tr.
MnO	0·03	0·07	0·18	0·30	0·15	0·42	0·28	0·30	0·02
Other Constituents	$BaO = 0·14$ $V_2O_3 = 0·07$	$BaO = 0·02$ $V_2O_3 = 0·02$	$F = 0·09$ $NiO = 0·02$ $V_2O_3 = tr.$ $BaO = 0·08$ $Cr_2O_3 = tr.$			$FeS_2 = abs.$	$BaO = 0·11$ $V_2O_3 = 0·05$ $NiO = 0·03$ $CuO = 0·05$		$NiO = 0·04$ $SO_3 = 0·04$ $Cl = tr.$
			100·16						
Less O = Cl, F, S			0·04						
	100·25	100·09	100·12	99·81	100·22	100·18	100·60	99·53	100·80

TABLE M — BASALTIC ROCKS — SiO_2 54—50%

a. CaO/Alk. <1

	K_2O/Na_2O = 1·25—0·75						K_2O/Na_2O < 0·75		
	10	11	12	13	14	15	16	17	18
Rock Name	Trachybasalt	Orthoclase Basalt (Macedonite)	Trachybasalt	Latite *Minumurra Latite*	Porphyritic Monzonite	"Hornblende Lamprophyre"	Anorthoclase Basalt	Oligoclase Basalt	Dolerite
Locality	S.E. of Lancefield, Vic.	Mt. Macedon, Vic.	East of Glenlyon, Vic.	Average of rocks from Jamberoo and Albion Park, N.S.W.	Milton, N.S.W.	Good Dog Mt., N.N.W. of Nowra, N.S.W.	Mapleton, Qld.	Spicers Peak, Main Range, Qld.	Dubbo, N.S.W.
Reference	**120**, 274	**462**, 205; **468**, 31; **500**, 278; **537**, 61	**120**, 274	**190**, 293; **229**, 21	**46**, 460; **77**, 83; **190**, 320; **554**, 320	**75**, 127; **190**, 328; **554**, 515	**426**, 165; **428**, 299	**408**; **421**, 177; **426**, 165; **554**, 463	**348**, 165; **554**, 897
Analyst	A. B. Edwards	A. G. Hall	A. B. Edwards	H. P. White	H. P. White	J. C. H. Mingaye	G. J. Saunders	G. R. Patten	J. C. H. Mingaye
Remarks									
Sp. Gr.	—	2·760	—	2·644	2·788	2·788	2·725	2·74	2·715
SiO_2	51·56	51·48	51·35	51·32	51·11	51·02	53·33	52·95	52·48
Al_2O_3	16·41	16·34	19·38	18·82	17·70	16·98	14·57	15·56	17·03
Fe_2O_3	4·17	4·86	3·82	4·50	3·99	5·52	4·47	2·62	2·10
FeO	6·83	5·14	5·65	2·97	5·13	4·13	6·67	7·29	6·48
MgO	3·39	2·82	4·04	3·58	3·43	4·13	3·24	2·89	2·21
CaO	5·88	4·70	6·04	6·42	6·51	6·37	5·76	4·92	5·22
Na_2O	4·04	3·57	4·21	3·97	3·97	3·61	4·40	4·46	4·31
K_2O	3·31	3·43	3·69	3·31	3·25	2·98	2·62	2·94	3·10
H_2O+	0·81	1·62	0·31	2·89	2·41	1·95	2·09	2·18	1·92
H_2O-	1·19	1·90	0·39	0·87	0·52	1·01	0·98	0·75	0·88
CO_2	—	tr.	—	0·10	0·01	0·35	—	—	2·21
TiO_2	1·20	2·62	0·78	0·56	1·34	1·44	1·71	1·84	1·12
P_2O_5	1·02	1·28	0·19	0·42	0·65	0·30	0·83	1·15	0·61
MnO	0·12	0·35	0·21	0·23	0·32	0·29	nd.	0·14	0·02
Other Constituents	BaO = 0·02	Cl = tr.	Cl = 0·01 S = 0·02 BaO = 0·03	V_2O_3 = 0·04 BaO = 0·22 NiO = 0·01 CuO = 0·02	V_2O_3 = 0·05 Bao = 0·07 (NiCO)O = 0·02 Cl = 0·01	V_2O_3 = 0·02 BaO = 0·25 NiO = 0·04 SO_3 = 0·19 Cl = 0·03			V_2O_3 = 0·01 BaO = 0·07 SO_3 = 0·13
	99·95	100·11	100·12	100·25	100·49	100·61	100·67	99·69	99·90

TABLE M — BASALTIC ROCKS — SiO_2 54—50%

a. CaO/Alk. <1					b. CaO/Alk. =1—2			
	K_2O/Na_2O <0·75				K_2O >1·25			K_2O/Na_2O =1·25—0·75
	19	20	21	22	1	2	3	4
Rock Name	Feldspathic Trachybasalt	"Essexite"	Mugearite	Oligoclase Basalt (Macedonite)	Basalt	Olivine Monzonite	Dolerite Aplite	Monzonite Porphyry
Locality	Corinthian Bay, Heard Is. Ant.	Boolcoo-matta Hills, S.A.	Smithton, Tas.	Mt. Macedon Area, Vic.	Eildon, Vic.	Tilba Tilba, N.S.W.	Prospect, near Sydney, N.S.W.	N. of Milton, N.S.W.
Refer-ence	**530**, 42	**440**, 111	**384**, 69; **437**, 124	**468**, 31; **537**, 61; **554**, 519	**517**, 36	**48**, 653	**577**	**46**, 460; **77**, 85; **554**, 479
Analyst	F. Herds-man	E. R. Segnit	Tas. Dept. Mines	A. G. Hall	Field & Clark	I. A. Brown	M. Chiba	H. P. White
Remarks	(Moraine)		*Loss on ignition					
Sp. Gr.	—	—	—	2·79	2·879	3·017	2·78	2·779
SiO_2	52·35	50·40	50·16	50·14	53·06	51·14	50·85	53·90
Al_2O_3	18·11	14·91	18·01	16·91	13·77	16·91	16·62	15·32
Fe_2O_3	1·17	9·21	13·98	3·26	1·90	1·34	1·44	3·60
FeO	7·69	6·92	4·15	9·15	5·96	7·27	2·76	5·13
MgO	3·16	4·70	1·84	2·62	7·03	5·88	1·77	2·41
CaO	7·12	5·94	1·40	5·18	8·13	9·68	12·42	7·30
Na_2O	4·25	5·17	4·43	3·80	1·48	1·92	1·83	3·73
K_2O	3·05	1·16	0·83	2·78	3·43	3·32	6·03	3·44
H_2O+	0·10	0·47	2·10*	2·16	2·43	0·54	3·09	0·97
H_2O-	abs.	0·08	—	0·14	0·08	0·20	0·65	0·74
CO_2	abs.	—	—	—	abs.	—	0·16	0·03
TiO_2	1·80	0·79	2·00	1·90	1·70	0·92	1·29	2·86
P_2O_5	0·83	0·12	0·25	1·19	0·69	0·53	0·58	0·55
MnO	0·32	0·03	tr.	0·38	0·12	0·14	0·06	0·36
Other Con-stituents	BaO=0·06 SiO=0·12		S=tr.		Cl=tr. SO_3=tr.			BaO=0·06 V_2O_3=0·02 (NiCo)O=0·02 CuO=0·01 Cl=0·02
	100·13	99·90	99·15	99·61	99·78	99·79	99·55	100·47

TABLE M — BASALTIC ROCKS — SiO_2 54—50%

b. CaO/Alk. = 1—2

	K_2O/Na_2O = 1·25—0·75								
	5	6	7	8	9	10	11	12	13
Rock Name	"Basalt"	Monzonite Porphyry	Latite *Saddleback Latite*	Hornblende Lampro-phyre	Latite *Blowhole Latite*	Tachylyte	Latite *Durras Latite*	Monzonite	Dolerite
Locality	Cape Vogel, Papua, T.P. & N.G.	Milton, N.S.W.	Mullet Ck., N.S.W.	Tilba Tilba Lake, N.S.W.	Kiama, N.S.W.	Meredith, Vic.	Durras Mt., 20 miles S. of Ulladalla, N.S.W.	Mt. Drome-dary, N.S.W.	Synnott Ck., Charnley River, W.A.
Refer-ence	**95**	**46**, 460; **77**, 85; **554**, 515	**73**, 263; **190**; **554**, 515	**6**, 153; **554**, 479	**229**, 7	**539**, 64; **554**, 605	**190**, 309; **355**, 198; **554**, 897	**48**, 650	**447**, 22; **521**, 643
Analyst	A. McClure	A. H. Greig	H. P. White	J. C. H. Mingaye	J. C. H. Mingaye	Not stated	W. G. Stone	I. A. Brown	C. C. Williams
Remarks	*Loss on ignition								(Flow?)
Sp. Gr.	—	2·768	2·757	—	2·758	—	2·727	2·871	2·94
SiO_2	53·51	53·21	52·86	52·12	51·92	51·68	51·38	51·09	50·98
Al_2O_3	12·11	17·84	17·23	18·47	15·58	14·77	15·18	16·11	11·06
Fe_2O_3	8·78	3·80	4·10	3·40	5·00	1·26	7·30	3·11	5·72
FeO	4·18	5·22	4·59	4·77	4·68	10·70	3·06	6·58	10·67
MgO	5·44	2·96	3·34	5·11	4·09	4·67	4·03	4·69	5·88
CaO	4·66	6·48	7·62	8·71	7·72	8·37	7·07	9·10	8·09
Na_2O	2·33	3·36	3·29	3·07	3·38	2·61	3·10	3·29	2·75
K_2O	1·85	3·03	2·75	3·29	2·56	2·52	3·53	3·94	2·11
H_2O+	2·28*	1·27	1·48	0·46	1·35	0·13	2·56	0·66	1·73
H_2O-	3·73	0·65	0·91	—	1·19	0·01	0·87	0·10	0·28
CO_2	—	0·02	0·04	—	0·02	—	0·46	abs.	abs.
TiO_2	0·98	1·01	1·10	tr.	1·20	2·91	0·90	1·02	0·70
P_2O_5	0·10	0·44	0·43	0·25	0·54	0·26	0·61	0·77	—
MnO	0·20	0·32	tr.	tr.	0·24	0·33	0·09	0·18	0·65
Other Con-stituents		BaO = 0·02 V_2O_3 = 0·01 (NiCo)O = 0·04 SO_3 = 0·09 Cl = 0·11 CuO = tr.	BaO = 0·01 V_2O_3 = 0·03 NiO = tr.	SO_3 = tr.	BaO = 0·07 V_2O_3 = 0·04 NiO = 0·02 CuO = 0·01 Cl = 0·05	Cl = 0·12	BaO = 0·07 V_2O_3 = 0·01 SO_3 = 0·03 Cl = 0·05		FeS_2 = 0·44
					99·66	100·34	100·30		
Less O = Cl, F, S					0·01	0·02	0·01		
	100·15	99·88	99·78	99·65	99·65	100·32	100·29	100·64	101·06

TABLE M — BASALTIC ROCKS — SiO_2 54—56%

b. CaO/Alk. = 1—2

	K_2O/Na_2O = 1·25—0·75			K_2O/Na_2O = 0·75—0·30					
	14	15	16	17	18	19	20	21	22
Rock Name	Basalt	Feldspathic Trachybasalt	Andesine Basalt	Basalt *Argyle Basalt*	Tachylyte	"Andesite"	Latite *Saddleback Latite*	Subophitic Basalt	Latite *Saddleback Latite*
Locality	E. of Lynchford, Tas.	Heard Island, Ant.	Sydenham, near Melbourne, Vic.	East Kimberley, W.A.	Inverell, N.S.W.	Silverwood, Qld.	Port Kembla, N.S.W.	East Kimberley, W.A.	N.W. of Jamberoo, N.S.W.
Reference	**474**, 49	**530**, 42	**120**, 278	**140**, 89	**354**, 198	**428**, **430**, 95	**190**, **355**, 198; **554**, 517	**140**, 89	**229**, 16; **554**, 517
Analyst	Mt. Lyell Co.		A. B. Edwards	A. B. Edwards	W. A. Greig	G. R. Patten	H. P. White	R. W. Fletcher	H. P. White
Remarks		(Moraine)							
Sp. Gr.	—	—	—	—	2·853	2·721	—	2·91	2·789
SiO_2	50·6	50·34	50·23	53·95	53·86	53·37	52·72	52·67	52·48
Al_2O_3	20·3	16·63	15·83	15·98	15·41	20·08	16·19	14·34	17·32
Fe_2O_3	10·7	2·39	2·81	2·99	1·50	3·94	4·80	2·37	4·30
FeO	nd.	7·44	7·63	8·49	11·51	5·02	4·14	6·95	5·04
MgO	4·4	3·92	4·86	3·95	3·60	4·26	4·12	7·32	3·65
CaO	6·6	8·20	7·62	5·35	7·18	4·34	8·10	6·99	7·66
Na_2O	2·3	3·86	3·10	3·10	3·04	0·82	3·31	3·20	3·43
K_2O	1·8	3·22	2·95	2·00	1·24	3·01	2·45	1·92	2·53
H_2O+	1·9	0·51	1·22	1·25	1·10	2·72	1·56	1·99	1·61
H_2O-			0·80	0·65	0·44	0·22	0·92	0·38	0·59
CO_2	0·4	—	—	tr.	abs.	—	0·07	0·06	0·17
TiO_2	0·5	3·18	2·16	1·00	0·36	1·85	1·20	1·02	0·74
P_2O_5	—	0·66	0·38	0·68	0·35	0·12	0·48	0·09	0·42
MnO	nd.	—	0·21	0·17	0·16	0·11	0·07	0·39	0·31
Other Constituents	SO_3 = 1·0				V_2O_3 = 0·04 SO_3 = tr. Cl = 0·06		V_2O_3 = 0·02 BaO = 0·05 NiO = tr.	FeS_2 = 0·09	V_2O_3 = 0·03 BaO = 0·06 NiO = 0·01 SO_3 = 0·09
					99·85				
Less O = Cl, F, S					0·01				
	100·5	100·35	99·80	99·56	99·84	99·86	100·20	99·78	100·44

TABLE M — BASALTIC ROCKS — SiO_2 54—50%

b. CaO/Alk. = 1—2

	K_2O/Na_2O = 0·75—0·30								
	23	24	25	26	27	28	29	30	31
Rock Name	Olivine-labradorite Basalt	Andesitic Basalt	Porphyritic Basalt	Andesitic Basalt	Basalt	Andesitic Basalt	Basalt	Andesine Basalt	Feldspar Basalt
Locality	Mitchells Gorge, Campaspe River, Vic.	Burleigh Heads, Qld.	Ardglen, N.S.W.	Jim Jim, Woodend, Vic.	Montville, Qld.	Mt. Canobolas, near Orange, N.S.W.	Ipswich, Qld.	Gisborne, Vic.	East Kimberley, W.A.
Reference	**120**, 285	**408**; **421**, 177; **554**, 515	**470**, 215	**548**	**426**, 165	**396**	**407**; **421**, 177; **554**	**120**, 270	**140**, 87
Analyst	A.B. Edwards	N. H. Christensen	T. H. Smith	Vict. Dept. Mines	R. Scott	R. E. Penrose	G. R. Patten	A. B. Edwards	A. B. Edwards
Remarks									
Sp. Gr.	—	2·87	2·719	—	—	2·88	—	—	—
SiO_2	52·48	52·24	52·16	52·09	52·00	51·89	51·86	51·82	51·80
Al_2O_3	14·87	16·52	17·58	14·71	18·76	17·91	18·56	15·15	18·14
Fe_2O_3	0·30	4·52	3·37	5·88	1·86	3·48	0·38	1·78	2·45
FeO	8·04	6·61	5·23	5·44	5·84	7·17	10·69	8·69	6·61
MgO	8·49	3·55	4·97	7·83	4·15	3·41	3·72	3·62	3·98
CaO	8·43	8·20	6·68	7·39	7·31	7·05	5·77	7·97	8·50
Na_2O	2·99	3·28	4·24	2·69	3·75	3·98	3·30	3·03	2·72
K_2O	1·43	1·48	1·95	1·06	1·27	2·26	2·10	1·41	1·89
H_2O+	0·24	0·65	1·05	0·95	1·06	0·59	0·56	1·37	1·04
H_2O-	0·44	0·58	0·43	0·84	0·80	0·22	0·24	0·77	1·05
CO_2	abs.	—	abs.	abs.	—	—	—	1·42	0·05
TiO_2	1·22	1·44	2·14	2·00	1·85	2·29	0·70	2·10	0·75
P_2O_5	0·26	0·80	0·36	0·30	1·24	tr.	1·44	0·31	0·41
MnO	0·26	tr.	0·01	—	—	0·33	0·18	0·16	0·08
Other Constituents	S = 0·02 NiO = 0·01 Cr_2O_3 = tr.		(NiCo)O = tr.	NiO = 0·05				BaO = 0·03 S = abs. Cl = 0·03	
	[99·48]	99·87	100·17	101·23	99·89	100·58	99·50	99·66	99·47

b. CaO/Alk. = 1 – 2

	K_2O/Na_2O = 0·75-0·30								
	32	33	34	35	36	37	38	39	40
Rock Name	Anortho-clase Basalt	Olivine Basalt	Olivine-oligoclase Basalt	Dolerite	Tachylyte	"Labradorite Porphyry"	Basalt *Bong Bong Basalt*	Quartz Dolerite	Iddingsite-labradorite Basalt
Locality	N.N.E. Jim Jim, Mt. Macedon Area, Vic.	Near Orange, N.S.W.	W.S.W. of Mt. Gisborne, Vic.	Batlow Creek, Mt. Barney, Qld.	Tanjil, Vic.	Nandewar Mts., N.S.W.	Near Broughton Village, N.S.W.	Staggy Ck., Copeton, N.S.W.	Baynton, Vic.
Reference	**468**, 33; **500**, 278; **537**, 61; **554**, 627	**574**, 142	**120**, 271	**486**, **487**	**121**, 90	**235**, 903; **554**, 837	**190**, 339; **229**, 23	**100**, 833; **554**, 897	**120**, 282
Analyst	R. J. Lewis	Avery & Anderson	A. B. Edwards	E. L. P. Mercy	A. W. Howitt	H. I. Jensen	J. C. H. Mingaye	L. A. Cotton	A. B. Edwards
Remarks		*Recal. to 100·00 excluding H_2O-		(Cone Sheet)					
Sp. Gr.	2·828	2·71	—	—	2·61	—	2·814	—	—
SiO_2	51·72	51·66	51·59	51·4	51·31	51·30	51·19	51·16	51·16
Al_2O_3	13·36	15·88	14·52	14·9	18·03	16·13	14·03	17·98	15·06
Fe_2O_3	2·80	0·76	2·15	2·8	1·50	3·01	4·95	2·85	2·76
FeO	8·16	9·70	8·59	6·6	7·32	6·92	6·48	4·09	8·04
MgO	7·20	7·35	4·11	5·7	5·60	2·58	4·27	4·10	6·48
CaO	7·68	8·07	7·49	8·3	8·74	6·97	8·18	7·30	8·30
Na_2O	2·87	2·81	3·45	3·3	3·30	4·00	3·53	3·92	3·63
K_2O	1·34	1·52	2·10	1·6	2·26	2·07	1·10	1·61	1·37
H_2O+	0·96	0·65	0·98	2·3	0·79	1·89	1·52	2·32	0·15
H_2O-	1·61	(0·09)*	1·10	—	—	0·50	1·06	2·51	1·36
CO_2	nd.	nd.	2·11	—	0·88	1·64	0·04	1·03	0·55
TiO_2	2·30	1·60	1·35	2·1	tr.	2·78	2·72	1·27	1·10
P_2O_5	0·25	—	0·81	0·42	0·45	pnd.	0·99	abs.	0·35
MnO	tr.	—	0·16	0·14	tr.	0·19	0·09	—	0·12
Other Constituents	Cl = tr.		BaO = 0·03 S = 0·04 Cl = 0·04			NiO = 0·05 CoO = pnd. SO_3 = tr. SrO = tr.	ZrO_2 = 0·02 V_2O_3 = 0·01 Cl = 0·01 CuO = 0·01 BaO = 0·04		Cl = 0·01 BaO = 0·02
	100·25	100·00	100·62	99·56	100·18	100·03	100·24	100·14	100·46

TABLE M — BASALTIC ROCKS — SiO_2 54—50%

b. CaO/Alk = 1 – 2

K_2O/Na_2O = 0·75 – 0·30

	41	42	43	44	45	46	47	48	49
Rock Name	Tachylyte	Porphyritic Andesine Basalt	Amygdaloidal Basalt	Basalt	Olivine Basalt	Dolerite	Basalt	"Gabbro-diabase"	Basalt
Locality,	Meredith, Vic.	S.W. of Sunbury, Vic.	Aitape, N.G. T.P. & N.G.	Main Range, Qld.	Tweed River Heads, N.S.W.	Prince Regent R., Kimberley, W.A.	Lake Terang, Camperdown, Vic.	Blinman, Flinders Ra., S.A.	Broadmeadow, Vic.
Reference	**113**, 324	**120**, 279	**17**, 25	**490**	**330**, 304; **554**, 517	**447**, 22	**181**, 22; **554**, 521	**25**, 234	**492**, 177 **554**, 901
Analyst	A. G. Hall	A. B. Edwards	G. C. Carlos	Avery & Anderson	J. C. H. Mingaye	C. G. Gibson	A. A. Topp	W. N. Benson	F. L. Stillwell
Remarks						(Dyke)		Rock slightly oxidized	
Sp. Gr.	2·83	—	2·58	—	2·795	2·95	2·797	—	—
SiO_2	50·87	50·86	50·86	50·84	50·78	50·70	50·69	50·63	50·50
Al_2O_3	14·33	16·43	17·02	14·63	15·16	14·02	15·64	16·30	16·01
Fe_2O_3	5·37	2·25	4·82	1·02	2·36	0·90	9·64	5·34	1·40
FeO	7·25	8·08	1·89	10·84	10·01	12·76	2·04	6·46	8·98
MgO	4·51	5·63	7·27	3·11	4·43	3·66	5·51	6·62	6·13
CaO	8·22	7·60	7·36	6·76	6·46	8·66	7·52	7·65	8·05
Na_2O	3·39	3·51	3·13	3·56	3·54	3·01	3·25	3·22	3·08
K_2O	1·35	2·38	1·65	2·32	2·20	1·37	1·05	1·69	2·02
H_2O+	0·17	0·25	2·90	1·37	1·32	1·35	0·87	0·89	0·29
H_2O-	0·33	0·77	1·89	1·06	0·75	0·20	1·06	0·14	0·48
CO_2	0·03	0·10	0·30	1·22	0·01	abs.	abs.	abs.	0·68
TiO_2	3·38	1·02	0·47	2·36	2·60	1·84	2·05	0·80	2·04
P_2O_5	0·07	0·44	0·54	0·66	0·34	—	0·36	—	0·39
MnO	0·58	0·41	0·24	0·15	0·14	0·86	0·12	—	tr.
Other Constituents	NiO = 0·06	Cl = 0·02	Cl = 0·01		SO_3 = 0·15 Cl = 0·02 (NiCo)O = 0·05 BaO = 0·05 V_2O_3 = 0·02 CuO = 0·01	FeS_2 = 0·20	Cr_2O_3 = 0·06 NiO = 0·06 Cl = tr. Li_2O = tr. SO_3 = tr.	SrO = tr.	
	99·91	99·75	[100·35]	99·90	100·40	[99·53]	99·92	99·74	[100·05]

b. CaO/Alk. = 1 – 2

K_2O/Na_2O = 0·75 – 0·30

	50	51	52	53	54	55	56	57	58
Rock Name	Basalt	Dolerite (diamond-bearing)	Andesine Basalt	Olivine Basalt	Andesine Basalt	Basalt *Bong Bong Basalt*	Andesine Basalt	Amygdaloid-al Basalt	Andesine Basalt
Locality	Aitape, N.G. T.P. & N.G.	Oakey Ck., Copeton, N.S.W.	Yendon, Ballarat Area, Vic.	Toowoomba, Qld.	Burrumbeat, Ballarat Area, Vic.	Near Broughton Village, N.S.W.	Grenville Hill, Ballarat Area, Vic.	Aitape, N.G. T.P. & N.G.	Lal Lal Falls, Ballarat, Vic.
Reference	**17**, 25	**73**, 264; **100**, 833; **554**, 897	**591**, 80	**407**; **421**, 177; **422**, 150; **424**, 96; **554**, 625	**591**, 89	**190**, 337; **229**, 23	**591**, 80	**17**, 25	**591**, 80
Analyst	G. C. Carlos	J. C. H. Mingaye	H. Yates	G. R. Patten	H. Yates	J. C. H. Mingaye	H. Yates	G. C. Carlos	H. Yates
Remarks									
Sp. Gr.	2·67	2·587	—	2·88	—	2·866	—	2·59	—
SiO_2	50·45	50·43	50·28	50·27	50·26	50·24	50·21	50·12	50·12
Al_2O_3	17·46	14·72	17·57	12·50	14·80	15·42	17·28	14·98	18·59
Fe_2O_3	5·25	2·90	4·31	2·44	4·20	5·59	3·04	4·08	0·77
FeO	2·24	4·59	4·96	8·18	7·18	6·75	5·98	2·52	7·92
MgO	5·48	6·67	3·86	10·25	7·22	3·73	4·58	9·11	4·06
CaO	8·77	7·13	6·98	7·52	8·41	7·86	7·52	9·06	6·76
Na_2O	3·40	2·47	4·08	3·29	3·26	3·60	3·80	4·07	3·92
K_2O	1·74	1·23	1·66	1·42	1·02	1·47	1·78	1·61	1·54
H_2O+	2·04	3·49	0·65	1·14	0·72	1·16	0·89	1·82	1·52
H_2O-	1·90	3·82	1·37	0·46	0·50	0·89	0·88	1·19	0·90
CO_2	0·03	1·67	—	—	—	0·03	—	0·25	—
TiO_2	0·77	0·82	3·71	2·26	2·23	3·08	3·42	0·90	3·65
P_2O_5	0·24	0·22	0·35	0·60	0·37	0·37	0·45	0·27	0·56
MnO	0·24	0·03	—	0·18	—	0·12	—	0·24	—
Other Constituents		SO_3 = 0·01 Cr_2O_3 = 0·02 V_2O_3 = 0·03 SrO = tr. Cl = tr. ZrO_2 = tr.				BaO = 0·03 V_2O_3 = 0·06 SO_3 = 0·07 Cl = 0·01 NiO = 0·04 CuO = 0·01		Cl = 0·01	
	100·01	100·25	99·78	100·51	100·17	100·53	99·83	100·23	100·31

TABLE M — BASALTIC ROCKS — SiO_2 54—50%

b. CaO/Alk. = 1 – 2

	$K_2O/Na_2O = 0{\cdot}75 - 0{\cdot}30$			$K_2O/Na_2O < 0{\cdot}30$					
	59	60	61	62	63	64	65	66	67
Rock Name	Porphyritic olivine-andesine Basalt	Andesine Basalt	Olivine-oligoclase Basalt	Albite Dolerite	Spilite	Andesine Basalt	Quartz Dolerite	Spilite	Spilite
Locality	Gong Gong, Ballarat, Vic.	Buninyong, Ballarat, Vic.	Kyneton, Vic.	Bingara, N.S.W.	King Island, Tas.	Piggbreet, Ballarat Area, Vic.	Bowling Alley Point, N.S.W.	Nemingha, N.S.W.	King Island, Tas.
Reference	**591**, 76	**591**, 80	**120**, 271	**27**, 20; **28**, 704; **29**, 171; **554**, 897	**436**, 121; **437**, 124	**591**, 92	**30**, 139	**31**, 602	**436**, 121; **437**, 124
Analyst	H. Yates	H. Yates	A. B. Edwards	W. N. Benson	B. Scott	H. Yates	W. N. Benson	W. N. Benson	B. Scott
Remarks						*Loss on ignition			
Sp. Gr.	—	—	—	—	—	—		—	
SiO_2	50·06	50·01	50·01	53·17	52·61	51·41	51·19	50·17	50·01
Al_2O_3	14·73	16·86	16·50	9·36	13·03	14·78	14·40	15·56	15·38
Fe_2O_3	1·61	5·51	1·81	1·29	3·90	2·20	4·43	2·18	4·86
FeO	8·49	4·96	9·04	9·62	8·48	8·42	9·04	12·06	9·21
MgO	7·94	3·85	4·50	9·00	5·10	6·93	4·51	3·49	5·85
CaO	8·27	7·38	8·68	7·46	7·26	8·30	6·05	7·77	6·35
Na_2O	4·06	3·42	3·23	4·26	5·60	3·70	4·18	4·12	4·77
K_2O	1·59	1·84	1·25	0·48	0·42	0·89	0·78	0·38	0·40
H_2O+	0·47	1·14	2·10	1·80	1·65	0·85*	1·82	1·12	2·60
H_2O-	0·11	0·76	1·34	0·07	0·10	0·58	0·24	0·27	0·23
CO_2	—	—	abs.	1·17	0·05	—	abs.	0·21	0·13
TiO_2	2·62	3·71	0·78	1·85	0·72	1·86	2·69	1·51	0·73
P_2O_5	0·44	0·35	0·44	0·12	tr.	0·30	0·40	0·18	0·09
MnO	—	—	0·09	0·19	0·19		0·21	0·43	0·21
Other Constituents			Cl = 0·03 S = tr. BaO = tr.	FeS_2 = 0·30 (NiCo)O = 0·04	S = 0·08		FeS_2 = 0·19	FeS_2 = 0·10	
	100·39	99·79	99·80	100·18	99·19	100·42	100·13	99·55	100·82

TABLE M — BASALTIC ROCKS — SiO_2 54-50%

b. CaO/Alk. = 1–2		c. CaO/Alk. = 2–3						
K_2O/Na_2O < 0·30		K_2O/Na_2O > 1·25		K_2O/Na_2O = 1·25–0·75	K_2O/Na_2O = 0·75–0·30			
68		1	2	3	4	5	6	7
Rock Name	Spilite	"Augite Porphyry"	Orthoclase gabbro (Shonkinite)	Basalt	Quartz Dolerite	Quartz Dolerite	Andesine Basalt	Andesitic Basalt
Locality	Nundle, N.S.W.	Blayney, N.S.W.	Walhalla, Vic.	Walhalla, Vic.	O'Briens Hill, near Hobart, Tas.	O'Briens Hill, near Hobart, Tas.	Jim Jim, Mt. Macedon Vic.	Mt. Macedon Vic.
Reference	**536**, 36	**376**, 90	**548**	**548**	**285**, 297	**285**, 296	**468**, 35; **537**, 61; **554**, 591	**468**, 35 **554**, 627
Analyst	Avery & Anderson	E. N. Reidy	F. F. Field	F. F. Field	I. McDougall	I. McDougall	A. G. Hall	A. G. Hall
Remarks	(Core of pillow)*Checked by T. G. Vallance		(Dyke)		(Red Hill Dyke)	(Red Hill (Dyke)		
Sp. Gr.	2·91	2·974		—	2·896	2·839	2·920	2·867
SiO_2	50·00	50·84	50·79	51·90	53·90	53·83	52·38	52·01
Al_2O_3	16·69	12·16	10·55	14·06	14·84	17·55	14·06	13·50
Fe_2O_3	1·97	2·07	1·57	2·99	2·75	1·69	6·86	6·25
FeO	9·20	6·84	7·43	7·31	9·70	8·00	4·82	4·82
MgO	5·04	9·89	10·50	6·96	2·99	2·56	8·02	8·48
CaO	7·22	10·14	12·40	10·54	9·51	9·58	7·12	7·81
Na_2O	3·74*	1·09	1·00	1·79	2·27	2·18	1·78	2·74
K_2O	1·10*	3·25	1·76	1·92	1·54	1·62	1·26	1·17
H_2O+	3·25	1·84	2·45	0·88	1·00	1·18	0·62	0·67
H_2O-	0·14	0·10	0·13	0·10	0·44	0·24	0·52	0·24
CO_2	abs.	0·70	0·30	tr.	—	—	—	2·20
TiO_2	1·68	0·40	0·93	1·15	1·44	1·03	1·95	abs.
P_2O_5	0·26	0·27	0·30	0·42	0·22	0·26	0·36	0·39
MnO	0·21	0·08	tr.	tr.	0·20	0·15	0·04	0·07
Other Constituents		BaO = 0·05 Cr_2O_3 = 0·04 (NiCo)O = 0·08 SO_3 = 0·05 V_2O_3 = tr. Cl = 0·06	SO_3 = abs.	SO_3 = abs.			Cl = tr. NiO = tr.	Cl = tr. NiO = 0·03 Li_2O = tr.
	100·50	99·95	100·11	100·02	99·80	99·87	99·79	100·38

TABLE M — BASALTIC ROCKS — SiO_2 54—50%

c. CaO/Alk. = 2 – 3

K_2O/Na_2O = 0·75 – 0·30

	8	9	10	11	12	13	14	15	16
Rock Name	Basalt	Ophitic Labradorite Basalt	Basalt	Basalt	Andesine Basalt	Aphanitic Basalt	Iddingsite-labradorite Basalt	Olivine-labradorite Basalt	Olivine-labradorite Basalt
Locality	Ipswich, Qld.	Ballarat, Vic.	Bridgewater, Tas.	Cue, W.A.	Smeaton, Ballarat, Vic.	East Kimberley, W.A.	Ballarat, Vic.	Warrnambool, Vic.	Mt. Macedon Area, Vic.
Reference	**421**, 177; **407**; **554**, 527	**591**, 74	**130**, 102	**447**, 24; **588**, 53	**591**, 92	**140**, 89	**120**, 282	**120**, 284; **540** 64; **554**, 629	**468**, 35
Analyst	G. R. Patten	H. Yates	W. St C. Manson	C. C. Williams	H. Yates	A. B. Edwards	A. G. Hall	A. G. Hall	A. G. Hall
Remarks					*Loss on ignition	(Part of large intrusion)			
Sp. Gr.	—	—	—	2·96	—	—	2·86	2·906	2·81
SiO_2	51·80	51·69	51·48	50·80	50·80	50·50	50·45	50·44	50·36
Al_2O_3	16·63	15·17	14·18	11·63	14·97	14·25	14·96	14·47	15·13
Fe_2O_3	2·72	0·35	1·56	2·91	1·90	0·58	6·26	6·32	0·68
FeO	7·91	7·64	9·61	12·13	7·13	11·36	4·72	5·01	9·93
MgO	5·34	4·59	8·18	4·61	5·99	5·01	6·98	7·93	8·09
CaO	8·38	8·19	8·95	8·31	9·22	10·15	8·60	8·75	8·66
Na_2O	3·89	2·80	2·61	2·41	3·32	2·58	2·93	2·59	2·71
K_2O	0·29	1·00	0·82	1·56	1·10	1·39	1·08	1·11	1·05
H_2O+	0·88	1·24	1·00	0·93	2·71*	0·35	0·79	0·60	1·15
H_2O-	1·10	1·17	0·24	0·71	0·31	0·62	0·97	0·60	0·12
CO_2	—	2·54	—	0·29	—	1·83	abs.	abs.	—
TiO_2	0·82	2·93	1·60	2·49	2·42	1·22	1·93	1·80	1·90
P_2O_5	0·26	0·27	0·29	0·68	0·34	0·05	0·37	0·31	0·48
MnO	0·23	—	0·15	0·09	—	0·28	0·24	0·19	0·10
Other Constitients			Cl = tr. SO_3 = tr.	FeS_2 = 0·26			S = 0·06 NiO = 0·01	NiO = 0·01	NiO = 0·01
	100·25	99·58	100·67	99·81	100·21	[100·17]	100·35	100·13	100·37

c. CaO/Alk. = 2–3

	K_2O/Na_2O = 0·75–0·30			K_2O/Na_2O < 0·30					
	17	18	19	20	21	22	23	24	25
Rock Name	Dolerite	Olivine-labradorite Basalt	Olivine Basalt	Mugearite	"Tholeiite"	Quartz Dolerite	Dolerite	Basalt	Basalt
Locality	Kuridala, Qld.	Alfredton, Ballarat, Vic.	East Kimberley, W.A.	Smithton Area, Tas.	Cape Vogel, T.P. & N.G.	Ashburton Goldfield, W.A.	Burracoppin, W.A.	Bundamba, Qld.	Ouse, Tas
Reference	**551**	**120**, 285	**140**, 86	**384**, 69; **437**, 124	**95**	**447**, 22; **519**, 164; **521**, 645; **554**	**563**	**421**, **408**, **554**, 637	**130**, 102
Analyst	K. R. Walker	A. G. Hall	A. B. Edwards	Tas. Dept. Mines	A. McClure	D. G. Murray	C. R. LeMesurier	G. R. Patten	W. St C. Manson
Remarks				*Loss on ignition	*Loss on ignition	(Flow or Sill)	(Dyke)		
Sp. Gr.	3·042	—	—	—	—	3·00	2·89	2·92	—
SiO_2	50·20	50·17	50·00	53·20	52·26	51·93	51·73	51·69	51·48
Al_2O_3	14·45	14·43	15·13	19·15	11·02	14·26	18·68	13·16	14·32
Fe_2O_3	2·86	8·02	3·06	7·72	6·14	2·49	1·44	3·99	2·17
FeO	8·34	3·65	6·07	3·87	5·53	10·76	7·85	8·65	8·98
MgO	7·30	7·66	8·33	2·89	8·21	5·28	3·93	6·84	8·02
CaO	10·56	8·96	9·10	1·24	8·06	7·89	10·65	8·41	8·33
Na_2O	2·48	3·04	2·59	5·17	3·00	2·79	3·29	2·76	2·48
K_2O	1·57	1·08	1·81	0·58	0·19	0·81	0·56	0·45	0·61
H_2O+	1·41	0·68	0·91	4·00*	1·83*	1·13	1·00	1·00	0·58
H_2O-	0·21	0·85	0·50		2·35	0·09	0·36	0·55	1·54
CO_2	—	abs.	0·20	—	—	abs.	0·07	—	0.05
TiO_2	0·50	1·70	1·25	1·74	0·73	1·75	0·74	1·70	1·45
P_2O_5	0·11	0·33	0·55	0·30	0·18	0·31	0·17	0·28	0·21
MnO	0·12	0·18	0·17	tr.	0·14	0·57	0·29	0·14	0·14
Other Constituents		$S=0·04$ $NiO=0·03$ $Cr_2O_3=0·05$		$S=0·05$		$FeS_2=0·14$	$Cr_2O_3=0·01$ $V_2O_3=0·02$		
	100·11	100·87	99·67	99·91	99·64	100·20	100·56	99·62	[100·36]

TABLE M — BASALTIC ROCKS — SiO_2 54–50%

c. CaO/Alk. = 2–3									
	$K_2O/Na_2O > 0{\cdot}30$								
	26	27	28	29	30	31	32	33	34
Rock Name	Labradorite Basalt	Tholeiite	Olivine Basalt	Olivine-labradorite Basalt	Olivine Basalt	Olivine-labradorite Basalt	Iddingsite-labradorite Basalt	Olivine-labradorite Basalt	Labradorite Basalt
Locality	Mt. Porndon, Vic.	Cape Gosselin, W.A.	Coburg, Melbourne, Vic.	Footscray, Melbourne, Vic.	Inverell, N.S.W.	Terang-Camperdown Rd., Vic.	Ballarat, Vic.	Ballarat Area, Vic.	Smeaton, Ballarat, Vic.
Reference	**466**, 250	**117**, 20	**548**	**120**, 284; **287**, 156	**351**, 184; **554**, 897	**120**, 285; **181**, 22	**591**, 70	**591**, 72	**591**, 92
Analyst	G. Ampt	A. B. Edwards	P. G. W. Bayly	A. G. Hall	N.S.W. Dept. Mines	A. G. Hall	H. Yates	H. Yates	H. Yates
Remarks			See Mc 38						*Loss on ignition
Sp. Gr.	—	—	—	2·839	2·808	2·922	—	—	—
SiO_2	51·36	51·14	51·05	50·86	50·54	50·53	50·43	50·33	50·33
Al_2O_3	13·05	14·56	12·75	13·84	12·77	15·13	16·88	17·43	14·50
Fe_2O_3	2·36	4·05	9·75	4·70	2·50	5·26	4·16	5·48	1·69
FeO	8·89	7·04	3·02	6·56	8·01	5·68	5·58	3·73	8·78
MgO	9·45	6·25	6·15	8·94	5·89	7·59	4·18	6·17	4·18
CaO	8·56	10·15	9·27	8·45	9·24	8·41	9·32	8·28	9·03
Na_2O	2·93	3·96	2·76	2·59	3·33	3·26	3·32	2·88	2·84
K_2O	0·85	0·58	0·39	0·75	0·57	0·94	0·94	0·60	0·70
H_2O+	0·38	0·54	1·52	0·82	1·96	0·63	1·37	2·16	5·03*
H_2O-		1·35	2·23	0·57	1·24	0·76	0·36	0·18	0·88
CO_2	—	0·05	—	—	2·07	abs.	2·23	—	—
TiO_2	2·04	0·01	—	1·93	1·80	1·70	1·34	2·04	2·30
P_2O_5	tr.	—	0·23	0·23	0·23	0·35	0·27	0·30	0·32
MnO	0·12	0·16	0·66	0·20	0·11	0·10	—	—	—
Other Constituents		Cl = abs. S = abs. BaO = abs.	Cl = tr.	S = 0·03 NiO = 0·01 Cr_2O_3 = 0·05	Cr_2O_3 = 0·01 V_2O_3 = 0·04 SrO = tr.	NiO = 0·02			
	99·99	[99·84]	99·78	100·53	100·31	100·36	100·38	99·58	100·58

TABLE M — BASALTIC ROCKS — SiO_2 54–50%

c. CaO/Alk. = 2–3						
	$K_2O/Na_2O < 0{\cdot}30$					
	35	36	37	38	39	40
Rock Name	Basalt	Olivine-labradorite Basalt	Olivine-labradorite Basalt	Iddingsite-labradorite Basalt	Olivine-andesine Basalt	"Basic Lava"
Locality	Coopers Plains, Qld.	Alfredton, Ballarat, Vic.	Alfredton, Ballarat, Vic.	Coburg, Melbourne, Vic.	Alfredton, Ballarat, Vic.	Burbanks, Coolgardie, W.A.
Reference	**421**, 177; **407**; **554**, 661	**591**, 71	**591**, 71	**120**, 282	**591**, 72	**563**
Analyst	G. R. Patten	H. Yates	H. Yates	P. G. W. Bayly	H. Yates	W. Inglis
Remarks				See Mc 28		
Sp. Gr.	2·87	—	—	2·73	—	3·07
SiO_2	50·24	50·22	50·15	50·05	50·03	50·00
Al_2O_3	16·59	15·77	15·06	12·75	15·54	13·51
Fe_2O_3	2·72	1·80	1·93	9·75	5·80	3·32
FeO	8·35	8·05	8·58	3·02	5·40	11·68
MgO	5·14	7·95	8·40	6·15	6·64	5·97
CaO	8·70	8·56	8·53	9·27	9·02	8·41
Na_2O	3·54	3·18	3·20	2·76	3·44	2·67
K_2O	0·40	0·78	0·74	0·39	0·92	0·57
H_2O+	1·84	1·11	0·58	1·52	0·47	1·63
H_2O-	1·02	abs.	0·32	2·23	0·51	0·09
CO_2	—	abs.	abs.	—	—	abs.
TiO_2	0·72	2·32	1·92	—	2·59	1·77
P_2O_5	0·41	0·32	0·27	0·23	0·33	0·13
MnO	0·29	—	—	0·66	—	0·18
Other Constituents						$Cr_2O_3 = 0{\cdot}02$
	99·96	100·06	99·68	98·78	100·69	99·95

TABLE M — BASALTIC ROCKS — SiO_2 54–50%

d. CaO/Alk. > 3

	$K_2O/Na_2O > 1·25$		$K_2O/Na_2O = 1·25–0·75$						
	1	2	3	4	5	6	7	8	9
Rock Name	Pegmatitic Dolerite	Porphyritic Basalt	Basalt	Basalt	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite (Mg-rich)	Quartz Dolerite
Locality	Mt. Sedgwick, Tas.	Near Wellington, N.S.W.	The Bluff, Kangaroo Is., S.A.	The Bluff, Kangaroo Is., S.A.	Gunnings Sugar Loaf, Tas.	¾ mile N.E. Longley, Tas.	Cradle Mt., Tas.	Mt. Wellington, Tas.	Ben Lomond Tas.
Reference	**126**, 478	**94**, 192	**221**, 116	**221**, 116	**126**, 476	**285**, 296	**126**, 473	**126**, 467	**126**, 473
Analyst	A. B. Edwards	M. J. Colditz	W. S. Chapman	W. S. Chapman	A. B. Edwards	Avery & Anderson	A. B. Edwards	A. B. Edwards	A. B. Edwards
Remarks			? Alkalies						
Sp. Gr.	—	2·92	—	—	—	—	—	—	—
SiO_2	53·10	50·46	53·80	53·64	53·55	53·50	52·60	52·50	52·45
Al_2O_3	14·13	17·99	21·92	21·65	17·22	14·85	15·06	13·39	14·37
Fe_2O_3	2·14	1·06	9·04	10·44	0·76	1·48	2·02	0·90	1·43
FeO	8·16	5·76	—	—	7·78	8·83	7·92	8·72	6·98
MgO	6·66	6·78	1·60	1·06	4·65	6·23	7·33	9·16	9·74
CaO	11·50	10·91	10·70	10·12	11·40	10·81	11·90	12·25	12·50
Na_2O	1·28	0·97	tr.	1·03	1·29	1·23	0·95	0·80	1·00
K_2O	1·68	1·63	tr.	0·94	1·28	1·14	0·72	0·70	0·78
H_2O-	0·31	2·38	0·88	1·11	0·42	0·68	0·25	0·21	0·25
H_2O-	0·72	0·04	0·40	0·43	0·42	0·50	0·63	0·48	0·58
CO_2	tr.	1·12	abs.	abs.	abs.	—	abs.	abs.	abs.
TiO_2	0·50	0·88	0·46	0·48	0·70	0·65	0·36	0·60	0·15
P_2O_5	0·05	0·29	—	—	0·01	0·14	tr.	tr.	tr.
MnO	0·17	0·12	tr.	pnd.	0·11	0·19	0·18	0·21	0·13
Other Constituents									
	100·40	100·39	[98·80]	100·90	[99·59]	100·23	99·92	99·92	100·36

d. CaO/Alk. > 3

	K_2O/Na_2O = 1·25–0·75	K_2O/Na_2O = 0·75–0·30							
	10	11	12	13	14	15	16	17	18
Rock Name	Two-pyroxene Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	"Tholeiite"	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite
Locality	North Kimberley, W.A.	Cape Royds, South Victoria Land, Ant.	Cape Royds, South Victoria Land, Ant.	Cape Vogel, T.P. & N.G.	Snug River, Tas.	Mt. Nelson, near Hobart, Tas.	Snug River, Tas.	Ben Lomond, Tas.	St. Leonards, Tas.
Reference	**125**, 88	**54**, 253	**54**, 253	**95**	**285**, 296	**126**, 470	**285**, 296	**126**, 473	**133**, 27
Analyst	A. B. Edwards	(?) Walkom & Burrows	(?) Walkom & Burrows	A. McClure	I. McDougall	A. B. Edwards	I. McDougall	A. B. Edwards	W. St C. Manson
Remarks				*Loss on ignition	(Red Hill Dyke)		(Red Hill Dyke)		(Core of doleritic bauxite boulder)
Sp. Gr.	—	—	—	—	2·843	—	2·893	—	—
SiO_2	51·15	54·17	54·16	53·97	53·93	53·80	53·64	53·45	53·40
Al_2O_3	15·16	14·90	15·08	7·08	18·88	17·52	16·32	17·79	14·68
Fe_2O_3	2·00	1·09	0·79	3·46	1·38	2·15	0·87	2·20	1·04
FeO	11·52	7·74	8·08	6·95	7·31	7·06	8·41	7·92	8·36
MgO	5·88	10·66	7·14	16·03	3·09	3·80	4·83	3·87	7·50
CaO	9·70	8·79	10·57	4·79	10·32	10·55	10·81	10·50	10·40
Na_2O	1·46	1·26	1·60	0·60	2·09	1·86	2·00	1·79	1·77
K_2O	1·14	0·54	1·11	0·35	0·95	1·14	1·54	0·91	0·77
H_2O+	0·41	0·53	0·36	4·34*	1·21	0·32	0·77	0·25	1·21
H_2O-	0·36	0·17	0·20	1·73	0·20	0·54	0·23	0·61	0·10
CO_2	tr.	tr.	tr.	—	—	abs.	—	abs.	tr.
TiO_2	1·19	0·64	0·70	0·23	0·80	0·58	0·85	0·49	0·63
P_2O_5	0·01	tr.	tr.	0·06	0·16	tr.	0·16	tr.	0·15
MnO	0·19	0·15	0·14	0·21	0·17	0·10	0·16	0·07	0·07
Other Constituents	FeS_2 – nd.								
	100·17	[100·64]	99·93	99·80	100·49	99·42	100·59	99·85	100·08

TABLE M — BASALTIC ROCKS — SiO_2 54–50%

d. CaO/Alk. >3

$K_2O/Na_2O = 0{\cdot}75 - 0{\cdot}30$

	19	20	21	22	23	24	25	26	27
Rock Name	Quartz Dolerite (Iron pyroxene rich)	Quartz Dolerite	Nuée Deposit 25/1/58	Enstatite Basalt	Nuée Deposit 18/10/57	Quartz Dolerite	Basalt	Quartz Dolerite	Quartz Dolerite
Locality	Mt. Wellington, Tas.	Knob Head Moraine, South Victoria Land, Ant.	Manam Volcano, T.P. & N.G.	Kangaroo Is., S.A.	Manam Volcano, T.P. & N.G.	Horn Bluff, King George Land, Ant.	Manam Volcano, T.P. & N.G.	Snug River, Tas.	Ben Lomond, Tas.
Reference	**126**, 467	**54**, 253	**95**	**485**, 72; **554**, 547	**95**	**54**, 253	**95**	**285**, 296	**126**, 458, 473
Analyst	A. B. Edwards	Prior	A. McClure	E. R. Stanley	A. McClure	Osborne & Graham	A. McClure	Avery & Anderson	A. B. Edwards
Remarks		(Erratic)	Composite Sample		*Loss on ignition		(Flow from Main Crater)	(Red Hill Dyke)	(Chilled base)
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	53·30	53·26	53·20	53·18	53·08	53·05	53·05	53·03	53·00
Al_2O_3	17·40	15·64	14·39	17·61	14·84	16·95	13·90	15·41	17·12
Fe_2O_3	1·26	0·24	6·11	1·59	5·96	0·79	6·07	0·56	1·02
FeO	8·50	7·44	3·60	6·47	3·81	6·69	3·99	7·93	7·27
MgO	4·38	8·64	8·30	6·59	7·37	6·91	8·60	7·65	6·25
CaO	11·75	12·08	10·93	10·42	10·70	11·56	10·68	11·71	11·30
Na_2O	1·39	1·25	2·44	2·03	2·61	2·05	2·57	1·44	1·30
K_2O	0·82	0·58	0·74	0·70	0·83	0·97	0·90	0·80	0·78
H_2O+	0·15	0·41	abs.	0·40	0·07*	0·49	abs.	0·78	0·38
H_2O-	0·60	0·35	0·03	0·33	0·03	0·43	abs.	0·40	0·58
CO_2	abs.	—	—	tr.	—	—	—	—	abs.
TiO_2	0·30	0·70	0·33	0·78	0·35	0·65	0·35	0·56	0·62
P_2O_5	tr.	0·04	0·22	tr.	0·19	tr.	0·25	0·14	tr.
MnO	0·30	0·11	0·15	0·10	0·16	0·07	0·16	0·16	0·16
Other Constituents				$BaO = 0{\cdot}13$ $SiO = 0{\cdot}02$ Cr_2O_3 = tr. NiO = tr. S = tr SO_3 = tr.					
	100·15	100·74	100·44	100·35	100·00	100·61	100·52	100·57	99·78

d. CaO/Alk >3

K_2O/Na_2O = 0·75–0·30

	28	29	30	31	32	33	34	35	36
Rock Name	Quartz Dolerite	Quartz Dolerite	Basalt	Nuée Deposit	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite
Locality	Mt. Wellington, Tas.	Butler's Gorge, Tas.	Kangaroo Is., S.A.	Manam Volcano, T.P. & N.G.	Gunnings Sugarloaf, Tas.	Gunnings Sugarloaf, Tas.	Butlers Gorge, Tas.	Mt. Nelson, Tas.	Mt. Nelson, Tas.
Reference	**126**, 467	**133**,	**221**, 116	**95**	**126**, 458, 476	**126**, 476	**133**	**126**, 470	**127**, 470
Analyst	A. B. Edwards	Avery & Anderson	W. S. Chapman	A. McClure	A. B. Edwards	A. B. Edwards	Avery & Anderson	A. B. Edwards	A. B. Edwards
Remarks	(Chilled base)			(Bomb-like boulders)	(Chilled contact)				
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	52·95	52·90	52·88	52·79	52·75	52·75	52·74	52·70	52·60
Al_2O_3	15·29	12·10	21·81	14·28	15·89	17·10	12·28	14·40	15·12
Fe_2O_3	1·37	1·04	10·11	4·90	0·81	1·61	0·24	0·35	0·53
FeO	7·70	8·24	—	4·75	8·50	7·12	9·35	8·33	8·13
MgO	7·49	10·35	2·20	8·66	6·54	5·61	10·35	9·74	8·89
CaO	11·60	11·25	10·84	11·08	12·30	12·30	11·33	12·40	12·95
Na_2O	1·10	1·71	1·19	2·46	1·64	1·49	1·36	0·84	0·94
K_2O	0·72	0·60	0·67	0·79	1·04	0·99	0·72	0·42	0·48
H_2O+	0·10	0·46	0·46	abs.	0·18	0·15	0·27	0·12	0·12
H_2O-	0·45	0·76	0·36	0·02	0·20	0·15	0·20	0·67	0·38
CO_2	abs.	—	abs.	—	abs.	abs.	—	abs.	abs.
TiO_2	0·50	0·56	0·48	0·34	0·51	0·60	0·56	0·15	0·12
P_2O_5	tr.	0·10	—	0·17	tr.	0·01	0·16	tr.	0·05
MnO	0·16	0·28	pnd.	0·16	0·08	0·12	0·31	0·15	0·20
Other Constituents		SO_3 = 0·03 Cl = 0·53					SO_3 = 0·04 Cl = 0·20		
		100·91					100·11		
Less O = Cl, F, S		0·11					0·04		
	99·43	100·80	101·00	100·40	100·44	[100·00]	100·07	100·27	100·51

TABLE M — BASALTIC ROCKS — SiO_2 54–50%

d. CaO/Alk. >3

K_2O/Na_2O = 0·75–0·30

	37	38	39	40	41	42	43	44	45
Rock Name	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite
Locality	Mt. Nelson, Tas.	Mt. Nelson, Tas.	Butlers Gorge, Tas.	Mt. Wellington, Tas.	Mt. Sedgwick, Tas.	Mt. Sedgwick, Tas.	Mt. Wellington, Tas.	Mt. Nicholas Range, Tas.	2 miles from Collins Vale, Tas.
Reference	**126**, 470	**126**, 470	**133**	**126**, 467	**126**, 473	**126**, 458 & 473	**126**, 467 & 458	**126**, 458	**126**, 478
Analyst	A. B. Edwards	A. B. Edwards	Avery & Anderson	A. B. Edwards	A. B. Edwards	A. B. Edwards	A. B. Edwards	A. B. Edwards	A. B. Edwards
Remarks		(Chilled top)				(Chilled base)	(Chilled base)	(Chilled base)	(3″ from coarse vein)
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	52·60	52·60	52·60	52·60	52·55	52·54	52·50	52·50	52·50
Al_2O_3	17·68	16·80	14·24	14·99	17·60	16·89	16·38	14·30	16·65
Fe_2O_3	0·20	0·08	0·17	0·85	1·30	0·27	0·77	0·15	0·40
FeO	9·36	8·64	10·71	8·78	7·84	8·09	8·12	8·63	8·82
MgO	4·28	6·76	7·51	8·00	4·99	6·36	6·77	7·15	6·68
CaO	10·85	11·60	11·70	11·95	11·85	11·10	11·20	10·55	11·80
Na_2O	1·67	1·34	1·10	1·30	1·32	1·82	1·54	1·82	1·35
K_2O	0·93	0·80	0·62	0·80	0·80	0·83	0·80	1·15	0·80
H_2O+	1·05	0·18	0·30	0·22	0·36	0·21	0·47	1·46	0·31
H_2O-	0·30	0·31	0·22	0·04	0·44	0·76	0·40	1·25	0·42
CO_2	abs.	abs.	—	abs.	abs.	abs.	abs.	abs.	abs.
TiO_2	0·52	0·48	0·60	0·40	0·31	0·65	0·65	0·60	0·60
P_2O_5	tr.	tr.	0·22	0·01	0·05	tr.	0·05	0·02	tr.
MnO	0·18	0·28	0·25	0·15	0·19	0·18	0·12	0·11	0·15
Other Constituents			SO_3 = 0·07 S = 0·04 Cl = 0·21						
			100·56						
Less O = Cl, F, S			0·07						
	99·62	99·87	[100·49]	[100·09]	99·60	99·70	99·77	99·69	100·48

d. CaO/Alk. >3

$K_2O/Na_2O = 0{\cdot}75 - 0{\cdot}30$

	46	47	48	49	50	51	52	53	54
Rock Name	Quartz Dolerite	Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite (Feldspar rich)
Locality	Gunnings Sugarloaf, Tas.	Duchess, Qld.	Launceston, Tas.	Gunnings Sugarloaf, Tas.	Mt. Nelson, Tas.	Ben Lomond Tas.	Mt. Nelson, Tas.	Mt. Sedgwick, Tas.	Mt. Wellington, Tas.
Reference	**126**, 476	**551**	**386**, **506**, 155; **126**	**126**, 476	**126**, 470	**126**, 473	**126**, 470	**126**, 473	**126**, 467
Analyst	A. B. Edwards	K. R. Walker	A. Dittrich	A. B. Edwards	A. B. Edwards	A. B. Edwards	A. B. Edwards	A. B. Edwards	A. B. Edwards
Remarks									
Sp. Gr.	—	2·990	—	—	—	—	—	—	—
SiO_2	52·50	52·50	52·49	52·40	52·35	52·35	52·35	52·25	52·25
Al_2O_3	15·79	14·41	16·44	16·82	16·34	14·41	17·68	13·05	17·90
Fe_2O_3	1·40	1·51	2·60	0·31	0·67	1·96	0·91	0·05	0·12
FeO	7·49	7·99	5·30	8·92	7·33	7·42	7·37	8·27	8·64
MgO	6·14	6·89	6·18	5·67	6·30	7·75	5·72	10·41	5·33
CaO	12·70	10·58	11·71	11·90	11·90	11·70	11·80	12·20	11·51
Na_2O	1·54	2·18	2·06	1·41	1·88	1·36	1·33	0·92	2·07
K_2O	0·78	1·35	1·09	0·83	0·82	0·98	0·87	0·64	1·04
H_2O+	0·19	0·95	0·15	0·12	0·31	0·56	0·45	0·32	0·21
H_2O-	0·19	0·02	1·42	0·12	1·32	1·03	0·31	0·85	0·32
CO_2	abs.	—	—	abs.	tr.	abs.	abs.	abs.	tr.
TiO_2	0·44	0·54	0·62	0·46	0·35	0·42	0·38	0·50	0·20
P_2O_5	0·01	0·45	tr.	0·02	0·01	tr.	0·02	tr.	0·02
MnO	0·05	0·17	tr.	0·11	0·17	0·12	0·12	0·05	0·10
Other Constituents									
	[99·22]	99·54	100·06	[99·09]	99·75	100·06	99·31	99·51	99·71

TABLE M — BASALTIC ROCKS — SiO_2 54–50%

d. CaO/Alk. >3

K_2O/Na_2O = 0·75–0·30

	55	56	57	58	59	60	61	62	63
Rock Name	Quartz Dolerite	Basalt	Quartz Dolerite	Volcanic Ash-fall 25/1/58	Scoriaceous Lapilli 25/1/58	Volcanic Ash 16/2/58	Basalt	Lava Bomb, March, 1958	Nuée Deposit 26/12/57
Locality	Mt. Nelson, Tas.	Manam Volcano, T.P. & N.G.	Cradle Mt., Tas.	Manam Volcano, T.P. & N.G.	Manam Volcano, T.P. & N.G.	Manam Volcano, T.P. & N.G.	Manam Volcano, T.P. & N.G.	Manam Volcano, T.P. & N.G.	Manam Volcano, T.P. & N.G.
Reference	**126**, 470	**95**	**126**, 473	**95**	**95**	**95**	**95**	**95**	**95**
Analyst	A. B. Edwards	S. Baker	A. B. Edwards	A. McClure	S. Baker	S. Baker	S. Baker	S. Baker	A. McClure
Remarks		(Flow from main crater)		*Loss on ignition (Fall on mainland)		(Fall on Waris)	(Flow from main crater)		
Sp. Gr.	—	—		—	—	—	—	—	—
SiO_2	52·20	52·16	51·95	51·80	51·76	51·76	51·74	51·74	51·52
Al_2O_3	15·25	16·62	13·10	14·19	16·01	16·29	16·68	15·84	16·18
Fe_2O_3	0·45	6·23	1·86	6·18	5·87	5·20	5·20	6·33	5·75
FeO	7·78	2·73	6·61	4·02	3·25	3·02	3·65	2·99	3·16
MgO	8·54	8·45	10·19	8·73	8·45	8·31	8·71	8·42	8·37
CaO	12·75	10·96	12·30	10·58	11·00	11·10	11·10	11·15	10·90
Na_2O	1·18	1·80	1·08	2·50	1·44	2·10	1·80	1·26	2·32
K_2O	0·76	0·70	0·76	0·83	0·70	0·74	0·72	0·72	0·71
H_2O+	0·21	abs.	0·43	0·13*	abs.	abs.	abs.	abs.	abs.
H_2O-	0·45	abs.	0·68	0·08	abs.	abs.	abs.	abs.	abs.
CO_2	abs.	—	abs.	—	—	—	—	—	—
TiO_2	0·32	0·30	0·40	0·33	0·31	0·32	0·32	0·31	0·30
P_2O_5	0·02	0·22	0·01	0·19	0·20	0·18	0·18	0·20	0·20
MnO	0·16	0·16	0·17	0·15	0·14	0·14	0·18	0·13	0·12
Other Constituents									
	100·07	100·33	99·54	99·71	99·13	99·16	100·28	99·09	99·53

d. CaO/Alk. >3

	K_2O/Na_2O = 0·75–0·30			K_2O/Na_2O >0·30					
	64	65	66	67	68	69	70	71	72
Rock Name	Nuée Deposit	Olivine Dolerite	Basalt	Basalt	"Tholeiite"	Amygdaloidal Basalt	Olivine Dolerite	Basalt	Hypersthene-bearing Dolerite
Locality	Manam Volcano, T.P. & N.G.	Kalgoorlie, W.A.	Strangways Range, N.T.	Silverwood, Qld.	Cape Vogel, T.P. & N.G.	Coolgardie, W.A.	Cavanagh Ra., W.A.	Ouse, Tas.	Loomberah, N.S.W.
Reference	**95**	**456**, 175	**92**, 7	**428**; **429**, 118; **430**, 95	**95**	**563**	**520**, 308	**130**, 102	**32**, 368; **360**, 182
Analyst	A. McClure	J. N. A. Grace	A. W. Hounslow	G. R. Patten	A. McClure	W. Inglis	G. Burrows	A. B. Edwards	J. C. H. Mingaye
Remarks	(Formed by Cob lava)	(Dyke)			*Loss on ignition				
Sp. Gr.	—	—	—	2·847	—	2·93	—	—	2·929
SiO_2	51·45	50·43	50·02	53·34	52·20	51·71	51·55	51·48	51·14
Al_2O_3	14·56	9·38	13·98	18·73	10·43	12·75	18·85	14·32	14·47
Fe_2O_3	5·01	2·50	2·58	1·72	5·24	0·86	0·32	2·17	3·60
FeO	4·43	8·56	12·38	6·65	8·19	8·17	6·77	8·98	8·28
MgO	8·64	15·30	4·63	5·10	7·31	9·60	7·09	8·02	5·80
CaO	10·99	8·30	9·45	8·75	9·48	11·90	14·04	8·33	9·64
Na_2O	2·48	0·71	2·24	2·30	2·02	1·99	0·63	2·48	2·43
K_2O	0·91	0·22	0·86	0·61	0·29	0·14	0·08	0·61	0·57
H_2O+	abs.	2·33	1·66	1·03	2·86*	2·03	0·11	0·58	2·52
H_2O-	0·02	0·16	0·22	0·21	0·39	0·22	0·04	1·54	0·34
CO_2	—	0·15	abs.	—	—	0·19	abs.	0·05	abs.
TiO_2	0·35	0·77	2·05	1·80	0·76	0·56	0·53	1·45	0·75
P_2O_5	0·15	0·35	0·23	0·15	0·14	0·06	tr.	0·21	0·08
MnO	0·16	0·54	0·25	0·17	0·18	0·16	0·13	0·14	0·22
Other Constituents		FeS_2 = 0·15 V_2O_3 = 0·08 Cr_2O_3 = 0·32 Cu = 0·03				FeS_2 = 0·09 Cr_2O_3 = 0·16			BaO = tr. SriO = pnd. V_2O_3 = 0·03
	99·15	[100·28]	100·55	100·56	99·49	100·59	100·14	[100·36]	99·87

TABLE M — BASALTIC ROCKS — SiO_2 54–50%

d. CaO/Alk. >3

K_2O/Na_2O <0·30

	73	74	75	76	77	78	79	80
Rock Name	Tholeiite	Basalt	Basalt	Dolerite	Basalt	Porphyritic Basalt	Iddingsitized Olivine Basalt	Dolerite
Locality	Donnelly River, W.A.	Burracoppin, W.A.	Lord Bobs, Coolgardie, W.A.	Muradup, W.A.	Reservoir Coolgardie, W.A.	Bellbird, Coolgardie, W.A.	Vineys Sugar-Loaf, S. of Nile, Tas.	Duchess, Qld.
Reference	**119**, 6 **582**, 76	**563**	**563**	**562**, 26	**563**	**563**	**130**, 102	**551**
Analyst	A. B. Edwards	C. R. LeMesurier	B. W. Stenhouse	N. K. Jones	B. W. Stenhouse	B. W. Stenhouse	W. St C. Manson	S. Baker
Remarks								*Loss on ignition
Sp. Gr.	—	3·02	2·99	—	3·02	3·01	—	3·031
SiO_2	50·57	50·47	50·41	50·40	50·37	50·27	50·04	50·3
Al_2O_3	15·11	14·99	15·17	14·08	17·23	9·02	14·47	15·1
Fe_2O_3	3·65	1·55	0·21	2·37	0·84	10·36	4·26	1·3
FeO	8·80	9·91	9·68	9·00	9·15	9·87	7·69	8·7
MgO	5·55	5·93	13·45	7·41	6·77	6·16	7·89	7·9
CaO	10·64	11·25	6·51	11·42	12·01	9·10	9·35	10·5
Na_2O	2·29	2·78	1·60	1·72	1·65	1·71	2·47	2·8
K_2O	0·57	0·47	0·04	0·18	0·03	0·05	0·26	0·8
H_2O+	0·25	0·79	1·35	1·57	1·18	1·48	1·43	0·5*
H_2O-	1·42	0·21	0·11	0·03	0·14	0·01	0·52	nd.
CO_2	abs.	0·04	abs.	0·02	0·04	0·01	tr.	—
TiO_2	1·37	1·12	0·35	1·07	0·90	1·29	1·55	1·3
P_2O_5	0·07	0·03	0·63	0·19	0·13	0·27	0·23	0·2
MnO	0·26	0·30	0·07	0·18	0·14	0·15	0·17	0·1
Other Constituents		FeS_2=0·02 Cr_2O_3=0·02 V_2O_3=0·05	FeS_2=tr. Cr_2O_3=0·06 V_2O_3=tr.	FeS_2=0·01 BaO=0·01 Cr_2O_3=0·03 V_2O_3=0·07 NiO=0·02			Cl=tr. SO_3=tr.	
	100·55	99·93	99·64	99·78	100·58	99·75	100·33	99·5

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

a. CaO/Alk. <1

	K_2O/Na_2O = 1·25–0·75				K_2O/Na_2O = 0·75–0·30				
	1	2	3	4	5	6	7	8	9
Rock Name	Corundum Basalt	Nepheline-rich Crinanite	Melaphyre	Mica Lamprophyre	Trachytic Basalt (Mugearite)	Anorthoclase Trachybasalt	Spilite	Anorthoclase Trachybasalt	Nepheline Basanite
Locality	Coonabara-bran, N.S.W.	Circular Head, Tas.	Near Ora-parinna Head Station, S.A.	Robertson, N.S.W.	Mt. Molong, N.S.W.	N. of Kyneton, Vic.	Beulah, Tas.	Mitchells Gorge, Cam-paspe R., Vic.	Square Top Mt., Nundle, N.S.W.
Refer-ence	**233**, 616; **554**, 519	**124**, 407	**312**, 270	**190**, 338; **554**, 567	**55**, 62; **79**, 93 & 124	**120**, 274	**482**	**120**, 275	**28**, 706; **55**, 69
Analyst	H. I. Jensen	A. B. Edwards	E. G. Robinson	H. P. White	H. P. White	A. B. Edwards	W. St C. Manson	A. B. Edwards	W. N. Benson
Remarks		(Not *in situ*)		(? Neck)					
Sp. Gr.	—	—	—	2·765	2·821	—	—	—	—
SiO_2	48·27	48·05	47·20	46·50	49·82	49·50	49·18	47·92	47·56
Al_2O_3	18·02	21·33	14·65	16·48	17·53	16·64	17·46	19·30	15·20
Fe_2O_3	12·06	4·60	11·55	3·80	4·30	2·41	6·43	1·11	4·75
FeO	0·90	4·96	3·71	7·47	7·11	9·13	5·78	7·02	6·12
MgO	1·17	2·03	6·61	3·46	3·02	2·91	8·60	3·99	5·44
CaO	6·06	6·10	5·39	6·14	5·26	7·22	3·90	7·94	6·15
Na_2O	3·73	5·18	3·43	4·19	5·90	5·77	3·37	6·34	6·40
K_2O	3·33	4·28	2·76	4·54	2·55	2·26	1·49	2·86	2·32
H_2O+	0·52	0·20	2·46	3·57	1·31	0·01	2·83	1·49	2·20
H_2O-	0·85	1·72	0·49	0·21	0·30	1·55	0·20	0·34	0·26
CO_2	0·30	abs.	0·08	0·28	0·04	0·88	—	abs.	abs.
TiO_2	4·87	1·95	1·80	2·40	2·04	1·17	0·99	1·32	2·40
P_2O_5	tr.	0·25	0·37	1·13	0·88	1·07	0·16	0·84	0·55
MnO	0·03	0·12	0·04	0·15	0·15	0·09	0·21	0·35	0·23
Other Con-stituents	NiO = 0·04 CoO = tr. ZrO_2 = 0·04 Cl = tr. F = 0·11			BaO = 0·08	Cl = 0·04 BaO = 0·03 Cr_2O_3 = tr.	S = 0·02		S = 0·06 Cl = 0·05	FeS_2 = 0·50 Cr_2O_3 = 0·05 BaO = 0·08
	100·30				100·28	100·63		100·93	
Less O = Cl, F, S	0·05				0·01	0·01		0·03	
	100·25	100·77	100·54	100·40	100·27	100·62	100·60	100·90	100·21

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

a. CaO/Alk. <1				b. CaO/Alk. =1–2				
	K_2O/Na_2O = 0·75–0·30			K_2O/Na_2O > 1·25				
	10	11	12	1	2	3	4	5
Rock Name	Fayalite Basalt	Dolerite Pegmatite	Analcite Basalt	Basalt	Dolerite	Covite	Iddingsite-andesine Basalt	Olivine Essexite
Locality	One Tree Hill, Hobart, Tas.	Peats Ridge, 50 miles N. of Sydney, N.S.W.	W. of Glen Innes, N.S.W.	Red Hill, Ipswich, Qld.	110 miles N.N.W. of Mt. Isa, Qld.	Little Dromedary, near Mt. Dromedary N.S.W.	Ballan, Vic.	Termeil, N.S.W.
Reference	**506**, 162; **554**, 1103; **566**, 78	**576**	**571**	**407**; **421**, 177	**551**	**48** 659	**120**, 279	**190**, 313; **355**, 198
Analyst	O. E. White	J. M. Pyle	J. F. G. Wilkinson	G. R. Patten	Avery & Anderson	I. A. Brown	A. B. Edwards	W. A. Greig
Remarks	Old Analysis cf. Oal							
Sp. Gr.	2·81	2·79	—	2·89	2·868	2·912	—	2·857
SiO_2	47·21	46·97	46·31	49·32	46·44	46·04	49·90	49·80
Al_2O_3	16·06	15·04	15·36	18·11	15·66	19·46	18·45	15·43
Fe_2O_3	11·87	2·59	4·66	2·51	2·66	3·80	4·25	4·70
FeO	4·43	9·12	6·31	4·86	8·68	6·20	7·88	5·39
MgO	0·12	2·56	4·26	8·05	5·61	3·74	4·72	5·95
CaO	7·34	6·82	5·21	8·90	6·34	9·72	6·87	9·52
Na_2O	7·51	6·54	5·20	1·90	1·76	3·49	2·51	3·01
K_2O	2·40	2·12	3·41	3·30	2·97	4·91	1·89	2·48
H_2O+	2·55	2·86	5·11	1·80	3·87	0·69	0·62	2·27
H_2O-		0·54	1·91	0·28	0·33	0·31	0·51	0·39
CO_2		0·10	0·34	—	2·47	abs.	abs.	0·04
TiO_2		3·49	1·28	0·60	2·45	0·92	1·30	0·40
P_2O_5		1·26	0·92	0·27	0·50	0·84	0·59	0·30
MnO		0·16	0·27	0·47	0·15	0·23	0·15	0·17
Other Constituents							BaO = 0·02	BaO = 0·03 V_2O_3 = 0·05 Cl = 0·02
								99·95
Less O = Cl, F, S								0·01
	99·49	100·17	100·55	100·37	99·89	100·35	99·66	99·94

b. CaO/Alk. = 1–2

K_2O/Na_2O = 1·25–0·75

	6	7	8	9	10	11	12	13	14
Rock Name	Olivine-oligoclase Basalt	Olivine Essexite	Basalt	Porphyritic Dolerite	Dolerite	Basalt	Andesine Basalt	Woodendite (Orthoclase Basalt)	Limburgite
Locality	Near Lance-field, Vic.	Durras Mt., Woodburn, N.S.W.	Beulah, Tas.	Point Hillier, W.A.	Dobbyn, Qld.	Eucumbene-Tumut Tunnel, Snowy Mts., N.S.W.	Lauriston, Vic.	Woodend, Mt. Macedon Vic.	Near Gis-borne, Vic.
Refer-ence	**120**, 271	**190**, 313; **355**, 198; **554**, 517	**482**	**89**, 51	**551**	**283**	**120**, 279	**468**, 31; **554**, 599	**141**, 301
Analyst	A. B. Edwards	J. C. H. Mingaye	W. St C. Manson	W. H. Herdsman	S. Baker	A. J. Easton	A. B. Edwards	A. G. Hall	A. B. Edwards
Remarks					* Loss on ignition				
Sp. Gr.	—	2·910	—	—	2·977	2·87	—	2·888	—
SiO_2	49·76	49·56	48·86	48·36	47·6	47·34	47·22	47·02	46·28
Al_2O_3	14·91	17·54	17·75	17·16	14·2	12·56	17·44	12·52	13·63
Fe_2O_3	3·71	1·20	3·63	0·79	} 15·2	4·56	1·26	4·81	5·08
FeO	7·41	7·83	6·01	10·88		6·02	9·27	5·83	8·90
MgO	4·66	5·72	8·58	2·69	5·8	9·04	6·39	9·92	8·38
CaO	7·62	8·46	5·75	8·64	7·4	7·02	7·72	8·38	9·38
Na_2O	3·19	2·73	2·88	2·33	2·9	3·40	2·97	3·23	2·75
K_2O	2·83	2·08	2·75	2·44	2·7	2·82	2·50	3·23	2·43
H_2O+	1·45	1·98	2·45	2·20	} 2·0*	2·23	1·35	0·70	0·21
H_2O-	1·22	0·40	0·23	0·12		0·41	0·99	0·69	0·47
CO_2	1·24	0·12	—	abs.	—	1·79	0·30	tr.	abs.
TiO_2	0·95	1·30	0·68	2·82	1·5	2·18	2·19	2·60	2·31
P_2O_5	0·80	0·50	0·13	1·26	0·2	0·84	0·59	1·23	0·28
MnO	0·16	0·22	0·19	0·18	0·1	0·16	0·11	0·12	0·23
Other Con-stituents	BaO = 0·01 S = 0·04 Cl = 0·03	BaO = 0·03 V_2O_3 = 0·04 S = 0·03 Cl = 0·09				Cr_2O_3 = 0·01	S = 0·01 Cl = 0·01	Li_2O = tr. Cl = tr.	
	99·99	99·83							
Less O = Cl, F, S	0·03	0·02							
	99·96	99·81	99·89	99·87	99·6	100·38	100·32	100·28	[100·33]

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

b. CaO/Alk. = 1–2

K_2O/Na_2O = 0·75–0·30

	15	16	17	18	19	20	21	22	23
Rock Name	Iddingsite-labradorite Basalt	Essexite	Andesine Basalt	Olivine Basalt	Iddingsite-labradorite Basalt	Olivine-oligoclase Basalt	Iddingsite-labradorite Basalt	Olivine-oligoclase Basalt	Basalt
Locality	Near Trentham, Vic.	Camper-down, Vic.	Smeaton, Ballarat, Vic.	Near Gisborne, Vic.	Pattens Hill, S. of Malms-bury, Vic.	Near Lancefield, Vic.	W. of Keilor, Vic.	Lauriston, Vic.	Yandina, Qld.
Refer-ence	**120**, 282	**181**, 22; **554**, 521	**591**, 92	**141**, 301	**120**, 283	**120**, 271	**120**, 282	**120**, 271	**232**, 169; **554**, 627
Analyst	A. B. Edwards	A. G. Hall	H. Yates	A. B. Edwards	A. B. Edwards	A. B. Edwards	A. B. Edwards	A. B. Edwards	H. I. Jensen
Remarks		(Ejected block)	*Loss on ignition						
Sp. Gr.	—	2·87	—	—	—	—	—	—	3·18
SiO_2	49·95	49·93	49·92	49·83	49·82	49·78	49·60	49·53	49·43
Al_2O_3	16·06	15·99	14·21	13·76	16·50	15·85	15·14	13·33	12·73
Fe_2O_3	1·99	1·56	6·59	4·77	7·53	3·11	3·94	2·04	5·06
FeO	9·06	7·32	5·08	7·77	2·20	8·63	6·97	9·41	8·47
MgO	6·40	6·83	5·18	5·76	5·99	4·53	6·73	4·88	6·96
CaO	8·22	9·12	7·96	7·05	8·66	7·02	8·22	7·95	8·59
Na_2O	3·59	3·54	3·74	2·93	3·40	3·82	2·98	4·28	3·50
K_2O	2·04	1·54	1·46	1·84	1·93	2·22	1·35	2·62	1·21
H_2O+	0·12	1·55	1·48*	0·50	0·88	1·77	1·08	1·50	1·11
H_2O-	0·35	0·36	1·42	1·95	1·04	1·32	2·40	0·89	0·73
CO_2	0·35	abs.	—	abs.	abs.	—	0·30	0·10	0·28
TiO_2	1·07	1·95	2·57	1·87	1·32	1·17	1·01	2·24	2·26
P_2O_5	0·31	0·40	0·49	0·78	0·67	1·03	0·11	0·94	0·49
MnO	0·18	0·07	—	0·29	0·22	0·19	0·32	0·10	0·08
Other Con-stituents	BaO = 0·04 S = 0·02 Cl = 0·04	NiO = 0·03 Cl = tr.			S = 0·02	BaO = tr. Cl = 0·02	BaO = 0·01	S = tr. Cl = tr.	NiO = 0·05
	99·79								
Less O = Cl, F, S	0·02								
	99·77	100·19	100·10	[99·10]	100·18	100·46	100·16	99·81	[100·95]

b. CaO/Alk. = 1–2

K_2O/Na_2O = 0·75–0·30

	24	25	26	27	28	29	30	31	32
Rock Name	Olivine-andesine Basalt	"Melaphyre" Basalt	Olivine-andesine Basalt	Olivine-analcite Dolerite	Olivine Diabase	Olivine Basalt	Olivine Basalt	Andesine Basalt	Iddingsite Basalt
Locality	Lake Burrumbeat, Ballarat, Vic.	Moroka Snow Plain, Mt. Wellington, Vic.	Mt. Callender, Ballarat, Vic.	Kilcunda, Vic.	Blinman, Flinders Ra., S.A.	Alfredton, Ballarat, Vic.	Mt. Canobolas, Orange, N.S.W.	Coliban Gorge, N. of Malmsbury, Vic.	Near Gisborne, Vic.
Reference	**591**, 89	**511**, 267; **514**; 270, 169; **554**, 521	**591**, 89	**116**, 123	**25**, 234; **554**, 521	**120**, 270	**357**, 217; **554**, 519	**120**, 279	**141**, 301
Analyst	H. Yates	G. Ampt	H. Yates	A. B. Edwards	W. N. Benson	A. G. Webb	W. G. Stone	A. B. Edwards	A. B. Edwards
Remarks				(Dyke)					
Sp. Gr.	—	2·918	—	—	—	2·81	—	—	—
SiO_2	49·35	49·35	49·34	49·30	49·29	49·27	49·26	49·25	49·25
Al_2O_3	16·10	17·61	19·33	16·36	18·81	15·33	18·56	15·49	13·87
Fe_2O_3	4·13	1·50	1·85	2·74	3·57	8·40	3·80	0·65	6·78
FeO	7·94	9·72	7·92	8·58	7·78	4·71	6·12	10·00	6·29
MgO	4·90	3·17	4·28	6·43	3·28	3·47	3·71	5·33	7·24
CaO	7·06	7·71	6·94	8·55	9·25	7·05	7·40	8·39	8·46
Na_2O	4·12	3·10	4·16	3·41	3·07	3·54	3·61	2·84	2·95
K_2O	1·71	1·56	1·51	1·64	2·10	2·25	2·21	2·01	1·76
H_2O+	0·65	2·56	0·98	0·59	1·07	0·48	1·64	0·22	0·12
H_2O-	0·57	0·65	0·49	0·88	0·20	0·54	0·95	0·39	0·85
CO_2	—	—	—	abs.	tr.	abs.	0·20	3·70	0·05
TiO_2	3·02	2·83	3·24	1·00	2·17	3·71	1·85	0·97	2·01
P_2O_5	0·34	tr.	0·32	0·40	—	0·61	0·78	0·55	0·08
MnO	—	0·07	—	0·25	—	0·35	0·21	0·11	0·27
Other Constituents		FeS_2 = 0·34				(NiCo)O = 0·06 Cl = 9·05	BaO = 0·02 V_2O_3 = 0·01 CuO = tr. Cr_2O_3 = tr. FeS_2 = tr. SO_3 = tr. Cl = tr.	Cl = 0·03 S = 0·08	
						99·82		100·01	
Less O = Cl, F, S						0·01		0·04	
	99·89	100·17	100·36	100·13	100·59	99·81	100·33	99·97	99·98

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

b. CaO/Alk. = 1–2

K_2O/Na_2O = 0·75–0·30

	33	34	35	36	37	38	39	40	41
Rock Name	Olivine oligoclase Basalt	Iddingsite-labradorite Basalt	Basalt	Olivine Basalt	Oligoclase Basalt	Essexite	Anorthoclase Basalt	Iddingsite Basalt	Olivine-labradorite Basalt
Locality	Lancefield, Area, Vic.	Near Brocks Monument, Mt. Macedon Area, Vic.	St. Georges Hd., Nowra, N.S.W.	Mt. Canoblas, Orange, N.S.W.	Trentham Falls, Vic.	Camper-down, Vic.	N.N.E. Woodend, Mt. Macedon Vic.	Taradale, Vic.	Trentham, Vic.
Refer-ence	**120**, 271	**120**, 282	**77**, 91; **190**, 358; **554**, 519	**330**, 304; **55**, 55; **554**, 627	**120**, 270	**181**, 22; **554**, 521	**385**, 40; **468**, 33; **537**, 61; **554**, 519	**120**, 283	**120**, 284
Analyst	A. B. Edwards	A. B. Edwards	H. P. White	J. C. H. Mingaye	A. B. Edwards	A. G. Hall	A. G. Hall	A. B. Edwards	A. B. Edwards
Remarks						(Ejected Block)			
Sp. Gr.	—	—	2·869	2·865	—	2·90	2·87	—	—
SiO_2	49·14	49·02	48·98	48·92	48·89	48·84	48·83	48·73	48·55
Al_2O_3	16·70	16·96	16·88	14·87	15·91	14·95	16·69	15·36	14·26
Fe_2O_3	2·41	5·62	3·30	3·99	2·70	2·79	2·66	1·90	3·22
FeO	8·75	6·14	7·29	7·44	7·98	8·53	8·40	9·47	8·46
MgO	4·77	6·01	5·27	5·73	3·10	4·73	5·56	6·30	8·24
CaO	7·04	8·78	8·86	7·26	7·25	7·47	7·95	8·79	8·47
Na_2O	3·87	3·15	3·39	3·42	4·96	3·90	2·92	2·93	3·24
K_2O	2·89	1·59	2·11	1·80	3·55	2·01	2·10	1·60	1·38
H_2O+	0·44	0·60	1·78	1·56	1·23	1·53	0·66	1·02	1·02
H_2O-	1·27	0·80	0·52	0·82	1·34	0·67	1·34	1·12	0·38
CO_2	0·22	abs.	0·06	0·09	1·58	abs.	tr.	1·37	abs.
TiO_2	1·12	1·05	1·28	2·78	0·91	4·00	2·85	1·05	2·16
P_2O_5	1·18	0·38	0·30	0·59	0·13	0·52	0·74	0·40	0·38
MnO	0·13	0·14	0·31	0·29	0·20	0·13	0·25	0·17	0·19
Other Con-stituents	Cl = abs. S = tr. BaO = tr.	Cl = 0·01	Cl = 0·02 V_2O_3 = 0·02 NiO = 0·04	BaO = 0·04 SO_3 = 0·08 Cr_2O_3 = 0·01 V_2O_3 = 0·02 SrO = tr. Cl = 0·02 CuO = 0·06 NiO = 0·04	BaO = 0·21	NiO = 0·03 F = 0·08	Cl = 0·04 SO_3 = tr.	Cl = 0·04 BaO = 0·04	Cl = 0·02 BaO = 0·01
						100·18	100·99	100·29	
Less O = Cl, F, S						0·03	0·01	0·01	
	99·93	100·25	100·41	99·83	99·94	100·15	100·98	100·28	99·98

b. CaO/Alk. = 1–2

K_2O/Na_2O = 0·75–0·30

	42	43	44	45	46	47	48	49	50
Rock Name	Basalt	Porphyritic Andesine Basalt	Olivine Basalt	"Melaphyre"	Olivine-labradorite Basalt	Basalt *Bong Bong Basalt*	Olivine labradorite Basalt	Andesine Basalt	Basalt
Locality	Pittsworth, Qld.	Near Lance-field, Vic.	Ballina, Richmond River, N.S.W.	Wooltana, S.A.	S.W. of Sunbury, Vic.	1½ miles from Broughton Village, N.S.W.	Pattens Hill, S. of Malms-bury, Vic.	Mitchells Gorge, Campaspe River, Vic.	Hornsby, near Sydney, N.S.W.
Refer-ence	**407**, **421**, 177, **554**, 625	**120**, 279	**330**, 304; **55**, 55; **554**, 519	**310** 197	**120**, 284	**190**, 337; **229** 23; **554**, 517	**120**, 285	**120**, 279	**26**, 544; **554**, 899
Analyst	G. R. Patten	A. B. Edwards	J. C. H. Mingaye	W. S. Chapman	A. B. Edwards	H. P. White	A. B. Edwards	A. B. Edwards	W. N. Benson
Remarks									* Corrected **554**
Sp. Gr.		—	2·761	—	—	2·799	—	—	—
SiO_2	48·55	48·49	48·48	48·46	48·43	48·39	48·35	48·31	48·30
Al_2O_3	12·45	18·65	16·71	18·76	14·83	13·36	14·87	13·66	17·94*
Fe_2O_3	3·60	2·77	5·93	6·38	4·67	5·80	3·00	2·67	3·23
FeO	10·43	7·07	5·96	3·01	7·80	6·48	8·04	8·80	5·82
MgO	7·64	4·65	4·19	6·94	7·29	4·57	8·21	6·34	2·78
CaO	7·58	8·27	7·02	5·00	8·70	8·90	8·17	8·82	8·09
Na_2O	3·20	3·49	3·38	3·44	2·94	3·61	3·08	3·27	3·85
K_2O	1·75	1·79	1·78	1·89	1·88	1·18	1·42	2·24	2·30
H_2O+	1·66	0·28	1·44	3·55	0·31	1·57	1·27	0·83	2·36
H_2O-	0·34	0·60	2·07	0·01	0·70	1·33	1·89	1·11	1·76
CO_2	—	abs.	0·04	0·26	0·50	0·05	0·09	1·14	0·71
TiO_2	1·34	1·37	2·50	1·53	0·98	3·74	1·02	2·20	2·64*
P_2O_5	0·61	0·60	0·59	0·28	0·48	0·63	0·38	0·80	0·56
MnO	0·25	0·15	0·12	0·08	0·32	0·36	0·17	0·11	0·20
Other Con-stituents		BaO = 0·01	SO_3 = 0·10 Cl = 0·07 (NiCO)O = 0·03 Cr_2O_3 = tr. BaO = 0·05 V_2O_3 = 0·02 CuO = 0·01	BaO = 0·05 FeS_2 = 0·04	Cl = 0·01 BaO = 0·02	SO_3 = tr. SrO = tr. Cl = tr. BaO = 0·06 NiO = 0·01	Cl = 0·03 BaO = 0·02		(NiCo)O = 0·03 SO_3 = tr.
			100·49				100·01		
Less O = Cl, F, S			0·01				0·01		
	99·40	98·19	100·48	99·68	99·86	100·04	100·00	100·30	[100·57]

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

b. CaO/Alk. = 1–2

	K_2O/Na_2O = 0·75-0·30								
	51	52	53	54	55	56	57	58	59
Rock Name	Olivine-labradorite Basalt	Olivine Basalt	Lampro-phyre	Olivine Basalt	Basalt	Olivine Trachy-basalt	Anortho-clase-olivine Basalt	Crinanite (poor in analcite)	Olivine-andesine Basalt
Locality	Gong Gong, Ballarat, Vic.	Lake Eacham, Qld.	Bookookoorara Falls, Undercliffe, N.S.W.	Clifton Hill, N. of Melbourne, Vic.	Mt Moon area, near Moogerah, Qld.	Buckle Island, Balleny Islands, Ant.	Daylesford, Vic.	Kilcunda, Vic.	Mt Pisgah, Ballarat, Vic.
Reference	**591**, 76	**428**, 299	**11**, 238	**554**, 518	**490**	**314**, 229	**385**, 41	**116**, 123; **121**, 90	**591**, 77
Analyst	H. Yates	V. E. G. Harris	J. C. H. Mingaye	H. C. Richards	Avery & Anderson	A. P. Wymond	D. Orr	A. B. Edwards	H. Yates
Remarks			(Dyke)	(Dyke)					
Sp. Gr.	—	—	2·820	—	—	—	—	—	—
SiO_2	48·10	47·87	47·84	47·80	47·79	47·73	47·71	47·70	47·66
Al_2O_3	17·14	17·89	16·23	18·02	14·09	16·87	15·66	17·76	17·30
Fe_2O_3	4·02	0·44	4·18	1·77	2·67	2·52	2·47	2·23	1·72
FeO	6·42	10·14	7·20	9·46	8·93	8·78	8·43	8·25	8·37
MgO	6·32	8·52	5·85	3·96	3·89	5·80	4·45	6·50	7·82
CaO	7·91	8·48	7·33	8·54	8·06	8·64	7·53	9·37	8·20
Na_2O	4·28	2·89	3·57	3·74	3·32	4·90	3·69	3·34	3·52
K_2O	2·14	1·75	1·11	1·12	2·21	1·99	2·23	1·59	1·24
H_2O+	0·57	0·77	2·90	1·15	4·52	0·14	1·93	0·85	0·42
H_2O-	0·14	0·26	0·70	—	0·86	0·02	0·48	0·27	0·67
CO_2	—	—	0·19	—	—	—	2·67	tr.	—
TiO_2	2·71	1·96	2·15	3·53	2·74	2·39	1·96	1·02	3·20
P_2O_5	0·58	0·38	0·47	0·27	0·64	0·65	0·89	0·51	0·50
MnO	—	0·21	0·29	0·30	0·20	0·18	tr.	0·24	—
Other Constituents			Cl = 0·02 FeS_2 = 0·35 V_2O_3 = 0·01 Sb_2O_3 = 0.04			S = 0·09 BaO = 0·06		BaO = 0·03 Cl = 0·03 S = 0·02	
						100·76		99·69	
Less O = Cl, F, S						0·02		0·01	
	100·33	101·56	100·43	99·66	99·92	100·74	100·10	99·68	100·62

b. CaO/Alk. = 1–2

	K_2O/Na_2O = 0·75–0·30								
	60	61	62	63	64	65	66	67	68
Rock Name	Porphyritic Iddingsite Basalt	Analcite-olivine Dolerite	Olivine-andesine Basalt	Olivine-labradorite Basalt	Basalt	Andesine Basalt	Dolerite	Dolerite	Olivine-andesine Basalt
Locality	Near Lauriston, Vic.	Poowong, Vic.	Burrumbeet, Ballarat, Vic.	Trentham, Vic.	Mt Lindsay, Qld.	Newlyn, Vic.	Ballow Ck., Mt Barney, Qld.	Kiama, N.S.W.	Green Hill, Ballarat, Vic.
Reference	**120**, 283	**295**, 128; **499**	**591**, 89	**120**, 284	**408**; **421**, 177; **426**, 165; **554**, 625	**540**, 62 **554**, 521	**486**, **487**	**190**, 363: **229**, 58; **554**, 899	**591**, 80
Analyst	A. B. Edwards	J. Dennant	H. Yates	A. B. Edwards	G. R. Patten	D. J. Mahony	E. L. P. Mercy	H. P. White	H. Yates
Remarks			(Block in Agglomerate)				(Cone Sheet)	(Dyke)	
Sp. Gr.	—	—	—	—	2·79	2·82	—	2·765	—
SiO_2	47·56	47·56	47·55	47·54	47·50	47·46	47·4	47·32	47·31
Al_2O_3	17·10	16·79	15·32	14·16	14·19	16·12	14·9	16·99	16·15
Fe_2O_3	5·00	3·05	6·60	3·02	1·78	2·96	2·2	4·30	5·28
FeO	7·13	8·71	5·94	8·89	12·15	9·39	8·1	5·76	6·53
MgO	6·33	6·30	6·64	8·96	5·06	5·70	8·2	5·73	6·30
CaO	8·19	8·57	8·69	9·18	7·47	7·27	8·0	7·98	7·84
Na_2O	3·28	4·96	3·36	3·25	3·85	3·51	4·0	3·07	3·54
K_2O	1·73	1·78	1·52	1·88	1·58	1·74	1·7	1·22	1·66
H_2O+	0·42	2·23	0·65	0·55	1·59	0·57	2·7	2·71	0·96
H_2O-	0·82	—	0·56	1·47	0·33	0·72	—	1·49	1·10
CO_2	abs.	—	—	—	—	abs.	—	1·21	—
TiO_2	1·72	—	3·01	0·90	3·08	3·10	2·4	1·70	3·00
P_2O_5	0·34	—	0·57	0·44	0·79	0·78	0·39	0·42	0·43
MnO	0·15	tr.	—	0·30	0·20	0·25	0·15	0·29	—
Other Constituents	Cl = 0·02			Cl = 0·06 BaO = 0·03		NiO = 0·05 Cr_2O_3 = 0·02		BaO = 0·06 NiO = 0·02 SrO = tr. Cl = 0·06 Cr_2O_3 = tr. V_2O_3 = 0·02	
				100·63				100·35	
Less O = Cl, F, S				0·01				0·01	
	99·79	99·95	100·41	100·62	99·57	99·64	100·14	100·34	100·10

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

b. CaO/Alk. = 1–2

K_2O/Na_2O = 0·75–0·30

	69	70	71	72	73	74	75	76	77
Rock Name	Fayalite Basalt	Trachybasalt	Olivine-analcite Basalt	Porphyritic Andesine Basalt	Olivine Basalt	Andesine Basalt	Porphyritic olivine-labradorite Basalt	"Porphyrite"	Olivine-nepheline-labradorite Basalt
Locality	Mt. Boorambool, Springsure, Qld.	Mt. Gorong, Werribee River, Vic.	Callanans Hill, Vic.	Mt. Rowan, Ballarat, Vic.	Wollongong, N.S.W.	W. of Pirron Yallock, Vic.	Ballarat, Vic.	Mt. Hilda, Warburton Ra., W.A.	Clarendon, Ballarat, Vic.
Reference	**423**, 194; **428**, 299	**120**, 275	**116**, 123	**591**, 77	**190**, 355; **355**, 198; **554**, 899	**466**, 250	**591**, 77	**563**	**591**, 80
Analyst	G. R. Patten	A. B. Edwards	P. G. W. Bayly	H. Yates	W. A. Greig	G. Ampt	H. Yates	H. P. Rowledge	H. Yates
Remarks			"Poor analysis" A.B.E.		(Dyke)				
Sp. Gr.	2·747	—	—	—	2·911	2·974	—	2·90	—
SiO_2	47·20	47·19	47·15	46·91	46·88	46·87	46·82	46·79	46·72
Al_2O_3	15·25	18·05	20·48	17·73	18·32	12·42	19·26	14·87	18·80
FeO_2	4·61	3·90	1·61	5·14	2·50	2·34	1·79	5·29	1·53
FeO	8·43	7·90	9·33	6·47	7·91	10·54	7·37	8·38	7·29
MgO	5·72	5·01	4·61	4·94	5·36	10·31	5·65	4·33	6·44
CaO	8·14	8·54	8·13	6·96	8·46	8·43	7·94	6·07	7·72
Na_2O	3·45	3·82	3·64	3·60	2·96	3·45	3·68	3·90	4·56
K_2O	1·57	2·51	1·66	1·98	1·47	1·25	1·92	1·58	2·42
H_2O+	1·54	0·23	1·30	1·64	1·96	1·08	1·43	3·47	0·80
H_2O-	0·50	1·39	0·32	0·96	0·78		0·31	0·10	0·24
CO_2	—	0·23	abs.	—	0·62	—	—	abs.	—
TiO_2	3·25	1·20	1·46	2·97	2·30	2·99	2·74	3·21	2·85
P_2O_5	0·55	0·45	0·38	0·53	0·64	tr.	0·76	1·36	0·74
MnO	0·16	0·14	0·25	—	0·01	0·15	—	0·16	—
Other Constituents	SO_3 = 0·07	Cl = 0·02	Cl = 0·02 Cr_2O_3 = 0·03 V_2O_3 = 0·01		V_2O_3 = 0·03 SO_3 = 0·02 Cl = tr. CuO = tr. NiO = 0·02 SrO = tr. Li_2O = tr.				
	100·44	100·58	100·38	99·83	100·24	99·83	99·67	99·51	100·11

b. CaO/Alk. = 1–2

K_2O/Na_2O = 0·75–0·30

	78	79	80	81	82	83	84	85	86
Rock Name	Olivine-andesine Basalt	Iddingsite Basanite	Andesine Basalt	Olivine Basalt	Basalt	Porphyritic olivine-labradorite basalt	Crinanite	Andesine Basalt	Olivine-labradorite Basalt
Locality	Burrumbeet, Ballarat, Vic.	Bellerive, Tas.	Smeaton, Ballarat, Vic.	Mt. Tomah, N.S.W.	Scotts Well, Springsure, Qld.	Mt. Hollow-back, Ballarat, Vic.	Mt. Nebo, near Wollongong, N.S.W.	Sydenham, near Melbourne, Vic.	N.W. of Mt. Warrenheip, Ballarat, Vic.
Reference	**591**, 89	**130**, 111	**591**, 92	**79**, 93; **330**, 304; **554**, 519	**423**, 194	**591**, 77	**131**, 16	**120**, 278	**591**, 76
Analyst	H. Yates	W. St C. Manson	H. Yates	J. C. H. Mingaye		H. Yates	G. C. Carlos	A. B. Edwards	H. Yates
Remarks	(Block in agglomerate)		*Loss on ignition						
Sp. Gr.	—	—	—	2·905	2·822	—	—	—	—
SiO_2	46·69	46·64	46·45	46·42	46·41	46·36	46·35	46·34	46·33
Al_2O_3	16·02	13·22	14·67	17·42	16·61	19·87	15·91	15·52	17·78
Fe_2O_3	2·02	9·81	1·40	3·70	3·85	0·87	1·45	2·76	2·25
FeO	8·93	4·16	9·37	7·45	8·69	8·96	9·95	7·26	6·97
MgO	7·58	7·01	8·87	6·61	5·41	5·45	9·02	5·44	7·00
CaO	8·31	7·33	7·58	8·56	6·24	7·34	8·29	9·72	7·76
Na_2O	3·16	4·11	3·18	3·61	3·41	4·02	3·58	3·56	4·04
K_2O	1·30	1·35	1·52	1·80	1·36	1·64	1·68	1·42	2·40
H_2O+	1·73	0·52	2·35*	1·52	0·50	1·15	0·11	0·50	1·25
H_2O-	0·54	2·14	0·69	0·34	2·86	1·33	1·01	2·06	0·34
CO_2	—	—	—	0·04	—	—	tr.	3·40	—
TiO_2	3·48	2·50	3·28	1·88	4·04	2·43	1·98	1·25	2·85
P_2O_5	0·42	1·00	0·63	0·87	0·62	0·47	0·53	0·03	0·71
MnO	—	0·19	—	0·02	0·14	—	0·20	0·33	—
Other Constituents		Cl = tr.		BaO = 0·03 V_2O_3 = 0·01 Cl = 0·05 Cr_2O_3 = 0·02 (NiCo)O = 0·02	SO_3 = 0·03		SO_3 = tr. Cl = tr.	BaO = 0·02	
				100·35					
Less O = Cl, F, S				0·01					
	100·18	99·98	99·99	100·34	100·17	99·89	100·06	99·61	99·68

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

b. CaO/Alk. = 1–2

	K_2O/Na_2O = 0·75–0·30								K_2O/Na_2O <0·30
	87	88 *	89	90	91	92	93	94	95
Rock Name	Basalt	Olivine-labradorite Basalt	Olivine Basalt	Basalt	Oligoclase Basalt	Analcite-olivine-titanaugite Dolerite	Basalt	Dolerite Pegmatite	Dolerite
Locality	Camperdown Vic.	Camperdown Vic.	North Dural, near Sydney, N.S.W.	Ruby Hill, near Bingara, N.S.W.	Toolern Ck., Toolern Area, Vic.	Circular Head, Tas.	Mt. Lookout, Aberfeldy, Vic.	Prospect, near Sydney, N.S.W.	Savoy Hill, near Muswellbrook, N.S.W.
Reference	**181**, 22; **554**, 629	**181**, 22	**366**, 97	**283**	**120**, 270	**124**, 407	**121**, 90; **294**, 45	**577**	**409**, 226; **55**, 66; **372**, 88
Analyst	A. G. Hall	A. G. Hall	H. P. White	A. J. Easton	A. B. Edwards	A. B. Edwards	M. K. Evans	M. Chiba	W. A. Greig
Remarks			(Volcanic neck)	(Dyke through breccia pipe)					
Sp. Gr.	2·959	2·959	2·908	2·81	—	—	—	2·70	2·793
SiO_2	46·29	46·29	46·26	46·25	46·24	46·15	46·04	46·00	49·50
Al_2O_3	13·71	13·71	16·91	15·80	12·83	18·95	15·08	14·34	16·46
Fe_2O_3	3·03	3·03	4·10	5·53	5·15	3·68	5·08	3·34	3·70
FeO	9·14	9·14	8·37	6·12	6·35	6·41	6·95	7·91	6·12
MgO	9·50	9·50	5·15	5·81	3·63	5·20	7·02	3·96	5·75
CaO	8·60	8·60	7·22	7·94	10·48	9·15	7·75	8·19	8·14
Na_2O	3·26	3·26	3·79	4·54	4·41	3·79	3·76	4·57	4·40
K_2O	1·62	1·62	2·32	2·40	1·64	2·43	2·41	1·80	1·15
H_2O+	0·39	0·39	1·67	2·10	1·10	0·20	1·20	3·84	2·69
H_2O-	0·31	0·31	0·15	0·47	1·45	1·49	0·57	1·12	0·87
CO_2	tr.	tr.	1·04	0·16	3·08	abs.	abs.	0·29	0·16
TiO_2	2·95	2·95	2·30	2·16	1·70	1·65	2·78	3·73	0·76
P_2O_5	0·71	0·71	0·72	0·87	1·32	0·50	1·44	1·07	0·48
MnO	0·14	0·14	0·18	0·24	0·23	0·10	0·28	0·16	0·16
Other Constituents	Cr_2O_3=0·05 NiO=0·01 SO_3=tr. Cl=tr.	Cr_2O_3=0·05 NiO=0·01 Cl=tr. SO_3=tr.	Cl=tr. BaO=0·03 Li_2O=pnd. V_2O_3=tr.	Cr_2O_3=0·02	Cl=0·07 BaO=0·05				Cl=tr. SrO=pnd. V_2O_3=tr.
	99·71	99·71	100·21	100·41	99·73	99·70	100·36	99·32	100·34

* 88 same analysis as 87, included in error.

b. CaO/Alk. = 1–2

K_2O/Na_2O < 0·30

	96	97	98	99	100	101	102	103	104
Rock Name	Olivine-andesine Basalt	Olivine-andesine Basalt	Dolerite	Spilite	Spilite	Spilite	Gabbro	Dolerite	"Melaphyre"
Locality	Hardies Hill, Ballarat, Vic.	Lal Lal Falls, near Ballarat, Vic.	Bowling Alley Point, N.S.W.	Grooms Slip, near Penguin, Tas.	King Island, Tas.	Nundle, N.S.W.	Smithton, Tas.	Bowling Alley Point, N.S.W.	Wellington Valley, Vic.
Reference	**591**, 80	**591**, 80	**30**, 139	**457**, 124	**436**, 121	**28**, 704; **30**, 139; **554**, 885	**384**, 68	**30**, 139	**514**, 98
Analyst	H. Yates	H. Yates	W. N. Benson	B. Scott	B. Scott	W. N. Benson	Tas. Dept. Mines	W. N. Benson	E. O. Thiele
Remarks							*Loss on ignition		
Sp. Gr.	—	—	—	—	—	—	—	—	2·82
SiO_2	49·10	48·90	48·35	48·35	48·24	48·22	48·20	48·04	47·84
Al_2O_3	16·71	13·63	14·12	16·82	17·55	14·82	14·74	14·47	16·17
Fe_2O_3	3·18	2·42	4·87	2·85	1·05	0·56	9·22	0·87	9·28
FeO	6·80	8·78	10·27	10·21	7·04	9·25	7·82	11·87	8·64
MgO	7·72	6·82	4·78	4·46	5·27	5·58	5·00	5·56	2·62
CaO	7·90	8·77	6·71	9·55	10·43	8·81	5·91	9·11	4·70
Na_2O	3·55	3·68	4·63	3·78	5·58	4·95	2·89	4·06	4·47
K_2O	0·96	0·94	0·38	0·42	0·97	0·44	0·44	0·64	0·08
H_2O+	0·89	3·60	2·00	2·32	2·88	2·54	2·50*	2·15	2·51
H_2O-	0·62	0·09	0·30	0·32	0·17	0·15	—	0·13	0·06
CO_2	—	—	abs.	—	0·11	1·40	—	0·26	—
TiO_2	1·87	2·62	2·84	0·78	0·70	2·68	2·36	1·97	2·68
P_2O_5	0·29	0·32	0·35	nd.	0·10	0·23	0·38	0·08	tr.
MnO	—	—	0·18	0·10	0·12	0·23	0·74	0·21	0·30
Other Constituents			FeS_2 = 0·22 BaO = 0·10			FeS_2 = 0·37 (NiCo)O = 0·03	S = 0·07	FeS_2 = tr.	
							100·27		
Less O = Cl, F, S							0·03		
	99·59	100·57	100·10	99·96	100·21	100·26	100·24	99·42	99·35

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

b. CaO/Alk. = 1–2

$K_2O/Na_2O < 0{\cdot}30$

	105	106	107	108	109	110
Rock Name	Olivine-andesine Basalt	Olivine Diabase	Analcite-olivine Dolerite	Basalt	Olivine-poor Basalt	Olivine Dolerite
Locality	Mt. Mercer, Ballarat, Vic.	Wooltana, S.A.	Kilcunda, Vic.	Diamond Ck., Greensborough, Vic.	Prospect, near Sydney, N.S.W.	Wanyambilli Trig. Station, W. of Wollongong, N.S.W.
Reference	**591**, 80	**310**, 198	**116**, 123; **295**, 128	**121**, 90; **267**, 335; **554**, 519	**577**	**190**, 289; **355**, 198; **554**, 627
Analyst	H. Yates	A. R. Alderman	P. G. W. Bayly	N. R. Junner	J. M. Pyle	H. P. White
Remarks						
Sp. Gr.	—	—	—	2·94	2·88	2·934
SiO_2	47·81	47·75	46·76	46·43	46·26	46·20
Al_2O_3	15·40	12·77	22·85	17·60	14·39	17·44
Fe_2O_3	6·37	7·22	3·80	8·51	3·09	1·30
FeO	5·61	4·38	5·83	2·44	8·33	9·54
MgO	7·58	9·92	4·32	8·03	5·27	7·38
CaO	8·48	5·79	8·05	8·12	9·53	9·02
Na_2O	3·94	3·46	5·30	3·56	4·46	3·69
K_2O	1·04	0·81	1·54	0·92	1·15	1·10
H_2O+	0·91	3·38	1·55	1·20	2·89	2·11
H_2O-	0·39	0·43	—	0·81	0·49	0·09
CO_2	—	1·98	—	—	abs.	0·04
TiO_2	2·42	1·65	—	2·25	3·37	1·30
P_2O_5	0·44	0·19	tr.	0·37	0·68	0·56
MnO	—	0·28	—	0·22	0·18	0·17
Other Constituents				(NiCo)O = 0·07		BaO = 0·03
	100·39	[100·01]	100·00	100·53	100·09	99·97

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

c. CaO/Alk. = 2–3

	$K_2O/Na_2O > 1 \cdot 25$			$K_2O/Na_2O = 1 \cdot 25 - 0 \cdot 75$	$K_2O/Na_2O = 0 \cdot 75 - 0 \cdot 30$				
	1	2	3	4	5	6	7	8	9
Rock Name	Shonkinite	Dolerite	"Monchiquite-Nephelinite"	Andesitic Basalt	Iddingsite-labradorite Basalt	Olivine-andesine Basalt	Basalt	Olivine Basalt	Iddingsite-labradorite Basalt
Locality	Tilba Tilba Village, N.S.W.	W. of Mount McMinn, N.T.	Port Cygnet, Tas.	Near Walhalla, Vic.	Mt. Blowhard, Ballarat, Vic.	W. of Ballarat, Vic.	Nethercote, near Eden, N.S.W.	Arm River, Tas.	Malmsbury, Vic.
Reference	**48**, 656	**92**, 7	**394**; **554**	**548**	**591**, 77	**591**, 74	**49**, 479	**481**, 133	**120**, 283
Analyst	I. A. Brown	P. J. J. Sinnott	A. Pohl	M. K. Evans	H. Yates	H. Yates	I. A. Brown	W. St C. Manson	A. B. Edwards
Remarks		*Author's Correction							
Sp. Gr.	3·085	—	—	—	—	—	—	—	—
SiO_2	48·34	47·86	46·30	49·89	49·98	49·95	49·87	49·80	49·53
Al_2O_3	11·79	13·73*	9·87	11·07	16·18	14·53	15·91	14·25	17·52
Fe_2O_3	2·31	3·79	7·43	2·93	3·73	2·75	3·55	3·38	4·21
FeO	7·72	9·17	5·40	7·41	6·23	8·18	10·09	7·70	5·57
MgO	9·59	6·40	7·18	10·23	7·70	8·92	4·84	5·79	6·54
CaO	12·76	10·39	14·26	9·78	8·84	8·98	8·27	9·78	9·61
Na_2O	1·60	1·64	1·74	1·90	3·08	3·16	2·17	2·96	3·38
K_2O	3·17	2·44	3·81	1·82	1·12	0·94	1·10	0·93	1·25
H_2O+	0·68	2·50	1·85	3·16	0·45	0·10	2·44	0·71	0·52
H_2O-	0·04	0·10		0·21	0·52	—	0·19	1·69	0·49
CO_2	pnd.	abs.	nd.	abs.	—	—	0·22	—	abs.
TiO_2	0·88	1·52	1·37	1·08	2·12	2·49	1·89	2·05	0·63
P_2O_5	0·87	0·18	1·01	0·48	0·50	0·33	—	0·34	0·35
MnO	0·15	0·17	tr.	tr.	—	—	pnd.	0·13	0·11
Other Constituents				SO_3 = tr. Cl = tr.					Cl = 0·01
	99·90	99·89	100·22	99·96	100·45	100·33	100·54	99·51	99·72

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

c. CaO/Alk. = 2–3

K_2O/Na_2O = 0·75–0·30

	10	11	12	13	14	15	16	17	18
Rock Name	Olivine labradorite Basalt	Dolerite	Porphyritic Basalt	Olivine-labradorite Basalt	Porphyritic Olivine-andesine Basalt	Basalt	Basalt	Dolerite	Olivine Basalt
Locality	Mt. Noorat, near Terang, Vic.	Mt. Holmes, Central Division, W.A.	Walhalla, Vic.	Stoney Rises, W. of Pirron Yallock, Colac, Vic.	Gong Gong, Ballarat, Vic.	Waratah, Tas.	4 miles E. of Mt. Isa, Qld.	Pieman River, Tas.	Mersey Bluff, Launceston, Tas.
Reference	**181**, 22; **554**, 629	**147**, 419; **554**	**270**, 169	**120**, 284	**591**, 76	**130**, 104	**551**	**482**	**130**, 104
Analyst	A. G. Hall	H. Bowley	N. R. Junner	F. F. Field	J. Clark	W. St C. Manson	Avery & Anderson	W. St C. Manson	W. St C. Manson
Remarks		(Dyke)	(Dyke)					(Dyke Swarm)	
Sp. Gr.	2·89	2·99	—	2·97	—	—	2·856		—
SiO_2	49·29	49·27	49·07	49·07	48·56	48·40	48·39	48·38	48·28
Al_2O_3	13·99	13·57	14·88	13·76	19·36	15·59	13·14	14·52	14·01
Fe_2O_3	7·54	2·47	1·64	2·24	1·10	5·12	2·90	5·87	3·13
FeO	4·49	12·78	8·27	9·26	9·21	6·29	9·46	9·21	8·45
MgO	8·82	4·26	7·58	9·11	5·21	6·52	3·84	5·07—	9·18
CaO	8·28	8·51	8·17	8·57	8·52	7·95	8·48	7·20	9·35
Na_2O	2·97	2·44	2·87	3·22	2·62	2·69	2·76	2·22	2·96
K_2O	1·04	1·42	1·05	1·15	1·57	1·09	0·96	1·50	0·89
H_2O+	0·69	0·55	2·21	0·61	1·07	2·40	2·39	3·40	1·29
H_2O-	0·79	0·22	0·48	0·04	0·20	1·74	0·25	0·49	0·40
CO_2	abs.	0·10	2·81	abs.	—	tr.	3·23	—	0·06
TiO_2	1·75	2·13	1·46	2·25	2·13	1·88	3·72	2·20	2·10
P_2O_5	0·38	1·23	tr.	0·47	0·50	0·36	0·65	0·22	0·39
MnO	0·15	0·50	0·18	0·61	0·09	0·14	0·30	0·18	0·15
Other Constituents	NiO = 0·06	V_2O_3 = 0·09 FeS_2 = 0·15				Cl = tr. SO_3 = tr.			Cl = tr. SO_3 = tr.
	100·24	99·69	100·67	100·36	[100·14]	100·17	100·47	100·46	[100·64]

c. CaO/Alk. = 2–3

K_2O/Na_2O = 0·75–0·30

	19	20	21	22	23	24	25	26	27
Rock Name	Dolerite	Basalt	Olivine Basalt	Iddingsite-labradorite Basalt	Augite Basalt	Iddingsite-labradorite Basalt	Spilite	Olivine Basalt	Dolerite
Locality	Blinman, S.A.	Mt. Lookout, Aberfeldy, Vic.	Gulgong, N.S.W.	Ballarat, Vic.	Lynch Ck., S. Queens-town, Tas.	Ballarat, Vic.	King Island, Tas.	Mt. Gambier, S.A.	Mt. Lyell, Kimberley, W.A.
Refer-ence	**202**, 178	**121**, 90; **294**, 45	**330**, 304; **55**, 55; **554**, 663	**591**, 70	**474**, 49	**591**, 70	**436**, 121	**162**, 178; **483**, 87; **554**, 685	**447**, 32; **457**, 271
Analyst		M. K. Evans	H. P. White	H. Yates	Mt. Lyell Co.	H. Yates	B. Scott	E. R. Stanley	C. G. Gibson
Remarks									(? laccolith)
Sp. Gr.	—	—	2·858	—	—	—	—	—	3·02
SiO_2	48·11	47·89	47·88	47·68	47·6	47·49	47·40	46·95	46·90
Al_2O_3	15·08	16·16	16·65	14·31	17·7	14·92	19·19	14·37	14·12
Fe_2O_3	4·73	2·00	2·45	6·34	13·7	4·76	1·48	1·37	0·07
FeO	8·37	8·88	7·08	4·49	nd.	5·28	8·26	9·52	12·50
MgO	5·87	6·23	7·91	8·31	6·55	8·18	3·60	9·74	6·96
CaO	9·75	10·39	9·25	7·89	8·2	8·53	11·25	10·04	10·92
Na_2O	3·33	3·37	2·64	2·98	2·0	2·76	3·40	3·49	2·85
K_2O	1·45	1·47	1·17	0·94	1·3	1·02	1·31	1·53	1·67
H_2O+	0·72	1·34	1·38	1·95	1·5	2·86	3·32	0·52	1·24
H_2O-	0·17	0·15	1·02	2·35		2·00	0·34	0·10	0·22
CO_2	0·44	abs.	0·04	abs.	0·6	abs.	—	abs.	abs.
TiO_2	2·10	1·75	1·74	2·26	nd.	2·34	0·29	2·04	1·88
P_2O_5	—	0·78	0·36	0·14	—	0·21	nd.	0·46	—
MnO	0·12	0·19	0·22	—	nd.	—	0·13	—	0·29
Other Con-stituents	S = 0·19		SO_3 = 0·03 Cl = 0·05 Cr_2O_3 = 0·01 V_2O_3 = 0·01 BaO = 0·10 SrO = tr. (NiCo)O = 0·05		SO_3 = 1·1				FeS_2 = tr.
	100·43		100·04						
Less O = Cl, F, S	0·08		0·01						
	100·35	100·60	100·03	99·64	100·25	100·35	99·97	100·13	99·62

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

c. CaO/Alk. = 2-3

	$K_2O/Na_2O = 0{\cdot}75-0{\cdot}30$								
	28	29	30	31	32	33	34	35	36
Rock Name	Ophitic labradorite Basalt	Augite Basalt	Olivine Basalt	Olivine-labradorite Basalt	Essexite-gabbro	Olivine Dolerite	Iddingsite-labradorite Basalt	Olivine Trachy-basalt	Analcite Dolerite
Locality	Ballarat, Vic.	Lynch Ck., S. Queens-town, Tas.	Upper Mersey River, Tas.	Alfredton, Ballarat, Vic.	Near Carlsruhe, Vic.	Camden Park, near Sydney, N.S.W.	Ballarat, Vic.	Mt. Dry-galski, Heard Island, Ant.	Prospect, near Sydney, N.S.W.
Refer-ence	**591**	**474**, 49; **438**	**481**, 133	**591**, 71	**120**, 293	**329**, 230; **345**, 173; **554**, 627	**591**, 70	**419**, 258; **530**, 37	**238**; **55**, 66; **554**, 627
Analyst	A. G. Hall	B. Scott	W. St C. Manson	H. Yates	A. B. Edwards		H. Yates	Reinisch	J. C. H. Mingaye
Remarks					(Sill)				(Marginal phase)
Sp. Gr.	—	—	—	—	—	—	—	—	2·947
SiO_2	46·81	46·72	46·66	46·52	46·51	46·51	46·48	46·36	46·26
Al_2O_3	12·94	18·25	13·06	14·40	15·90	15·27	15·31	16·70	13·36
Fe_2O_3	1·62	2·38	2·10	1·94	2·84	2·50	4·99	7·53	2·34
FeO	8·39	7·73	9·87	7·79	7·93	8·92	5·54	6·23	10·53
MgO	6·81	7·81	9·11	5·74	6·99	8·40	8·40	5·84	8·87
CaO	9·51	7·86	10·33	9·90	10·47	9·12	7·47	9·77	9·18
Na_2O	2·76	2·64	2·65	2·82	3·24	3·12	2·46	3·22	3·27
K_2O	0·88	1·32	0·91	0·90	1·94	1·17	0·80	1·12	1·23
H_2O+	0·90	0·11	1·02	4·07	0·53	1·21	2·67	0·35	2·08
H_2O-	0·50	4·43	0·88	0·26	1·05	0·22	3·43		0·15
CO_2	6·85	—	1·02	3·41	1·52	0·61	0·61	—	0·06
TiO_2	1·60	0·48	1·77	2·22	0·95	2·20	1·86	1·88	1·78
P_2O_5	0·25	nd.	0·34	0·24	0·47	0·33	0·24	0·58	0·42
MnO	0·14	0·07	0·18	—	0·16	0·05	—	—	0·12
Other Con-stituents					S = tr.	(NiCo)O = 0·03 Cr_2O_2 = 0·02 SO_3 = 0·11 Cl = 0·04 V_2O_3 = 0·03 BaO = 0·04			SO_3 = 0·13 BaO = 0·05 Cl = 0·01 Cr_2O_3 = 0·02 (NiCo)O = 0·01 V_2O_3 = 0·03
	99·96	99·80	99·90	100·21	100·50	99·90	100·26	99·58	99·90

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

c. CaO/Alk. = 2–3

	K_2O/Na_2O = 0·75–0·30							K_2O/Na_2O < 0·30	
	37	38	39	40	41	42	43	44	45
Rock Name	Limburgite	Olivine Basalt	"Essexite"	Crinanite	Dolerite	Olivine Basalt	Basalt	Labradorite Dolerite	Basalt
Locality	W. of Darlingford, Vic.	S.W. of Burrinjuck, N.S.W.	Jellore Ck., near Mittagong, N.S.W.	Mt. Nebo, near Wollongong, N.S.W.	Wineglass Bay, Tas.	Kangaroo Mt., Cambewarra, N.S.W.	Prospect, near Sydney, N.S.W.	Nemingha, N.S.W.	Melbourne, (probably Footscray), Vic.
Reference	**120**, 290	**590**	**510**, 341; **55**, 66; **554**, 911	**131**, 18	**482**	**75**, 116; **190**, **333**; **554**, 901	**380**, 263; **575**, 15	**31**, 602	**382**
Analyst	A. B. Edwards	H. Yates	Not stated	G. C. Carlos	W. St C. Manson	W. A. Greig	J. H. Pyle	W. N. Benson	N.Z. Dom. Lab.
Remarks									
Sp. Gr.	—	2·93	2·801	—	—	3·013	—		2·743
SiO_2	46·25	46·24	46·22	46·16	46·14	46·12	46·01	49·96	49·95
Al_2O_3	13·06	17·32	9·33	15·44	15·17	12·39	13·13	15·49	18·51
Fe_2O_3	6·02	0·96	5·85	3·08	1·93	2·70	2·84	1·83	6·42
FeO	6·36	8·35	7·39	8·72	10·82	9·53	10·09	10·85	5·18
MgO	8·25	8·72	3·08	9·57	5·72	10·26	8·90	4·70	6·36
CaO	10·68	9·64	10·80	8·93	8·45	10·00	9·08	8·52	8·80
Na_2O	2·77	3·34	3·21	2·38	3·11	2·72	3·03	2·90	3·25
K_2O	1·59	1·26	1·80	1·46	1·04	1·56	0·96	0·65	0·68
H_2O+	0·91	0·93	2·30	0·05	3·68	1·80	2·58	2·47	0·70
H_2O-	0·97	0·78	0·94	1·09	0·15	0·26	0·30	0·04	—
CO_2	abs.	—	4·46	abs.	—	0·77	0·60	0·05	0·15
TiO_2	2·30	2·44	3·70	2·51	3·35	1·28	2·46	1·40	—
P_2O_5	0·60	0·43	0·80	0·51	0·73	0·46	0·49	0·38	
MnO	0·14	—	0·32	0·32	0·19	0·19	0·18	0·14	
Other Constituents	Cl = 0·06 BaO = 0·05		BaO = 0·24 Cl = 0·03 SO_3 = 0·32 S = 0·10 Cr_2O_3 = 0·02 V_2O_3 = 0·02	SO_3 = 0·10 Cl = 0·10		V_2O_3 = 0·06 SO_3 = 0·15 Cl = 0·08 BaO = 0·01 Cr_2O_3 = 0·02	ZrO_2 = 0·01 Cr_2O_3 = 0·01 S = tr. BaO = tr. V_2O_3 = 0·02 (NiCo)O = 0·03 SrO = 0·02	FeS_2 = 0·10 Cr_2O_3 = abs.	
	100·01		[100·93]	[100·42]		100·36			
Less O = Cl, F, S	0·01		0·05	0·02		0·02			
	100·00	100·41	100·88	100·40	100·48	100·34	[100·74]	99·48	100·00

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

c. CaO/Alk. = 2–3

	K_2O/Na_2O < 0·30								
	46	47	48	49	50	51	52	53	54
Rock Name	Olivine-labradorite Basalt	Basalt	Olivine Basalt	Olivine-andesine Basalt	Olivine Basalt	Dolerite	Basalt	Basalt	Basalt
Locality	Alfredton, Ballarat, Vic.	Chinghee Creek, Qld.	Upper Forth River, Tas.	Ballarat South, Vic.	Upper Forth River, Tas.	Irregully Ck., W.A.	Copes Ck., Nymboida, N.S.W.	E. of Pentridge, N. Melbourne, Vic.	Chinghee Creek, Qld.
Reference	**591**, 71	**407**;**421**, 177; **554**, 515	**481**, 133	**591**, 72	**481**, 133	**447**, 32; **519**, 164; **521**, 645; **554**, 663	**286**	**97**, 181	**421**, 177; **407**; **554**, 661
Analyst	H. Yates	A. T. Jefferis	W. St C Manson	H. Yates	W. St C. Manson	H. Bowley	J. H. Pyle	G. A. Cook	A. T. Jefferis
Remarks									
Sp. Gr.	—	2·76	—	—	—	3·01	—	—	2·87
SiO_2	49·92	49·90	49·58	49·56	49·48	49·42	49·16	49·01	48·96
Al_2O_3	15·51	15·79	13·69	16·30	13·32	14·95	18·19	16·60	16·58
Fe_2O_3	1·62	4·52	3·52	3·51	3·20	1·38	0·49	2·97	1·95
FeO	8·58	6·25	8·34	6·48	9·14	10·76	5·19	8·55	8·62
MgO	8·47	5·77	8·46	7·86	8·18	6·16	3·93	7·81	7·97
CaO	8·40	9·12	8·52	9·04	8·62	9·85	9·95	8·21	8·75
Na_2O	3·06	3·24	2·47	3·42	2·70	2·70	3·70	2·91	3·08
K_2O	0·64	0·89	0·59	0·68	0·71	0·72	0·35	0·85	0·91
H_2O+	0·85	1·36	1·29	0·73	1·18	0·77	3·09	0·44	1·18
H_2O-	0·16	1·28	1·86	0·28	1·52	0·09	1·09	1·24	0·66
CO_2	abs.	—	—	—	—	abs.	2·90	—	—
TiO_2	2·25	1·98	1·69	2·26	1·66	1·95	1·38	1·56	0·81
P_2O_5	0·30	0·43	0·23	0·35	0·24	0·55	0·30	0·32	0·34
MnO	—	0·12	0·18	—	0·16	0·47	0·27	—	0·14
Other Constituents					—	FeS_2 = 0·26	S = tr. Li_2O = tr. Cr_2O_3 = 0·01 SrO = tr. BeO = tr.		
	99·76	100·65	100·42	100·47	100·11	100·03	100·00	[100·47]	99·95

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

c. CaO/Alk. = 2–3

$K_2O/Na_2O < 0{\cdot}30$

	55	56	57	58	59	60	61	62	63
Rock Name	Iddingsite-labradorite Basalt	Labradorite Basalt	Basalt	Variolite	Dolerite Pegmatite	Olivine-andesine Basalt	Quartz Dolerite	"Basalt"	Ophitic Dolerite
Locality	Ballarat, Vic.	Smeaton, Ballarat, Vic.	Capalaba, Qld.	Bowling Alley Point, N.S.W.	Peats Ridge, 50 miles N. of Sydney, N.S.W.	Alfredton, Ballarat, Vic.	Murchison River, near Geraldine Mine, W.A.	Cape Vogel, T.P. & N.G.	Prospect, near Sydney, N.S.W.
Reference	**591**, 70	**591**, 92	**490**	**30**, 139	**576**, 274	**591**, 71	**598**	**95**	**577**
Analyst	H. Yates	H. Yates	Avery & Anderson	W. N. Benson	J. M. Pyle	H. Yates	B. W. Stenhouse	A. McClure	M. Chiba
Remarks							(Dyke)	* Loss on ignition	(Centre of vein) *Confirmed
Sp. Gr.	—	—	—	—	2·91	—	3·07	—	2·84
SiO_2	48·85	48·83	48·74	48·61	48·50	48·31	47·84	47·84	47·15
Al_2O_3	15·82	17·03	16·49	18·54	15·53	15·30	16·37	10·76	21·56*
Fe_2O_3	0·22	3·81	2·63	0·34	2·90	4·51	2·17	6·90	2·18
FeO	8·97	6·70	7·43	6·79	8·28	5·68	11·36	5·06	4·17
MgO	7·21	6·97	6·16	7·22	4·45	8·65	4·71	8·34	2·03
CaO	8·78	9·36	8·28	10·20	10·14	7·95	9·37	6·39	11·63
Na_2O	2·72	2·80	2·88	4·13	3·90	3·14	2·63	2·04	4·09
K_2O	0·78	0·64	0·79	0·18	1·05	0·64	0·75	0·56	0·87
H_2O+	1·53	0·97	1·62	2·02	0·95	1·87	0·82	5·45*	3·40
H_2O-	0·30	1·06	3·73	0·20	0·48	1·80	0·03	5·29	0·67
CO_2	2·21	—	—	1·19	abs.	abs.	—	—	0·11
TiO_2	2·11	1·86	1·46	0·90	3·04	2·17	3·46	0·73	2·06
P_2O_5	0·28	0·29	0·24	tr.	0·66	0·30	0·82	0·12	0·71
MnO	—	—	0·14	0·08	0·15	—	0·18	0·18	0·06
Other Constituents				$FeS_2 = 0{\cdot}04$					
	99·78	100·32	100·59	100·44	100·03	100·32	100·51	99·66	100·69

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

	c. CaO/Alk. = 2–3					d. CaO/Alk. > 3			
	K_2O/Na_2O < 0·30					K_2O/Na_2O = 1·25–0·75			
	64	65	66	67		1	2	3	4
Rock Name	Basalt	Olivine-poor Basalt	Amygdaloidal Basalt	Olivine-labradorite Basalt		Tachylyte	Olivine-labradorite Basalt	"Augite Andesite"	Dolerite
Locality	Prospect, near Sydney, N.S.W.	Peats Ridge, 50 miles N. of Sydney, N.S.W.	Nethercote, near Eden, N.S.W.	Alfredton, Ballarat, Vic.		Poona, Murchison Div., W.A.	Tylden Falls, Little Coliban R., Vic.	S.E. of Blayney, N.S.W.	Nandewar Mts., N.S.W.
Reference	**577**	**576**, 274	**49**, 479	**591**, 71		**447**, 32	**120**, 285	**376**, 90	**235**, 903; **554**, 605
Analyst	M. Chiba	J. M. Pyle	I. A. Brown	H. Yates		H. Bowley	A. B. Edwards	W. G. Stone	H. I. Jensen
Remarks						(Selvage of dolerite dyke)			
Sp. Gr.	3·04	2·88	—	—		3·02	—	3·020	—
SiO_2	47·11	46·80	46·28	46·22		49·41	48·25	47·46	47·20
Al_2O_3	14·23	16·93	16·02	14·57		11·64	15·79	11·50	11·78
Fe_2O_3	2·28	1·76	2·43	1·94		3·92	2·33	3·31	1·94
FeO	8·46	7·99	7·27	7·72		12·07	8·57	7·02	9·04
MgO	8·05	5·32	6·84	5·51		4·37	8·36	12·10	9·95
CaO	10·93	10·88	8·86	8·68		7·92	8·93	11·50	11·63
Na_2O	2·96	3·95	2·83	3·10		1·02	1·56	1·68	1·61
K_2O	0·82	1·00	0·25	0·80		1·25	1·30	1·47	1·67
H_2O+	1·08	1·40	3·65	4·71		4·85	1·65	2·56	1·24
H_2O-	0·23	0·70	0·30	0·26		0·03	1·79	0·50	0·28
CO_2	0·06	0·07	2·58	3·85		abs.	—	0·18	0·17
TiO_2	2·61	2·61	1·94	2·14		3·22	0·91	0·50	4·31
P_2O_5	1·09	0·54	0·34	0·31		0·28	0·56	0·19	pnd.
MnO	0·13	0·12	0·11	—		0·38	0·11	0·20	0·26
Other Constituents						FeS_2 = 0·19	Cl = 0·02 S = 0·06	Cl = tr (NiCo)O = 0·04 BaO = 0·05 SrO = tr. Cr_2O_3 = 0·04 V_2O_3 = 0·01	NiO = 0·03
	100·04	100·07	99·70	99·81		100·55	100·19	100·31	101·11

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

d. CaO/Alk. <3

	K_2O/Na_2O = 0·75–0·30						K_2O/Na_2O <0·30		
	5	6	7	8	9	10	11	12	13
Rock Name	Basalt	Basaltic Olivine Dolerite	Quartz Dolerite	Porphyritic Basalt	Olivine Basalt	Basalt	Dolerite	Quartz Dolerite	Dolerite
Locality	Rohm Pt., Aitape, T.P. & N.G.	Point Irby, W.A.	West Cape Howe, W.A.	Korkuper-rimul Ck., Vic.	Barrington, Tas.	4 miles E. of Mt. Isa, Qld.	Mt. Lofty Ra., S.A.	Musgrave Ra., S.A.	Morawa, W.A.
Reference	**17**, 25	**89**, 51	**89**, 51	**121**, 90; **224**, 145	**482**, 284	**551** —	**145**, 14	**584**	**456**, 97
Analyst	G. C. Carlos	W. H. Herdsman	W. H. Herdsman	R. Jacobson	W. St C Manson	Avery & Anderson	H. N. England	W. H. Herdsman	H. Bowley
Remarks		(Chilled margin of dyke)							
Sp. Gr.	2·71	—	—	—	—	3·070	3·07	—	—
SiO_2	49·68	49·43	49·42	46·64	46·30	46·22	49·99	49·94	49·89
Al_2O_3	15·89	14·28	15·37	15·46	13·78	14·67	15·54	14·83	11·53
Fe_2O_3	4·88	2·08	1·84	4·49	3·18	2·50	3·07	2·68	3·24
FeO	2·73	13·10	12·23	7·25	8·57	13·05	8·44	12·06	11·06
MgO	6·34	5·78	5·32	7·24	10·50	5·52	6·61	5·87	5·96
CaO	10·58	9·06	10·13	10·80	10·27	8·56	11·15	9·78	9·67
Na_2O	2·33	1·93	1·94	2·43	1·94	1·88	1·74	2·05	1·96
K_2O	0·71	0·86	0·89	0·92	1·26	0·60	0·43	0·41	0·42
H_2O+	3·50	0·16	0·40	1·83	1·25	3·88	0·89	0·05	1·93
H_2O-	2·02	0·19	abs.	0·89	1·15	0·24	0·14	0·26	0·02
CO_2	0·05	tr.	abs.	tr.	—	—	abs.	abs.	abs.
TiO_2	0·90	2·36	1·76	1·90	2·24	2·74	1·50	1·97	3·15
P_2O_5	0·20	0·27	0·28	0·32	—	0·44	0·45	0·04	0·20
MnO	0·26	0·24	0·26	0·04	0·13	0·20	0·19	0·24	0·34
Other Constituents									FeS_2 = 0·28
	100·07	99·74	99·84	100·21	100·57	100·50	100·14	100·18	99·65

TABLE N — BASALTIC ROCKS — SiO_2 50–46%

d. CaO/Alk. >3

K_2O/Na_2O <0·30

	14	15	16	17	18	19	20	21	22
Rock Name	Ultrabasic Lava	Tholeiite	Gabbro (? coarse dolerite)	Dolerite	Olivine Dolerite	Pyroxene Basalt	Olivine Dolerite	"Gabbro"	Olivine Dolerite
Locality	S.W. of Block 59, Coolgardie Goldfield, W.A.	Bunbury, W.A.	70 miles N. of Mt. Isa, Qld.	Mt. Lofty Ra., S.A.	Kulgera, N.T.	Preston, Tas.	Kulgera, N.T.	Kalgoorlie, W.A.	Mt. Cavenagh, N.T.
Reference	**563**	**119**, 6	**551**	**145**, 14	**580**, 76	**482**	**584**	**460**, 61; **447**, 34; **554**	**584**
Analyst	B. W. Stenhouse	A. B. Edwards	Avery & Anderson	H. N. England	W. H. Herdsman	W. St C. Manson	W. H. Herdsman	H. Bowley	W. H. Herdsman
Remarks					(Dyke)		(Chilled edge)	(Dyke)	
Sp. Gr.	3·04		2·951	3·04	—	—	—	3·12	—
SiO_2	49·56	49·46	49·26	49·13	49·09	49·00	48·76	48·72	48·67
Al_2O_3	13·61	14·74	18·49	16·67	14·92	13·21	17·55	11·75	17·49
Fe_2O_3	0·98	2·45	0·93	1·90	1·81	1·57	1·58	1·44	1·68
FeO	9·20	9·10	7·68	6·76	8·85	12·07	9·96	6·63	9·93
MgO	8·54	6·30	5·16	8·54	11·27	10·00	8·38·	10·92	8·36
CaO	14·68	12·01	11·72	12·19	10·16	7·10	9·80	16·45	9·82
Na_2O	0·84	2·65	2·42	1·74	1·62	1·77	2·32	0·96	2·16
K_2O	0·12	0·55	0·60	0·24	0·48	0·35	0·31	0·10	0·48
H_2O+	1·49	0·13	2·24	0·87	0·22	3·25	0·27	1·28	0·12
H_2O-	0·13	1·40	0·13	0·16	0·09	0·40	0·15	0·06	0·10
CO_2	0·05	tr.	—	—	0·68	—	abs.	abs.	abs.
TiO_2	0·57	1·48	1·27	1·27	0·62	1·75	0·86	1·04	0·88
P_2O_5	0·20	0·03	0·25	0·29	0·09	nd.	tr.	0·30	0·05
MnO	0·21	0·17	0·19	0·15	0·18	0·13	0·25	0·45	0·20
Other Constituents				FeS_2=0·11 Cr_2O_3=0·01				FeS_2=0·24 V_2O_3=0·06 Cr_2O_3=abs.	
	100·18	[100·47]	100·34	100·03	100·08	100·60	100·19	100·40	99·94

d. CaO/Alk. >3

K_2O/Na_2O <0·30

	23	24	25	26	27	28	29	30	31
Rock Name	Dolerite	Olivine Dolerite	Diabase	Olivine-bronzite Dolerite	Dolerite	Dolerite	"Basalt"	Picrite Basalt	Diabase
Locality	Mt. Lofty Ra., S.A.	Mt. Cavenagh, N.T.	Mt. Malcolm, Mt. Margaret Goldfield, W.A.	E. of Ernabella, Musgrave Ra., S.A.	Norseman, W.A.	Smithton, Tas.	Cape Vogel, T.P. & N.G.	King Island, Tas.	Howqua, Vic.
Reference	**145**, 14	**584**	**300**, 7; **521**, 633	**579**, 72	**67**, 119; **447**, 36; **554**, 663	**384**, 68	**95**	**436**, 119	**513**, 42
Analyst	H. N. England	W. H. Herdsman	E. S. Simpson	A. F. Wilson	E. S. Simpson	Tas. Dept. Mines	A. McClure	B. Scott	E. O. Teale
Remarks		(Centre of dyke)				*Loss on ignition (Dyke)	*Loss on ignition		
Sp. Gr.	3·12	—	3·04		3·02	—		—	
SiO_2	48·66	48·55	48·06	47·98	47·80	46·88	46·66	46·53	46·44
Al_2O_3	17·99	17·07	16·21	13·79	14·30	19·04	11·81	10·51	15·71
Fe_2O_3	2·13	3·14	0·89	0·78	1·25	5·15	5·23	0·62	0·53
FeO	8·44	8·69	10·37	8·89	12·09	9·03	7·73	8·27	11·21
MgO	6·72	7·86	6·67	14·02	7·40	3·62	7·88	17·36	8·61
CaO	10·81	9·92	11·37	11·27	10·17	10·67	11·00	10·04	12·30
Na_2O	2·23	2·42	2·50	1·77	2·54	2·00	2·14	1·90	2·50
K_2O	0·30	0·48	0·27	0·39	0·60	0·55	0·34	0·22	0·21
H_2O+	0·37	0·47	0·10	0·31	1·87	2·00*	4·73*	3·71	0·21
H_2O-	0·19	0·03	0·59	0·02	0·44		0·98	0·31	2·54
CO_2	tr.	0·33	1·03	—	0·24	—	—	—	
TiO_2	2·18	0·87	0·90	0·90	1·23	1·48	1·18	0·21	
P_2O_5	0·33	0·06	—	0·12	—	0·13	0·15	tr.	
MnO	0·20	0·18	0·59	0·16	0·40	tr.	0·17	0·16	
Other Constituents			FeS_2=0·34	S=0·05 Cr_2O_3=0·19 BaO=abs.	FeS_2=tr.	S=0·04			
	100·55	100·07	99·89	100·64	100·33	100·59	100·00	99·84	[100·26]

TABLE O — BASALTIC ROCKS — SiO_2<46%

a. CaO/Alk.<1				b. CaO/Alk.=1–2					
	K_2O/Na_2O=0·75–0·30			K_2O/Na_2O=1·25–0·75			K_2O/Na_2O=0·75–0·30		
	1	2		1	2	3	4	5	6
Rock Name	Nepheline Basanite	Basalt (Basanite)		Olivine titan-augite Basalt	Dolerite *Cooee Dolerite*	Nepheline Basalt	Limburgite	Olivine Basalt	Pyroxene-rich Basalt
Locality	One Tree Hill, Hobart, Tas.	Bondi, Sydney, N.S.W.		Myrtle Hill, Smithton, Tas.	Burnie, Tas.	Sapling Flat, Caper-tee Valley, N.S.W.	Near Chinton, Vic.	Dundas, Sydney, N.S.W.	Prospect, near Sydney, N.S.W.
Refer-ence	**12**, 615; **477**, 159	**102**, 225; **554**, 1103		**384**, 76	**480**, 90	**72**, 42; **344**; 206; **554**, 919	**120**, 290	**329**, 230; **55**, 58; **554**, 899	**577**
Analyst	M. Aurousseau	Not Stated		Tas. Dept. Mines	W. St C. Manson	J. C. H. Mingaye	A. B. Edwards	H. P. White	J. H. Pyle
Remarks				Al_2O_3 high ? *Loss on ignition				(Volcanic Neck)	(Chilled margin)
Sp. Gr.	—	2·94		—	—	3·01	—	2·898	3·07
SiO_2	45·59	43·50		44·48	44·44	39·92	45·99	45·88	45·86
Al_2O_3	12·48	14·60		20·60	17·97	11·26	14·52	17·16	13·72
Fe_2O_3	9·93	5·40		5·98	1·74	4·24	4·96	3·03	2·96
FeO	2·84	8·28		7·38	8·32	11·01	7·26	7·57	9·96
MgO	4·71	6·16		3·76	4·74	8·01	7·89	6·26	9·29
CaO	8·26	8·70		8·10	9·42	8·91	8·49	7·20	9·35
Na_2O	5·51	7·34		2·67	2·86	3·18	3·82	4·08	3·63
K_2O	3·16	2·95		2·01	3·04	2·70	1·22	1·78	1·20
H_2O+	1·73	2·50		1·56*	3·53	2·15	0·98	3·17	1·05
H_2O-	1·64	—			0·26	0·40	1·29	0·88	0·16
CO_2	—	—		—	—	6·82	tr.	0·60	0·02
TiO_2	2·10	0·10		1·80	3·00	1·02	3·15	2·24	2·43
P_2O_5	1·65	tr.		0·51	0·72	0·41	0·60	0·19	0·41
MnO	0·16			0·91	0·22	0·11	0·21	0·24	0·18
Other Con-stituents	BaO=0·05 SO_3=0·09 Cl=0·16	Cr_2O_3=tr. Cl=0·37				SO_3=0·30 V_2O_3=tr.	BaO=0·01 Cl=0·04	V_2O_3=0·03 BaO=0·13 Cr_2O_3=0·01 Cl=0·02 SO_3=0·09 (NiCo)O=0·05	
	100·06	99·90							
Less O=Cl, F, S	0·03	0·08							
	100·03	99·82		99·76	100·26	100·44	100·43	100·61	100·22

b. CaO/Alk. =1−2

K_2O/Na_2O =0·75−0·30

	7	8	9	10	11	12	13	14	15
Rock Name	Dolerite Pegmatite	Monchiquite Basalt	Teschenite	Olivine Dolerite *Wallaya Dolerite*	Analcite Dolerite	Limburgite	Olivine-titanaugite Basalt	Mugearite	Teschenite
Locality	Prospect, near Sydney, N.S.W.	W. of Drouin, Vic.	Black Jack Mt., Gunnedah, N.S.W.	Minnamurra River, W. of Kiama, N.S.W.	Broke, N.S.W.	Balwyn, near Doncaster, Vic.	Burnie, Tas.	Aberfeldy, Vic.	Black Jack Mt., Gunnedah, N.S.W.
Reference	**577**	**116**, 123	**570**, 22	**190**, 342; **55**, 72; **356**, 191; **554**, 899	**371**, 137; **55**, 66	**84**, 133; **121**, 91; **554**, 629	**130**, 106	**121**, 90; **294**, 44	**570**, 22
Analyst	J. H. Pyle	A. B. Edwards	J. F. G. Wilkinson	H. P. White	W. A. Greig	F. Chapman	W. St C. Manson	W. L. Robertson	J. F. G. Wilkinson
Remarks	(Schlieren in chilled margin)	(Neck)			(Fordwich Sill)	(Plug)		(Pipe)	
Sp. Gr.	2·86	—	2·84	2·933	2·776	2·994	—	—	2·83
SiO_2	45·75	45·73	45·66	45·60	45·58	45·56	45·44	45·29	45·15
Al_2O_3	15·38	15·17	16·71	11·62	17·31	13·32	14·52	19·83	17·29
Fe_2O_3	4·33	3·90	2·71	2·80	3·20	2·30	1·27	4·90	2·59
FeO	8·33	7·66	7·93	9·18	8·37	9·68	10·68	6·43	8·36
MgO	4·22	9·03	4·60	10·41	3·78	11·12	11·12	2·49	4·76
CaO	8·98	8·97	10·01	8·46	9·30	8·77	8·23	9·80	10·25
Na_2O	4·25	3·21	3·94	2·58	4·35	3·02	2·95	4·24	4·00
K_2O	1·72	2·27	1·82	1·88	2·52	1·53	1·41	1·96	1·76
H_2O+	3·04	1·02	2·84	3·32	2·86	1·28	0·32	1·02	2·86
H_2O-	0·39	0·51	0·21	0·76	0·44	0·27	2·62	0·38	0·13
CO_2	abs.	tr.	abs.	1·01	abs.	abs.	tr.	abs.	abs.
TiO_2	2·69	1·96	2·79	1·85	1·55	3·00	1·83	2·35	2·71
P_2O_5	0·70	0·60	0·58	0·41	0·54	0·71	0·40	0·62	0·44
MnO	0·19	0·18	0·12	0·14	0·18	0·19	0·14	0·23	0·10
Other Constituents		BaO=0·01 Cl=0·03		V_2O_3=0·02 Cr_2O_3=tr. Cl=tr.	SO_3=0·11 Cl=tr. V_2O_3=0·05 BaO=0·02	Cl=0·05 NiO=0·01 Cr_2O_3=0·06			
		[100·25]							
Less O= Cl, F, S		0·01							
	99·97	100·24	99·92	100·04	100·16	100·87	[100·93]	99·54	100·40

TABLE O — BASALTIC ROCKS — SiO_2<46%

b. CaO/Alk. =1–2

K_2O/Na_2O =0·75–0·30

	16	17	18	19	20	21	22	23	24
Rock Name	Analcite Basalt	Olivine Trachybasalt	Teschenite	Basalt	Dolerite Pegmatite	Dolerite	Teschenite	Crinanite	Teschenite
Locality	Wollongong, N.S.W.	Borradaile Is., Balleny Group, Ant.	Black Jack Mt., Gunnedah, N.S.W.	Tullamarine, Broadmeadow, Vic.	Prospect, near Sydney, N.S.W.	Prospect, near Sydney, N.S.W.	Black Jack Mt., Gunnedah, N.S.W.	Circular Head, Tas.	Black Jack Mt., Gunnedah, N.S.W.
Reference	**190**, 356; **355**, 198; **554**, 899	**314**, 229	**570**, 22	**121**, 90; **492**, 177; **554**, 629	**577**	**577**	**570**	**124**, 407	**570**, 22
Analyst	J. C. H. Mingaye	R. B. Wilson	J. F. G. Wilkinson	F. L. Stillwell	M. Chiba	M. Chiba	J. F. G. Wilkinson	A. B. Edwards	J. F. G. Wilkinson
Remarks	(Dyke)				(Patch in Dolerite)			(Chilled margin)	
Sp. Gr.	2·941	—	2·86	2·91	2·56	2·76	2·9	—	2·91
SiO_2	45·14	45·06	44·97	44·95	44·94	44·85	44·78	44·75	44·73
Al_2O_3	17·41	18·76	14·64	15·50	14·85	13·16	14·03	16·15	14·42
Fe_2O_3	0·20	0·23	3·12	2·04	5·79	3·75	4·15	4·52	2·93
FeO	9·27	9·94	9·28	10·47	8·36	9·48	9·15	8·35	9·51
MgO	5·75	7·33	7·45	7·43	2·85	3·66	9·57	7·68	8·08
CaO	9·06	9·72	8·33	8·24	7·05	8·34	8·12	8·20	8·31
Na_2O	2·75	4·19	3·80	3·04	4·18	4·25	3·30	3·68	3·60
K_2O	1·81	1·57	1·81	1·98	2·17	1·38	1·77	1·18	1·96
H_2O+	2·53	0·12	2·88	2·60	4·69	3·63	2·05	0·25	2·89
H_2O-	0·41	0·02	0·23	0·52	0·80	1·37	0·14	1·74	0·23
CO_2	3·20	—	tr.	0·18	1·72	0·86	abs.	abs.	abs.
TiO_2	2·10	2·69	2·62	2·77	2·03	3·97	2·59	2·25	2·58
P_2O_5	0·46	0·65	0·65	0·52	0·92	0·77	0·62	0·71	0·64
MnO	0·07	0·19	0·12	0·21	0·28	0·21	0·14	0·11	0·15
Other Constituents	V_2O_3=0·07 S=0·09 CuO=tr. Cr_2O_3=0·01 SrO=tr.	BaO=0·06 S=0·05							
		100·58							
Less O= Cl, F, S		0·01							
	100·33	100·57	99·90	100·45	100·63	99·68	100·31	99·57	100·03

b. CaO/Alk. = 1 – 2

K_2O/Na_2O = 0·75 – 0·30

	25	26	27	28	29	30	31	32	33
Rock Name	Olivine Basalt	Dolerite (Nepheline)	Dolerite Pegmatite	Olivine Dolerite	Dolerite Pegmatite	Olivine Basalt	Analcite-olivine-titanaugite Dolerite	Olivine Basalt	Dolerite
Locality	Hill End, N.S.W.	Warrawo-long, N.S.W.	Prospect, near Sydney, N.S.W.	Kembla Colliery, N.S.W.	Prospect, near Sydney, N.S.W.	Armidale, N.S.W.	Wongawilli, near Wollon-gong, N.S.W.	15 miles S.E. of Oberon, N.S.W.	Plashett, Jerrys Plains, N.S.W.
Refer-ence	**354**, 198; **55**, 58; **554**, 683	**79**, 93; **55**, 69;	**577**	**190**, 362; **355**, 198; **554**, 901	**577**	**578**	**131**, 20	**578**	**375**, 99
Analyst	H. P. White	H. P. White	M. Chiba	H. P. White	M. Chiba	W. H. Herdsman	G. C. Carlos	W. H. Herdsman	W. G. Stone
Remarks Sp. Gr.	2·939	2·905	2·82	2·755	2·83	2·96	—	2·94	2·752
SiO_2	44·66	44·61	44·59	44·52	44·51	44·48	44·40	44·29	44·26
Al_2O_3	13·37	20·01	12·46	15·36	12·91	13·47	16·49	13·98	14·73
Fe_2O_3	2·10	2·20	4·44	2·40	2·92	3·50	3·67	2·94	5·70
FeO	8·01	8·64	9·14	7·83	10·13	9·09	6·28	9·19	6·30
MgO	13·84	5·28	4·70	9·49	4·17	9·43	7·97	10·18	4·93
CaO	8·88	9·25	9·49	7·14	8·67	8·12	7·98	9·09	8·28
Na_2O	3·15	4·22	3·83	3·98	4·00	4·08	3·61	3·55	5·25
K_2O	2·16	1·80	1·47	1·71	1·40	2·23	1·38	1·15	1·88
H_2O+	1·75	1·63	3·01	4·83	4·37	1·29	4·48	1·73	4·16
H_2O-	0·23	0·42	0·55	0·75	0·85	0·38	1·87	0·28	1·18
CO_2	0·09	0·08	0·54	0·43	0·06	abs.	abs.	abs.	0·15
TiO_2	1·60	1·55	5·04	1·25	5·64	2·42	1·83	2·49	2·60
P_2O_5	0·57	0·34	0·76	0·56	0·99	0·97	0·34	0·71	0·61
MnO	—	0·21	0·19	0·11	0·16	0·24	0·25	0·24	0·20
Other Con-stituents		BaO = 0·02 V_2O_3 = 0·03 CuO = 0·01		NiO = 0·02 BaO = 0·02		Cr_2O_3 = 0·09 NiO = 0·04	SO_3 = 0·01 Cl = 0·01	Cr_2O_3 = 0·11 NiO = 0·03	BaO = 0·05 ($SFeS_2$) = 0·03 (CoNi)O = 0·02 V_2O_3 = 0·02
	100·41	100·30	100·21	100·40	100·78	99·83	100·57	99·96	100·35

TABLE O — BASALTIC ROCKS — SiO_2<46%

b. CaO/Alk. =1–2

K_2O/Na_2O =0·75–0·30

	34	35	36	37	38	39	40	41	42
Rock Name	Teschenite	Teschenite	Teschenite	Analcite Basanite	Analcite Basanite	Analcite Basanite	Analcite Basanite	Analcite Basalt	Monchiquite
Locality	Black Jack Mt., Gunnedah, N.S.W.	Black Jack Mt., Gunnedah, N.S.W.	Black Jack Mt., Gunnedah, N.S.W.	Luddenham, near Sydney, N.S.W.	Bondi, Sydney, N.S.W.	Bondi, Sydney, N.S.W.	Rixons Pass, Bulli, N.S.W.	Wollongong, N.S.W.	Rixons Pass, Bulli, N.S.W.
Reference	**570**, 23	**570**, 23	**570**, 23	**330**, 230; **554**, 685; **55**, 72	**76**, 97; **330**, 230; **345**, 173; **554**, 68	**76**, 97; **330**, 230; **345**, 173; **554**, 685	**190**, 347; **355**, 198; **554**, 901	**190**, 357; **355**, 198; **554**, 675	**190**, 348; **355**, 198; **554**, 915
Analyst	J. F. G. Wilkinson	J. F. G. Wilkinson	J. F. G. Wilkinson	H. P. White	J. C. H. Mingaye	J. C. H. Mingaye	W. A. Greig	W. A. Greig	H. P. White
Remarks						(Dyke)	(Sill)	(Dyke)	(Sill)
Sp. Gr.	2·90	2·81	2·92	2·953	2·941	2·943	2·872	2·845	2·812
SiO_2	44·15	44·01	43·92	43·54	43·48	43·39	43·38	42·54	42·52
Al_2O_3	14·13	15·90	14·61	15·61	16·53	16·67	19·24	12·57	16·82
Fe_2O_3	3·83	4·15	3·20	3·20	3·42	3·47	abs.	7·20	2·90
FeO	9·43	9·57	9·48	8·64	8·91	8·80	7·64	7·64	7·56
MgO	4·80	2·97	3·54	9·16	7·12	7·30	8·88	6·41	6·43
CaO	9·62	8·17	9·58	8·88	8·88	8·79	9·16	8·90	9·78
Na_2O	3·84	4·05	4·12	3·44	3·27	3·30	3·72	3·24	4·02
K_2O	1·83	2·40	2·58	2·10	2·31	2·17	1·32	2·29	1·31
H_2O+	3·26	4·04	3·12	2·56	2·69	2·67	3·78	2·72	5·51
H_2O-	0·20	0·31	0·18	0·32	0·31	0·29	0·42	1·70	0·47
CO_2	abs.	tr.	1·52	0·21	0·40	0·39	0·48	1·06	0·07
TiO_2	4·07	3·53	3·60	1·81	2·35	2·20	1·28	2·12	1·30
P_2O_5	0·70	1·21	0·36	0·40	0·44	0·41	0·86	1·18	1·46
MnO	0·10	0·08	0·11	0·26	0·15	0·19	0·06	0·18	0·15
Other Constituents				V_2O_3=0·01 SO_3=0·10 Cl=tr. BaO=0·24 (NiCo)O=0·04 CuO=0·01	BaO=0·02 SO_3=0·21 V_2O_3=0·01 Cl=0·03	BaO=0·02 SO_3=0·19 V_2O_3=0·01 Cl=0·02	V_2O_3=0·03 Cl=0·03 Cr_2O_3=0·02 BaO=0·01	BaO=0·06 SrO=tr. V_2O_3=0·02 SO_3=0·08 Cl=tr. Cr_2O_3=tr. Li_2O=tr.	V_2O_3=0·03 Cl=tr. BaO=0·04 SrO=tr.
	99·96	100·39	99·92	100·53	100·53	100·28	100·31	99·91	100·37

b. CaO/Alk. =1–2

K_2O/Na_2O =0·75–0·30

	43	44	45	46	47	48	49	50	51
Rock Name	Analcite Basanite	Analcite-olivine-titanaugite Dolerite	Limburgite	Monchiquite	Teschenite	Fourchite	Analcite Basanite	Picritic Rock	Monchiquite
Locality	Hurstville, Sydney, N.S.W.	Mt. Nebo, near Wollongong, N.S.W.	Llewellyn, W. of Avoca, Tas.	Rixons Pass, S. of Bulli, N.S.W.	Mt. Nebo, near Wollongong, N.S.W.	Mt. Nebo, W. of Wollongong, N.S.W.	Bulli, N.S.W.	Mt. Murray, near Wollongong, N.S.W.	Bendigo, Vic.
Reference	**329**, 230; **345**, 173; **554**, 899	**131**, 20	**130**, 111	**190**, 348; **355**, 198; **544**, 685, **55**, 72	**131**, 24	**190**, 344; **355**, 198; **554**, 915, **55**, 72	**190**, 405; **358**, 196; **554**, 919	**131**, 29	**493**, 4; **116**, 123; **554**, 917
Analyst	J. C. H. Mingaye	G. C. Carlos	W. St C. Manson	W. G. Stone	G. C. Carlos	J. C. H. Mingaye	W. G. Stone	G. C. Carlos	F. Stillwell
Remarks				(Sill)			Numerous inclusions of basaltic hornblende		(Dyke)
Sp. Gr.	3·027	—	—	2·799	—	2·732	2·733	—	
SiO_2	42·48	42·45	42·44	42·10	41·88	41·72	41·40	41·19	40·92
Al_2O_3	14·70	14·40	10·24	15·68	14·14	16·87	17·01	9·04	11·34
Fe_2O_3	3·96	4·46	4·38	3·40	5·78	5·90	2·50	4·35	0·54
FeO	9·24	6·54	8·79	7·11	6·56	3·87	7·74	9·62	12·96
MgO	9·15	9·34	14·25	8·26	6·61	4·23	5·56	18·54	7·78
CaO	9·98	7·00	7·75	9·91	10·07	10·32	7·64	4·96	9·28
Na_2O	3·13	3·41	4·18	4·20	4·36	4·99	3·93	1·89	3·27
K_2O	1·99	1·12	1·83	1·47	2·28	2·73	2·13	1·08	1·94
H_2O+	1·34	6·84	0·18	4·69	3·59	3·67	2·54	4·99	1·77
H_2O-	0·14	2·57	1·32	0·66	0·93	0·45	1·72	1·33	0·64
CO_2	0·94	abs.	0·36	0·08	0·35	2·54	4·34	abs.	2·82
TiO_2	2·38	1·78	2·50	1·45	3·05	1·70	2·30	1·64	6·57
P_2O_5	0·39	0·22	1·61	1·12	0·30	0·85	0·94	0·89	0·51
MnO	0·11	0·28	0·18	0·14	0·18	0·15	0·10	0·46	0·13
Other Constituents	NiO=0·06 CuO=0·01 Cr_2O_3=0·01 BaO=0·12 SO_3=0·10 Cl=0·02 V_2O_3=0·02	SO_3=0·01 Cl=0·01	SO_3=tr. Cl=abs.	SO_3=0·03 CuO=0·01 BaO=0·07 V_2O_3=0·03 Cr_2O_3=0·01 Cl=tr.	Cl=0·01	BaO=0·13 SrO=0·03 NiO=0·04 V_2O_3=0·02 Cl=0·03	BaO=0·21 SO_3=0·06	SO_3=0·01 Cl=0·01	
	100·27	100·43	100·01	100·42	100·09	100·24	100·12	100·00	100·47

TABLE O — BASALTIC ROCKS — SiO_2<46%

b. CaO/Alk. =1–2

	K_2O/Na_2O =0·75–0·30			K_2O/Na_2O <0·30					
	52	53	54	55	56	57	58	59	60
Rock Name	Picrite	Picrite	Melilite-nepheline Basalt	Olivine Basalt	Limburgite	Monchiquite	Olivine Nephelinite	Picrite	Basalt *Towallum Basalt*
Locality	Mt. Nebo, near Wollongong, N.S.W.	Mt. Nebo, near Wollongong, N.S.W.	Shannons Tier, Tas.	Kilcunda, Vic.	Woodend, Mt. Macedon, Vic.	Rixons Pass, Bulli, N.S.W.	Near Drouin, Vic.	Mt. Nebo, near Wollongong, N.S.W.	Kangaroo Ck., Nymboida, N.S.W.
Reference	**131**, 16	**131**, 16	**130**, **394**, 305; **506**, 161; **527**, **554**	**116**, 123	**468**, 28; **537**, 61; **554**, 629	**190**, 349; **355**, 198; **554**, 901	**116**, 122; **295**, 128	**131**, 16	**286**
Analyst	G. C. Carlos	A.I.S. Ltd.	F. P. Paul	A. B. Edwards	A. G. Hall	W. A. Greig	F. F. Field	A.I.S. Ltd.	J. H. Pyle
Remarks				(Dyke)			(Plug)		
Sp. Gr.	—	—	3·147	—	2·854	2·698	—	—	—
SiO_2	40·30	40·2	36·17	45·12	45·10	42·54	41·13	41·1	40·07
Al_2O_3	6·30	9·0	11·88	15·60	12·86	11·52	15·74	10·9	14·93
Fe_2O_3	4·12	5·4	11·37	9·01	5·66	7·30	4·02	7·0	9·81
FeO	10·83	8·6	4·17	7·21	7·10	7·28	7·71	6·4	9·92
MgO	24·95	20·2	14·22	9·01	8·56	8·89	7·98	21·7	2·08
CaO	3·99	6·2	11·54	8·04	9·10	9·28	10·48	4·8	6·73
Na_2O	1·52	2·4	5·38	3·52	3·99	4·25	5·56	2·3	4·22
K_2O	0·80	1·0	2·07	0·88	1·02	1·07	1·12	0·4	0·04
H_2O+	4·08	1·0	nd.	1·61	1·53	4·82	2·11	0·8	4·77
H_2O-	1·44	3·6	—	—	1·10	0·72	0·58	3·3	1·15
CO_2	abs.	—	—	—	tr.	0·16	abs.	—	3·64
TiO_2	1·28	0·9	2·15	—	3·50	1·04	2·34	0·9	1·58
P_2O_5	0·07	0·2	0·84	—	1·00	0·95	0·54	0·3	0·40
MnO	0·35	0·6	tr.	tr.	0·08	0·17	0·14	0·7	0·53
Other Constituents	SO_3=0·01 Cl=0·01				Cl=tr.	Cr_2O_3=0·01 V_2O_3=0·11 BaO=0·06 Cl=0·08	Li_2O=tr.		ZrO_2=tr. SrO=tr. NiO=0·03 Cr_2O_3=0·02 BaO=tr. Li_2O=tr. S=tr.
						100·25			
Less O= Cl, F, S						0·01			
	100·05	99·3	99·79	100·00	100·60	100·24	99·45	100·6	99·92

TABLE O — BASALTIC ROCKS — SiO_2<46%

b. CaO/Alk. =1−2			c. CaO/Alk. =2−3						
	K_2O/Na_2O< 0·30		K_2O/Na_2O=1·25−0·75						
	61		1	2	3	4	5	6	7
Rock Name	Picrite		Olivine Diabase	"Lampro-phyric" Quartz Diorite	Limburgite	Limburgite	Basalt	Limburgite	Limburgite
Locality	Mt. Nebo, near Wol-longong, N.S.W.		2 miles N. of Wooltana Head Station S.A.	Good Dog Mt., near Nowra, N.S.W.	Aberfeldy, Vic.	Lancefield, Vic.	Nimmitabel, N.S.W.	Woodend, Mt. Macedon, Vic.	Mt. Macedon, Vic.
Refer-ence	**131**, 18		**310**, 199	**75**, 121; **190**, 325; **554**, 547	**121**, 91; **294**, 44	**120**, 290	**50**, 349	**84**, 133; **468**, 28; **537**, 61; **554**, 605	**468**, 28; **537**, 61
Analyst	G. C. Carlos		A. R. Alderman	H. P. White	M. K. Evans	A. B. Edwards	I. A. Brown	A. G. Hall	A. G. Hall
Remarks					(Dyke)				
Sp. Gr.	—			2·955	—	—	—	2·978	2·935
SiO_2	39·86		45·52	45·28	44·67	44·44	44·08	43·58	43·06
Al_2O_3	8·73		14·39	21·04	12·39	13·24	16·70	11·46	13·06
Fe_2O_3	3·39		5·21	5·22	3·96	5·44	2·77	3·40	4·68
FeO	9·62		6·79	5·14	7·53	6·01	8·08	9·13	8·10
MgO	23·00		12·68	5·53	9·67	8·54	9·25	10·80	9·92
CaO	4·40		6·22	11·66	10·16	10·99	9·49	9·88	9·30
Na_2O	1·88		1·68	2·57	1·84	2·15	2·01	2·18	2·14
K_2O	0·49		1·38	1·98	1·85	2·14	1·74	2·13	2·14
H_2O+	2·73		3·91	0·43	3·92	1·89	2·45	2·40	2·53
H_2O-	4·26		0·88	0·13	0·92	1·46	0·64	0·47	0·76
CO_2	abs.		abs.	0·02	tr.	tr.	tr.	—	tr.
TiO_2	1·22		1·46	0·46	2·52	3·00	2·03	3·32	3·60
P_2O_5	0·06		0·13	0·22	0·14	1·04	0·50	0·95	0·96
MnO	0·22		0·22	0·31	tr.	0·16	0·16	tr.	0·43
Other Con-stituents	SO_3=0·10 Cl=0·10			BaO=0·11 SO_3=0·04 Cl=0·06 SrO=tr. Li_2O=tr. V_2O_3=tr.	SO_3=0·15 S=0·47 Cl=tr.	Cl=0·05		Cl=tr.	Cl=tr.
	100·06			100·20	100·19	100·55			
Less O = Cl, F, S	0·07			0·01	0·20	0·01			
	99·99		100·47	100·19	99·99	100·54	99·90	99·70	100·68

TABLE O — BASALTIC ROCKS — SiO_2 <46%

c. CaO/Alk. =2–3

	K_2O/Na_2O =1·25–0·75				K_2O/Na_2O =0·75–0·30				
	8	9	10	11	12	13	14	15	16
Rock Name	Dolerite	Dolerite	Fourchite	Monchiquite	Dolerite	Quartz Dolerite	Dolerite	Olivine-labradorite Basalt	Limburgitic Basalt
Locality	Murramarrang, N.S.W.	Long Reef, Collaroy, Sydney, N.S.W.	Mt. Nebo, near Wollongong, N.S.W.	Bendigo, Vic.	Prospect, near Sydney, N.S.W.	Par. of Talmo, Burrinjuck, N.S.W.	Carrolls Creek, Burrinjuck, N.S.W.	Camperdown, Vic.	Toolern Area, Vic.
Reference	**355**, 198 **554**, 901	**329**, 230; **554**, 901	**190**, 345; **355**, 198; **554**, 915	**84**, 133; **493**, 4; **546**, 4; **554**, 1137	**577**	**590**	**590**	**181**, 22; **554**, 901	**120**, 290
Analyst	H. P. White	J. C. H. Mingaye	W. G. Stone	F. Stone	J. H. Pyle	H. Yates	H. Yates	A. G. Hall	A. B. Edwards
Remarks									
Sp. Gr.	2·792	2·919	2·844	—	—	3·02	2·92	2·922	—
SiO_2	41·40	41·22	40·62	39·32	45·92	45·88	45·87	45·86	45·81
Al_2O_3	15·39	15·60	13·63	17·53	12·19	19·00	16·35	13·19	12·45
Fe_2O_3	4·00	1·99	7·05	3·07	4·31	1·09	2·78	2·82	9·20
FeO	6·84	8·95	6·07	9·12	9·89	9·66	8·67	8·61	2·86
MgO	3·41	6·26	5·71	8·00	4·97	4·85	7·42	10·58	8·83
CaO	12·02	9·96	10·05	10·38	9·95	9·43	8·64	9·09	10·00
Na_2O	2·81	2·21	2·23	2·44	3·59	2·38	2·92	2·44	2·86
K_2O	2·13	2·02	2·48	2·04	1·32	1·52	1·30	1·00	1·07
H_2O+	4·26	1·87	4·58	5·10	1·76	2·51	4·10	1·33	1·97
H_2O-	0·52	0·68	1·30	2·20	0·42	0·16	0·36	1·66	1·55
CO_2	5·98	7·12	0·71	—	1·19	—	—	0·60	abs.
TiO_2	0·95	1·44	2·30	—	3·94	2·96	1·33	2·20	2·80
P_2O_5	0·32	0·37	1·16	—	0·44	0·29	0·23	0·51	0·69
MnO	0·16	0·06	0·08	—	0·19			0·24	0·21
Other Constituents	BaO =0·06 SrO =tr. Cl =tr.	BaO =0·19 SrO =tr. SO_3 =0·50 Cl =0·03 Cr_2O_3 =0·01 V_2O_3 =tr.	V_2O_3 =0·06 SO_3 =0·38 S =0·11 BaO =1·46					SO_3 =tr. NiO =0·03	Cl =0·04 BaO =0·04
		100·48	99·98						
Less O = Cl, F, S		0·01	0·05						
	100·25	100·47	99·93	99·20	100·08	99·73	99·97	100·16	100·38

c. CaO/Alk. =2−3

K_2O/Na_2O =0·75−0·30

	17	18	19	20	21	22	23	24	25
Rock Name	Analcite-olivine-titanaugite Dolerite	Olivine-labradorite Basalt	Basalt	Basalt	Basalt	Olivine-augite Basalt	Basalt	Dolerite	Olivine-labradorite Basalt
Locality	Circular Head, Tas.	Royal Park, Melbourne, Vic.	Peats Ridge, 50 miles N. of Sydney, N.S.W.	Inverell District, N.S.W.	Prospect, near Sydney, N.S.W.	Bullengarook near Gisborne, Vic.	Prospect, near Sydney, N.S.W.	Mt. Midderula, N. of Glen Alice, N.S.W.	Mt. Terang, near Camperdown, Vic.
Reference	**124**, 407	**121**, 90; **284**, 247	**576**, 274	**392**, 32	**577**; **380**, 263	**141**, 301	**577**	**79**, 123; **55**, 69	**181**, 22; **554**, 629
Analyst	A. B. Edwards	D. M. McCance	J. H. Pyle	Not Stated	J. H. Pyle	A. B. Edwards	M. Chiba	H. P. White	A. A. Topp
Remarks			(Chilled margin)	*Loss on ignition †Total Iron	(Chilled margin) mica-rich		(Vein in chilled margin)		
Sp. Gr.	—	—	3·00	—	3·02	—	3·02	3·014	2·914
SiO_2	45·70	45·64	45·63	45·6	45·53	45·40	45·38	45·25	45·15
Al_2O_3	15·52	14·35	14·54	14·8	13·36	14·23	14·73	15·13	12·93
Fe_2O_3	3·75	2·08	1·98		3·40	6·77	3·47	1·80	5·26
FeO	8·14	10·32	10·21	10·5†	10·26	7·41	9·30	8·82	6·88
MgO	8·04	9·50	9·18	7·8	8·15	8·06	6·82	10·24	11·35
CaO	9·95	7·87	9·83	9·5	9·34	9·05	9·89	10·98	9·97
Na_2O	3·51	2·17	3·46	2·81	2·68	2·68	2·74	3·36	2·90
K_2O	1·51	1·23	1·04	1·54	1·31	1·14	1·33	1·22	1·76
H_2O+	0·19	1·29	1·09	2·4*	2·40	1·20	1·95	1·21	0·32
H_2O-	0·70	1·92	0·56		0·36	0·95	0·74	0·09	0·29
CO_2	abs.	0·47	abs.		0·86	0·10	0·15	0·06	abs.
TiO_2	2·35	2·74	2·04	1·9	1·87	1·25	2·81	1·52	2·65
P_2O_5	1·08	0·42	0·50	0·37	0·56	1·25	0·61	0·52	0·73
MnO	0·10	0·13	0·19		0·22	0·17	0·16	0·07	0·16
Other Constituents		Cl=0·14 S=0·14 Cr_2O_3=0·01 V_2O_3=0·05 SrO=0·02 ZrO_2=0·03			ZrO_2=0·02 Cr_2O_3=0·02 V_2O_3=0·03 (NiCo)O= 0·02			Cr_2O_3=0·01 BaO=0·03 V_2O_3=0·03 CuO=tr. SrO=tr.	NiO=0·01
	100·54	100·40	100·25	97·22	100·39	99·66	100·08	100·34	100·36

TABLE O — BASALTIC ROCKS — SiO_2<46%

c. CaO/Alk. =2−3

K_2O/Na_2O =0·75−0·30

	26	27	28	29	30	31	32	33	34
Rock Name	Olivine-labradorite Basalt	Crinanite	Limburgitic Basalt	Monchiquite Basalt	Crinanite	Olivine Basalt	Analcite Basanite	Olivine Basalt	Basalt
Locality	Alfredton, Ballarat, Vic.	Mt. Nebo, near Wollongong, N.S.W.	Rogers Head, Heard Island, Ant.	Kilcunda, Vic.	Mt. Nebo, near Wollongong, N.S.W.	Inverell, N.S.W.	Rookwood, Sydney, N.S.W.	Mt. Apsley, near Bathurst, N.S.W.	Prospect, near Sydney, N.S.W.
Reference	**591**, 71	**131**, 16	**419**, 258; **530**, 37	**116**, 123	**131**, 16	**351**, 184; **554**, 897	**329**, 230; **554**, 685	**330**, 304; **554**, 663; **55**, 58	**577**
Analyst	H. Yates	A.I.S. Ltd.	R. Reinisch	A. B. Edwards	A.I.S. Ltd.	Not Stated	J. C. H. Mingaye	H. P. White	M. Chiba
Remarks							(Dyke)		(Chilled margin)
Sp. Gr.	—	—	—	—	—	2·876	3·000	2·927	3·02
SiO_2	44·95	44·8	44·71	44·71	44·7	44·70	44·54	44·38	44·25
Al_2O_3	15·42	15·6	11·24	15·40	15·6	17·28	16·44	16·18	12·17
Fe_2O_3	1·55	5·1	5·48	4·14	5·0	2·10	2·00	1·94	2·91
FeO	9·50	7·2	8·21	7·64	6·3	9·63	9·75	8·54	10·18
MgO	5·39	9·2	14·32	10·83	10·8	8·24	10·82	10·30	10·06
CaO	8·10	10·3	10·22	9·00	10·7	9·24	9·16	9·20	9·00
Na_2O	2·86	2·7	2·50	2·75	2·6	2·28	3·04	2·55	2·60
K_2O	0·91	1·9	1·01	1·64	1·1	1·31	1·23	1·50	1·05
H_2O+	4·65	0·5	0·21	0·65	0·2	2·83	1·53	1·99	1·94
H_2O-	0·35	0·5		1·00	0·8	1·21	0·25	0·74	0·50
CO_2	4·07	nd.	—	0·60	nd.	0·14	0·11	0·04	0·52
TiO_2	2·18	1·5	2·00	0·89	1·5	0·56	0·80	1·94	3·18
P_2O_5	0·31	0·4	0·37	0·60	0·4	0·45	0·44	0·31	0·74
MnO	—	0·7	—	0·27	0·9	0·10	0·05	0·26	0·18
Other Constituents						ZrO_2=0·08 Cl=tr. Cr_2O_3=0·02 V_2O_3=0·01 BaO=0·02 SrO=tr. (NiCo)O=0·02	V_2O_3=0·06 SO_3=0·07 Cr_2O_3=0·02 (CoNi)O=0·04 BaO=0·02 SrO=tr.	BaO=0·07 SrO=tr. SO_3=0·05 Cl=0·01 Cr_2O_3=0·01 (NiCo)O=0·04	
	100·24	100·4	100·27	[100·12]	[100·6]	100·22	100·37	100·05	99·28

TABLE O — BASALTIC ROCKS — SiO_2 <46%

c. CaO/Alk. = 2 – 3

K_2O/Na_2O = 0·75 – 0·30

	35	36	37	38	39	40	41	42	43
Rock Name	Dolerite Pegmatite	Dolerite Pegmatite	Olivine Basalt	Limburgite	Olivine-titanaugite Basalt	Olivine-rich Dolerite	Olivine-rich Crinanite	Basalt	Limburgite
Locality	Prospect, near Sydney, N.S.W.	Prospect, near Sydney, N.S.W.	Near Hampshire Siding, Tas.	Mt. Macedon, Vic.	Lileah, Tas.	Prospect, near Sydney, N.S.W.	Circular Head, Tas.	Bowral, N.S.W.	Mt. Macedon, Vic.
Reference	**577**	**577**	**130**, 106	**468**, 28; **537**, 61; **554**, 629	**384**, 76	**577**	**124**, 407	**55**, 58; **510**, 341; **554**, 663	**468**, 28; **537** 61; **554**, 629
Analyst	M. Chiba	M. Chiba	W. St C. Manson	A. G. Hall	W. St C. Manson	M. Chiba	A. B. Edwards	D. Mawson	A. G. Hall
Remarks		(Vein in dolerite)							
Sp. Gr.	2·92	2·91	—	2·995	—	2·71	—	2·995	2·901
SiO_2	44·19	44·12	44·12	43·82	43·68	43·53	43·35	43·31	43·24
Al_2O_3	13·19	12·33	13·94	12·90	21·18	12·52	13·50	16·68	13·19
Fe_2O_3	5·11	4·85	2·60	6·74	1·42	4·51	2·62	2·31	4·42
FeO	8·62	8·44	8·98	6·25	11·45	7·84	10·94	9·00	8·46
MgO	4·89	6·44	11·43	9·32	3·90	10·02	11·84	10·56	8·48
CaO	10·22	9·97	9·40	9·44	8·85	8·61	9·85	7·95	9·32
Na_2O	3·54	3·09	2·83	2·49	2·51	2·41	3·02	2·94	2·28
K_2O	1·19	0·99	1·99	1·75	1·71	0·74	1·18	0·97	1·68
H_2O+	3·50	3·32	0·10	1·70	1·70	3·83	0·15	1·72	2·46
H_2O-	0·66	1·24	1·94	1·26		2·38	0·71	0·88	2·03
CO_2	0·42	0·11	—	tr.	abs.	0·21	abs.	0·03	tr.
TiO_2	4·36	4·26	2·30	3·50	1·80	2·49	2·25	2·20	3·15
P_2O_5	0·48	0·88	0·55	1·02	0·44	0·32	0·83	0·65	1·13
MnO	0·17	0·21	0·14	0·37	2·04	0·18	0·10	0·43	0·18
Other Constituents			Cl = abs. SO_3 = abs.	Cl = tr.				SO_2 = 0·05 Cl = 0·02 S = tr. Cr_2O_3 = 0·11 V_2O_3 = tr. BaO = tr. (NiCo)O = tr.	Cl = tr.
	100·54	100·25	100·32	100·56	100·68	99·59	100·34	99·81	100·02

TABLE O — BASALTIC ROCKS — SiO_2<46%

c. CaO/Alk. = 2–3

K_2O/Na_2O = 0·75–0·30

	44	45	46	47	48	49	50	51	52
Rock Name	Picrite Basalt	Analcite Dolerite	Olivine Basalt	Picrite	Olivine Nephelinite	Nepheline Basalt	Monchiquite	Olivine Basalt	Basalt
Locality	Prospect, near Sydney, N.S.W.	Prospect, near Sydney, N.S.W.	Toombullup, Vic.	Prospect, near Sydney, N.S.W.	Greendale, Vic.	Yerranderie, N.S.W.	Cape Paterson, Gippsland, Vic.	Seal Bay, Sydney, N.S.W.	Inverell District, N.S.W.
Reference	**577**	**329**, 230; **238**, 504; **554**, 899, 911	**548**	**577**	**116**, 123; **120**, 293	**366**, 97	**116**, 123	**329**, 230; **345**, 173; **554**, 899	**392**, 32
Analyst	M. Chiba	J. C. H. Mingaye	Not Stated	M. Chiba	A. B. Edwards	W. A. Greig	A. B. Edwards	J. C. H. Mingaye	Not Stated
Remarks			*Loss on ignition				(Pipe)		*Loss on ignition °Total Iron
Sp. Gr.	3·02	2·814	—	3·12	—	—	—	—	—
SiO_2	43·20	43·06	42·82	42·60	42·39	42·34	41·95	41·62	41·5
Al_2O_3	11·36	16·31	13·74	8·65	16·17	10·36	12·50	15·49	13·8
Fe_2O_3	2·25	5·40	6·37	1·75	4·29	4·50	4·02	3·41	—
FeO	10·82	7·61	9·97	13·49	5·79	8·19	9·38	9·38	18·7°
MgO	13·09	5·49	8·50	17·13	7·66	16·44	12·76	10·47	10·1
CaO	8·05	9·37	9·63	7·19	11·57	10·00	8·48	9·74	8·5
Na_2O	2·72	3·12	3·13	1·99	4·26	2·84	2·82	2·68	2·39
K_2O	0·96	1·07	0·94	0·68	1·46	1·41	1·34	1·86	1·54
H_2O+	2·39	2·93	0·59*	1·41	1·85	1·27	2·31	2·16	1·28*
H_2O-	0·63	1·16	1·21	0·35	0·56	0·29	1·15	0·34	
CO_2	0·51	1·36	—	0·06	abs.	—	0·87	0·56	
TiO_2	2·87	2·46	—	2·83	2·13	1·25	1·32	1·88	2·54
P_2O_5	0·68	0·32	0·91	0·95	1·16	1·05	0·48	0·23	0·55
MnO	0·18	0·23	2·64	0·20	0·23	0·19	0·33	0·08	
Other Constituents		V_2O_3=0·05 Cl=0·02 BaO=0·02 FeS_2=0·26 SrO=tr. (NiCo)O=0·06	SO_3=tr.		Cl=0·11 S=0·13 BaO=0·01 Cr_2O_3=0·03 V_2O_3=0·01	Cl=0·03 (NiCo)O=0·17	Cl=0·08	(NiCo)O=0·03 BzO=0·22 SrO=tr. SO_3=0·09 Cl=0·02 V_2O_3=0·02	
					99·81	100·33	[99·79]		
Less O=Cl, F. S					0·07	0·01	0·02		
	99·71	100·30	100·45	99·28	99·74	100·32	99·77	100·28	100·90

TABLE O — BASALTIC ROCKS — $SiO_2 < 46\%$

c. CaO/Alk. = 2 – 3

	$K_2O/Na_2O = 0{\cdot}75 - 0{\cdot}30$					$K_2O/Na_2O < 0{\cdot}30$			
	53	54	55	56	57	58	59	60	61
Rock Name	Analcite Basanite	Olivine Nephelinite	Olivine Nephelinite	Nephelinite	Monticellite-eudialite-nepheline Basalt	Olivine-labradorite Basalt	Analcite Dolerite	Olivine Basalt	Olivine-rich Analcite Dolerite
Locality	Canterbury, Sydney, N.S.W.	Bacchus Marsh, Vic.	Derby, Tas.	W. of Dapto, N.S.W.	Shannons Tier, Tas.	Alfredton, Ballarat, Vic.	Prospect, near Sydney, N.S.W.	Cooma, N.S.W.	Prospect, near Sydney, N.S.W.
Reference	**329**, 230; **345**, 173; **554**, 695	**121**, 91; **224**, 145	**130**, 111	**190**, 361 **554**, 701	**130**; **527**; **506** 161; **394**; **554**	**591**	**577**	**65**, 314; **352**, 198; ~~**55**~~, 58–	**577**
Analyst	H. P. White	R. Jacobson	W. St C. Manson	H. P. White	Heidenreich	H. Yates	M. Chiba	H. P. White	M. Chiba
Remarks									
Sp. Gr.	—	—	—	2·949	3·079	—	2·80	2·911	2·70
SiO_2	41·10	39·79	39·12	37·84	36·03	45·54	45·36	45·06	43·60
Al_2O_3	14·82	12·11	10·29	13·81	15·19	13·49	15·87	14·60	12·30
Fe_2O_3	2·35	4·67	6·03	6·20	5·94	2·98	4·53	2·60	5·26
FeO	10·38	7·87	8·44	8·01	9·55	7·97	5·94	9·00	7·65
MgO	9·43	12·25	14·03	4·79	8·60	6·89	5·56	9·64	8·94
CaO	10·56	11·29	10·40	14·60	15·52	8·84	10·82	9·86	9·29
Na_2O	3·94	2·83	3·33	3·73	4·23	2·68	3·51	2·90	2·57
K_2O	1·28	1·23	1·23	1·96	1·85	0·76	0·92	0·85	0·74
H_2O+	2·31	1·79	0·88	4·53	0·58	3·51	3·94	2·73	4·06
H_2O-	0·39	3·06	2·46	0·38		1·60	0·46	0·55	2·85
CO_2	0·26	abs.	tr.	0·02	—	3·65	0·08	0·05	0·36
TiO_2	3·20	1·87	2·73	2·80	1·13	1·73	2·61	1·55	2·51
P_2O_5	0·19	1·30	1·25	1·50	1·38	0·24	0·39	0·61	0·28
MnO	0·14	0·02	0·18	0·11	0·17	—	0·14	0·19	0·15
Other Constituents	$SO_3 = 0{\cdot}09$ Cl = tr. Cr_2O_3 = tr. BaO = 0·06 SrO = tr. (NiCo)O = tr.		Cl = abs. SO_3 = tr.	$V_2O_3 = 0{\cdot}04$ Cl = tr. BaO = 0·04	ZnO = 0·21			ZrO_2 = abs. $V_2O_3 = 0{\cdot}02$ $Cr_2O_3 = 0{\cdot}02$	
	100·50	100·08	100·37	100·36	100·38	99·88	100·13	100·23	100·56

TABLE O — BASALTIC ROCKS — SiO_2 <46%

c. CaO/Alk. = 2–3

K_2O/Na_2O <0·3

	62	63	64	65	66	67	68	69	70
Rock Name	Analcite Dolerite	Analcite-nepheline Basanite	Olivine-rich analcite Dolerite	Analcite Dolerite	Analcite Dolerite	Nepheline Basanite	Analcite Dolerite	Picrite	Nepheline Basanite
Locality	Prospect, near Sydney, N.S.W.	Putty Creek, Colo R., N.S.W.	Prospect, near Sydney, N.S.W.	Prospect, near Sydney, N.S.W.	Prospect, near Sydney, N.S.W.	Near Cabramurra, N.S.W.	Prospect, near Sydney, N.S.W.	Prospect, near Sydney, N.S.W.	Near Cabramurra, N.S.W.
Reference	**577**	**79**, 93 & 139	**380**, 263; **577**	**577**	**577**	**279**, 8	**577**	**577**	**279**, 8
Analyst	M. Chiba	J. C. H. Mingaye	J. H. Pyle	M. Chiba	M. Chiba	K. Pesina	M. Chiba	M. Chiba	K. Pesina
Remarks						P_2O_5 & TiO_2 transposed?			TiO_2 & P_2O_5 transposed?
Sp. Gr.	2·91	2·956	2·88	2·48	2·93	—	2·89	3·13	—
SiO_2	43·37	43·32	43·23	42·79	42·69	42·42	42·23	42·18	42·15
Al_2O_3	14·73	14·97	11·81	12·61	11·71	17·04	11·71	8·58	19·55
Fe_2O_3	5·45	3·50	3·44	3·43	4·44	2·01	5·21	2·21	2·25
FeO	7·96	7·11	9·75	6·63	10·69	8·35	9·97	12·11	7·64
MgO	5·82	10·51	10·90	6·61	5·08	9·90	5·86	17·94	9·88
CaO	10·95	9·78	8·93	11·26	10·04	9·88	10·81	6·88	9·48
Na_2O	3·22	3·33	2·80	4·02	3·07	3·00	3·02	2·58	3·20
K_2O	0·87	0·78	0·51	0·54	0·89	0·80	0·65	0·71	0·78
H_2O+	2·90	3·94	4·56	4·67	3·97	2·17	4·14	2·37	1·47
H_2O-	0·66	0·44	1·26	1·63	1·17	0·67	1·09	0·94	0·66
CO_2	0·04	0·11	0·12	2·04	0·15	—	0·11	0·10	—
TiO_2	3·69	1·80	2·15	2·67	5·35	0·85	4·67	2·46	0·94
P_2O_5	0·40	0·48	0·50	0·85	1·30	2·38	1·15	0·84	1·78
MnO	0·16	0·06	0·22	0·12	0·19	tr.	0·18	0·19	tr.
Other Constituents		Cl = tr. V_2O_3 = 0·02 Cr_2O_3 = 0·02 (NiCo)O = 0·05 BaO = 0·06 SrO = tr.	ZrO = 0·02 S = 0·02 V_2O_5 = 0·01 (NiCo)O = 0·03			SrO = 0·18			SrO = 0·20
	100·22	100·28	100·26	99·87	100·74	99·65	100·80	100·09	99·98

TABLE O — BASALTIC ROCKS — SiO_2 <46%

c. CaO/Alk. = 2–3			d. CaO > 3					
K_2O/Na_2O < 0·30			K_2O/Na_2O > 1·25					
	71	72	1	2	3	4	5	6
Rock Name	Nepheline Basalt	Nepheline Monchiquite	Limburgite	(?) Kedabekite	Pyroxenite	Orthoclase Gabbro (Perknite)	Melanite-Melteigite	Limburgite
Locality	Mt. Muruin, N.S.W.	Putty Ck., Colo R., N.S.W.	Euroa, Vic.	Mt. Dromedary, near Little Dromedary, N.S.W.	Pooles Point, Tilba Tilba Lake, N.S.W.	Aberfeldy, Vic.	Mt. Dromedary, near Little Dromedary, N.S.W.	Norseman, W.A.
Reference	**366**, 97; **55**, 62	**79**, 93 & 147; **55**, 62	**121**, 91; **540**, 62; **554**, 637	**48**, 670	**48**, 664	**294**, 44	**48**, 670	**563**
Analyst	W. A. Greig	H. P. White	D. L. Mahony	I. A. Brown	I. A. Brown	F. F. Field	I. A. Brown	J. D. Hayton
Remarks						(Pipe)		
Sp. Gr.	3·067	2·883	2·895	3·237	3·393	—	3·425	3·05
SiO_2	41·90	41·38	44·56	44·28	43·63	42·55	40·26	32·10
Al_2O_3	13·90	13·09	11·68	10·13	7·52	17·66	10·95	6·55
Fe_2O_3	3·10	5·80	3·95	4·04	6·45	2·62	12·16	6·61
FeO	8·82	7·07	6·88	6·21	8·57	10·73	3·38	11·51
MgO	13·72	8·30	11·91	8·42	13·67	6·48	2·16	14·77
CaO	9·66	9·92	10·37	21·86	17·12	10·53	26·30	8·37
Na_2O	3·51	4·23	1·03	0·31	0·36	0·52	0·44	1·03
K_2O	1·04	0·72	2·31	0·69	0·50	2·02	1·33	1·52
H_2O+	1·47	4·44	2·97	1·29	0·46	4·61	0·64	3·74
H_2O-	0·33	0·52	0·84	0·29	0·25	0·50	0·28	1·43
CO_2	0·27	0·04	abs.	abs.	abs.	tr.	abs.	3·63
TiO_2	1·25	3·28	2·90	1·28	1·24	1·40	1·68	7·54
P_2O_5	0·96	0·77	0·40	1·35	0·10	tr.	0·89	0·68
MnO	0·19	0·11	0·24	0·23	0·20	tr.	—	0·21
Other Constituents	Cr_2O_3 = 0·02 V_2O_3 = tr. (NiCo)O = 0·20 Cl = 0·02	Cr_2O_3 = 0·01 (NiCo)O = 0·02 BaO = 0·11 V_2O_3 = 0·03	Cl = tr. BaO = tr. S = 0·06 NiO = 0·01 Cr_2O_3 = 0·09			Cl = tr. SO_3 = 0·42		SO_3 = 0·13 F = 0·14 Cr_2O_3 = 0·05 V_2O_3 = 0·04 S = 0·36
								100·41
Less O = Cl, F, S								0·15
	100·36	99·84	100·20	100·38	[100·07]	100·04	100·47	100·26

TABLE O — BASALTIC ROCKS — SiO_2<46%

d. CaO/Alk.>3

	K_2O/Na_2O=1·25–0·75				K_2O/Na_2O=0·75–0·30				
	7	8	9	10	11	12	13	14	15
Rock Name	Basalt	Limburgite	Analcite* Monchiquite	"Diabase"	Gabbro	Basalt	Basalt	Basalt	Titanaugite Basalt
Locality	Bombala, N.S.W.	Heard Island, Ant.	Kiama, N.S.W.	Bendigo, Vic.	Duchess, Qld.	Lowood, Qld.	Upper Castra, Tas.	Berrys Creek, Vic.	Mt. Murray, near Wollongong, N.S.W.
Reference	**50**, 349	**530**, 37	**190**; 360; **229**, 50; **554**, 917; **55**, 72	**540**, 62; **554**, 885	**551**	**283**	**482**	**121**, 90; **540**, 62; **554**, 901	**131**, 29
Analyst	I. A. Brown	F. Herdsman	H. P. White	H. S. Whitelaw	Avery & Anderson	A. J. Easton	W. St C. Manson	A. G. Hall	G. C. Carlos
Remarks			*Originally called Leucite						
Sp. Gr.	—	—	2·915	2·967	3·138	2·96	—	2·874	—
SiO_2	44·35	44·30	39·35	38·85	45·84	45·70	45·00	44·91	44·89
Al_2O_3	14·71	7·10	11·60	19·83	12·80	12·87	15·05	13·77	15·53
Fe_2O_3	3·08	1·53	3·32	2·72	0·98	4·04	2·43	5·28	1·79
FeO	8·21	11·54	7·38	8·12	10·23	5·93	8·86	5·81	8·40
MgO	10·63	15·14	9·82	3·61	16·94	13·42	9·42	12·19	5·64
CaO	10·08	11·30	12·66	12·09	9·27	10·59	10·76	8·56	12·63
Na_2O	1·64	1·90	2·00	1·74	1·37	2·20	1·86	1·73	2·92
K_2O	1·39	1·57	1·77	1·58	0·51	0·76	0·68	0·94	1·45
H_2O+	3·04	abs.	3·82	1·85	1·16	1·22	3·25	3·40	3·01
H_2O-	0·72	abs.	1·28	1·46	0·05	0·29	1·55	1·34	0·41
CO_2	tr.	abs.	4·04	6·17	—	0·43	—	tr.	abs.
TiO_2	1·95	4·50	1·98	1·78	0·67	2·23	1·58	1·73	2·60
P_2O_5	0·59	0·45	0·64	0·45	0·21	0·43	—	0·32	0·32
MnO	0·15	0·50	0·21	0·16	0·22	0·17	0·10	0·33	0·40
Other Constituents		Cr_2O_3=0·06 V_2O_3=0·06	Cl=0·05 S=0·46 V_2O_3=0·03 Cr_2O_3=tr. NiO=0·01 BaO=0·08	NiO=0·05		Cr_2O_3=0·08		Cr_2O_3=0·05 NiO=0·03	SO_3=0·01 Cl=0·01
			100·50						
Less O= Cl, F, S			0·21						
	100·54	99·95	100·29	100·46	100·25	100·36	100·54	100·39	100·01

d. CaO/Alk. >3

K_2O/Na_2O = 0·75 – 0·30

	16	17	18	19	20	21	22	23	24
Rock Name	Analcite Basanite	Volcanic Glass	Basalt	Nepheline Basanite	Limburgite	Monchiquite	Limburgitic Basalt	Titanaugite Dolerite	Basalt
Locality	5 miles W. of Jamberoo, N.S.W.	King Island, Tas.	Mt. Wellington, Vic.	Beacon Hill, near Cabramurra, N.S.W.	Glenugie Peak, near Grafton, N.S.W.	Moorabool, Vic.	Rogers Head, Heard Island, Ant.	Mt. Murray, near Wollongong, N.S.W.	Bellambi, N.S.W.
Reference	**190**, 288; **55**, 58; **229**, 32; **554**, 663	**436**, 122	**511**, 267; **514**, 98; **554**, 901	**279**, 8	**358**, 196; **55**, 62; **554**, 713	**116**, 123	**419**, 258; **530**; 37	**131**, 29	**190**, 405; **358**, 196; **554**, 901
Analyst	H. P. White	B. Scott	Not Stated	K. Pesina	W. A. Greig	A. B. Edwards	Reinisch	G. C. Carlos	H. P. White
Remarks		(From Breccia)		TiO_2 & P_2O_5 transposed?		(Dyke)			(Crowded with Xenocrysts)
Sp. Gr.	2·907	—	—	—	3·177	—	—	—	2·928
SiO_2	44·57	44·14	43·88	43·57	43·56	43·12	43·01	42·52	42·50
Al_2O_3	15·30	15·63	16·58	17·28	8·18	12·65	12·23	14·38	9·28
Fe_2O_3	3·20	5·45	5·53	3·13	2·40	2·66	3·57	3·26	2·60
FeO	7·83	0·93	9·11	8·21	11·15	8·49	12·07	5·02	6·66
MgO	10·04	2·75	5·77	10·47	18·49	14·86	13·62	7·20	18·84
CaO	10·00	20·44	9·60	10·65	10·34	10·49	10·17	12·35	9·60
Na_2O	1·94	0·80	2·02	1·15	1·65	2·43	2·26	2·66	1·95
K_2O	1·39	0·21	1·06	0·53	0·90	0·73	0·95	1·37	0·92
H_2O+	3·21	6·04	2·22	1·19	1·77	1·25	0·16	6·31	4·40
H_2O-	1·09	—	0·64	0·67	0·15	0·53		1·99	0·48
CO_2	0·01	—	—	—	0·04	0·28	—	abs.	1·49
TiO_2	1·01	0·31	3·52	0·90	0·92	1·55	1·51	2·24	0·70
P_2O_5	0·41	nd.	tr.	1·88	0·40	0·61	0·40	0·43	0·49
MnO	0·29	0·11	—	tr.	0·19	0·20	—	0·26	0·12
Other Constituents	BaO = 0·05 NiO = 0·05 Cr_2O_3 = 0·01 V_2O_3 = 0·02 Cl = 0·01 CuO = tr.			SrO = 0·20	Cl = 0·11 Cr_2O_3 = 0·01 V_2O_3 = 0·02 CuO = tr.	Cl = 0·01 BaO = 0·06		SO_3 = 0·01 Cl = 0·01	V_2O_3 = 0·02 NiO = 0·04 BaO = 0·02
					100·28				
Less O = Cl, F, S					0·02				
	100·43	[96·81]	99·93	99·83	100·26	99·92	99·95	100·01	100·11

TABLE O — BASALTIC ROCKS — SiO_2<46%

d. CaO/Alk. >3

K_2O/Na_2O = 0·75 – 0·30

	25	26	27	28	29	30	31	32	33
Rock Name	Nepheline Basanite	Picrite	Picrite	Picrite	Mafic-rich Dolerite	Basalt	Picrite	Amygdaloidal Dolerite	Nepheline-melilite Basalt
Locality	Near Cabramurra, N.S.W.	Prospect, near Sydney, N.S.W.	Prospect, near Sydney, N.S.W.	Prospect, near Sydney, N.S.W.	Prospect, near Sydney, N.S.W.	Wingello, N.S.W.	Jellore Creek, near Mittagong, N.S.W.	Guilford, near Sydney, N.S.W.	Shannons Tier, Tas.
Reference	**279**, 8	**577**	**577**	**577**	**577**	**228**, 116; **343**, 217	**510**, 341; **55**, 66; **554**, 933	**329**, 230; **345**, 173; **554**, 899	**394**, 305; **506**, 161
Analyst	K. Pesina	M. Chiba	M. Chiba	M. Chiba	M. Chiba	H. P. White	D. Mawson	J. C. H. Mingaye	F. P. Paul
Remarks	(?) P_2O_5 & TiO_2 transposed				(Outer zone of vein)				
Sp. Gr.	—	3·11	3·12	3·08	2·96	—	2·891	2·903	3·150
SiO_2	41·99	41·90	41·76	41·56	41·17	41·15	39·91	38·12	37·96
Al_2O_3	15·75	8·52	9·22	8·12	5·66	17·29	13·67	14·11	10·14
Fe_2O_3	3·05	2·21	3·30	3·56	3·35	3·86	6·55	3·58	3·69
FeO	7·66	12·75	12·18	11·16	12·34	8·40	8·98	7·43	7·59
MgO	10·84	19·09	19·12	17·11	17·62	11·14	11·96	6·91	14·69
CaO	11·65	6·76	6·55	8·05	9·50	11·04	6·18	11·40	16·28
Na_2O	1·50	1·60	1·35	1·48	1·10	2·18	1·28	2·23	2·18
K_2O	0·65	0·55	0·72	0·47	0·39	1·58	0·66	1·16	0·69
H_2O+	2·61	1·89	2·60	3·24	3·74	2·03	3·66	2·71	} 1·82
H_2O-	0·65	0·75	1·26	1·53	1·21	1·09	3·74	0·58	
CO_2	—	0·07	0·26	0·12	0·09	—	0·40	9·60	—
TiO_2	0·99	2·37	1·63	2·27	2·21	0·07	1·75	0·40	2·93
P_2O_5	2·20	0·55	0·34	0·77	1·38	0·27	0·61	1·12	1·13
MnO	tr.	0·20	0·19	0·20	0·35	0·49	0·18	0·18	0·22
Other Constituents	SrO = 0·23					V_2O_3 = tr.	Cl = 0·02 S = 0·20 Cr_2O_3 = 0·21 V_2O_3 = tr.	Cr_2O_3 = 0·01 SO_3 = 0·24 V_2O_3 = 0·02 BaO = 0·07 SrO = tr.	Cr_2O_3 = 0·08 S = 0·04 V_2O_3 = 0·05 SO_3 = 0·03 NiO = 0·04 BaO = 0·06 SrO = 0·05
							99·96		[99·67]
Less O = Cl, F, S							0·10		0·01
	99·77	99·21	100·48	99·64	100·11	100·59	99·86	99·87	99·66

TABLE O — BASALTIC ROCKS — SiO_2<46%

d. CaO/Alk. >3

	K_2O/Na_2O = 0·75 – 0·30		K_2O/Na_2O < 0·30						
	34	35	36	37	38	39	40	41	42
Rock Name	Monchiquite Lamprophyre	Ultrabasic Rock	Dolerite	Porphyritic Dolerite	Basalt	Olivine Basalt	Olivine-rich Analcite Dolerite	Analcite Dolerite	"Nepheline Basalt"
Locality	Nandewar Mts., N.S.W.	Norseman, W.A.	Prospect, near Sydney, N.S.W.	Smithton, Tas.	Casterton, Vic.	Between Deloraine & Elizabeth Town, Tas.	Prospect, near Sydney, N.S.W.	Prospect, near Sydney, N.S.W.	Whartons Mill, near Barrington Tops, N.S.W.
Reference	**235**, 903; **554**, 917	**563**	**577**	**384**, 68	**548**	**130**, 106	**577**	**577**	**369**, 104; **55**, 69
Analyst	H. I. Jensen	J. D. Hayton	M. Chiba	Tas. Dept. Mines	F. F. Field	W. St C. Manson	M. Chiba	J. M. Pyle	W. G. Stone
Remarks				*Loss on ignition					
Sp. Gr.	—	3·05	2·80	—	—	—	2·75	2·98	3·023
SiO_2	36·88	32·10	44·77	44·20	43·76	43·76	43·50	43·29	41·86
Al_2O_3	4·53	6·55	15·01	20·80	17·86	13·55	12·27	13·71	14·40
Fe_2O_3	2·03	6·61	5·02	9·98	3·49	3·90	4·81	4·62	3·91
FeO	9·67	11·51	5·91	5·84	7·54	7·20	7·14	9·75	7·29
MgO	25·40	14·77	6·59	3·18	6·22	10·24	9·38	5·13	8·76
CaO	7·61	8·37	10·42	10·40	11·86	8·28	9·94	11·31	13·74
Na_2O	1·17	1·03	2·47	1·71	3·28	1·70	2·36	3·12	3·21
K_2O	0·43	1·52	0·72	0·36	0·59	0·47	0·60	0·71	0·91
H_2O+	0·82	3·74	4·18	1·44*	1·54	6·68	3·30	3·52	2·23
H_2O-	0·58	1·43	2·04		0·34	2·06	2·74	0·30	0·79
CO_2	8·10	3·63	0·36	—	0·96	—	0·45	1·12	0·02
TiO_2	2·10	7·54	2·32	1·44	1·95	1·63	2·71	2·92	2·30
P_2O_5	abs.	0·68	0·40	0·15	0·81	0·35	0·74	0·56	0·67
MnO	0·04	0·21	0·13	1·06	0·15	0·12	0·17	0·13	0·21
Other Constituents	NiO = 0·07 ZrO_2 = 0·06 S(FeS) = 0·17	Cr_2O_3 = 0·05 F = 0·14 V_2O_3 = 0·04 S = 0·36 SO_3 = 0·13			Cr_2O_5 = 0·05 Cl = tr. ZrO_2 = abs. FeS_2 = 0·22 BaO = 0·02 SO_3 = tr.	SO_3 = 0·15 Cl = tr.		ZrO_2 = 0·01 S = 0·05 BaO = 0·02 V_2O_3 = 0·01	Cl = tr. Cr_2O_3 = tr. BaO = 0·04 V_2O_3 = 0·01
	99·66	100·41						100·28	
Less O = Cl, F, S	0·08	0·15						0·02	
	99·58	100·26	100·34	100·56	100·64	100·09	100·11	100·26	100·35

TABLE O — BASALTIC ROCKS — SiO_2<46%

d. CaO/Alk. >3

K_2O/Na_2O <0·30

	43	44	45	46	47	48	49
Rock Name	Picrite	Basalt	Monchiquite	Analcite Dolerite	Pyroxenite	Melilite Fasinite	Nepheline-melilite Basalt
Locality	Prospect, near Sydney, N.S.W.	Delegate, N.S.W.	Kangaroo Gully, near Bendigo, Vic.	Prospect, near Sydney, N.S.W.	Near Junction Shaft, Snowy Mts., N.S.W.	Shannons Tier, Tas.	Shannons Tier, Tas.
Reference	**577**	**283**	**464**, 381	**238**, 483; **554**, 911; **55**, 66	**264**, 124	**146**, 13	**394**, 37 **506**, 161
Analyst	M. Chiba	A. J. Easton	H. C. Richards	J. C. H. Mingaye	J. K. Burnett		F. P. Paul
Remarks		(Breccia Pipe)	(Dyke cutting agglomerate)				
Sp. Gr.	3·08	3·10	—	3·058	—		3·04
SiO_2	41·57	41·24	41·15	41·05	39·49	37·60	33·89
Al_2O_3	8·97	10·20	10·54	12·27	6·61	15·27	9·93
Fe_2O_3	3·09	4·93	13·21	6·39	16·03	5·53	15·63
FeO	11·40	6·69	—	11·07	7·30	6·72	—
MgO	18·15	15·87	7·28	6·38	10·72	4·78	16·14
CaO	6·89	11·92	10·70	10·96	16·51	14·06	15·19
Na_2O	1·53	2·88	0·99	2·43	1·07	3·76	2·86
K_2O	0·42	0·48	2·18	0·53	0·25	0·87	—
H_2O+	2·69	1·89	2·15	3·58	0·57	5·61	2·90
H_2O-	1·75	0·19	7·25	0·44	0·01	1·15	
CO_2	0·31	0·04	0·60	0·03	—	abs.	1·41
TiO_2	2·24	2·42	5·62	4·39	1·55	3·78	0·64
P_2O_5	0·58	1·04	—	0·19	tr.	0·98	1·41
MnO	0·19	0·20	—	0·17	abs.	0·28	
Other Constituents		Cr_2O_3=0·03		S(FeS_2)=0·35 (NiCo)O=0·02 V_2O_3=0·06 Cl=tr. Cr_2O_3=tr.		Cl=0·08	
						100·47	
Less O= Cl, F, S						0·02	
	99·78	100·02	101·67	100·31	100·11	100·45	100·00

TABLE LM[1] — METAMORPHOSED MAFIC ROCKS — $SiO_2 > 50\%$

a. CaO/Alk. <1

	$K_2O/Na_2O >$ 1·25	$K_2O/Na_2O = 0·75 - 0·30$		$K_2O/Na_2O < 0·30$	
	1	2	3	4	5
Rock Name	Biotite Schist	Meta-morphosed Dolerite	Altered Dolerite	Albite-epi-dote-chlorite-calcite Rock	Basic Hornfels
Locality	Norseman, W.A.	Port Cygnet, Tas.	Napier, Broome Bay, W.A.	4 miles W. of Tumblong, N.S.W.	Tilbuster, near Armi-dale, N.S.W.
Refer-ence	**67**, 30; **447**, 64	**129**, 109	**447**, 46	**534**, 183	**377**, 47; **478**, 168
Analyst	C. C. Williams	A. B. Edwards	C. G. Gibson	T. G. Vallance	J. H. Pyle
Remarks	(Dolerite Dyke)				
Sp. Gr.	2·87	—	2·81	—	
SiO_2	53·12	55·20	51·04	57·24	53·41
Al_2O_3	17·99	15·00	13·60	16·63	19·80
Fe_2O_3	3·97	4·24	2·08	2·46	1·61
FeO	8·37	5·11	8·40	4·21	4·85
MgO	6·15	4·15	7·94	3·06	2·02
CaO	0·63	9·35	5·68	4·50	5·05
Na_2O	1·02	2·95	4·30	5·83	6·86
K_2O	5·75	2·00	1·83	1·24	1·77
H_2O+	1·58	0·21	2·64	1·51	0·77
H_2O-	0·14	0·35	0·36	0·48	0·30
CO_2	0·18	abs.	abs.	2·05	0·42
TiO_2	1·16	1·36	1·36	0·95	3·40
P_2O_5	—	0·10	—	nd.	0·03
MnO	0·31	0·17	0·34	0·04	0·12
Other Con-stituents	$FeS_2 = 0·07$				$Cr_2O_3 = 0·005$ $V_2O_3 = 0·04$
	100·44	100·19	99·57	100·20	100·46

TABLE LM[1] — METAMORPHOSED MAFIC ROCKS — $SiO_2 > 50\%$

b. CaO/Alk. = 1 – 2

	$K_2O/Na_2O >$ 1·25	$K_2O/Na_2O =$ 1·25 – 0·75	$K_2O/Na_2O =$ 0·75 – 0·30	$K_2O/Na_2O <$ 0·30	
	1	2	3	4	5
Rock Name	Chlorite Schist	Amphibolite	Epidiorite	Epidiorite	Altered Amygdaloidal Basalt
Locality	Boulder, Kalgoorlie, W.A.	Eyre Peninsula, S.A.	Isdell River, Kimberley Div., W.A.	Laverton, W.A.	North Pole, W.A.
Reference	**445**, 67	**524**, 101	**447**, 46	**173**, 15; **447**, 24; **460**; **554**, 40	**301**, 12; **303**, 7; **447**, 48; **554**, 847
Analyst	E. S. Simpson	C. E. Tilley	C. G. Gibson	J. H. Brooking	C. C. Williams
Remarks				(Dolerite Dyke)	
Sp. Gr.	2·95		2·86	2·86	2·77
SiO_2	51·27	55·23	54·44	59·35	54·41
Al_2O_3	13·85	13·02	7·72	15·83	12·80
Fe_2O_3	1·54	7·66	8·22	1·76	0·16
FeO	2·63	6·60	11·20	5·41	10·35
MgO	4·18	2·27	4·00	4·58	5·72
CaO	6·40	5·87	6·68	6·43	5·21
Na_2O	1·78	2·80	3·14	3·38	3·02
K_2O	2·37	2·93	1·91	0·90	0·02
H_2O+	0·22	0·50	2·01	0·83	3·42
H_2O-	0·40	0·15	0·20	0·07	0·15
CO_2	8·02	—	abs.	0·06	3·58
TiO_2	0·23	2·85	1·48	0·78	0·78
P_2O_5	—	0·79	—	—	—
MnO	tr.		0·22	0·33	0·09
Other Constituents	S = 4·42 Fe = 3·99		FeS_2 = 0·16	FeS_2 = 0·07	
	101·30	100·67	[101·38]	99·78	99·71

TABLE LM[1] — METAMORPHOSED MAFIC ROCKS — $SiO_2 > 50\%$

c. CaO/Alk. = 2–3

$K_2O/Na_2O = 0{\cdot}75 - 0{\cdot}30$

	1	2	3	4	5	6	7	8	9
Rock Name	Schistose Amphibolite	Epidiorite	Norite	Amphibolite	Epidiorite	Altered Dolerite	Hornblende Schist	Altered Dolerite	Epidiorite
Locality	Toodyay, W.A.	Youlingoorina, W.A.	Fraser Ra., W.A.	Kalgoorlie, W.A.	Harvey Weir, W.A.	Warrawoona, W.A.	Middleback Ra., S.A.	Nullagine, W.A.	Southern Cross, W.A.
Reference	**402**, 105	**447**, 50; **519**, 10	**304**, 8	**157**, 55	**563**	**302**, 66; **303**, 164; **447**, 46 **554**, 6	**132**, 229	**302**, 32; **303**, 134; **447**, 46; **554**, 6	**172**, 20; **447**, 28; **521**, 645
Analyst	R. T. Prider	C. C. Williams	H. E. Hill	H. Bowley	H. P. Rowledge	C. G. Gibson	G. C. Carlos	C. C. Williams	J. H. Brooking
Remarks		(Quartz Dolerite Dyke)				(Dyke)			(Quartz Dolerite Dyke)
Sp. Gr.	—	2·89	2·98	2·94	3·04	3·00	—	2·82	2·96
SiO_2	53·61	52·50	52·21	51·72	50·95	50·48	50·06	54·92	52·70
Al_2O_3	10·77	14·93	17·37	14·63	13·34	23·18	12·72	14·27	14·27
Fe_2O_3	2·21	2·75	0·78	2·02	3·31	3·07	5·28	1·28	1·48
FeO	9·02	7·87	8·55	8·26	10·54	8·86	10·28	5·25	11·07
MgO	6·92	7·22	6·43	7·50	5·21	0·64	4·72	10·32	6·39
CaO	10·04	6·73	8·67	8·10	9·04	7·47	8·79	6·42	8·23
Na_2O	2·12	2·04	2·60	2·42	2·24	2·17	2·15	2·50	3·15
K_2O	1·54	0·61	— 1·38	1·38	1·00	0·83	1·10	0·64	0·23
H_2O+	1·62	2·86	0·03	2·94	1·51	1·71	1·49	2·96	0·12
H_2O-	0·17	0·06	0·09	0·06	0·06	0·10	0·05	0·12	0·24
CO_2	—	1·12	0·89	0·05	0·05	0·55	abs.	0·38	0·15
TiO_2	1·05	0·78	0·60	0·51	1·97	0·38	2·47	0·90	0·83
P_2O_5	0·17	—	0·18	0·11	0·26	—	0·45	—	—
MnO	0·35	0·27	0·47	0·48	0·12	tr.	0·42	tr.	0·18
Other Constituents		$FeS_2 = 0{\cdot}13$	$FeS_2 = 0{\cdot}09$ $Cr_2O_3 = 0{\cdot}02$	$FeS_2 = 0{\cdot}19$ $Cr_2O_3 = 0{\cdot}02$ $V_2O_3 = 0{\cdot}06$	$FeS_2 = 0{\cdot}26$	$FeS_2 = 0{\cdot}30$	Cl = tr. SO_3 = tr.	$FeS_2 = 0{\cdot}22$	$FeS_2 = 0{\cdot}49$
	99·59	99·87	100·36	100·45	99·86	99·74	99·98	100·18	99·53

TABLE LM[1] — METAMORPHOSED MAFIC ROCKS — SiO_2 > 50%

	c. CaO/Alk. = 2–3				d. CaO/Alk. > 3				
	K_2O/Na_2O < 0·30				K_2O/Na_2O > 1·25				K_2O/Na_2O = 1·25–0·75
	10	11	12		1	2	3	4	5
Rock Name	Epidiorite	Amphibolite	Greenstone *Rocksberg Greenstone*		Garnet Amphibolite	Garnet Amphibolite	Garnet Amphibolite	Amphibolite	Pyroxene-rich band in Amphibolite
Locality	Cue, W.A.	Leonora, W.A.	Rocksberg, Brisbane, Qld.		Broken Hill, N.S.W.	Southern Cross, W.A.	Broken Hill, N.S.W.	Westonia, W.A.	Broken Hill, N.S.W.
Reference	**447**, 24; **521**, 645; **588**, 53	**222**, 19; **447** 26; **521**, 643; **554**, 1081	**63**, 28; **307**		**495**, 360	**150**, 83; **447**, 62	**495**, 360	**156**, 282; **447**, 62	**135**, 17
Analyst	E. S. Simpson	C. C. Williams	Not Stated		G. T. Pyke	H. Bowley	F. H. Searcy	H. Bowley	A. W. Hounslow
Remarks	(Quartz Dolerite Dyke)	(Quartz Dolerite Dyke)						(Dyke)	
Sp. Gr.	3·00	2·95	—		3·12	—	3·10	—	—
SiO_2	52·31	50·98	50·65		53·50	52·27	51·54	50·69	56·77
Al_2O_3	14·64	17·09	11·47		16·10	8·10	14·69	5·97	9·42
Fe_2O_3	3·09	0·87	4·11		1·60	2·37	0·17	2·31	0·32
FeO	5·87	8·35	5·75		16·20	22·32	15·97	8·04	2·89
MgO	8·90	4·70	11·65		0·90	7·84	2·89	17·85	9·72
CaO	9·32	9·70	7·74		7·50	1·90	7·92	11·26	18·37
Na_2O	2·57	4·09	3·07		0·50	0·32	1·16	0·32	abs.
K_2O	0·59	0·10	0·68		1·60	1·94	1·39	0·38	abs.
H_2O+	0·88	1·08	3·21		0·40	1·52	0·19	2·22	0·39
H_2O-	0·25	0·05	0·55		0·30	0·22	0·84	0·04	0·06
CO_2	0·05	abs.	0·10		0·24	0·06	0·02	abs.	1·28
TiO_2	0·41	0·79	0·86		0·49	0·64	2·00	0·35	0·25
P_2O_5	0·31	—	0·17		nd.	0·38	0·75	0·17	0·04
MnO	0·29	1·25	0·18		0·95	0·20	0·70	0·25	0·18
Other Constituents	FeS_2 = 0·02	FeS_2 = 0·19	NiO = 0·03			FeS_2 = 0·19 C = 0·19		FeS_2 = 0·09 Cr_2O_3 = 0·39	Cl = tr.
	99·50	99·24	100·22		100·28	100·46	100·23	[100·33]	[100·69]

TABLE LM[1] — METAMORPHOSED MAFIC ROCKS — $SiO_2 > 50\%$

d. CaO/Alk. >3

	$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$		$K_2O/Na_2O = 0{\cdot}75 - 0{\cdot}30$						
	6	7	8	9	10	11	12	13	14
Rock Name	Amphibolite	Pyroxene Amphibolite	Amphibolite	Amphibolite	Garnet Amphibolite	Pyroxene Granulite	Amphibolite	Amphibolite	Amphibolite
Locality	Cooma, N.S.W.	Lyell Highway, Tas.	Cooma, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Between Hells Gate & Rocky Creek, W.A.	Kalgoorlie, W.A.	Cooma, N.S.W.
Reference	**255**, 96	**482**, 281	**255**, 93	**53**, 42; **364**, 77	**495**, 360	**135**, 5	**147**, 52; **447**, 24	**447**, 26; **460**, 61; **582**, 76	**255**, 91; **351**, 184
Analyst	G. A. Joplin	W. St C. Manson	G. A. Joplin	W. A. Greig	W. Grosse & W. Usher	Avery & Anderson	H. Bowley	J. H. Brooking	H. P. White
Remarks				*Spectroscopic			(Dolerite Dyke)	(Flow)	
Sp. Gr.	3·100	—	3·039	3·193	3·05	—	3·11	2·98	2·993
SiO_2	52·06	50·92	59·13	57·44	57·14	54·48	52·83	52·53	52·50
Al_2O_3	14·83	16·83	7·92	11·34	14·54	14·83	4·35	13·42	11·72
Fe_2O_3	1·08	1·11	0·98	1·70	1·19	0·38	0·85	0·42	2·30
FeO	4·51	9·78	4·06	14·49	12·24	12·36	7·62	8·97	5·94
MgO	11·75	7·99	14·29	3·41	1·35	5·37	16·47	9·17	10·44
CaO	12·31	9·87	12·37	7·50	8·90	9·31	14·24	9·63	13·04
Na_2O	1·19	1·15	0·44	0·50	0·95	0·34	0·70	1·99	0·97
K_2O	0·98	1·12	0·15	0·18	0·44	0·52	0·29	0·72	0·53
H_2O+	0·60	0·96	0·31	0·89	0·34	0·37	0·59	1·42	1·66
H_2O-	0·36	0·14	0·15	0·11	0·61	0·06	0·17	0·16	0·28
CO_2	—	—	—	0·02	0·08	abs.	0·11	abs.	0·06
TiO_2	0·29	0·60	0·32	1·80	1·90	1·44	0·41	0·86	0·22
P_2O_5	abs.	0·02	abs.	0·21	nd.	0·14	0·45	0·20	0·07
MnO	0·67	0·18	0·10	0·65	0·72	0·25	0·42	0·63	0·11
Other Constituents	Cr_2O_3 = tr.		Cr_2O_3 = tr.	Cl = 0·03 V_2O_3 = 0·05 SrO = p_o*		Cl = 0·42 S = 0·40	Cr_2O_3 = 0·20 V_2O_3 = 0·20 FeS_2 = 0·04	Cr_2O_3 = 0·02 V_2O_3 = 0·04 FeS_2 = 0·30	Cr_2O_3 = 0·02 V_2O_3 = 0·05 (NiCo)O = 0·01 SrO = tr.
						100·67			
Less O = Cl, F, S						0·26			
	100·63	100·67	100·22	100·32	100·40	100·41	[99·94]	[100·48]	99·92

TABLE LM[1] — METAMORPHOSED MAFIC ROCKS — $SiO_2 > 50\%$

d. CaO/Alk. >3

	$K_2O/Na_2O = 0{\cdot}75 - 0{\cdot}30$						$K_2O/Na_2O < 0{\cdot}30$		
	15	16	17	18	19	20	21	22	23
Rock Name	Epidiorite	Pyroxene Amphibolite	Metadolerite	Hornblende-pyroxene Granulite	Metadolerite	Amphibolite	Amphibole-rich Band in Amphibolite	Hornblende Schist	Amphibolite
Locality	Southern Cross, W.A.	Broken Hill, N.S.W.	40 miles S.E. of Mt. Isa, Qld.	Broken Hill, N.S.W.	32 miles E.S.E. of Mt. Isa, Qld.	20 miles S.S.E. of Cloncurry, Qld.	Broken Hill, N.S.W.	Southern Cross, W.A.	Boulder, Kalgoorlie, W.A.
Reference	**150**, 79; **447**, 128	**309**, 257	**551**	**135**, 17	**551** —	**551**	**135**, 17	**150**, 85; **447**, 28	**150**, 100; **447**, 26; **460**
Analyst	E. S. Simpson	J. C. H. Mingaye	Avery & Anderson	Avery & Anderson	Avery & Anderson	Avery & Anderson	A. W. Hounslow	H. Bowley	E. S. Simpson
Remarks								(Tuff)	
Sp. Gr.	—	3·144	3·028	—	2·985	3·001	—		3·03
SiO_2	52·50	52·00	50·53	50·34	50·31	50·00	58·59	53·37	53·01
Al_2O_3	16·80	10·72	14·40	9·80	15·43	14·44	10·79	14·40	15·23
Fe_2O_3	1·08	2·50	1·30	0·10	1·42	1·57	0·41	1·69	2·79
FeO	7·78	11·61	10·00	5·55	8·19	10·90	3·71	9·35	6·97
MgO	7·32	3·63	7·04	14·83	7·46	7·10	12·30	7·54	6·95
CaO	10·06	16·02	10·88	15·84	11·67	10·16	13·21	10·69	10·02
Na_2O	2·25	0·78	1·79	0·71	2·04	2·15	0·44	1·90	1·70
K_2O	0·85	0·37	0·77	0·45	0·70	0·70	abs.	0·08	0·43
H_2O+	1·01	0·18	1·59	0·03	1·37	1·42	0·72	0·50	1·41
H_2O-	0·16	0·14	0·09	0·90	0·29	0·21	0·09	0·12	0·10
CO_2	tr.	0·05	—	—	—	—	tr.	abs.	abs.
TiO_2	—	1·40	1·16	0·72	1·08	1·36	0·30	0·62	0·96
P_2O_5	—	0·11	0·16	0·22	0·15	0·17	tr.	0·13	—
MnO	—	0·25	0·21	0·37	0·11	0·19	0·12	0·26	—
Other Constituents		$BaO = 0{\cdot}01$ $V_2O_3 = 0{\cdot}05$		Cl = tr.			Cl = tr.	$FeS_2 = 0{\cdot}03$	
	99·81	99·82	99·92	99·86	100·22	100·37	100·68	100·68	99·57

TABLE LM[1] — METAMORPHOSED MAFIC ROCKS — $SiO_2 > 50\%$

d. CaO/Alk. > 3

$K_2O/Na_2O < 0 \cdot 30$

	24	25	26	27	28	29	30	31	32
Rock Name	Garnet Amphibolite	Epidiorite	Amphibolite	Epidiorite	Epidiorite	Epidiorite	Epidiorite	Epidiorite	Hornblende Schist
Locality	Broken Hill, N.S.W.	Bullfinch Area, W.A.	Bowgada, W.A.	Mt. Singleton, W.A.	Glen Forrest, Swan District, W.A.	Niagara-Malcolm, Rd, W.A.	Mt. Singleton, W.A.	Somerville, Kalgoorlie, W.A.	Gibraltar, W.A.
Reference	**53**, 42; **364**, 77	**156**, 306	**563**	**563**	**445**, 60; **447**, 28	**273**, 17	**563**	**460**, 61; **554**, 663	**151**, **447**, 28
Analyst	H. P. White	H. Bowley	H. Bowley	D. G. Murray	E. S. Simpson	H. Bowley	D. G. Murray	H. Bowley	H. Bowley
Remarks					(Dolerite Dyke)			(Dolerite Dyke)	(Tuff)
Sp. Gr.	3·188	3·07	3·10	3·02	3·08	3·04	2·99	3·07	—
SiO_2	52·68	52·20	51·17	50·98	50·96	50·93	50·74	50·72	50·71
Al_2O_3	16·27	14·22	14·00	14·85	11·89	12·38	14·99	13·93	19·55
Fe_2O_3	2·40	0·87	1·48	1·45	2·54	2·67	1·06	1·93	2·67
FeO	12·70	7·75	9·52	8·16	13·64	10·83	8·11	6·27	8·50
MgO	1·99	8·71	10·18	7·94	6·26	5·45	8·34	10·16	4·77
CaO	8·02	12·85	9·13	11·83	9·94	10·50	11·07	13·18	9·56
Na_2O	1·38	0·56	1·82	1·60	2·68	2·80	2·48	1·04	2·58
K_2O	0·23	0·14	0·16	0·36	0·29	0·20	0·15	0·18	0·28
H_2O+	0·75	1·72	1·34	2·38	0·05	1·41	2·39	1·55	1·21
H_2O-	0·07	0·07	0·02	abs.	0·16	0·11	0·04	0·16	0·40
CO_2	0·03	0·29	0·19	abs.	abs.	0·19	0·14	0·18	abs.
TiO_2	2·50	0·69	1·15	0·75	1·84	1·98	0·72	0·39	—
P_2O_5	0·32	0·09	0·06	0·06	—	0·17	0·10	0·18	—
MnO	0·94	0·31	0·24	0·15	0·34	abs.	0·19	0·41	—
Other Constituents		$FeS_2 = 0 \cdot 24$	$FeS_2 = 0 \cdot 17$	$FeS_2 = 0 \cdot 02$		$FeS_2 = 0 \cdot 06$	$FeS_2 = 0 \cdot 06$	$V_2O_3 = 0 \cdot 11$ $Cr_2O_3 = 0 \cdot 04$ $FeS_2 = 0 \cdot 15$	
	100·28	100·71	100·63	100·53	100·59	99·68	100·58	100·58	100·23

TABLE LM[1] — METAMORPHOSED MAFIC ROCKS — $SiO_2 > 50\%$

d. CaO/Alk > 3

$K_2O/Na_2O < 0{\cdot}30$

	33	34	35	36	37	38	39
Rock Name	Sheared Greenstone	Epidiorite	Epidiorite	Amphibolite	Amphibolite	Amphibolite *Riddock Amphibolite*	Gneissic Quartz Epidiorite
Locality	Boulder, Kalgoorlie, W.A.	Box Soak, N.W. Division, W.A.	Warrawoona,	Norseman, W.A.	Bonnievale Rd., 2⅜ miles N. of Coolgardie, W.A.	Harts Range, N.T.	Lower Pallinup River, W.A.
Reference	**496**, 27	**447**, 48	**302**, 66; **303**, 164; **447**, 48	**67** **447**, 64	**563**	**243**, 50	**560**
Analyst	H. P. Rowledge	C. C. Williams	B. R. Synnott	J. H. Brooking	B. W. Stenhouse	Avery & Anderson	D. G. Murray
Remarks	(Edge of Dyke)						
Sp. Gr.	2·85	3·04	3·07	2·97	2·96	—	3·11
SiO_2	50·36	50·21	50·20	50·08	50·84	50·32	50·02
Al_2O_3	11·04	15·45	17·95	14·85	17·19	14·95	12·98
Fe_2O_3	1·03	0·38	9·49	1·21	1·31	1·34	2·75
FeO	14·72	6·47	4·20	8·27	7·14	9·48	12·16
MgO	5·12	7·27	2·26	7·21	7·28	7·58	6·16
CaO	4·81	14·34	7·76	12·60	11·62	10·66	10·13
Na_2O	1·30	1·72	1·01	1·69	1·23	3·00	2·04
K_2O	0·14	0·47	0·14	0·15	0·03	0·34	0·44
H_2O+	4·28	2·07	3·04	0·91	1·40	0·14	1·72
H_2O-	0·05	0·03	0·10	0·13	0·04	0·10	0·03
CO_2	3·76	0·11	1·12	1·15	0·04	—	0·06
TiO_2	2·60	0·25	1·42	0·63	1·03	2·08	1·42
P_2O_5	0·14	—	—	—	0·85	0·23	0·20
MnO	0·29	1·40	0·37	0·69	0·05	—	0·29
Other Constituents	FeS_2=0·19 B_2O_3=0·05	FeS_2=0·15	FeS_2=0·30	FeS_2=0·17		Cl=0·08	FeS_2=0·06 ZrO_2=pnd. B_2O_3=pnd.
						100·30	
Less O= Cl, F, S						0·02	
	99·88	100·32	99·36	99·74	100·05	100·28	100·46

TABLE N¹ — METAMORPHOSED MAFIC ROCKS — SiO_2 50–46%

a. CaO/Alk. >1					b. CaO/Alk. =1–2				
	K_2O/Na_2O >1·25		K_2O/Na_2O <0·30			K_2O/Na_2O =0·75–0·30		K_2O/Na_2O <0·30	
	1	2	3	4		1	2	3	4
Rock Name	Biotite Epidiorite	Chloritic Schist	Chlorite-quartz Schist	Mica-glaucophane Schist		Metabasalt	Chlorite-albite Epidiorite	Glaucophane Amphibolite	Pyroxene Amphibolite
Locality	Armadale, W.A.	Meekatharra, W.A.	Bullfinch Area, W.A.	(?) Near Inverell, N.S.W.		Marysville, Vic.	Armadale, W.A.	Lower Pieman, R., Tas.	Duchess, Qld.
Reference	**400**, 48	**155**, 261	**156**, 307	**565**, 48		**198**, 162	**400**, 43	**482**, 281	**138**, 18
Analyst	R. T. Prider	H. Bowley	H. Bowley	H. P. White		E. S. Hills	R. T. Prider	W. St C. Manson	G. C. Carlos
Remarks		(?) Igneous	(Dolerite Dyke)						
Sp. Gr.	—	2·86	2·88	—		—	—	—	3·00
SiO_2	48·88	47·21	48·35	48·10		48·17	47·08	48·38	48·24
Al_2O_3	16·18	31·27	13·11	18·60		14·54	14·78	11·52	15·35
Fe_2O_3	3·06	1·43	2·77	2·50		1·97	1·32	7·05	3·47
FeO	11·00	0·33	15·02	9·81		7·58	13·80	7·15	7·63
MgO	6·87	1·64	11·86	7·45		7·29	7·45	7·11	6·21
CaO	4·79	0·14	0·28	3·69		8·60	4·24	7·10	10·58
Na_2O	0·96	0·14	0·30	4·60		2·86	3·10	4·43	4·63
K_2O	5·32	11·12	0·04	1·79		2·17	1·03	0·30	0·89
H_2O+	1·24	4·37	7·30	1·46		1·94	3·89	2·50	0·85
H_2O-	0·33	0·06	0·04	0·19		0·68	0·22	0·06	0·08
CO_2	—	—	0·15	abs.		tr.	—	—	0·01
TiO_2	1·49	2·56	1·20	1·16		2·77	2·49	2·02	1·26
P_2O_5	0·14	—	0·11	0·19		1·41	0·41	0·12	0·04
MnO	0·16	—	0·07	0·11		0·24	0·31	0·22	0·03
Other Constituents	BaO =0·14 Cr_2O_3 =0·03 FeS_2 =nd.		FeS_2 =0·09	SO_3 =0·08			FeS_2 =0·14 Cr_2O_3 =abs. BaO =abs.	FeS_2 =2·00	Cl=0·99 SO_3 =abs.
									100·26
Less O= Cl, F, S									0·22
	100·59	100·27	100·69	99·73		100·22	100·26	99·96	100·04

TABLE N[1] — METAMORPHOSED MAFIC ROCKS — SiO_2 50–46%

c. CaO/Alk. = 2–3

K_2O/Na_2O = 0·75–0·30

	1	2	3	4	5	6	7	8	9
Rock Name	Metadolerite	Amphibolite (Meta-dolerite)	Amphibolite (Meta-dolerite)	Feldspar-bearing Amphibolite	Amphibolite	Metadolerite	Metadolerite	Hornblende-rich Amphibolite	Gabbro Amphibolite
Locality	25 miles E. of Mt. Isa, Qld.	20 miles E. of Mt. Isa, Qld.	28 miles E. of Mt. Isa, Qld.	Near Wellington, N.S.W.	Middleback Ra., S.A.	25 miles E. of Mt. Isa, Qld.	Duchess, Qld.	Lower Forth R., Tas.	Pimba-acla, S.A.
Reference	**551**	**551**	**551**	**22**, 73	**327**, 48	**551**	**551**	**482**, 281	**215**, 13
Analyst	Avery & Anderson	S. Baker	Avery & Anderson	E. M. Basnett	Not Stated	Avery & Anderson	Avery & Anderson	W. St C. Manson	W. S. Chapman
Remarks		*Loss on ignition							
Sp. Gr.	3·032	3·014	3·051	3·09	—	3·014	2·989	—	
SiO_2	49·46	49·3	49·25	49·24	49·12	49·10	48·94	48·48	47·84
Al_2O_3	12·62	15·9	14·33	13·85	15·85	13·90	14·59	15·68	23·86
Fe_2O_3	6·06	4·7	2·27	4·88	2·20	2·83	2·59	3·92	2·97
FeO	10·59	8·1	10·69	6·55	9·98	10·29	9·82	10·98	6·85
MgO	4·98	5·8	6·00	8·34	6·46	7·04	6·31	5·72	3·19
CaO	7·90	8·9	9·90	10·94	8·02	9·37	9·65	8·37	8·92
Na_2O	2·05	2·9	2·62	2·55	2·40	1·96	2·88	2·47	2·22
K_2O	1·48	0·9	0·86	1·32	1·58	1·34	1·48	1·17	0·80
H_2O+	1·43	0·9*	2·00	0·72	1·96	2·35	1·28	1·42	1·36
H_2O-	0·25	nd.	0·06	0·16	0·20	0·10	0·17	0·10	0·32
CO_2	—	—	—	—	0·32	—	—	—	abs.
TiO_2	2·60	2·1	1·46	0·62	1·46	1·32	1·56	0·80	0·94
P_2O_5	0·31	0·2	0·17	0·31	0·11	0·18	0·36	abs.	0·14
MnO	0·20	0·2	0·25	0·17	0·32	0·18	0·22	0·21	0·02
Other Constituents					SO_3=0·01 Cl=0·01 FeS_2=0·06				Cl=0·01 FeS_2=0·06
	99·93	99·9	99·86	99·65	[100·06]	99·96	99·85	99·32	99·50

TABLE N[1] — METAMORPHOSED MAFIC ROCKS — SiO_2 50–46%

	c. CaO/Alk. = 2–3					d. CaO/Alk. > 3			
	$K_2O/Na_2O < 0{\cdot}30$					$K_2O/Na_2O > 1{\cdot}25$			
	10	11	12	13		1	2	3	4
Rock Name	Greenstone	Metabasalt	Amphibolite (Meta-dolerite)	Amphibolite		Hornblende Schist	Fibrous Amphibole Rock	Epidote Amphibolite	Amphibolite
Locality	Cape Riche, W.A.	Kittys Plain, near Mt. Isa, Qld.	25 miles E.N.E. of Mt. Isa, Qld.	Lower Pieman R., Tas.		Norseman, W.A.	Broken Hill, N.S.W.	Wellington, N.S.W.	Broken Hill, N.S.W.
Reference	**289**, 33	**262**, 51	**551**	**482**, 281		**67**, 30; **447**, 64	**135**, 11	**22**, 73; **94**, 192	**495**, 360
Analyst	V. N. Young	B. E. Williams	Avery & Anderson	W. St C. Manson		C. C. Williams		M. J. Colditz	H. N. Mills & A. Morris
Remarks	(Injection Gneiss)					(Dolerite Dyke)			
Sp. Gr.	2·92	3·065	2·976	—		3·09		3·13	3·08
SiO_2	49·99	49·56	49·52	49·20		49·66	47·76	47·52	47·38
Al_2O_3	18·35	16·53	15·89	13·59		14·52	17·16	12·50	14·63
Fe_2O_3	2·15	1·25	2·79	2·78		3·11	0·67	1·08	0·66
FeO	5·97	10·69	7·33	10·98		11·78	14·68	6·26	15·71
MgO	6·19	7·21	8·28	6·66		5·04	5·22	16·50	9·07
CaO	10·39	10·67	10·14	8·13		9·82	9·27	13·07	9·60
Na_2O	3·79	3·35	2·68	3·18		0·72	1·08	0·46	0·64
K_2O	0·91	0·89	0·78	0·08		1·40	0·50	0·92	0·78
H_2O+	0·92	0·22	1·74	3·28		0·46	1·28	0·85	0·15
H_2O-	0·28	0·05	0·05	0·05		0·05	0·31	—	0·60
CO_2	abs.	—	—	—		0·24	abs.	—	0·08
TiO_2	0·87	pnd.	1·00	1·63		1·43	1·80	0·67	1·40
P_2O_5	0·30	0·21	0·22	0·21		—	0·23	tr.	nd.
MnO	0·14	0·06	0·10	0·21		1·53	0·34	0·14	0·15
Other Constituents	$FeS_2 = 0{\cdot}09$ $Cr_2O_3 = 0{\cdot}05$ V_2O_3 = tr. Cl = 0·12					$FeS_2 = 0{\cdot}07$			
	100·51								
Less O = Cl, F, S	0·03								
	100·48	100·69	100·52	99·98		99·83	100·30	99·97	100·85

TABLE N[1] — METAMORPHOSED MAFIC ROCKS — SiO_2 50–46%

d. CaO/Alk. > 3

	$K_2O/Na_2O > 1{\cdot}25$				$K_2O/Na_2O = 0{\cdot}75-0{\cdot}30$				
	5	6	7	8	9	10	11	12	13
Rock Name	Amphibolite	Amphibolite	Amphibolite	Amphibolite	Epidiorite	Amphibolite	Meta-dolerite	Scapolite-bearing Meta-dolerite	Amphibolite
Locality	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Middleback Ra., S.A.	Broken Hill, N.S.W.	Ora Banda, W.A.	Berthong, near Wallendbeen, N.S.W.	5 miles W. of Dajarra, Qld.	Mt. Woodroffe, Musgrave Ra., S.A.	South Middleback Ra., S.A.
Reference	**135**, 11	**135**, 11	**327**, 48	**495**, 360	**271**, 48 & 123; **447**, 56	**227**, 23	**551**	**584**	**132**, 229
Analyst	Avery & Anderson	Avery & Anderson	Not Stated	J. Whitelaw	A. J. Robertson	J. C. H. Mingaye	K. R. Walker	W. H. Herdsman	G. C. Carlos
Remarks					(Dolerite Dyke)				
Sp. Gr.	—	—	—	3·22	—	3·00	2·978	—	—
SiO_2	47·34	47·10	46·18	46·00	49·71	49·30	49·20	49·15	49·13
Al_2O_3	14·39	14·61	16·85	16·30	13·17	10·42	15·49	16·82	11·93
Fe_2O_3	1·56	1·10	5·15	3·07	2·18	2·20	2·77	2·41	2·32
FeO	13·56	12·98	6·52	17·35	10·04	3·83	7·86	8·69	10·38
MgO	7·34	8·26	12·50	1·85	7·52	19·36	8·55	9·74	7·13
CaO	11·34	12·48	0·42	11·20	11·08	11·82	10·78	10·12	11·47
Na_2O	0·59	0·34	0·10	0·07	1·02	1·14	2·04	1·59	1·88
K_2O	0·72	0·52	1·66	1·00	0·38	0·50	1·14	0·34	0·80
H_2O+	0·17	0·20	7·70	0·45	3·12	0·79	1·33	0·28	2·48
H_2O-	0·11	0·10	1·32	0·87	0·11	0·26	0·05	0·12	0·08
CO_2	abs.	abs.	abs.	0·10	tr.	—	—	tr.	tr.
TiO_2	1·54	1·63	1·42	1·35	1·35	—	0·38	0·72	1·60
P_2O_5	0·17	0·18	0·13	nd.	0·21	—	0·11	tr.	0·39
MnO	0·29	0·10	0·50	0·45	0·32	abs.	0·15	0·18	0·40
Other Constituents	Cl = 0·25 S = 0·18	Cl = 0·22 S = 0·32	SO_3 = 0·01 Cl = 0·04 FeS_2 = 0·04		FeS_2 = 0·09	Cr_2O_3 = tr. (NiCo)O = tr.			Cl = tr. SO_3 = tr.
	99·55	[100·14]	100·54						
Less O = Cl, F, S	0·13	0·18	0·01						
	99·42	99·96	100·53	100·06	100·30	99·62	99·85	100·16	99·99

TABLE N¹ — METAMORPHOSED MAFIC ROCKS — SiO_2 50–46%

d. CaO/Alk. > 3

K_2O/Na_2O = 0·75–0·30

	14	15	16	17	18	19	20	21	22
Rock Name	Norite	Metadolerite	Amphibolite (Meta-dolerite)	Amphibolite (Meta-dolerite)	Amphibolite (Meta-dolerite)	Amphibolite	Epidiorite	Amphibolite	Amphibolite (Meta-dolerite)
Locality	Fraser Ra. Station, W.A.	Fraser Ra., W.A.	20 miles S.S.E. of Cloncurry, Qld.	20 miles S.S.E. of Cloncurry, Qld.	Kuridala, Qld.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	28 miles E. of Mt. Isa, Qld.
Reference	**304**, 8	**584**	**551**	**551**	**551**	**135**, 11	**85**, 402	**135**, 11	**551**
Analyst	H. P. Rowledge	Avery & Anderson	K. R. Walker	Avery & Anderson	Avery & Anderson	Avery & Anderson	H. N. Mills & A. Morris	Avery & Anderson	Avery & Anderson
Remarks							(Dyke)		
Sp. Gr.	3·05	—	3·052	3·074	3·075	—	3·06	—	3·075
SiO_2	49·11	48·56	48·45	47·87	47·56	46·87	46·84	46·78	46·74
Al_2O_3	16·98	16·70	14·51	14·54	14·36	15·05	14·61	14·37	15·78
Fe_2O_3	1·94	1·63	3·63	1·33	0·80	0·81	1·59	0·82	4·46
FeO	8·87	9·40	8·73	10·56	11·50	12·13	12·67	12·48	11·57
MgO	8·44	8·50	7·52	8·71	7·63	6·96	8·00	8·65	5·34
CaO	9·69	10·62	11·55	11·22	11·89	12·78	12·45	13·00	9·24
Na_2O	2·29	1·42	2·20	1·95	1·43	0·59	0·92	0·86	2·00
K_2O	0·81	0·75	0·63	0·84	1·00	0·28	0·54	0·54	0·96
H_2O+	0·52	0·75	1·28	1·56	1·85	1·60	1·30	0·15	1·53
H_2O-	0·06	0·07	0·02	0·11	0·18	0·08	0·20	0·37	0·03
CO_2	abs.	—	—	—	—	abs.	0·07	abs.	—
TiO_2	0·95	1·25	0·57	1·10	1·46	1·44	1·34	1·44	1·80
P_2O_5	0·24	0·52	0·24	0·18	0·18	0·16	—	0·47	0·21
MnO	0·37	0·22	0·18	0·24	0·23	0·24	0·25	0·22	0·28
Other Constituents	Cr_2O_3=0·06 FeS_2=0·04					Cl=0·42 S=0·10		Cl=0·20 S=0·29	
						99·51		100·64	
Less O= Cl, F, S						0·09		0·17	
	100·37	100·39	99·51	100·21	100·07	99·42	100·78	100·47	99·94

TABLE N[1] — METAMORPHOSED MAFIC ROCKS — SiO_2 50–46%

d. CaO/Alk. >3

	K_2O/Na_2O = 0·75–0·30			K_2O/Na_2O < 0·30					
	23	24	25	26	27	28	29	30	31
Rock Name	Hornblende-pyroxene granulite	Metadolerite	Amphibolite	Glaucophane Rock	Epidiorite	Epidiorite	Altered Quartz Dolerite	Amphibolite Migmatite	Amphibolite Migmatite
Locality	Broken Hill, N.S.W.	4 miles E. of Mt. Isa, Qld.	Kalgoorlie, W.A.	Mount Mee, Qld.	Niagara-Malcolm Road, W.A.	Norseman, W.A.	Morawa, W.A.	Mt. Fitton, S.A.	Mt. Fitton, S.A.
Reference	**135**, 5	**551**	**157**, 56; **447**, 72; **460**, 61	**232**, 169	**273**, 17	**447**, 36; **521**, 643	**563**	**42**, 475	**42**, 475
Analyst	Avery & Anderson	Avery & Anderson	H. Bowley	H. I. Jensen	H. Bowley	C. C. Williams	H. Bowley	D. R. Bowes	D. R. Bowes
Remarks			(Dolerite Dyke)			(Dolerite Dyke)	(Dyke)		
Sp. Gr.		2·928		—	3·17	2·94	3·04	3·02	2·98
SiO_2	46·70	46·44	46·26	49·98	49·97	49·94	49·89	49·81	49·70
Al_2O_3	11·11	18·13	9·01	11·95	15·11	19·45	11·53	12·01	13·98
Fe_2O_3	1·17	0·78	0·67	13·91	2·94	tr.	3·24	3·72	1·06
FeO	13·16	7·81	10·41	2·75	7·11	7·21	11·06	10·24	9·23
MgO	10·20	8·78	19·65	5·53	7·49	9·64	5·96	7·43	8·37
CaO	11·65	10·60	6·94	10·54	10·13	11·23	9·67	11·41	12·12
Na_2O	1·48	1·58	0·30	2·63	2·49	0·90	1·96	1·75	2·10
K_2O	0·70	1·02	0·10	0·26	0·54	0·07	0·42	0·33	0·53
H_2O+	0·47	3·23	4·42	1·18	2·68	0·73	1·93	0·49	0·65
H_2O-	0·09	0·14	0·14	0·03	0·19	0·06	0·02	0·10	0·05
CO_2	abs.	—	0·20	0·02	0·47	abs.	abs.	—	—
TiO_2	1·32	1·08	0·54	0·80	0·80	0·52	3·15	1·57	1·20
P_2O_5	1·43	0·21	0·21	0·23	0·08	—	0·20	0·17	0·09
MnO	0·22	0·16	0·56	—	0·45	0·63	0·34	0·20	0·23
Other Constituents	Cl = 0·14		Cr_2O_3 = 0·20 V_2O_3 = 0·10 FeS_2 = 0·19	S = 0·13 (NiCo)O = 0·10	FeS_2 = 0·13	FeS_2 = 0·05	ZrO_2 = tr. FeS_2 = 0·28	ZrO_2 = 0·04 Cr_2O_3 = 0·05 S = 0·13	BaO = 0·09 ZrO_2 = 0·05 S = 0·03
	99·84			100·04				99·45	99·48
Less O = Cl, F, S	0·03			0·05				0·05	0·01
	99·81	99·96	99·90	99·99	100·58	100·43	99·65	99·40	99·47

TABLE N[1] — METAMORPHOSED MAFIC ROCKS — SiO_2 50–46%

d. CaO/Alk. >3

K_2O/Na_2O <0·30

	32	33	34	35	36	37	38	39	40
Rock Name	Amphibolite	Metadolerite	Epidiorite	Epidiorite	Epidiorite	Epidiorite	Amphibolite	Epidiorite	Epidiorite
Locality	Coolgardie, W.A.	Near Blinman, S.A.	Mt. Fitton, S.A.	Mt. Barker Springs, S.A.	Bickley Brook Reservoir, W.A.	Southern Cross, W.A.	Mt. Jackson Ra., W.A.	Mt. Barker, Junction, S.A.	Kalgoorlie, W.A.
Reference	**447**, 36	**312**, 270	**42**, 475	**3**, 165	**563**	**150**, 77; **447**, 36	**37**, 195; **447**, 64	**3**, 166	**447**, 36; **460**, 61
Analyst	C. C. Williams	R. H. Jones	D. R. Bowes		D. G. Murray		B. Bowley	A. R. Alderman	H. Bowley
Remarks	(Dyke)			(Dyke)	(Dyke)	(Dyke)	(Dyke)	(Dyke)	(Dolerite Dyke)
Sp. Gr.	2·98	—	3·05				2·84	3·01	3·04
SiO_2	49·52	49·40	49·37	49·29	49·22	49·19	49·17	49·09	49·06
Al_2O_3	15·66	14·42	15·78	18·41	12·62	18·96	15·39	18·03	14·30
Fe_2O_3	3·23	2·75	1·79	1·00	3·16	0·75	1·52	3·35	3·14
FeO	8·28	8·87	11·30	5·87	11·09	4·39	8·73	4·56	9·13
MgO	9·40	7·38	3·88	8·68	6·42	10·00	8·29	7·48	6·05
CaO	10·61	11·75	9·89	13·03	10·59	14·69	11·11	12·97	10·86
Na_2O	2·26	2·72	2·81	1·18	1·86	0·89	2·22	1·71	2·38
K_2O	0·23	0·38	0·37	0·28	0·30	abs.	0·06	0·42	0·18
H_2O+	0·11	1·36	0·59	0·67	2·24	1·34	2·20	0·89	1·71
H_2O-	0·10	0·12	0·05	0·04	0·12	0·08	0·10	0·05	0·10
CO_2	0·12	—	—	abs.	abs.	0·14	0·06	abs.	abs.
TiO_2	0·89	1·02	2·79	1·01	2·00	—	0·59	1·38	1·40
P_2O_5	—	0·06	0·22	0·21	0·09	—	0·10	0·21	0·32
MnO	0·31	nd.	0·19	0·15	0·33	—	0·21	0·18	0·46
Other Constituents	FeS_2=0·13		BaO=0·05 ZrO_2=0·11	S=0·05 BaO=abs. Cr_2O_3=abs.	FeS_2=0·22 BaO=abs. ZrO_2=abs.		FeS_2=tr.		ZrO_2=0·02 BaO=0·03 FeS_2=0·56 Cr_2O_3=0·02 V_2O_3=0·25
				99·87					
Less O= Cl, F, S				0·02					
	100·85	100·23	99·19	99·85	100·26	100·43	99·75	100·32	99·97

TABLE N¹ — METAMORPHOSED MAFIC ROCKS — SiO_2 50–46%

d. CaO/Alk. >3

K_2O/Na_2O <0·30

	41	42	43	44	45	46	47	48	49
Rock Name	Amphibolite (Meta-dolerite)	Quartz Dolerite Amphibolite	Epidiorite	Epidiorite	Metadolerite	Amphibolite (Meta-dolerite)	Amphibolite	Recrystalized Pyroxene Gabbro	Amphibolite
Locality	30 miles E.S.E. of Mt. Isa, Qld.	Boulder, Kalgoorlie, W.A.	Boulder, Kalgoorlie, W.A.	Harvey Weir, W.A.	Musgrave Ra., S.A.	12 miles E.S.E. of Cloncurry, Qld.	Mt. Crawford, S.A.	Ben Bullen, N.S.W.	3 miles W.N.W. of Adelong, N.S.W.
Reference	**551**	**496**, 60; **521**, 664	**445**, 66; **460**, 61; **521**, 645; **554**, 665	**563**	**584**	**551**	**328**	**253**, 78	**534**, 186
Analyst	K. R. Walker	C. C. Williams	E. S. Simpson	C. R. Le Mesurier	W. H. Herdsman	S. Baker	K. J. Mills	G. A. Joplin	T. G. Vallance
Remarks			(Quartz Dolerite Dyke)	(Sheared)		*Loss on ignition			
Sp. Gr.	3·084	—	3·08	3·09	—	3·042	—	2·98	—
SiO_2	49·06	48·86	48·86	48·77	48·73	48·7	48·67	48·42	48·41
Al_2O_3	17·47	14·91	13·47	13·21	18·04	13·8	15·05	21·53	16·78
Fe_2O_3	1·47	—	2·18	3·30	3·26	2·7	3·12	3·09	2·90
FeO	11·40	11·13	8·92	11·35	8·62	10·2	8·70	7·84	9·03
MgO	5·90	7·65	7·65	6·37	7·74	8·4	6·63	4·96	5·35
CaO	10·42	12·19	12·19	10·47	9·43	10·5	11·49	9·12	13·33
Na_2O	2·23	2·58	2·58	2·16	2·23	2·5	2·42	2·43	1·89
K_2O	0·51	0·19	0·19	0·38	0·37	0·6	0·42	0·39	0·47
H_2O+	0·34	1·51	1·51	1·92	0·32	0·8*	1·59	0·25	0·44
H_2O-	abs.	0·04	0·04	0·15	0·28	nd.	0·09	0·09	0·27
CO_2	—	—	abs.	abs.	tr.	—	0·10	abs.	—
TiO_2	0·97	0·22	1·49	1·96	1·02	1·4	1·66	1·41	1·19
P_2O_5	0·38	—	0·11	0·22	tr.	0·1	0·26	0·39	nd.
MnO	0·16	0·90	0·90	0·22	0·18	0·2	0·17	0·11	0·32
Other Constituents			Cr_2O_3=0·06 V_2O_3=0·08 BaO=0·01 ZrO_2=abs. FeS_2=0·17	FeS_2=abs.					
	100·31	100·18	100·41	100·48	100·22	99·9	100·37	100·03	100·38

d. CaO/Alk. >3

K_2O/Na_2O <0·30

	50	51	52	53	54	55	56	57	58
Rock Name	Amphibolite	Amphibolite (Gneissic)	Amphibolite	Altered Vesicular Basalt	Spinel-bearing Metagabbro	Hornblende-pyroxene Granulite	Epidiorite	Metagabbro	Epidiorite
Locality	Cue, W.A.	Cue, W.A.	Malcolm, W.A.	Peeawah, W.A.	10 miles E. of Fraser Ra. Homestead, W.A.	Bunker Bay, near Cape Naturaliste, W.A.	Woodside, S.A.	E. Fraser Ra., W.A.	Ora Banda, W.A.
Reference	**171**, 15; **447**, 32; **521**, 633; **588**, 53	**171**, 15; **447**, 52; **521**, 643; **588**, 53	**157**; **300**, 7; **447**, 54	**175**, 28; **447**, 50	**584**	**12**, 625, **89**, 38; **404**, 161; **582**, 76	**3**, 164	**584**	**271**, 48 & 114 **447**, 54
Analyst	C. C. Williams	C. C. Williams	J. H. Brooking	H. Bowley	W. H. Herdsman	M. Aurousseau	A. R. Alderman	Avery & Anderson	H. Bowley
Remarks	(? Basalt flow)		(Dyke)	(Flow)			(Dyke)		(Dyke)
Sp. Gr.	3·11	2·98	3·04	2·89		—	2·95		—
SiO_2	48·10	48·09	48·06	48·05	48·03	47·88	47·63	47·44	47·27
Al_2O_3	15·41	19·77	16·21	13·82	14·56	14·22	21·94	17·36	17·36
Fe_2O_3	2·10	1·43	0·89	0·73	1·76	1·73	1·81	0·72	1·50
FeO	11·88	6·99	10·37	15·43	10·08	12·36	4·59	10·57	3·85
MgO	6·58	7·56	6·67	3·91	12·57	6·35	5·81	8·62	8·68
CaO	12·73	11·30	11·37	5·78	9·04	10·23	14·08	10·06	16·93
Na_2O	2·11	2·17	2·50	1·14	1·69	2·47	1·79	2·08	0·54
K_2O	0·14	0·07	0·27	0·30	0·41	0·51	0·28	0·55	0·06
H_2O+	0·33	2·05	0·59	4·24	0·34	0·23	0·68	0·85	3·20
H_2O-	0·04	0·17	0·10	0·08	0·22	0·07	0·03	0·09	0·16
CO_2	0·12	0·12	1·03	4·42	abs.	abs.	abs.	—	abs.
TiO_2	0·41	0·12	0·90	1·14	1·08	2·95	0·77	1·30	0·41
P_2O_5	—	—	—	0·27	0·23	0·40	0·15	0·26	0·29
MnO	0·05	0·29	0·59	0·97	0·24	—	0·08	0·18	0·35
Other Constituents	FeS_2=0·25	FeS_2=0·11	FeS_2=0·34	FeS_2=0·32		Cr_2O_3=tr. Cl=0·08 S=0·08	S=0·15		FeS_2=0·07
						[99·56]	99·79		
Less O= Cl, F, S						0·05	0·06		
	100·25	100·24	99·89	100·60	100·25	99·51	99·73	100·08	100·67

TABLE N¹ — METAMORPHOSED MAFIC ROCKS — SiO_2 50–46%

d. CaO/Alk. < 3

$K_2O/Na_2O < 0{\cdot}30$

	59	60	61	62	63	64	65	66	67
Rock Name	Glaucophane Schist	Amphibolite	Meta-basalt *Bernafai Volcanics*	Epidiorite	Basic Hornfels	Epidiorite	Amphibolite	Epidiorite	Epidiorite
Locality	Conandale Ra., Qld.	Broken Hill, N.S.W.	Corinna, Tas.	Yarri, North Coolgardie, W.A.	Tilbuster, near Armidale, N.S.W.	Cue, W.A.	Kalgoorlie, W.A.	Cue, W.A.	No. 1 Rabbit Proof Fence, Wyemandoo Hill, W.A.
Reference	**234**, 701	**53**, 39; **309**, 262, **352**, 198	**482**, 281	**300**, 7; **447**, 34; **521**, 643	**377**, 47; **478**, 168	**447**, 32; **521**, 643; **588**, 53	**460**, 61; **447**, 70; **521**, 640	**447**, 34; **521**, 643; **588**, 53	**563**
Analyst	H. I. Jensen		W. St C. Manson	E. S. Simpson	J. M. Pyle	J. H. Brooking	H. Bowley	J. H. Brooking	J. N. A. Grace
Remarks				(Dyke)		(Dyke)		(Dolerite Dyke)	
Sp. Gr.	—	3·051	—	3·04	—	3·03	2·91	2·90	2·97
SiO_2	47·21	46·76	46·74	46·55	46·48	46·44	46·38	46·27	46·01
Al_2O_3	14·35	18·96	14·94	15·36	15·97	20·22	12·70	23·85	19·63
Fe_2O_3	3·11	0·50	2·90	3·19	1·93	1·91	1·76	1·36	2·79
FeO	10·78	1·43	10·66	8·79	8·02	3·99	10·22	3·51	8·94
MgO	6·38	16·53	7·04	9·80	7·90	9·19	13·45	6·65	5·61
CaO	11·28	11·72	9·60	10·56	13·02	15·18	7·28	14·89	10·39
Na_2O	2·91	2·28	2·77	1·50	2·60	1·05	1·12	1·52	2·81
K_2O	0·49	0·14	0·06	0·33	0·20	0·10	0·24	0·13	0·33
H_2O+	0·32	0·57	3·54	1·31	2·13	0·06	4·39	1·17	2·10
H_2O-	0·34	0·05	0·14	0·29	0·20	0·18	0·21	0·11	0·04
CO_2	abs.	0·09	—	tr.	0·38	0·24	0·15	0·25	abs.
TiO_2	2·20	0·55	1·75	1·12	0·75	0·42	0·77	0·49	1·42
P_2O_5	nd.	0·13	0·16	0·06	0·09	0·36	0·25	0·11	0·11
MnO	0·09	0·34	0·26	0·45	0·22	0·22	0·30	0·32	0·39
Other Constituents	(NiCo)O = 0·10	Cl = tr. SrO = tr. (NiCo)O = 0·05 V_2O_3 = 0·05 CuO = tr.		FeS_2 = tr.	Cr_2O_3 = 0·06 V_2O_3 = 0·07 SO_3 = 0·08 Cl = 0·05	FeS_2 = 0·20	FeS_2 = 0·41 Cr_2O_3 = tr. V_2O_3 = tr.	FeS_2 = 0·08	FeS_2 = abs.
					100·15				
Less O = Cl, F, S					0·01				
	99·56	100·15	100·56	99·31	100·14	99·76	99·63	100·71	100·57

TABLE O[1] — METAMORPHOSED MAFIC ROCKS — SiO_2<46%

a. CaO/Alk. <1			b. CaO/Alk. =1–2			
K_2O/Na_2O>1·25			K_2O/Na_2O=1·25–0·75		K_2O/Na_2O=0·75–0·30	K_2O/Na_2O<0·30
	1	2	1	2	3	4
Rock Name	Amphibolite	Amphibolite	Massive Greenstone	Amphibolite	Amphibolite	Chlorite Schist
Locality	Middleback Ra., S.A.	Middleback Ra., S.A.	Boulder, Kalgoorlie, W.A.	Middleback Ra., S.A.	Middleback Ra., S.A.	Warra-woona, W.A.
Refer-ence	**327**, 48	**327**, 48	**445**, 67	**327**, 48	**327**, 48	**302**, 66; **303**, 164; **447**, 66
Analyst	Not Stated	Not Stated	Helms	Not Stated	Not Stated	C. C. Williams
Remarks						Altered Dolerite (Dyke)
Sp. Gr.	—	—	—	—	—	2·88
SiO_2	33·84	32·62	42·76	26·68	25·80	43·47
Al_2O_3	28·08	27·32	13·91	18·75	16·78	14·87
Fe_2O_3	20·16	22·54	10·95	12·06	11·97	3·35
FeO	abs.	abs.	—	8·26	10·66	14·93
MgO	0·42	0·55	5·59	17·22	17·28	12·64
CaO	0·40	0·46	8·20	0·46	0·50	1·18
Na_2O	0·22	0·30	2·46	0·10	0·16	0·55
K_2O	1·00	3·06	2·94	0·18	0·10	0·13
H_2O+	10·59	8·03	—	10·04	11·31	6·82
H_2O-	1·65	1·45	—	1·06	1·83	0·26
CO_2	abs.	abs.	11·73	abs.	abs.	abs.
TiO_2	2·90	2·34	0·71	4·23	2·07	1·48
P_2O_5	0·43	0·04	—	0·52	0·17	—
MnO	0·11	0·81	tr.	0·71	1·60	0·10
Other Con-stituents	SO_3=0·18 FeS_2=0·04 Cl=0·19	Cr_2O_3=0·13 FeS_2=0·04 Cl=0·12 SO_3=0·15	S=0·22 Fe=0·19 Cu=0·05	SO_3=0·02 FeS_2=0·06 Cl=0·08	SO_3=0·01 FeS_2=0·04 Cl=0·01	FeS_2=0·11
	100·21	99·96	99·71	100·43		
Less O = Cl, F, S	0·05	0·03	0·09	0·02		
	100·16	99·93	[99·62]	100·41	100·29	99·89

TABLE O[1] — METAMORPHOSED MAFIC ROCKS — SiO_2 <46%

	c. CaO/Alk. = 2–3					d. CaO/Alk. > 3			
	K_2O/Na_2O = 0·75–0·30		K_2O/Na_2O < 0·30			K_2O/Na_2O > 1·25			
	1	2	3	4		1	2	3	4
Rock Name	Amphibolite	Bronzite Amphibolite	Chlorite Schist	Massive Greenstone		Hornblende-garnet Schist	Amphibolite	Chlorite Schist	Chlorite Schist
Locality	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Boulder, Kalgoorlie, W.A.	Boulder, Kalgoorlie, W.A.		Southern Cross, W.A.	Broken Hill, N.S.W.	Sandstone, W.A.	Boulder, Kalgoorlie, W.A.
Reference	**85**, 398; **495**, 360	**226**, 56; **554**, 1139	**445**, 67; **447**, 74; **521**, 652	**445**, 67; **496**, 27		**447**, 78	**85**, 399; **495**, 360	**153**, 29; **447**, 70	**445**, 67; **460**, **447**, 74; 123
Analyst	Lavers, Hobbs & Oliver	H. P. White	E. S. Simpson	E. S. Simpson		H. Bowley	F. H. Searcy	A. J. Robertson	C. G. Gibson
Remarks			(Dolerite Dyke)					*Approx. owing to presence of Graphite	(Dolerite Dyke)
Sp. Gr.	3·24	3·05	2·91	2·84		—	3·27	2·82	2·90
SiO_2	42·05	41·46	45·55	45·03		44·76	44·06	41·85	40·61
Al_2O_3	14·77	20·36	10·88	9·87		15·76	12·61	15·96	8·85
Fe_2O_3	6·77	3·37	4·14	4·35		2·93	0·35	1·25*	—
FeO	14·75	16·71	13·18	11·58		21·89	19·42	9·22	12·42
MgO	4·80	5·50	2·31	4·26		5·90	7·20	8·43	4·50
CaO	8·90	8·79	7·52	8·86		1·56	10·75	8·28	14·72
Na_2O	2·18	2·43	3·04	3·17		0·14	0·17	0·18	0·84
K_2O	1·26	0·82	0·26	0·38		3·70	1·96	1·36	3·17
H_2O+	0·12	nd.	1·74	1·83		2·55	0·17	6·67	2·30
H_2O-	1·60	0·13	0·27	0·11		0·20	1·82	0·21	0·10
CO_2	0·11	—	10·26	8·43		0·06	0·08	6·42	12·75
TiO_2	2·93	—	0·63	0·64		—	1·39	—	0·15
P_2O_5	nd.	—	—	—		—	0·34	—	—
MnO	0·35	—	—			—	0·52	—	0·21
Other Constituents		S = 0·13 Cu = 0·44	FeS_2 = 0·34	S = 0·13 Fe = 0·11		C = 0·14		C = 0·14 FeS_2 = 0·35	FeS_2 = 0·29
		[100·14]		98·75					
Less O = Cl, F, S		0·05		0·05					
	100·59	100·09	100·12	98·70		99·59	100·85	100·32	100·91

TABLE O[1] — METAMORPHOSED MAFIC ROCKS — SiO_2 <46%

d. CaO/Alk >3

	K_2O/Na_2O = 1·25 – 0·75			K_2O/Na_2O 0·75 – 0·30	= K_2O/Na_2O < 0·30				
	5	6	7	8	9	10	11	12	13
Rock Name	Amphibolite	Basic Hornfels	Foliated Amphibolite	Garnet Amphibolite	Basic Hornfels	Amphibolite	Basic Hornfels	Basic Hornfels	Basic Hornfels
Locality	Broken Hill, N.S.W.	Tilbuster, near Armidale, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Tilbuster, near Armidale, N.S.W.	Broken Hill, N.S.W.	Puddledock, near Armidale, N.S.W.	Tilbuster, near Armidale, N.S.W.	Puddledock, near Armidale, N.S.W.
Reference	**85**, 397	**377**, 47; **378**, 85; **478**, 168	**53**, 334; **226**, 55	**309**, 264	**378**, 85	**135**, 11	**478**, 168	**378**, 85	**377**, 47; **478**, 168
Analyst	H. N. Mills & A. Morris	J. H. Pyle	H. P. White	H. P. White	J. H. Pyle	Avery & Anderson	W. St C. Manson	J. H. Pyle	J. M. Pyle
Remarks									
Sp. Gr.	3·27	—	3·07	3·434	—	—	—	—	—
SiO_2	44·10	41·66	41·55	43·20	45·68	44·79	44·72	43·04	42·81
Al_2O_3	13·09	13·25	13·41	12·61	15·61	15·29	4·78	8·00	14·32
Fe_2O_3	2·88	3·68	24·28	5·10	0·32	1·13	1·92	2·40	0·90
FeO	18·85	3·75		17·46	7·32	17·03	4·68	7·94	7·26
MgO	5·41	2·88	7·01	6·14	4·50	7·72	2·51	2·36	4·34
CaO	9·70	26·66	10·03	9·88	15·92	8·70	33·30	29·77	22·11
Na_2O	1·50	1·86	0·71	0·75	4·05	0·73	0·20	0·57	1·83
K_2O	1·26	1·40	0·98	0·52	0·76	0·30	0·09	tr.	0·54
H_2O+	1·55	0·67	1·45	0·65	0·88	0·60	1·68	0·15	1·46
H_2O-	0·18	0·35		0·13	0·45	0·07	0·14	0·23	0·28
CO_2	0·27	2·70	—	0·05	1·38	abs.	5·04	4·21	1·55
TiO_2	2·39	0·88	—	2·20	1·59	2·23	0·20	0·22	2·11
P_2O_5	—	0·36	0·28	0·11	0·41	0·31	0·14	0·20	0·13
MnO	0·73	0·19	—	1·33	0·16	0·35	0·41	0·99	0·17
Other Constituents		Cl = 0·11 Cr_2O_3 = 0·04 V_2O_3 = 0·06	SO_3 = 0·14	(NiCo)O = 0·02 V_2O_3 = 0·06 Cu = 0·04	ZrO_2 = 0·03 F = 0·02 BaO = 0·03 Cl = 0·90 V_2O_3 = 0·02 SO_3 = tr. Cr_2O_3 = 0·03	Cl = 0·48 S = 0·28	Cl = nd.	Cr_2O_3 = 0·02	Cl = 0·15
		100·50			100·06	100·01			99·96
Less O = Cl, F, S		0·02			0·21	0·22			0·03
	101·91	100·48	99·84	100·25	99·85	99·79	99·81	100·10	99·93

TABLE O[1] — METAMORPHOSED MAFIC ROCKS — SiO_2<46%

d. CaO/Alk. >3

K_2O/Na_2O <0·30

	14	15	16	17	18	19	20	21	22
Rock Name	Plagioclase Amphibolite	Recrystallized Pyroxene "Gabbro"	Olivine-bearing Hornfels	Basic Hornfels	Recrystallized Pyroxene "Gabbro"	Lustre-mottle Amphibolite	Pegmatitic Amphibolite	Hornblende Schist	Talc-chlorite Schist
Locality	Radium Hill, S.A.	Hartley, N.S.W.	Samford, Qld.	Tilbuster, near Armidale, N.S.W.	Hartley, N.S.W.	Boulder, Kalgoorlie, W.A.	Kalgoorlie, W.A.	Warra-woona, W.A.	Warra-woona, W.A.
Reference	**112**, 27; **313**, 338	**248**, 130	**397**, 378	**378**, 85; **478**, 168	**248**, 130	**157**; 56; **445**, 67; **496**, 24; **521**, 641	**157**, 55; **447**, 72; **460**, 132	**302**, 66; **303**, 164; **447**, 66	**302**, 66; **303**, 164; **447**, 66
Analyst	W. S. Chapman	G. A. Joplin	W. H. Herdsman	J. M. Pyle	G. A. Joplin	C. G. Gibson	H. Bowley	J. H. Brooking	J. H. Brooking
Remarks							(Segregation in dolerite dyke)	(Dyke)	(?pyroxenite)
Sp. Gr.	—	3·055	—	—	3·050	3·00	3·27	2·93	2·94
SiO_2	45·90	44·79	44·66	44·56	44·52	44·23	44·17	43·90	43·25
Al_2O_3	18·99	19·56	16·62	13·65	21·32	10·89	10·57	9·13	9·98
Fe_2O_3	4·60	6·01	4·02	1·70	5·08	0·13	9·20	1·20	1·93
FeO	8·51	7·79	7·18	6·19	7·19	14·22	10·92	10·48	10·04
MgO	5·78	6·16	12·35	6·13	6·41	11·42	4·56	19·17	22·48
CaO	9·46	11·81	10·36	20·90	12·44	10·43	9·12	7·46	5·31
Na_2O	1·97	1·21	1·72	1·70	1·25	1·02	1·94	0·57	0·49
K_2O	0·21	0·06	0·46	0·40	0·15	0·20	0·16	0·09	tr.
H_2O+	0·62	0·64	1·15	1·67	0·37	4·25	2·28	4·68	4·74
H_2O-	0·18	0·10	0·05	0·15	0·06	0·22	0·16	0·04	0·20
CO_2	abs.	tr.	abs.	1·02	tr.	1·29	0·35	2·46	0·17
TiO_2	3·77	1·14	1·22	1·60	1·04	0·06	4·99	0·30	0·50
P_2O_5	0·15	0·18	0·16	tr.	abs.	—	0·40	—	—
MnO	0·17	0·15	0·14	0·15	0·09	1·60	0·51	0·05	0·54
Other Constituents	V_2O_3=0·08 FeS_2=0·08			SrO=0·03 Cr_2O_3=0·07 V_2O_3=0·12 Cl=0·07		FeS_2=0·26	FeS_2=0·26 BaO=0·01 V_2O_3=0·19	FeS_2=0·05	FeS_2=0·07
				100·11					
Less O= Cl, F, S				0·02					
	100·47	99·60	100·09	100·09	99·92	100·22	99·79	99·58	99·70

TABLE O[1] — METAMORPHOSED MAFIC ROCKS — SiO_2 <46%

d. CaO/Alk. >3				
	K_2O/Na_2O <0·30			
	23	24	25	26
Rock Name	Amphibolite	Chlorite Schist	Garnet-rich Amphibolite	Fayalite "Gabbro"
Locality	Port Davey, Tas.	Warra-woona, W.A.	Lower Forth River, Tas.	Burracoppin, W.A.
Refer-ence	**482**, 281	**302**, 66; **303**, 164; **447**, 66	**482**, 281	**455**, 116; **457**, 271
Analyst	W. St C. Manson	J. H. Brooking	W. St C. Manson	J. N. A. Grace
Remarks				
Sp. Gr.	—	2·79	—	3·47
SiO_2	43·16	41·88	41·16	40·18
Al_2O_3	16·12	10·13	15·94	7·90
Fe_2O_3	2·89	abs.	2·57	6·34
FeO	14·86	9·59	18·35	27·38
MgO	5·89	7·20	4·21	0·70
CaO	10·22	13·06	12·12	10·91
Na_2O	1·63	1·30	1·17	1·20
K_2O	0·32	0·10	0·21	0·24
H_2O+	2·68	3·51	2·31	0·10
H_2O-	0·18	0·07	0·04	0·17
CO_2	—	11·60	—	0·11
TiO_2	2·00	1·15	2·00	2·51
P_2O_5	0·12	—	0·18	0·68
MnO	0·24	0·32	0·32	0·70
Other Con-stituents		FeS_2 =0·34		FeS_2 =0·66 Cr_2O_3 =abs. V_2O_3 =0·05
	100·31	100·25	100·58	99·83

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Garnetized								
	1	2	3	4	5	6	7	8	9
Rock Name	"Eclogite"	Garnetized Gabbro	Grossularite Hornstone	Garnetized hypersthene Granulite	(?)Keda-bakite	Garnetized Dolerite	Garnetized Gabbro	Melanite Melteigite	Garnetized Gabbro (Rodingite)
Locality	Ravens-thorpe, W.A.	Eulaminna, Siding, W.A.	South Yilgarn, W.A.	Musgrave Ra., S.A.	Near Little Dromedary, N.S.W.	Broken Hill, N.S.W.	Eulaminna Siding, W.A.	Near Little Dromedary, N.S.W.	Bingara, N.S.W.
Refer-ence	**447**, 64; **461**	**326**, 125; **561**, 11	**563**	**583**, 25	**48**, 670	**498**, 220	**326**, 125; **561**, 11	**48**, 670	**28**, 706; **29**, 171
Analyst	J. H. Brooking	J. D. Hayton	Not Stated	Not Stated	I. A. Brown	Avery & Anderson	J. D. Hayton	I. A. Brown	W. N. Benson
Remarks	(Altered Dolerite)		(Replace-ment of Greenstone) *Loss on ignition		? Garnetized			? Garnetized	*Summation Corrected **29**
Sp. Gr.	2·96	3·24	—	—	3·237	—	3·33	3·425	3·35
SiO_2	62·23	45·31	44·94	44·87	44·28	41·50	40·98	40·26	35·68
Al_2O_3	11·90	7·49	21·72	16·22	10·13	13·17	12·77	10·95	22·37
Fe_2O_3	0·08	1·02	3·90	2·45	4·04	0·17	1·10	12·16	0·33
FeO	10·46	5·12	—	13·39	6·21	11·66	4·06	3·38	1·87
MgO	4·09	14·66	2·49	7·58	8·42	6·93	7·31	2·16	3·33
CaO	6·16	22·70	22·58	9·84	21·86	12·61	29·40	26·30	33·27
Na_2O	1·47	0·04	0·38	1·74	0·31	0·62	abs.	0·44	tr.
K_2O	0·29	0·04	1·78	0·29	0·69	1·16	0·03	1·33	tr.
H_2O+	0·34	2·65	2·75*	0·26	1·29	0·40	2·68	0·64	abs.
H_2O-	0·07	0·24		0·24	0·29	0·13	0·31	0·28	3·87
CO_2	0·23	0·06		abs.	abs.	abs.	0·07	abs.	abs.
TiO_2	1·51	0·46		2·56	1·28	1·50	1·01	1·68	0·04
P_2O_5	0·28	0·08		0·43	1·35	0·15	0·12	0·89	0·09
MnO	0·56	0·31		0·32	0·23	10·40	0·16	—	0·04
Other Con-stituents	FeS_2=0·79	Cr_2O_3=0·26 V_2O_3=abs. NiO=0·03					FeS_2=0·09 V_2O_3=0·04		
	100·46	100·47	100·54	100·19	100·38	100·40	100·13	100·47	100·89*

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Garnetized	Albitized							
	10	11	12	13	14	15	16	17	18
Rock Name	Garnetized Gabbro (Rodingite)	"Kerato-phyre"	Monzonite Aplite	Trachybasalt	Trachybasalt	Monzonite	Altered Trachybasalt	Altered Dolerite	Altered Basalt
Locality	Andersons Ck., Beacons-field, Tas.	Gloucester Buckets, N.S.W.	Milton, N.S.W.	Port Kembla, N.S.W.	Port Kembla, N.S.W.	Milton, N.S.W.	Port Kembla, N.S.W.	Hartley, N.S.W.	Prospect, near Sydney, N.S.W.
Refer-ence	**19**	**501**, 259	**46**, 458	**370**, 135; **59**, 318	**59**, 318; **369**, 104	**46**, 460; **77**, 85; **554**, 515	**59**, 318	**254**, 265	**577**
Analyst	A. W. Hounslow	W. G. Stone	I. A. Brown	H. P. White	H. P. White	H. P. White	H. P. White	G. A. Joplin	J. H. Pyle
Remarks		(Dolerite Dyke)		(Dark Intru-sive Rock)	(Pink Intru-sive Rock)			(Dyke in granite)	(Chilled Margin)
Sp. Gr.	3·30	2·721	—	2·732	2·681	2·760	2·758		2·88
SiO_2	35·61	55·64	53·45	51·96	51·34	51·16	51·06	46·84	44·60
Al_2O_3	21·59	17·70		15·64	14·78	19·16	18·66	18·59	12·93
Fe_2O_3	1·14	7·85		5·50	1·30	3·98	4·15	5·75	4·02
FeO	5·41	1·75		3·51	6·39	4·64	4·91	4·86	8·73
MgO	6·30	1·46		2·04	2·75	3·73	3·55	3·89	8·29
CaO	25·75	1·31	11·15	5·30	3·52	6·80	5·64	9·06	9·05
Na_2O	—	8·51	5·39	5·00	6·49	4·05	3·75	2·21	3·36
K_2O	—	1·20	0·15	3·34	1·35	2·89	3·84	0·80	0·95
H_2O+	3·93	2·24		1·51	1·64	1·48	2·88	2·45	3·19
H_2O-	0·11	0·72		0·57	0·30	0·72	0·18	0·87	1·38
CO_2	abs.	0·04		4·22	8·70	0·03	0·36	2·81	0·10
TiO_2	0·15	1·45		1·20	1·10	0·84	0·55	1·35	2·57
P_2O_5	abs.	0·11		0·44	0·54	0·56	0·41	abs.	0·58
MnO	0·02	0·25		0·13	0·10	0·26	0·09	0·10	0·19
Other Con-stituents		Cr_2O_3=0·01 BaO=0·01				SO_3=0·06 Cl=0·04 (NiCo)O=0·02 BaO=0·08 CuO=0·01 V_2O_3=0·05	BaO=0·03		
	100·01	100·25		100·36	100·30	100·56	100·06	99·58	99·94

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Albitized	Silicified				Epidotized			
	19	20	21	22	23	24	25	26	27
Rock Name	Altered Basalt	Spherulitic Quartz Rock	Variolite	Silicified Chlorite Schist	Variolite	Epidosite	Epidosite	Epidotized Dolerite	Epidosite
Locality	Peats Ridge, 50 miles N. of Sydney, N.S.W.	Montana Flat, Tas.	Waratah, Tas.	Sandstone, W.A.	Waratah, Tas.	Tarilta, Vic.	Synnott Ck., Kimberley Div., W.A.	Golden Ridge, W.A.	Napier, Broome Bay. Kimberley, W.A.
Reference	**576**	**439**, 139	**383**, 48	**153**, 30; **447**, 40	**383**, 48	**443**, 94	**447**, 46	**563**	**447**, 66
Analyst	J. H. Pyle	B. Scott	Tas. Dept. Mines	H. Bowley	Tas Dept. Mines	Not Stated	A. J. Robertson	D. G. Murray	C. C. Williams
Remarks	(Around Natrolite Amygdule)	(Altered Basic Rock)	(Altered Diabase)	*Approx. owing to presence of graphite	(Altered Diabase)		(Altered dolerite flow)		(Dolerite Dyke)
Sp. Gr.	2·66	—		—	—	—	3·12	3·05	3·28
SiO_2	42·07	99·11	73·00	67·06	60·00	59·62	55·43	52·05	45·59
Al_2O_3	11·24	abs.	9·95	13·60	11·97	17·86	12·83	12·29	13·54
Fe_2O_3	5·08	0·75	5·29	0·99*	7·68	5·60	9·87	1·62	9·39
FeO	7·92	tr.	0·39	8·39	0·39	—	2·47	14·21	4·87
MgO	8·81	abs.	3·84	3·58	6·50	tr.	0·59	8·57	3·01
CaO	8·53	abs.	2·30	0·13	4·35	14·65	16·09	5·34	20·19
Na_2O	3·66		—	0·10		tr.	0·37	1·38	0·57
K_2O	0·32		—	0·14		tr.	0·22	0·66	0·06
H_2O+	5·12		—	4·47		2·48	0·32	0·96	0·68
H_2O-	3·77		—	0·72			0·15	0·09	0·28
CO_2	0·21	abs.	5·90	abs.	8·90		0·41	0·16	abs.
TiO_2	2·57			—			0·34	2·04	0·68
P_2O_5	0·57			—			—	0·24	—
MnO	0·18			—			0·36	0·37	0·37
Other Constituents			FeS_2=0·57	Graphite=0·52	FeS_2=0·24		FeS_2=0·16	FeS_2=0·49	FeS_2=0·17
	100·05	99·86	101·24	99·70	100·03	100·21	99·61	100·47	99·40

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Epidotized		Prehnitized	Carbonated and Chloritized					
	28	29	30	31	32	33	34	35	36
Rock Name	Epidote Rock	Epidote Rock	Prehnite Rock	Carbonated Dolerite	Chloritized Dolerite	Propylite	Chlorite Schist	Carbonated Quartz Dolerite	Propylite
Locality	Seymour (Avenel), Vic.	Bowen River, Qld.	Bowen River, Qld.	Kalgoorlie, W.A.	Kalgoorlie, W.A.	Kalgoorlie, W.A.	Warra-woona, W.A.	Boulder, Kalgoorlie, W.A.	Bamboo Ck., Pilbara Gold-field, W.A.
Refer-ence	**548**	**103**, 314	**103**, 315	**563**	**445**, 67; **447**, 58; **521**, 652	**445**, 67; **447**, 58; **496**, 27; **521**, 652	**302**, 66; **303**, 164; **447**, 48	**563**	**301**, 12; **303**, 7; **447**, 48; **554**, 903
Analyst	F. F. Field	R. Daintree	R. Daintree	H. D. Watt	C. C. Williams	C. G. Gibson	C. G. Gibson	J. N. A. Grace	C. C. Williams
Remarks		(Associated with Volcanics)	(Altered Lava)		(Dyke)	(Dolerite Dyke)	(Sheared & Chloritized Dolerite)		(Chloritized Dolerite)
Sp. Gr.	3·22	3·172	2·844	2·75	3·04	2·90	2·62	2·82	2·79
SiO_2	43·46	42·380	42·033	60·62	57·72	55·84	55·00	53·97	53·85
Al_2O_3	18·08	24·905	21·606	10·96	9·68	10·38	24·30	14·80	14·00
Fe_2O_3	12·20	7·785	8·829	0·73	6·49	4·39	3·93	0·48	0·36
FeO	1·27	0·210	—	2·04	9·17	12·82	7·53	0·10	8·12
MgO	0·88	2·145		5·57	1·63	0·54	2·30	1·96	4·51
CaO	20·48	19·565	23·633	5·32	5·05	4·18	0·18	3·57	6·43
Na_2O	tr.	0·590		1·86	3·92	3·40	2·43	7·30	3·14
K_2O	tr.	0·185		1·56	0·12	0·76	tr.	0·88	0·60
H_2O+	1·39	0·975	2·900	2·05	1·51	1·83	3·14	0·37	2·94
H_2O-	0·15	0·825		0·22	0·16	0·05	0·27	0·05	0·06
CO_2	abs.			3·32	1·84	4·92	0·98	4·86	4·37
TiO_2	1·27			0·38	1·13	0·62	tr.	1·55	0·55
P_2O_5	0·69			0·16	—	—	—	0·21	—
MnO	0·24			0·37	0·09	0·38	tr.	0·05	0·87
Other Con-stituents	Cl=tr. SO_3=tr.	CuO=0·400	$CuCO_3$=0·825	Cr_2O_3=0·01		FeS_2=0·22	FeS_2=tr.	FeS_2=9·04 Cr_2O_3=0·04 V_2O_3=0·40	
	100·11	99·965	99·826	95·17	98·51	100·33	100·06	99·63	99·80

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Carbonated and Chloritized								
	37	38	39	40	41	42	43	44	45
Rock Name	Carbonated Amphibolite	Chloritized Amphibolite	Meta-somatized Greenstone	Chloritoid Schist	Propylite	Dolomitized Greenstone	Carbonated Dolerite	Propylite	Propylite
Locality	Leonora, W.A.	Kalgoorlie, W.A.	S. of Loch Marvel, Yilgarn, W.A.	Kalgoorlie, W.A.	Kalgoorlie, W.A.	Wiluna, W.A.	Boulder, Kalgoorlie, W.A.	Kalgoorlie, W.A.	Kalgoorlie, W.A.
Reference	**222**, 19; **447**, 54	**157**, 55; **447**, 58	**199**, 73	**447**, 60; **460**, 142	**157**, 55; **447**, 58	**457**, 160	**456**, 160	**447**, 60; **157**, 55	**445**, 67; **447**, 58
Analyst	C. C. Williams	H. Bowley	J. N. A. Grace	H. Bowley	E. S. Simpson	D. G. Murray	H. P. Rowledge	H. Bowley	C. G. Gibson
Remarks	(Dolerite Dyke)	(Dolerite Dyke)		(Foliated & Carbonated Dolerite)	(Dolerite Dyke)			(Slightly foliated & altered dolerite)	(Dolerite Dyke)
Sp. Gr.	2·73	3·00	2·94	2·88	2·79	—	2·82	2·85	2·93
SiO_2	53·09	52·37	52·34	50·94	50·05	49·92	49·86	49·81	49·43
Al_2O_3	16·03	13·90	13·23	12·04	12·77	4·98	14·93	12·38	13·00
Fe_2O_3	4·36	2·37	1·19	2·74	1·12	3·26	3·22	0·78	0·01
FeO	1·73	7·41	6·31	9·44	7·86	7·04	4·34	7·03	12·91
MgO	3·36	7·99	5·84	3·04	6·51	7·90	4·04	5·04	1·87
CaO	5·16	10·81	12·25	5·47	8·68	6·50	6·05	6·91	6·23
Na_2O	8·09	1·52	0·66	1·28	1·34	1·66	4·24	1·10	1·97
K_2O	0·03	0·06	2·72	0·66	0·48	0·50	1·65	1·74	1·62
H_2O+	0·56	2·68	0·60	2·81	4·42	2·25	1·40	2·82	1·26
H_2O-	0·05	0·10	0·05	0·16	0·13	0·28	0·06	0·02	0·09
CO_2	6·33	0·12	0·94	8·24	6·31	9·46	8·64	10·92	9·92
TiO_2	0·98	0·77	0·70	1·09	0·33	0·48	0·40	0·60	0·72
P_2O_5	—	0·11	0·08	0·45	0·14	0·08	0·41	0·10	—
MnO	—	0·24	0·27	1·06	0·34	0·23	0·15	0·24	0·52
Other Constituents	FeS_2=0·26	FeS_2=0·26	FeS_2=0·73 $FeAsS$=2·33	FeS_2=0·77 BaO=0·02 V_2O_3=0·09 ZrO_2=tr.	FeS_2=0·02 Cr_2O_3=0·05 V_2O_3=0·06	FeS=3·09 $FeAsS$=2·48 Cr_2O_3=nd. V_2O_3=nd.	FeS_2=0·11 B_2O_3=tr. V_2O_3=0·10	FeS_3=0·30 V_2O_3=0·03 Cr_2O_3=0·03	FeS_2=0·34
	100·03	100·71	100·24	100·30	100·61	[100·11]	99·60	99·85	99·89

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Carbonated and Chloritized								
	46	47	48	49	50	51	52	53	54
Rock Name	Chloritic Slate	Chlorite Schist	Propylite	Carbonated Dolerite	Chlorite-calc-schist	Dolomitized Greenstone	Carbonated Amphibolite	Propylite	Carbonated Dolerite
Locality	Meekatharra, W.A.	Station Peak, W.A.	Warra-woona, W.A.	Boulder, Kalgoorlie, W.A.	Kalgoorlie, W.A.	Kalgoorlie, W.A.	Warra-woona, W.A.	Kalgoorlie, W.A.	Kalgoorlie, W.A.
Refer-ence	**155**, 260	**447**, 50; **519**. 108	**302**, 66; **303**, 164; **447**, 48	**563**	**447**, 74; **460**, 69; **521**, 652	**457**, 160	**302**, 66; **303**, 164; **447**, 68	**447**, 72; **460**, 61	**563**
Analyst	H. Bowley	C. C. Williams	C. C. Williams	D. G. Murray	C. G. Gibson	Not Stated	C. C. Williams	H. Bowley	D. G. Murray
Remarks	(? Altered Igneous)	(Foliated Dolerite)	(Dolerite Dyke)		(Dolerite Dyke)		(Dolerite Dyke)	(Dolerite Dyke)	
Sp. Gr.	2·65	2·80	2·84	2·83	2·94	2·95	2·82	2·82	2·79
SiO_2	49·22	49·03	48·54	48·08	46·94	46·28	45·68	45·52	45·52
Al_2O_3	16·63	14·29	13·67	14·13	12·49	12·41	8·94	10·87	13·19
Fe_2O_3	3·00	1·16	2·13	1·64	0·33	0·75	2·23	0·84	0·04
FeO	6·68	6·86	10·04	4·53	9·20	2·74	5·91	7·92	6·73
MgO	7·38	7·39	4·54	4·94	3·56	4·03	12·25	11·72	5·32
CaO	2·80	7·85	6·46	8·20	6·43	6·44	12·56	6·80	8·85
Na_2O	3·38	0·30	3·58	1·68	1·84	1·95	1·82	2·24	4·94
K_2O	0·06	2·63	0·04	2·76	2·57	3·42	0·12	0·04	0·20
H_2O+	4·90	3·82	2·74	1·76	0·30	0·81	1·92	3·32	1·76
H_2O-	1·44	0·14	0·04	0·18	0·09	0·13	0·07	0·06	0·06
CO_2	4·03	6·03	7·14	11·33	13·41	9·52	8·34	9·52	12·16
TiO_2	1·02	0·36	1·12	0·84	0·14	1·19	0·40	0·43	0·93
P_2O_5	—	—	—	0·33	—	0·20	—	0·45	0·13
MnO	—	0·23	tr.	0·13	0·32	0·20	0·09	0·32	0·14
Other Con-stituents		FeS_2=0·09	FeS_2=0·26	FeS_2=0·07 V_2O_3=0·10 B_2O_3=0·02	FeS_2=2·25	CuAsS= 0·05 FeS_2=10·28 Cr_2O_3=0·02 V_2O_3=0·12	FeS_2=0·09	ZrO_2=0·01 FeS_2=0·17 Cr_2O_3=0·08 V_2O_3=0·30	FeS_2=0·02 V_2O_3=0·06 Cr_2O_3=tr. B_2O_3=tr.
	100·54	100·18	100·30	100·72	99·87	100·54	100·42	100·61	100·05

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Carbonated and Chloritized								
	55	56	57	58	59	60	61	62	63
Rock Name	Propylite	Carbonated Dolerite	Propylite	Chloritized Dolerite	Dolomitized Greenstone	Propylite	Propylite	Propylite	Propylite
Locality	Bangemall, W.A.	Kalgoorlie, W.A.	Kalgoorlie, W.A.	Point Hillier, W.A.	Ora Banda, W.A.	Kalgoorlie, W.A.	Boulder, Kalgoorlie, W.A.	Kalgoorlie, W.A.	Kalgoorlie, W.A.
Reference	**447**, 68; **519**, 160	**447**, 74	**447**, 72	**89**, 51	**457**, 160	**157**, 50; **447**, 72; **460**, 61; **496**, 27	**445**, 67; **447**, 72; **496**, 27	**563**	**563**
Analyst	C. C. Williams	C. G. Gibson	H. Bowley	W. H. Herdsman	E. S. Simpson	H. Bowley	E. S. Simpson	E. S. Simpson	D. G. Murray
Remarks	(Dolerite Dyke)	(Dyke)	(Dolerite Dyke)				(Dolerite Dyke)		(Dolerite Dyke)
Sp. Gr.	2·85	2·83	2·84	—	—	2·93	2·97	2·79	2·87
SiO_2	45·36	44·96	44·61	44·34	43·31	43·13	42·96	42·38	42·19
Al_2O_3	13·78	11·46	18·07	16·12	17·85	12·16	9·63	9·77	14·10
Fe_2O_3	1·74	4·02	0·55	2·76	3·68	1·54	4·47	0·92	0·66
FeO	11·54	14·70	7·71	11·52	5·93	10·64	12·73	10·76	10·71
MgO	6·23	0·50	3·39	5·14	3·72	4·79	4·38	11·25	11·36
CaO	8·07	4·66	7·28	8·38	1·79	8·71	8·24	9·38	3·36
Na_2O	1·71	4·40	0·14	2·76	0·50	1·70	2·66	0·18	0·96
K_2O	0·33	1·47	1·54	1·28	5·25	0·48	0·56	0·05	0·56
H_2O+	4·47	0·13	2·42	2·89	2·51	2·59	2·00	5·98	5·56
H_2O-	0·22	abs.	0·10	0·12	0·14	0·12	0·10	0·17	0·15
CO_2	4·49	12·42	13·86	abs.	3·40	11·56	11·65	8·65	5·39
TiO_2	1·69	0·65	0·31	2·86	1·29	1·22	1·04	0·66	1·13
P_2O_5	0·26	—	—	0·92	0·38	0·88	—	0·12	0·13
MnO	0·17	0·77	—	0·27	0·41	0·60	—	0·26	0·24
Other Constituents	FeS_2=0·17	FeS_2=0·19		FeS_2=0·47	FeS_2=7·16 SO_3=0·14 Fe_7S_8=2·02 $FeAs_2$=0·34 B_2O_3=0·30 Cr_2O_3=0·02 V_2O_3=0·41	FeS_2=0·39 V_2O_3=0·04 Cr_2O_3=abs.	FeS_2=0·32	FeS_2=tr. Cr_2O_3=0·12 V_2O_3=0·04	FeS_2=3·83
	100·23	100·33	99·98	99·83	[100·55]	[100·55]	100·74	100·69	100·33

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Carbonated and Chloritized								
	64	65	66	67	68	69	70	71	72
Rock Name	Propylite	Carbonated Propylite	Carbonated Rock	Altered Diabase	Carbonated Propylite	Propylite with Tourmaline	Carbonated Greenstone	Carbonated Chlorite Schist	Chlorite Schist
Locality	Mt. Charlotte, Kalgoorlie, W.A.	Boulder, Kalgoorlie, W.A.	Mathinna, Area, Tas.	Pitfield, Plains, Vic.	Kalgoorlie, W.A.	Kalgoorlie, W.A.	Mt. Charlotte, Kalgoorlie, W.A.	Meekatharra, W.A.	Boulder, Kalgoorlie, W.A.
Reference	**157**, 50; **496**, 27	**447**, 74; **496**, 54; **521**, 652	**166**, 19	**547**, 13; **554**, 1081	**447**, 74; **460**, 61	**157**, 50	**157**, 50; **496**, 54	**155**, 269	**445**, 67
Analyst	E. S. Simpson	C. G. Gibson	R. H. Bath	Vic. Dept. Mines	H. Bowley	H. Bowley	Simpson & Bowley	H. Bowley	Helms
Remarks	(Quartz Dolerite)	(Dolerite Dyke)	*Loss on ignition (Dyke)	(Dyke)				*Includes P_2O_5 & MnO	(Altered Dolerite)
Sp. Gr.	2·86	3·00	—	—	2·93	2·89	—	2·70	—
SiO_2	42·15	42·01	42·00	40·62	39·83	39·41	38·27	36·75	35·04
Al_2O_3	11·26	8·42	16·98	22·12	11·83	11·97	14·09	21·05*	9·67
Fe_2O_3	0·96	2·45	7·70	5·36	0·20	0·56	0·33	1·25	18·98
FeO	9·51	15·76	—	9·57	9·51	9·02	5·54	7·60	—
MgO	6·28	1·67	5·86	4·05	5·13	6·03	4·10	8·82	4·97
CaO	9·05	7·07	8·70	2·20	9·78	10·06	7·54	6·88	4·77
Na_2O	2·20	2·62	0·15	1·32	2·18	0·54	1·35	0·25	2·93
K_2O	0·22	1·15	2·58	1·32	0·44	2·14	3·38	0·08	2·25
H_2O+	2·40	0·67	15·86*	2·92	1·07	1·21	1·33	6·98	—
H_2O-	0·10	0·23		4·65	0·11	0·07	0·13	0·32	—
CO_2	13·81	15·65		6·74	17·32	15·46	11·58	10·48	8·38
TiO_2	0·82	0·81	0·64		1·14	1·31	1·31	0·11	2·57
P_2O_5	0·08	—	0·18		0·27	0·04	0·11	nd.	—
MnO	0·28	0·41	0·30		0·54	0·22	0·24	nd.	tr.
Other Constituents	FeS_2=0·44 Cr_2O_3=0·01 B_2O_3=0·05	FeS_2=0·30			ZrO_2=0·02 FeS_2=0·24 V_2O_3=0·33 Cr_2O_3=0·01	FeS_2=2·28 B_2O_3=0·13	FeS_2=10·49 B_2O_3=0·65 F=0·19		S=5·49 Fe=4·80 Cu=0·14
							100·63		
Less O= Cl, F, S							0·08		
	99·62	99·22	100·95	100·87	[99·95]	100·45	100·55	100·57	99·99

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Carbonated and Chloritized								Mainly Chloritized
	73	74	75	76	77	78	79	80	81
Rock Name	Carbonated Amphibolite Breccia	Carbonated Basalt	Dolomitized Basic Rock	Carbonated Dolerite	Carbonated Schist	Dolomitized Greenstone	Dolomitized Amphibolite	Carbonated Schafferite	Altered Basalt
Locality	Kanowna, W.A.	Prospect, near Sydney, N.S.W.	Dundas Area, Tas.	Prospect, near Sydney, N.S.W.	Warra-woona, W.A.	Yilgarn Goldfield, W.A.	Mt. Bischoff, Tas.	Mt. Bischoff, Tas.	Orange, N.S.W.
Refer-ence	**447**, 70	**380**, 263; **575**, 15	**415**, 20	**577**	**302**, 66; **303**, 164	**306**, 67	**414**, 86	**414**, 86	**574**, 142
Analyst	E. S. Simpson	J. H. Pyle	Not Stated	M. Chiba	E. S. Simpson	H. Bowley	Not Stated	Not Stated	Avery & Anderson
Remarks			*Loss on ignition						* Recal. to 100.00 excluding H_2O-
Sp. Gr.		—	—	2·45	2·76	2·94	—	—	2·61
SiO_2	33·32	31·91	29·96	23·29	17·63	15·83	6·00	1·00	51·51
Al_2O_3	5·93	13·41	9·35	7·85	4·28	0·29	0·95	1·56	16·98
Fe_2O_3	0·32	1·64	2·43	2·12	1·97	0·11	—	—	5·49
FeO	6·35	9·01	6·83	2·40	abs.	4·86	2·56	12·72	4·82
MgO	18·17	2·86	10·86	1·94	14·74	17·21	11·75	14·46	5·26
CaO	10·57	15·87	15·85	37·75	24·63	27·64	21·08	3·20	8·56
Na_2O	0·78	2·04		0·24	0·92	0·18	—	—	2·17
K_2O	tr.	0·42		0·21	0·43	0·06	—	—	1·05
H_2O+	1·30	4·82	5·90*	2·68	0·70	0·80	7·00	6·40	2·48
H_2O-	0·03	1·30		0·60	0·05	0·06			(3·08)*
CO_2	23·06	11·88	18·10	18·81	34·94	31·99	49·64	47·40	nd.
TiO_2	—	2·92		1·52	0·20	0·02	—		1·68
P_2O_5	—	0·48		0·97	—	0·07	—		—
MnO	0·43	1·39		0·10	tr.	0·27	0·92	13·26	—
Other Con-stituents		ZrO_2=0·03 S=0·02 (NiCo)O=0·03 Cr_2O_3=0·06 V_2O_3=0·02 SrO=0·02 BaO=tr.	FeS_2=0·57		FeS_2=abs.	Fe_7S_8=0·48 Cr_2O_3=abs. V_2O_3=0·04			
		100·13							
LessO=Cl, F, S		0·01							
	[100·26]	100·12	99·85	100·48	100·49	99·91	99·90	100·00	100·00

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Mainly Chloritized	Uralitized							
	82	83	84	85	86	87	88	89	90
Rock Name	"Selwynite" Altered Diabase	Greenstone Schist	Uralitized Dolerite	"Greenstone"	Partly Uralitized Dolerite	Uralitized Dolerite	Uralitized Dolerite	"Diabase"	Uralitized Dolerite
Locality	Heathcote, Vic.	Phillips River District, W.A.	Port Cygnet, Tas.	Gympie, Qld.	Port Cygnet, Tas.	Isdell River, Kimberley Division, W.A.	Mt. Anketell, Pilbara, W.A.	Udandarra Ck., Northampton, W.A.	Eulaminna Siding, W.A.
Reference	**555**, 473	**461**, 27	**129**, 109	**428**, **282**, 45	**129**, 109	**447**, 46	**447**, 50; **519**, 148	**299**, 10; **445**, 60; **554**	**326**, 115; **561**, 11
Analyst	F. F. Field	Not Stated	A. B. Edwards	A. Liversidge	A. B. Edwards	C. G. Gibson	C. C. Williams	E. S. Simpson	C. E. S. Davis
Remarks				(Ash or Breccia) *By difference				*Loss on ignition (Dolerite Dyke)	(Dyke)
Sp. Gr.	—	2·96	—	2·860	—		2·91		3·00
SiO_2	39·10	62·23	55·20	54·952	54·50	54·44	53·11	53·06	51·83
Al_2O_3	39·02	11·90	14·88	16·643	14·01	7·72	15·55	13·67	13·97
Fe_2O_3	0·43	0·08	3·68	2·410	3·51	8·22	1·26	4·83	1·16
FeO	0·90	10·46	7·49	7·849	6·89	11·20	7·17	9·96	6·53
MgO	3·67	4·09	4·27	tr.	5·10	4·00	6·50	5·31	9·51
CaO	0·37	6·16	9·75	8·645	9·55	6·68	8·93	8·62	9·74
Na_2O	0·12	1·47	2·22	6·647	1·90	3·14	3·03	3·22	1·89
K_2O	7·90	0·29	0·99	1·540	1·54	1·91	0·28	1·29	1·37
H_2O+	6·65	0·34	0·55	1·314*	0·55	2·01	3·12	0·38*	2·40
H_2O-	0·56	0·07	0·12		0·37	0·20	0·04	—	0·20
CO_2	abs.	0·23	abs.		abs.	abs.	0·32	—	0·24
TiO_2	0·35	1·51	1·25		1·35	1·48	0·40	—	0·51
P_2O_5	tr.	0·28	0·06		0·20	—	—	—	0·16
MnO	tr.	0·56	0·16	tr.	0·17	0·22	0·59	0·56	0·16
Other Constituents	SO_3=abs. Cl=tr. Cr_2O_3=0·75	FeS_2=0·79				FeS_2=0·16	FeS_2=0·07		Cr_2O_3=0·03 V_2O_3=tr. FeS_2=0·10 SO_3=0·02 Cl=tr.
	99·82	[100·46]	100·62	100·00	99·64	100·38	100·37	100·90	99·82

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Uralitized								
	91	92	93	94	95	96	97	98	99
Rock Name	Uralitized Dolerite	Uralitized Dolerite	Uralitized Dolerite	"Greenstone"	Altered Dolerite	Uralitized Dolerite	Uralitic Dolerite	Uralitized Dolerite	"Epidiorite"
Locality	Charnley River, Kimberley Division, W.A.	2 miles E. of Darlington, W.A.	Darlington Area, Darling Ra., W.A.	Gympie, Qld.	Near Wellington, N.S.W.	Bickley Brook Reservoir, W.A.	Encounter Bay, S.A.	Boya Quarry, Darling Ra., W.A.	Dog Rocks, Geelong, Vic.
Reference	**447**, 46	**90**, 173	**90**, 173	**103**, 293 **410**	**21**, 186	**90**, 173 **582**, 76	**51**, 34	**90**, 173	**500**, 292
Analyst	C. G. Gibson	E. S. Simpson	F. F. Allsop	A. Liversidge	E. M. Basnett	D. G. Murray	H. Yates	F. F. Allsop	A. G. Hall
Remarks							(Dyke)		
Sp. Gr.	2·94	—	—	2·752	2·98	—	2·992	—	2·934
SiO_2	51·40	50·96	50·67	50·500	49·79	49·53	49·32	49·28	49·25
Al_2O_3	16·38	11·89	14·01	18·485	18·63	12·92	21·03	13·62	17·49
Fe_2O_3	1·26	2·54	1·38	1·470	1·46	2·60	1·79	3·13	1·25
FeO	12·78	13·64	5·20	6·440	8·12	11·40	8·31	11·92	3·95
MgO	2·30	6·26	8·12	8·530	5·67	6·24	2·31	8·29	10·67
CaO	7·32	9·94	13·16	8·800	9·31	10·37	10·91	7·35	14·83
Na_2O	3·14	2·68	2·04	1·655	3·54	2·08	2·97	2·68	0·75
K_2O	1·72	0·29	2·32	0·635	1·09	0·36	0·47	0·29	0·06
H_2O+	1·99	0·05	0·70	1·600	0·86	2·21	0·63	0·70	1·44
H_2O-	0·12	0·16	0·23	0·850	0·06	0·09	0·10	0·18	0·14
CO_2	abs.	abs.	—	0·820	—	abs.	abs.	—	abs.
TiO_2	1·06	1·84	—	—	1·15	2·13	1·96	—	0·09
P_2O_5	—	abs.	0·12	—	0·17	0·16	0·12	0·28	tr.
MnO	tr.	0·34	—	—	0·17	0·35	—	—	0·09
Other Constituents	FeS_2=abs.	FeS_2=tr.		S=0·190		FeS_2=0·28	S=pnd.		NiO=0·02 CoO=tr. Cl=tr. Li_2O=tr.
	99·47	100·59	97·95	99·975	100·02	100·72	99·92	97·72	100·03

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Uralitized								
	100	101	102	103	104	105	106	107	108
Rock Name	Uralitized Dolerite	Uralite Dolerite	Uralitized Quartz Dolerite	Uralite Dolerite	Uralitized Quartz Dolerite	Uralitized Dolerite	Uralitized Quartz Dolerite	Uralite Dolerite	Uralite Dolerite
Locality	Bickley Brook Reservoir, W.A.	Broken Hill, N.S.W.	Toodyay, W.A.	Broken Hill, N.S.W.	Mt. Hassell, Stirling Ra., W.A.	Boya Quarries, Darling Ra., W.A.	Armadale, W.A.	Broken Hill, N.S.W.	Broken Hill, N.S.W.
Reference	**90**, 173	**53**, 349; **364**, 77; **498**	**89**, 51; **400**, 105; **582**, 45	**53**, 349; **309**, 270; **352**, 198; **554**, 639, 897	**89**, 51	**90**, 173	**400**, 45	**498**, 220	**498**, 220
Analyst	E. S. Simpson	W. G. Stone	R. T. Prider	J. C. H. Mingaye	W. H. Herdsman	F. F. Allsop	R. T. Prider	G. C. Carlos	Avery & Anderson
Remarks	(Centre of Dyke)	(Dyke)		(Dyke)				(Dyke)	(Dyke)
Sp. Gr.		3·002	—	3·124	—	—	—	—	—
SiO_2	49·22	49·18	49·13	49·10	49·04	49·04	48·83	48·14	47·88
Al_2O_3	12·62	13·68	13·13	16·11	15·02	16·55	13·46	15·87	14·13
Fe_2O_3	3·16	3·30	3·65	0·60	1·82	2·52	2·88	1·68	2·42
FeO	11·09	8·46	8·95	10·62	11·61	9·84	10·29	11·89	9·96
MgO	6·42	7·50	7·64	7·43	5·73	7·43	8·03	5·89	7·21
CaO	10·59	10·63	11·84	11·76	10·42	9·70	11·95	10·46	10·80
Na_2O	1·86	3·07	1·72	1·04	2·06	2·54	1·32	1·04	2·84
K_2O	0·30	0·48	0·16	1·06	0·49	0·28	0·50	1·00	1·44
H_2O+	2·24	0·84	1·72	0·50	2·28	0·61	1·39	0·84	0·65
H_2O-	0·12	0·18	0·04	0·20	0·12	0·18	0·08	0·11	0·08
CO_2	—	1·06	—	0·16	abs.	—	—	tr.	abs.
TiO_2	2·00	1·45	1·27	1·20	0·96	—	1·24	2·82	1·50
P_2O_5	0·09	0·14	0·14	0·09	0·09	0·25	0·07	0·14	0·16
MnO	0·33	0·19	0·15	0·21	0·24	—	0·18	0·35	1·40
Other Constituents	FeS_2=0·22	BaO=0·03 Cr_2O_3=0·04	FeS_2=0·45	Cl=0·22 ZnS=0·03 Cr_2O_3=0·01 V_2O_3=0·03 (NiCo)O=0·02			FeS_2=tr. Cr_2O_3=0·08	S=tr. Cl=tr.	
				100·39					
Less O=Cl, F, S				0·04					
	100·26	100·23	99·99	100·35	99·88	98·94	100·30	100·23	100·47

TABLE L²—O² — METASOMATIZED AND DEUTERICALLY ALTERED MAFIC ROCKS

	Uralitized				Altered Along Crush-Zones				Altered to Talc
	109	110	111	112	113	114	115	116	117
Rock Name	Uralitized Quartz Dolerite	Uralitized Quartz Dolerite	"Green-stone"	Altered Greenstone	Graphitic Schist	Graphitic Schist	Graphitic Schist	Graphitic Schist	Dolerite
Locality	Galena Crossing on Murchison, W.A.	Mt. Charlotte, Kalgoorlie, W.A.	Coolgardie, W.A.	Lake Miranda, Violet Ra., W.A.	Cue, W.A.	Sandstone, W.A.	Sandstone, W.A.	Coolgardie, W.A.	Kalgoorlie, W.A.
Reference	**598**, 207	**157**, 55; **447**, 34; **460**, 61; **496**, 24	**563**	**174**, 47	**447**, 52; **557**, 24; **563**	**153**, 47; **447**, 54	**153**, **447**, 52	**151**, 73; **447**, 78	**563**
Analyst	B. W. Stenhouse	H. Bowley	B. W. Stenhouse	E. S. Simpson	E. S. Simpson	H. Bowley	H. Bowley	H. Bowley	J. N. A. Grace
Remarks	(Dyke)				Corrections **563** (Dolerite) *Approxi-mate	(Dolerite)	(Dolerite) *Approx. owing to graphite	(Dolerite)	(Dyke)
Sp. Gr.	3·03	3·10		3·15	2·76	—	—	—	3·01
SiO_2	47·72	47·12	47·08	45·90	62·62	57·17	53·93	38·49	50·43
Al_2O_3	15·42	16·18	12·91	29·03	18·78	18·67	20·41	21·43	9·38
Fe_2O_3	1·67	3·23	0·61	2·03	1·00*	—	0·57*	—	2·50
FeO	10·29	6·90	10·02	0·36	2·62	9·95	11·03	3·60	8·56
MgO	7·20	7·23	17·90	0·44	3·09	3·41	2·90	5·95	15·30
CaO	9·57	13·80	7·66	18·77	0·82	0·18	1·57	5·39	8·30
Na_2O	2·31	1·54	1·06	2·74	2·36	2·16	0·28	0·42	0·71
K_2O	0·32	0·11	tr.	0·48	3·30	2·08	0·88	3·68	0·22
H_2O+	2·96	1·92	1·93	0·13	2·07	3·58	5·48	2·60	2·33
H_2O-	0·10	0·09	0·08	0·10	0·13	0·97	0·58	0·92	0·16
CO_2	—	abs.	abs.	abs.	abs.	abs.	1·24	14·14	0·15
TiO_2	1·44	0·72	0·24	0·08	0·16	—		—	0·77
P_2O_5	0·77	0·15	0·10	0·13	0·29	—		—	0·35
MnO	0·17	0·45	0·09	tr.	0·16	—		—	0·54
Other Con-stituents		ZrO_2=0·01 FeS_2=0·22 V_2O_3=0·01	FeS_2=tr. V_2O_3=tr. Cr_2O_3=0·11		FeS=1·22 C=1·60	C=1·29	C=0·68	C=3·33	FeS_2=0·15 Cr_2O_3=0·32 V_2O_3=0·08 CuO=0·03
	99·94	99·68	99·79	100·19	100·22	99·46	99·55	99·95	100·28

TABLE L³—O³ — WEATHERED MAFIC ROCKS

	1	2	3	4	5	6	7	8	9
Rock Name	Weathered Chlorite Schist	Weathered Greenstone Schist	Leached & Weathered Basic Igneous Rock	Quartz Dolerite	Gabbro	Dolerite	Quartz Dolerite	Quartz Dolerite	Quartz Dolerite
Locality	Leonora, W.A.	Sandstone, W.A.	Bobby Dazzler Vein, Peak Hill, W.A.	Campbelltown, Tas.	Waratah Bay, Vic.	Parkerville, Darling Ra., W.A.	St Leonards, Tas.	Butlers Gorge Dam Site, Tas.	Campbelltown, Tas.
Reference	**222**, 19; **447**, 40; **554**, 771	**153**, 30; **447**, 40	**331**, 67	**133**, 2	**548**	**515**, 107	**133**	**133**	**133**
Analyst	C. C. Williams	H. Bowley	Not Stated	W. St C. Manson	F. F. Field	S. Terrill & D. Burns	R. Dunt	Avery & Anderson	W. St C. Manson
Remarks	(Dolerite)	(Dolerite Dyke)				(Dyke)		*Dried	
Sp. Gr.	2·47	—		—	—	—	—	—	—
SiO_2	76·22	70·85	—	55·52	51·77	50·63	48·4	47·13	45·56
Al_2O_3	12·55	15·36	59·35	15·55	11·84	13·20	22·9	14·44	19·43
Fe_2O_3	3·52	4·03	31·19	5·12	0·29	1·70	11·1	6·85	15·90
FeO	abs.	0·76		5·08	2·00	10·06	—	8·90	0·58
MgO	0·70	0·61	tr.	3·69	7·31	7·63	5·1	8·95	0·66
CaO	0·66	abs.		6·93	8·49	12·27	—	6·61	tr.
Na_2O	0·08	0·20	0·36	2·51	0·09	2·00	0·6	0·60	0·78
K_2O	2·01	3·24	0·76	1·30	1·82	0·16	tr.	0·86	1·34
H_2O+	3·72	3·83	7·28	2·14	2·97	0·59	9·7	3·70	9·62
H_2O-	0·32	0·41	0·61	1·00	0·56	0·03		(7·33)*	4·30
CO_2	abs.	abs.		tr.	12·85	—	—	—	tr.
TiO_2	0·86	0·80		0·98	tr.	0·91	1·4	1·03	1·35
P_2O_5	—	—		0·04	abs.	0·15	0·1	0·12	0·10
MnO	tr.	—		0·09	0·20	0·17		0·35	0·01
Other Constituents	FeS_2			Cl=tr.	Cl=tr. Cr_2O_3=0·23 CoO=tr. NiO=tr.			S=tr. SO_3=tr. Cl=0·11	Cl=0·13
								99·65	99·76
Less O= Cl, F, S								0·02	0·03
	100·64	100·09	99·55	99·95	100·42	99·50	99·3	99·63	99·73

TABLE L[3]—O[3] — WEATHERED MAFIC ROCKS

	10	11	12	13	14	15	16	17	18
Rock Name	Basalt	Quartz Dolerite	Amphibolite	Basalt	Basic Rock	Basalt	Olivine Basalt	Basalt	Quartz Dolerite
Locality	Royal Park, Melbourne, Vic.	St Leonards, Tas.	Gabanintha, Central Div., W.A.	Bondi, Sydney, N.S.W.	Helensburgh, N.S.W.	Goulburn District, N.S.W.	Between Deloraine & Elizabeth-town, Tas.	Royal Park, Melbourne, Vic.	St Leonards, Tas.
Refer-ence	**284**, 247	**133**	**331**, 31; **447**, 70	**102**, 225	**367**, 106	**338**, 47	**133**	**284**, 247	**133**
Analyst	D. M. McCance	W. St C. Manson	H. Bowley	Not Stated	W. G. Stone	Not Stated	W. St C. Manson	D. M. McCance	R. Dunt
Remarks			(Dyke)		(Dyke)	*Loss on ignition			
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	43·74	43·40	42·74	42·0	41·94	41·05	39·68	39·09	33·9
Al_2O_3	19·20	22·47	7·66	40·2	22·16	13·20	17·22	19·74	29·5
Fe_2O_3	11·57	13·63	16·68	tr.	1·60	14·35	13·63	15·57	19·2
FeO	0·65	0·64	7·78	—	1·65	—	1·22	0·46	—
MgO	0·94	1·29	15·38	abs.	1·48	7·00	5·98	1·05	—
CaO	2·03	2·56	6·64	abs.	2·26	8·97	tr.	0·49	—
Na_2O	2·00	2·08	0·36	4·4	1·75	0·49	0·32	2·03	—
K_2O	1·86	1·11	0·10	1·6	2·39		0·26	1·80	—
H_2O+	5·43	7·84	2·32	12·00	9·50	11·46*	10·94	8·11	15·0
H_2O-	8·56	3·88	0·10				8·98	7·30	
CO_2	0·04	0·15	tr.		—	—	tr.	0·09	—
TiO_2	3·60	1·50	—		1·70	2·20	2·00	3·62	1·6
P_2O_5	nd.	0·05	—		0·99	1·28	0·17	nd.	—
MnO	nd.	0·04	—		0·25	—	0·05	—	—
Other Con-stituents		Cl=tr.		Cr_2O_3=tr.	$FeCO_2$= 12·43		Cl=tr.		
	99·62	100·64	99·76	100·2	100·10	100·00	[100·45]	99·35	99·2

TABLE L[3]—O[3] — WEATHERED MAFIC ROCKS

	19	20
Rock Name	Basic Rock	Basalt
Locality	Robertson Area, N.S.W.	Jeeralong North, via Morwell, Vic.
Reference	**354**, 205	**548**
Analyst	Not Stated	Not Stated
Sp. Gr.	—	—
SiO_2	31·74	28·60
Al_2O_3	26·54	34·39
Fe_2O_3	14·60	16·61
FeO	tr.	—
MgO	0·77	—
CaO	0·86	—
Na_2O	3·80	—
K_2O	0·23	—
H_2O+	10·53	11·80
H_2O-	9·15	7·92
CO_2	—	—
TiO_2	1·44	—
P_2O_5	0·44	—
MnO	0·21	—
Other Constituents		
	100·31	99·32

TABLE L[4]—O[4] — PARTIAL ANALYSES OF MAFIC ROCKS

	1	2	3	4	5	6
Rock Name	Basic Rock	Old Basic Mass	Gabbro altering to Serpentine	Basic Rock	"Selwynite"	Altered Analcite Basalt
Locality	Mt. Morgan, Qld.	Mt. Morgan, Qld.	Mt. Wellington, Vic.	Dundas Area, Tas.	Heathcote, Vic.	North Bulli, N.S.W.
Reference	**377**, 444	**377**, 444	**537**, 61	**415**, 20	**443**, 18, **532**, 339	**190**, 350
Analyst	Not Stated	Not Stated	A. B. Peden	Not Stated	C. Newbery	N.S.W. Dept. Mines
Remarks	(Stope Dyke)			(Dyke)	(Altered diabase)	
Sp. Gr.	—	—	—	—	—	—
SiO_2	52	52	50	48·36	47·15	
Al_2O_3	12	11	8	19·12	33·23	
Fe_2O_3	19	16		6·42		
FeO	—	—		0·40		6·68
MgO	4	1	17	4·71	4·56	4·62
CaO	5·5	7	23·4	6·10		4·38
Na_2O						
K_2O						
H_2O+				3·90	6·23	
H_2O-			tr.			
CO_2				9·40		11·17
TiO_2						
P_2O_5						
MnO						
Other Constituents				FeS_2 = 1·41	Cr_2O_3 = 7·61	
				99·82	98·78	

TABLE L[5]—O[5] — OLD AND UNRELIABLE ANALYSES OF MAFIC ROCKS

	1		2		3		4	
Rock Name	Basalt (Newer Basalt)		Basalt		Basalt (Dense Black)		Greenstone (Diabase)	
Locality	Mt. Mercer, Ballarat, Vic.		Barfold, Campaspe R., Vic.		S.W. of Kyneton, Vic.		Barrabool Hills, W. of Geelong, Vic.	
Reference	**336**, 56; **334**, 113		**336**, 56; **443**, 28		**336**, 56; **443**, 23		**336**, 33; **443**, 17	
Analyst	J. C. Newbery		J. C. Newbery		Not Stated		J. C. Newbery	
Remarks	Sol. in HCl.	Insol. in HCl.	Sol. in HCl.	Insol. in HCl.	Sol. in. HCl.	Insol. in HCl.	Sol. in HCl.	Insol. in HCl.
Sp. Gr.	—	—	—	—	—	—	—	—
SiO_2	34·361	58·016	35·71	54·16	34·80	63·39	46·34	53·94
Al_2O_3	6·835	23·738	40·11	19·27	38·58	16·11	29·05	2·80
Fe_2O_3	37·962	5·266	13·66	} 14·08	18·07	10·03	1·30	—
FeO	—							11·78
MgO	12·951	tr.	0·52	0·85	tr.	3·41	3·44	16·13
CaO	4·260	10·670	1·07	3·14	7·12	5·26	14·56	14·39
Na_2O	2·901	} 2·310	6·03	3·24		} 2·21	4·51	
K_2O	0·091			7·13				
H_2O+	0·902		} 1·36		1·43		1·75	
H_2O-								
CO_2								
TiO_2			0·72			0·63		
P_2O_5								
MnO				0·28	tr.	1·01		
Other Constituents								
	100·263	100·00	99·18	102·15	100·00	102·05	100·95	99·04

TABLE L[5]—O[5] — OLD AND UNRELIABLE ANALYSES OF MAFIC ROCKS

	5		6		7		8	
Rock Name	Basalt (Older Basalt)		Basalt		Vesicular Basalt		Dense Basalt	
Locality	Phillip Island, Vic.		Durham Lead, Vic.		Mt. Mercer, Ballarat, Vic.		Barfold, Campaspe R., Vic.	
Reference	**336**, 46; **443**, 94		**336**, 56; **443**, 94		**336**, 56		**336**, 56	
Analyst	J. C. Newbery		J. C. Newbery		J. C. Newbery		J. C. Newbery	
Remarks	Sol. in HCl.	Insol. in HCl.	Sol. in HCl.	Insol. in HCl.	Sol. in HCl.	Insol. in HCl.	Sol. in HCl.	Insol. in HCl.
Sp. Gr.	—	—	—	—	—	—	—	—
SiO_2	34·16	49·96	35·44	54·73	33·02	55·65	37·42	54·18
Al_2O_3	23·22	8·21	8·13	19·12	3·67	21·59	39·16	20·26
Fe_2O_3	12·09	—	31·43	—	40·06	8·85	10·58	
FeO	—	16·32	—	6·03			—	12·43
MgO	12·34	18·76	17·33	5·05	16·41	0·72	1·52	0·60
CaO	5·21	7·26	5·24	10·14	5·13	9·95	2·03	3·32
Na_2O	5·28		1·40	0·50	1·40	tr.	5·22	
K_2O	3·10		tr.	2·11	tr.	2·11		8·36
H_2O+	2·16		2·03		0·57	1·29	0·98	
H_2O-								
CO_2	—							
TiO_2	0·04						0·58	
P_2O_5	—							
MnO	0·46	tr.					1·17	1·32
Other Constituents								
	98·06	100·01	101·00	97·68	100·26	100·16	98·66	100·47

TABLE L[5]—O[5] — OLD AND UNRELIABLE ANALYSES OF MAFIC ROCKS

	9	10	11	12	13	14	15	16	17
Rock Name	Basalt	Basalt	"Lava" (Newer Basalt)	"Green-stone"	Basalt	"Epidiorite"	Basalt	Basalt	Basalt (Older Basalt)
Locality	Dargo High Plains, Vic. or Kiandra, N.S.W. (?)	Dundas, (Pennant Hills), N.S.W.	Portland Pen., Vic.	Gympie, Qld.	Mt. Mercer, Ballarat, Vic.	Barrabool Hills, Gee-long, Vic.	Mt. Mercer, Ballarat, Vic.	Mt. Pleasant, Bathurst, N.S.W.	Phillip Island, Vic.
Refer-ence	**543**, 22	**282**, 45	**187**, 66	**282**, 46	**542**, 113	**443**, 94	**443**, 56	**599**	**443**, 94
Analyst	J. C. Newbery	A. M. Thomson	J. Woods	A. Liversidge	J. C. Newbery	J. C. Newbery	J. C. Newbery	W. C. Ross	
Remarks	Probably only insol. fraction	*By difference	*Including MgO & CaO		Recal. from Sol. & Insol.	? Recal.	? Recal.		? Recal.
Sp. Gr.	—	—	—	—	—	—	—	2·68	—
SiO_2	71·55	60·42	60	54·952	52·26	50·84	50·10	49·8-50	49·46
Al_2O_3	1·35	10·29	10	16·643	19·63	12·92	16·48	15·5	8·21
Fe_2O_3	19·40	14·10	20	2·410	13·21	0·52	7·54	14·5	—
FeO	—	—		7·849		6·99	4·58		16·32
MgO	1·35	0·96		tr.	3·15	10·97	8·00	—	18·76
CaO	1·85	2·66		8·645	9·11	14·35	8·98	7·5	7·26
Na_2O	1·45	2·39		6·647	2·48	tr.	0·74		
K_2O		1·81		1·540		1·83	1·60		
H_2O+	2·70	7·37*	10*	1·314	0·22	0·71	0·49		
H_2O-									
CO_2									
TiO_2									
P_2O_5									
MnO				tr.					
Other Con-stituents									
	99·65	100·00	100·00	100·00	100·06	99·13	98·51		100·01

TABLE L[5]—O[5] — OLD AND UNRELIABLE ANALYSES OF MAFIC ROCKS

	18	19	20	21	22	23	24	25	26
Rock Name	Basalt (Newer Basalt)	Basalt	Basalt	Dolerite	Basalt (Older Basalt)	Monchiquite or Limburgite	Basalt (Older Basalt)	Basalt (Older Basalt)	Decomposed Basalt
Locality	Mt. Mercer, Ballarat, Vic.	Mt. Apsley, Bathurst, N.S.W.	Bald Hills, Bathurst N.S.W.	Prospect, N.S.W.	Phillip Island, Vic.	Bendigo, Vic.	Port Arlington, Vic.	Phillip Island, Vic.	Phillip Island, Vic.
Reference	**187**, 115	**599**	**599**	**282**, 45	**443**	**546**, 4	**104**, 7	**336**, 46	**336**, 46
Analyst	J. C. Newbery	W. C. Ross	W. C. Ross	A. Liversidge	Not Stated	F. Stone	R. Daintree	J. C. Newbery	J. C. Newbery
Remarks	(Recalculated)							? Sol. fraction	? Sol. fraction
Sp. Gr.	—	2·9	2·9-3·05	2·780	—	—	—	—	—
SiO_2	48·64	48·2	47·75-47·55	46·498	45·28	43·620	42·025	37·22	35·24
Al_2O_3	16·04	17·5-18	18·5-19	17·620	15·57	34·314	38·114	21·16	17·18
Fe_2O_3	18·53	14·5	12·5-15	8·251	5·92	0·647	2·935	9·11	29·46
FeO				5·238	8·32	5·634			
MgO	5·59	6·86-7·56	7·5-9·2		15·62	2·960		6·21	2·08
CaO	8·46	10·08	8·4-10·6	9·303	6·26	0·520		7·02	3·12
Na_2O	0·43			3·476	2·59	tr.		8·46	1·62
K_2O	0·08			1·612	1·52	2·420			0·06
H_2O+	0·38			7·009	1·06	8·500	10·301	8·80	10·32
H_2O-				0·991		0·400	6·791		
CO_2									
TiO_2					0·02				
P_2O_5					—				
MnO				tr.	0·23				
Other Constituents						S=0·800			
	98·15			[99·998]	102·39	99·015	100·166	[97·98]	99·08

TABLE L⁵—O⁵ — OLD AND UNRELIABLE ANALYSES OF MAFIC ROCKS

	27	28	29
Rock Name	Basalt (Older Basalt)	Basalt (Older Basalt)	Decomposed basalt
Locality	Bellarine Pen., Port Arlington Vic.	Phillip Island, Vic.	Phillip Island, Vic.
Reference	**224**, 140; **541**, **104**, 7	**443**, 94	**336**, 46; **443**, 94
Analyst	R. Daintree	J. C. Newbery	J. C. Newbery
Remarks			Probably Sol. fraction only
Sp. Gr.	—	—	
SiO_2	34·445	34·16	25·45
Al_2O_3	17·373	23·22	28·67
Fe_2O_3	23·078	12·09	12·50
FeO	—		—
MgO	3·300	12·34	4·37
CaO		5·21	6·07
Na_2O		5·28	5·32
K_2O		3·10	0·91
H_2O+	8·271	2·16	15·48
H_2O-	13·023		
CO_2			
TiO_2		0·04	
P_2O_5			
MnO		0·46	
Other Constituents			
	99·490	98·06	98·77

TABLE P — LEUCITE-BEARING BASALTIC ROCKS

a. CaO/Alk. <1

$K_2O/Na_2O > 1 \cdot 25$

	1	2	3	4	5	6	7	8	9
Rock Name	Mamilite	Diopside-leucite-magmophorite-phlogopite Rock	Cedricite	Fitzroyite	Mamilite	Olivine-leucite Lamproite	Fitzroyite	Cedricite	Wolgidite
Locality	Hills Cone, W. Kimberley, W.A.	"P" Hill, Noonbanbah, W. Kimberley, W.A.	Mamilu Hill, W. Kimberley, W.A.	Dadja (Barjar) Hill, W. Kimberley, W.A.	Mamilu Hill, W. Kimberley, W.A.	Mt. North, W. Kimberley, W.A.	Mamilu Hill, W. Kimberley, W.A.	Mt. Gytha, W. Kimberley, W.A.	Mt. North, W. Kimberley, W.A.
Reference	**458**, 69; **549**, 75	**458**, 69; **467**, 43; **549**, 43	**405**, 107	**36**, 21; **449**, 58; **549**, 75	**405**, 107	**405**, 107	**405**, 107	**549**, 175	**549**, 75
Analyst	R. T. Prider	F. F. Field	R. T. Prider	D. G. Murray	R. T. Prider	R. T. Prider	R. T. Prider	R. T. Prider	C. R. Mesurier
Remarks									
Sp. Gr.	—	2·33	—	—	—	—	—	—	—
SiO_2	54·48	54·09	52·79	52·45	52·37	51·98	51·22	51·19	45·82
Al_2O_3	9·87	11·67	11·37	8·64	9·86	7·97	10·59	8·53	6·86
Fe_2O_3	4·89	4·91	5·41	5·48	6·15	3·92	6·91	6·12	6·07
FeO	1·70	2·14	1·83	0·94	1·48	1·34	1·33	1·38	1·98
MgO	5·35	4·76	4·84	6·42	5·90	9·41	6·67	7·15	10·90
CaO	1·89	1·91	2·21	2·01	3·32	3·18	2·34	5·82	4·70
Na_2O	0·88	tr.	0·45	0·38	0·24	0·36	0·07	0·58	0·84
K_2O	11·06	12·60	11·40	10·42	10·35	9·61	11·90	9·02	8·82
H_2O+	1·36	2·30	1·49	1·99	1·94	2·36	2·04	1·99	0·75
H_2O-	0·89	0·73	1·04	2·89	1·52	2·87	1·04	1·26	2·40
CO_2	abs.	abs.	—	abs.	—	abs.	—	abs.	0·08
TiO_2	5·57	4·08	5·00	5·85	4·82	4·96	4·00	4·89	7·34
P_2O_5	0·40	0·26	1·03	1·58	0·91	1·36	1·33	0·79	1·83
MnO	0·09	tr.	0·07	0·13	0·07	0·04	0·05	0·06	0·10
Other Constituents	BaO = 0·64 SO_3 = 0·10 SrO = 0·16 Cr_2O_3 = tr. ZrO_2 = 0·07 FeS_2 = 0·20 F = 0·09	BaO = 0·74 Cl = tr.	BaO = 1·23 ZrO_2 = tr. Cr_2O_3 = 0·06	BaO = 1·19	BaO = 0·93 ZrO_2 = abs. Cr_2O_3 = 0·07	BaO = 0·94 SrO = 0·13 ZrO_2 = 0·24 Cr_2O_3 = 0·09	BaO = 0·80 ZrO_2 = tr. Cr_2O_3 = 0·04	BaO = 0·60 SO_3 = 0·11 FeS_2 = 0·22 Cr_2O_3 = tr.	BaO = 1·27 F = p. FeS_2 = 0·07 Cl = tr. Cr_2O_3 = 0·07 V_2O_3 = 0·03
	99·69								
Less O = Cl, F, S	0·04								
	99·65	100·19	[100·22]	100·37	99·93	100·76	100·33	99·71	99·93

TABLE P — LEUCITE-BEARING BASALTIC ROCKS

a. CaO/Alk. <1				b. CaO/Alk = 1–2				
	$K_2O/Na_2O > 1·25$		$K_2O/Na_2O < 0·75$	$K_2O/Na_2O > 1·25$		$K_2O/Na_2O = 1·25–0·75$		
	10	11	12	1	2	3	4	5
Rock Name	Leucite Basalt	Fitzroyite	Leucite Kenyte	Leucite Basalt	Leucite Basalt	Leucite Monchiquite	Leucite Monchiquite	Leucite Monchiquite
Locality	Byrock, N.S.W.	Mt. North, W. Kimberley, W.A.	Cape Royds, S. Victoria Land, Ant.	Lake Cudgellico, N.S.W.	El Capitan, N.S.W.	Murrumburrah, N.S.W.	Murrumburrah, N.S.W.	Murrumburrah, N.S.W.
Reference	**330**, 302; **55**, 62; **554**, 695	**405**, 107	**554**, 299	**358**, 196; **55**, 62; **554**, 697	**330**, 302; **55**, 62; **554**, 719	**330**, 302; **554**, 915	**193**, 438	**193**, 438
Analyst	J. C. H. Mingaye	R. T. Prider		W. A. Greig	H. P. White	H. P. White	M. H. Harvey	M. H. Harvey
Remarks							(Biotite-free)	
Sp. Gr.	2·980	—		2·944	2·897	3·024	3·04	3·04
SiO_2	45·18	44·02	56·09	44·68	43·58	40·25	40·10	39·51
Al_2O_3	9·31	6·30	20·79	11·43	8·08	10·83	13·59	15·05
Fe_2O_3	6·31	5·98	1·54	7·00	5·00	5·30	4·27	2·43
FeO	4·08	2·01	3·84	4·67	5·77	8·00	8·11	9·22
MgO	10·77	11·98	1·26	10·25	12·91	12·53	12·03	12·39
CaO	8·56	4·61	3·18	9·44	8·88	9·64	10·12	10·96
Na_2O	1·73	0·28	7·33	1·56	0·90	3·76	3·93	4·50
K_2O	6·93	6·59	3·91	5·68	5·99	1·48	1·28	1·67
H_2O+	1·01	3·83	0·39	2·73	1·95	2·58	2·71	2·13
H_2O-	0·55	3·42	0·19	0·77	1·15	0·78	0·35	0·24
CO_2	0·17	abs.	—	0·20	0·11	1·14	abs.	abs.
TiO_2	4·36	6·57	1·23	0·84	4·64	2·74	2·32	2·19
P_2O_5	0·51	1·55	0·38	0·66	0·62	0·73	0·91	nd.
MnO	tr.	0·06	0·05	0·11	0·21	0·30	0·13	0·10
Other Constituents	Cl = 0·05 SrO = tr. Cr_2O_3 = 0·02 CuO = 0·01 BaO = 0·30 V_2O_3 = 0·02	BaO = 2·55 SrO = 0·07 ZrO_2 = 0·28 Cr_2O_3 = 0·09 SO_3 = 0·12	Cl = 0·17	Cl = 0·11 BaO = 0·02 Cr_2O_3 = 0·02 V_2O_3 = 0·02 (NiCo)O = tr.	Cl = tr. Cr_2O_3 = 0·02 (NiCo)O = 0·08 BaO = 0·32 SrO = tr. V_2O_3 = 0·03 CuO = 0·01	Cl = 0·03 Cr_2O_3 = 0·01 (NiCo)O = 0·06 BaO = 0·18 SrO = tr. V_2O_3 = 0·04		
	99·87		100·35	100·19		100·38		
Less O = Cl, F, S	0·01		0·04	0·02		0·01		
	99·86	100·31	100·31	100·17	100·25	100·37	99·85	100·39

TABLE P[2] — DEUTERICALLY-ALTERED LEUCITE-BEARING BASALTIC ROCKS

	1	2	3
Rock Name	Silicified Fitzroyite	Deuterically-altered Monchiquite	Carbonated Wolgidite
Locality	Hill C 48, W. Kimberley, W.A.	Murrumnurrah, N.S.W.	Wolgidee Hills, W. Kimberley, W.A.
Reference	**467**, 44, **549**, 64	**193**, 438	**549**, 75
Analyst	F. F. Field	M. H. Harvey	R. T. Prider
Remarks			
Sp. Gr.	2·53	3·03	—
SiO_2	59·59	41·72	36·02
Al_2O_3	8·23	13·55	5·32
Fe_2O_3	5·25	2·54	5·37
FeO	1·20	8·87	0·89
MgO	5·97	11·56	7·79
CaO	1·44	9·88	15·12
Na_2O	tr.	3·24	0·16
K_2O	8·82	1·51	7·25
H_2O+	1·88	2·01	1·92
H_2O-	1·41	0·39	0·90
CO_2	abs.	1·53	9·84
TiO_2	5·44	2·26	5·31
P_2O_5	0·28	1·09	1·15
MnO	tr.	0·13	0·04
Other Constituents	BaO=0·31 Cl=tr.		BaO=1·58 SO_3=0·27 SrO=0·22 F=0·17 ZrO_2=0·19 FeS_2=0·21 Cr_2O_3=tr.
			99·72
Less O= Cl, F, S			0·07
	99·82	100·28	99·65

TABLE P4 — INCOMPLETE ANALYSES OF LEUCITE-BEARING BASALTIC ROCKS

	1	2
Rock Name	Leucite Basalt	Leucite Basalt
Locality	El Capitan, N.S.W.	Byrock, N.S.W.
Reference	**106**, 156; **330**, 302; **340**, 177; **554**, 1131	**106**, 156; **330**, 302; **340**, 177; **1554**, 1131
Analyst	J. C. H. Mingaye	J. C. H. Mingaye
Remarks	*Moisture	*Moisture
Sp. Gr.	2·910	
SiO_2	47·31	46·43
Al_2O_3	18·51	15·99
Fe_2O_3	14·56	15·04
FeO	—	—
MgO	2·28	1·74
CaO	7·57	9·27
Na_2O	0·98	0·51
K_2O	6·14	6·93
H_2O+		
H_2O-	2·31*	3·20*
CO_2	—	—
TiO_2	—	—
P_2O_5	0·55	0·73
MnO	—	—
Other Constituents		
	100·21	99·84

TABLE Q — XENOLITHS IN VOLCANIC ROCKS

a. IGNEOUS

CaO < 5%

	1	2	3	4	5	6	7	8	9
Rock Name	Olivine-pyroxene Xenolith	Lherzolite	Peridotite	Peridotite	Peridotite	Peridotite	Peridotite	Peridotite	Dunite
Locality	Aberfeldy, Vic.	Mt. Gambier, S.A.	Eucumbene-Tumut Tunnel, Snowy Mts., N.S.W.	Eucumbene-Tumut Tunnel, Snowy Mts., N.S.W.	Armidale, N.S.W.	Delegate, N.S.W.	S.E. of Oberon, N.S.W.	Kiama, N.S.W.	The Basin, Nepean River, N.S.W.
Reference	**164**, 476; **294**, 44	**484**, 65	**283**	**283**	**578**, 190	**283**	**578**, 190	**578**, 190	**387**, 137
Analyst	F. F. Field	E. R. Stanley	A. J. Easton	Avery & Anderson	J. H. Pyle	Avery & Anderson	W. H. Herdsman	W. H. Herdsman	G. D. Osborne
Remarks	(In basalt)	(In basalt)	(In basalt)		(In basalt flow)	(In basalt breccia pipe)	(In basalt flow)	(In lamprophyre dyke)	(In basalt)
Sp. Gr.	—	3·33	3·28	3·28	3·33	3·15	3·29	3·27	—
SiO_2	45·33	45·22	44·97	44·34	44·20	43·55	43·43	43·25	41·20
Al_2O_3	2·75	2·99	0·97	1·82	2·95	1·66	2·74	2·55	2·85
Fe_2O_3	0·57	0·20	2·69	0·62	1·16	1·69	1·01	2·09	1·67
FeO	7·33	7·17	5·53	7·38	7·70	6·03	7·21	7·33	7·23
MgO	41·22	40·89	41·60	41·35	40·01	41·81	40·98	37·77	38·04
CaO	1·34	1·93	1·77	2·22	2·65	1·31	2·12	2·07	1·29
Na_2O	tr.	0·55	0·06	tr.	0·16	0·06	0·19	0·20	tr.
K_2O	tr.	0·21	0·02	0·11	0·07	0·16	tr.	tr.	abs.
H_2O+	1·18	0·20	0·62	0·18	0·17	2·91	0·74	2·58	2·65
H_2O-	0·60	0·05	abs.	0·82	0·29	0·36	0·68	0·07	0·92
CO_2	—	abs.	0·44	—	0·06	—	abs.	abs.	3·40
TiO_2	tr.	0·14	0·21	0·10	0·12	0·14	0·12	0·28	tr.
P_2O_5	abs.	0·20	0·04	0·68	abs.	0·57	abs.	0·01	—
MnO	—	0·28	0·13	0·11	0·14	0·11	0·12	0·12	0·26
Cr_2O_3		0·20	0·53	0·14	0·31	0·24	0·25	0·35	0·21
Other Constituents		NiO = 0·14 SrO = 0·04 BaO = abs.			NiO = 0·27		NiO = 0·23	NiO = 0·24	(NiCo)O = 0·45
	100·32	100·41	99·58	99·87	100·26	100·60	99·82	99·91	100·17

TABLE Q — XENOLITHS IN VOLCANIC ROCKS

a. IGNEOUS

	CaO<5%		CaO>5%						
	10	11	12	13	14	15	16	17	18
Rock Name	Forsterite Inclusion	Dunite	Garnet-pyroxene- plagioclase Granulite	Two-pyroxene-plagioclase Granulite	Diallage Rock	Pyroxenite	Anorthosite	Hornblende Gabbro	Two-pyroxene-plagioclase Granulite
Locality	Mt. Lamington, T.P. & N.G.	Dundas, near Sydney, N.S.W.	Eucumbene-Tumut Tunnel, Snowy Mts., N.S.W.	Delegate, N.S.W.	The Basin, Nepean River, N.S.W.	Dundas, near Sydney, N.S.W.	Dundas, near Sydney, N.S.W.	Tumleo, New Guinea, T.P. & N.G.	Delegate, N.S.W.
Reference	**509**, 82	**26**, 532; **554**, 933	**283**,	**283**	**26**, 530; **351**, 174; **387**, 184, **554**, 925	**26**, 530; **554**, 661	**26**, 517; **554**, 547	**17**, 25; **432**, 445; **554**, 1063	**283**
Analyst	A. W. Dye & Co.	W. N. Benson	A. J. Easton	A. J. Easton	J. C. H. Mingaye	W. N. Benson	W. N. Benson	E. Ludwig	A. J. Easton
Remarks	(May be sedimentary)	(In basalt)	(In basalt)	(In basalt breccia)	(In basalt)	(In basalt)	(In basalt)	(In andesite)	(In basalt breccia)
Sp. Gr.	—	—	3·04	2·96	2·802	—	—	—	3·01
SiO_2	39·90	39·13	51·40	51·12	50·36	50·09	48·86	47·97	47·72
Al_2O_3	0·91	3·48	16·61	16·40	2·46	11·31	21·88	20·03	17·21
Fe_2O_3	6·40	1·83	3·45	3·40	4·26	1·91	1·83	8·08	4·18
FeO		7·58	4·94	4·80	4·41	3·09	4·87	1·29	7·12
MgO	52·3	42·15	9·20	8·34	20·76	13·83	3·79	5·43	7·77
CaO	abs.	0·07	9·57	11·22	6·15	15·63	11·69	12·10	11·52
Na_2O	nd.	—	2·79	2·99	0·51	1·92	3·30	1·54	2·27
K_2O	nd.	—	0·26	0·43	0·09	tr.	0·20	0·17	— 0·11
H_2O+	abs.	0·80	0·76	0·67	4·07	1·06	1·22	2·04	1·00
H_2O-	abs.	2·80	0·10	abs.	2·21	0·61	1·04	—	0·23
CO_2	nd.	3·05	0·19	0·05	4·44	0·16	—	—	0·39
TiO_2	tr.	0·16	0·90	0·60	tr.	0·95	1·26	1·46	0·65
P_2O_5	nd.	—	0·04	0·15	tr.	—	0·28	tr.	0·11
MnO	0·11	0·21	0·12	0·15	0·29	0·06	0·34	tr.	0·18
Cr_2O_3	—	0·20	0·01	0·18	0·04	0·21	—	—	tr.
Other Constituents		(NiCo)O = 0·04			V_2O_3 = tr. SrO = tr. NiO = 0·31 Li_2O = tr. BaO = 0·02	(NiCo)O = tr.	(NiCo)O = 0·10		
	99·62	[101·50]	100·34	100·50	100·38	100·83	100·66	100·11	100·46

TABLE Q — XENOLITHS IN VOLCANIC ROCKS

a. IGNEOUS

	CaO>5%								
	19	20	21	22	23	24	25	26	27
Rock Name	Two-pyroxene-plagioclase Granulite	Anhydrite-bearing Hornblendite	Troctolite	Quartz-carbonate-picotite Rock	Garnet-pyroxene-plagioclase Granulite	Garnet-pyroxene-plagioclase Granulite	Eclogite	Garnet-pyroxene-plagioclase Granulite	Eclogite
Locality	Delegate, N.S.W.	Mt. Lamington, T.P. & N.G.	The Basin, Nepean River, N.S.W.	Dundas, near Sydney, N.S.W.	Delegate, N.S.W.	Delegate, N.S.W.	Delegate, N.S.W.	Delegate, N.S.W.	Delegate, N.S.W.
Reference	**283**	**509**, 82	**387**, 131	**26**, 535	**283**	**283**	**283**	**383**	**283**
Analyst	A. J. Easton	A. W. Dye & Co.	G. D. Osborne	W. N. Benson	Avery & Anderson	A. J. Easton	Avery & Anderson	A. J. Easton	A. J. Easton
Remarks	(In basalt breccia)	(In andesite)	? MgO				(In basalt breccia pipe)	(In basalt breccia pipe)	(In basalt breccia pipe)
Sp. Gr.	2·96	—	—	—	2·88	3·14	3·29	3·20	3·44
SiO_2	47·60	47·48	46·71	46·29	46·02	45·93	45·60	45·51	45·13
Al_2O_3	18·17	10·42	24·08	4·66	16·72	16·97	13·77	16·58	13·02
Fe_2O_3	2·20	3·52	0·51	1·93	1·54	5·59	2·20	4·76	5·99
FeO	4·18	4·97	4·99	10·10	7·53	5·80	6·54	6·03	5·88
MgO	10·18	13·71	2·12	7·13	8·16	7·97	14·30	7·57	11·81
CaO	14·73	10·86	10·01	9·36	10·40	11·96	12·86	11·88	14·37
Na_2O	1·19	1·97	2·51	—	3·19	3·21	1·18	3·10	1·49
K_2O	0·03	1·30	0·10	—	0·96	0·21	0·48	0·23	0·14
H_2O+	0·95	tr.	1·22	0·11	3·47	1·05	1·50	1·56	0·11
H_2O-	0·41	0·03	0·69	—	0·67	0·32	0·46	0·10	0·09
CO_2	0·25	abs.	—	19·34	—	0·21	—	0·35	0·02
TiO_2	0·33	2·44	0·26	0·12	0·74	0·56	0·91	1·96	1·91
P_2O_5	0·09	0·60	—	—	0·20	0·47	0·12	0·76	0·24
MnO	0·12	0·18	0·27	0·19	0·20	0·17	0·20	0·19	0·30
Cr_2O_3	0·07	—	—	0·24	0·01	0·01	0·06	0·065	0·06
Other Constituents		SO_3=2·33 Cl=0·08		(NiCo)O=0·05					
	100·50	99·89	[93·47]	[99·52]	99·81	100·43	100·19	100·64	100·56

TABLE Q — XENOLITHS IN VOLCANIC ROCKS

a. IGNEOUS

CaO > 5%

	28	29	30	31	32	33	34
Rock Name	Eclogite	Spinel-garnet Pyroxenite	Eclogite	Two-pyroxene-plagioclase Granulite	Altered Garnet-pyroxene-plagioclase Granulite	Altered Eclogite	Eclogite
Locality	Delegate, N.S.W.	Delegate, N.S.W.	Delegate, N.S.W.	Delegate, N.S.W.	Ruby Hill, Bingera, N.S.W.	Ruby Hill, Bingera, N.S.W.	Ruby Hill, Bingera, N.S.W.
Reference	**283**	**283**	**283**	**283**	**283**	**283**	**71**, 37; **344**, 206
Analyst	A. J. Easton	A. J. Easton	A. J. Easton	Avery & Anderson	A. J. Easton	A. J. Easton	H. P. White
Remarks	(In basalt breccia pipe)	(In basalt breccia pipe)	(In basalt breccia pipe)	(In basalt breccia pipe)	(In basalt breccia pipe)		
Sp. Gr.	3·46	3·28	3·46	3·11	3·08	2·93	—
SiO_2	45·09	44·81	44·51	44·46	44·30	43·46	43·05
Al_2O_3	12·53	14·59	15·15	17·42	18·62	14·49	20·74
Fe_2I_3	7·62	4·10	5·83	2·02	5·35	7·49	4·55
FeO	8·21	1·37	6·49	9·02	4·04	4·62	4·08
MgO	10·12	17·86	12·25	10·16	8·63	7·59	7·06
CaO	12·37	15·11	13·13	12·72	14·52	14·57	15·30
Na_2O	2·02	0·74	1·30	0·33	1·33	1·64	1·59
K_2O	0·17	0·06	0·17	0·53	0·07	0·16	0·21
H_2O+	0·37	0·88	0·45	1·78	1·65	2·13	2·97
H_2O-	0·12	0·13	0·05	0·24	0·24	1·31	0·50
CO_2	0·23	abs.	0·06	—	0·35	0·28	—
TiO_2	1·26	0·03	0·92	0·74	0·94	2·36	tr.
P_2O_5	0·34	0·03	0·08	0·15	0·04	0·07	0·02
MnO	0·23	0·14	0·21	0·22	0·13	0·14	0·23
Cr_2O_3	0·03	0·05	0·02	0·01		0·02	
Other Constituents							V_2O_3 = tr.
	100·71	99·90	100·62	99·80	100·21	100·33	100·30

TABLE Q — XENOLITHS IN VOLCANIC ROCKS

b. SEDIMENTARY

	1	2	3	4	5
Rock Name	Hawkesbury Sandstone	Shale	Vitrified Shale	Chert or Adinole	Indurated Argillaceous Sandstone
Locality	Peats Ridge, 50 miles N. of Sydney, N.S.W.	Peats Ridge, 50 miles N. of Sydney, N.S.W.	Peats Ridge, 50 miles N. of Sydney, N.S.W.	Warrum-bungle Mts., N.S.W.	Mt. Dandenong, Vic.
Refer-ence	**576**, 274	**576**, 274	**576**, 274	**236**, 575	**118**, 102 **134**, 141
Analyst	J. H. Pyle	J. H. Pyle	J. H. Pyle	H. I. Jensen	F. F. Field
Remarks	Core of Xenolith in analcite basalt	Core of Xenolith in analcite basalt	Margin of Xenolith in analcite basalt	Xenolith in Trachyte	Xenolith in dacite
Sp. Gr.	2·28	2·44	2·68		
SiO_2	70·34	67·74	67·02	66·90	61·38
Al_2O_3	5·73	14·59	15·30	15·75	20·28
Fe_2O_3	1·14	0·25	0·25	4·42	6·91
FeO	1·41	1·89	2·10		0·78
MgO	5·12	0·98	0·83	1·04	0·99
CaO	3·08	6·90	3·00	0·48	tr.
Na_2O	1·41	1·26	2·59	4·57	1·07
K_2O	1·76	0·52	1·98	5·18	3·46
H_2O+	3·90	2·01	3·50	1·04	3·38
H_2O-	3·85	2·14	1·44		0·57
CO_2	1·09	abs.	abs.	—	abs.
TiO_2	0·95	1·40	1·70	0·62	1·12
P_2O_5	0·13	0·26	0·25	—	tr.
MnO	0·03	0·05	0·02	—	tr.
Other Con-stituents					FeS_2=abs. Cl=tr.
	99·94	99·99	99·98	100·00	99·94

TABLE R — SERPENTINITES AND ASSOCIATED ULTRAMAFIC ROCKS

a. CaO < 1%

	1	2	3	4	5	6	7	8	9
Rock Name	Pyroxenite	Antigorite Serpentinite	Schistose Serpentinite	Pyroxenite (Bronzite)	Serpentinite	Serpentinite	Matrix of Peridotite Breccia	Serpentinite	Serpentinite
Locality	Kokoda, Papua, T.P. & N.G.	Bauhinia Ck., Qld.	Mary Valley, Qld.	S. of Renison Bell, Tas.	356 M.P. on Railway line, Coolgardie, W.A.	Andersons Ck., Beaconsfield, Tas.	Musa Valley, E. Papua, T.P. & N.G.	Ninghanboun Hills, W.A.	Andersons Ck., Beaconsfield, Tas.
Reference	**95**	**95**	**568**, 310	**508**, 84	**563**	**508**, 35	**182**, 14	**456**, 118	**508**, 35
Analyst	S. Baker	S. Baker	T. R. Lowth	W. St C. Manson	W. Inglis	Tas. Dept. Mines	D. H. Green	H. P. Rowledge	Tas. Dept. Min., Launc.
Remarks	*Loss on ignition	*Loss on ignition							(With vein of Chrysolite)
Sp. Gr.		—	—	—	2·61	—	—	2·74	—
SiO_2	55·66	51·04	47·40	46·95	44·97	43·04	42·09	41·91	41·69
Al_2O_3	0·79	0·79	0·43	2·69	4·66	0·91	1·90	3·18	0·87
Fe_2O_3	4·42	10·09	6·12	} 6·63	2·92	4·07	1·59	2·28	} 5·17
FeO	2·95	0·61	0·99		5·24	1·06	3·78	4·87	
MgO	34·64	26·15	29·90	34·65	30·61	38·35	43·60	36·10	39·67
CaO	0·05	tr.	0·50	0·97	0·18	—	tr.	0·04	tr.
Na_2O	0·70	tr.	tr.		abs.		0·02	—	
K_2O	0·12	tr.	0·07		abs.		0·02	—	
H_2O+	0·97*	10·35*	} 14·22	7·84	9·78	} 12·11	2·74	} 10·82	12·32
H_2O-	0·03	0·03			0·92		2·46		
CO_2	—	—	—		0·06		0·16	—	
TiO_2	0·10	0·15	0·02		0·16		abs.	0·17	
P_2O_5	0·03	0·03	0·01		0·07		0·05	—	
MnO	0·07	0·08	0·07	0·19	0·03	0·09	0·11	0·05	0·04
Cr_2O_3	0·10	0·38	0·41	0·70	0·26	0·33	0·35	0·55	0·67
Other Constituents	NiO = 0·05	NiO = 0·10	NiO = 0·39		FeS_2 = 0·09		NiO = 0·81 S = 0·03 Cl = 0·05		
							99·76		
Less O = Cl, F, S							0·02		
	100·68	99·80	100·53	100·62	99·95	99·96	99·74	99·97	100·43

TABLE R — SERPENTINITES AND ASSOCIATED ULTRAMAFIC ROCKS

a. CaO <1%

	10	11	12	13	14	15	16	17	18
Rock Name	Serpentinite	Matrix of Serpentinite Breccia	Serpentinite	Fragment in Peridotite Breccia	Matrix of Serpentinite Breccia	Serpentinite	Fragment in Serpentinite Breccia	Antigorite Serpentinite	Serpentinite Breccia
Locality	S. of Renison Bell, Tas.	Musa Valley, E. Papua, T.P. & N.G.	Berthong, near Wallendbeen, N.S.W.	Musa Valley, E. Papua, T.P. & N.G.	Musa Valley, E. Papua, T.P. & N.G.	Mt. Wellington, Vic.	Musa Valley, E. Papua, T.P. & N.G.	65 miles S.E. of Einasleigh, Qld.	Mary Valley, Qld.
Reference	**508**, 84	**182**, 14	**227**, 23 **596**, 70	**182**, 14	**182**, 14	**548**	**182**, 14	**95**	**568**, 310
Analyst		D. H. Green	J. C. H. Mingaye	D. H. Green	D. H. Green	Not Stated	D. H. Green	S. Baker	T. R. Lowth
Remarks		(Mesh-structure Serpentinite)			(Antigorite Serpentinite)		(Antigorite Serpentinite)	*Loss on ignition	
Sp. Gr.	—	—	2·52	—	—	—	—	—	—
SiO_2	41·53	41·11	40·80	40·44	40·41	40·3	40·20	40·14	40·10
Al_2O_3	1·46	1·01	2·54	0·76	1·39	16·1	2·04	2·40	1·83
Fe_2O_3	2·15	4·98	6·20	1·82	3·99		3·59	4·98	6·04
FeO		0·92	0·48	5·01	1·10		3·70	1·30	2·32
MgO	41·72	36·39	32·82	48·39	37·68	32·1	42·83	37·08	35·60
CaO		0·42	abs.	tr.	tr.	abs.	tr.	0·10	0·49
Na_2O		0·01	0·27	0·02	0·01		abs.	0·22	tr'
K_2O		0·01	abs.	0·03	0·02		0·01	0·04	0·05
H_2O+	13·51	11·50	10·11	1·94	10·01	10·1	6·63	12·83*	13·23
H_2O-		2·90	2·87	0·51	3·59		0·48	0·01	
CO_2		0·29	—	0·08	1·13		0·06	—	—
TiO_2		abs.	—	abs.	abs.		abs.	0·10	0·02
P_2O_5		0·04	—	0·06	0·04		0·03	0·03	0·01
MnO	tr.	0·05	tr.	0·11	0·03		0·05	0·12	0·10
Cr_2O_3	0·48	0·35	0·29	0·41	0·22		0·27	0·40	0·38
Other Constituents		NiO=0·71 S=0·02 Cl=0·03	(NiCo)O=0·25	NiO=0·82	NiO=0·75 Cl=0·10 S=0·06		NiO=0·61	NiO=0·25	NiO=0·46
		100·74			100·53				
Less O=Cl, F, S		0·01			0·03				
	[100·85]	100·73	96·63	100·40	100·50	98·6	100·50	100·00	100·63

TABLE R — SERPENTINITES AND ASSOCIATED ULTRAMAFIC ROCKS

a. CaO < 1%

	19	20	21	22	23	24	25	26	27
Rock Name	Serpentinite	Serpentinite	Fragment in Serpentinite Breccia	Serpentinite	Serpentinite	Serpentinite	Fragment in Peridotite Breccia	Serpentinite	Serpentinite
Locality	Mt. Timbertop, Vic.	Comet Vale, W.A.	Musa Valley, E. Papua, T.P. & N.G.	Box Soak, Port Hedland, W.A.	Soanesville, N.W. Division, W.A.	Eulaminna Siding, W.A.	Musa Valley, E. Papua, T.P. & N.G.	Dolodrook, Vic.	Andersons Ck., Beaconsfield, Tas.
Reference	**443**, 94	**274**, 11	**182**, 14	**301**, 12; **303**, 7; **521**, 637	**34**, 47; **447**, 68	**326**, 113	**182**, 14	**511**, 256	**508**, 35
Analyst	Not Stated	H. Bowley	D. H. Green	E. S. Simpson	A. J. Robertson	J. D. Hayton	D. H. Green	G. Ampt	W. St C. Manson
Remarks			(Mesh-structure serpentinite)	(Augite peridotite)	(peridotite)	(peridotite) *Dried sample			
Sp. Gr.	—	2·64	—	2·69	—	2·66	—	2·80	—
SiO_2	39·90	39·31	39·10	38·91	38·84	38·68	38·57	38·43	38·41
Al_2O_3	8·20	3·36	1·08	1·08	2·10	2·80	1·02	3·08	1·38
Fe_2O_3		4·82	5·35	10·30	9·52	6·59	2·61	0·37	14·08
FeO	—	1·78	2·27	1·80	0·53	2·33	4·11	6·40	
MgO	36·80	37·72	42·06	36·65	34·06	36·02	46·70	35·08	33·96
CaO		abs.	0·28	tr.	0·03	abs.	0·24	—	—
Na_2O		0·28	abs.	0·40	0·10	abs.	0·02	0·77	—
K_2O		tr.	abs.	tr.	0·13	0·06	0·02	0·37	—
H_2O+	15·40	11·56	8·19	10·89	12·81	12·14	5·08	13·58	11·56
H_2O-		0·34	1·28	0·28	1·00	*	0·06	1·35	
CO_2		abs.	0·16	—	tr.	abs.	0·88	—	
TiO_2		0·25	abs.	0·06	0·04	0·15	abs.	—	
P_2O_5		tr.	0·03	—	tr.	0·09	0·04	—	
MnO		0·32	0·05	0·08	tr.	0·18	0·10	0·12	0·05
Cr_2O_3		0·14	0·37	—	0·79	0·59	0·34	0·16	1·03
Other Constituents		NiO = 0·36 FeS_2 = 0·17	NiO = 0·45		FeS_2 = 0·19	SO_3 = 0·07 NiO = 0·30 FeS_2 = 0·06 V_2O_3 = tr.	NiO = 0·49	CuO = 0·06 NiO = 0·38	
	100·30	100·41	100·67	100·45	100·14	100·06	100·28	100·15	100·47

TABLE R — SERPENTINITES AND ASSOCIATED ULTRAMAFIC ROCKS

a. CaO <1%

	28	29	30	31	32	33	34
Rock Name	Serpentinite	Serpentinite	Dunite	Matrix of Peridotite Breccia	Serpentinite	Pyroxene Peridotite	Chromite Serpentinite
Locality	62 miles S.E. of Einasleigh, Qld.	Lake Goongarrie, Comet Vale, W.A.	65 miles S.E. of Einasleigh, Qld.	Musa Valley, E. Papua, T.P. & N.G.	Kokoda, Papua, T.P. & N.G.	Coolgardie, W.A.	Paling Yards, N.E. of Barraba, N.S.W.
Reference	**95**	**274**, 12	**95**	**182**, 14	**95**	**88**, 16	**28**, 705
Analyst	S. Baker	H. Bowley	S. Baker	D. H. Green	S. Baker	E. S. Simpson	W. N. Benson
Remarks	*Loss on ignition		*Loss on ignition		*Loss on ignition		
Sp. Gr.	—	2·71	—	—		2·71	—
SiO_2	38·10	37·12	37·00	33·49	33·00	32·87	17·23
Al_2O_3	3·58	1·48	0·89	2·25	1·83	17·44	5·16
Fe_2O_3	5·20	1·46	11·72	1·85	7·92	1·44	—
FeO	1·40	5·33	0·42	2·23	1·06	4·99	13·51
MgO	37·23	37·54	35·39	43·07	44·37	30·07	21·80
CaO	0·10	abs.	tr.	0·08	0·10	0·10	—
Na_2O	0·30	0·38	tr.	0·02	0·65	0·05	—
K_2O	0·03	0·11	tr.	0·02	0·11	0·03	—
H_2O+	13·40*	10·75	13·90*	6·91	10·90*	11·65	4·80
H_2O-	0·02	0·08	0·01	2·28	0·34	0·48	—
CO_2	—	5·45	—	6·82	—	0·03	—
TiO_2	0·10	0·13	—	abs.	0·10	0·29	—
P_2O_5	0·05	abs.	0·04	0·05	0·04	0·15	—
MnO	0·09	0·22	0·17	0·02	0·05	0·35	—
Cr_2O_3	0·58	0·16	0·23	0·31	0·21	0·08	37·73
Other Constituents	NiO=0·23	NiO=0·30	NiO=0·12	NiO=0·30 Cl=0·05 S=0·04 99·79	NiO=0·25	FeS_2=0·06 V_2O_3=0·03 NiO=0·22 CoO=0·09	
Less O= Cl, F, S				0·03			
	100·41	100·51	99·89	99·76	100·93	100·42	100·23

b. CaO = 1% – 5%

	1	2	3	4	5	6	7	8	9
Rock Name	Hypersthenite	Hypersthene-rich Pyroxenite	Enstatite Rock	Hypersthenite	Pyroxenite	Serpentinite	Actinolite Peridotite	Matrix of Basalt-peridotite Breccia	Mica-hornblende Peridotite
Locality	Norseman, W.A.	Mt. Bischoff, Tas.	S. of Crow Mt., N.S.W.	Mt. Woodroffe, S.A.	Andersons Ck., Beaconsfield, Tas.	Kalgoorlie, W.A.	Westonia, W.A.	Musa Valley, E. Papua, T.P. & N.G.	Near Aberfeldy, Vic.
Reference	**67**, 119; **144**, 80; **447**, 30; **554**, 70	**414**, 86	**28**, 705; **29**, 171	**584**	**508**, 35	**157**, 56	**156**, 281; **447**, 78; **457**, 271	**182**, 14	**270**, 172; **294** 44; **537**, 63; **554**, 933
Analyst	C. C. Williams	Not Stated	W. N. Benson	W. H. Herdsman	W. St C. Manson	Not Stated	H. Bowley	D. H. Green	A. G. Hall
Remarks					*Loss on ignition				
Sp. Gr.	3·25	—	—	—		—	—	—	2·931
SiO_2	55·27	53·60	53·55	50·46	48·64	47·44	43·60	42·91	41·43
Al_2O_3	3·67	2·34	1·53	4·58	2·06	6·65	3·46	10·17	5·92
Fe_2O_3	0·45	10·86	0·53	2·02	8·36	0·76	3·49	4·50	4·03
FeO	7·17	—	4·27	18·24	—	6·78	4·46	2·37	7·46
MgO	28·36	25·42	35·01	21·78	31·43	26·68	33·24	23·11	27·49
CaO	2·93	1·58	1·79	2·02	3·60	3·39	4·69	2·46	4·31
Na_2O	0·86	0·85	abs.	0·13	—	0·33	0·22	0·78	0·35
K_2O	0·18	abs.	abs.	0·05	—	—	0·07	0·65	0·64
H_2O+	0·30	4·90	2·26	0·14	5·81*	5·68	5·56	7·74	6·47
H_2O-	0·04		0·14	0·12		0·78	0·16	4·68	0·32
CO_2	abs.		abs.	abs.	—	2·06	abs.	0·09	0·38
TiO_2	0·16		0·17	0·43	tr.	—	0·27	0·64	0·60
P_2O_5	tr.		—	abs.	tr.	—	0·53	0·04	0·24
MnO	0·03		0·12	0·35	0·12	—	0·19	0·15	0·42
Cr_2O_3	0·46		0·42		0·57	—	0·16	0·20	0·31
Other Constituents	FeS_2 = 0·17	SO_3 = 0·34 F = 0·31	(NiCo)O = tr.				FeS_2 = 0·09	NiO = 0·30 Cl = 0·04 S = 0·03	NiO = 0·03
		100·20						100·86	
Less O = Cl, F, S		0·13						0·02	
	100·05	100·07	99·79	100·32	[100·59]	100·55	100·19	100·84	100·50

TABLE R — SERPENTINITES AND ASSOCIATED ULTRAMAFIC ROCKS

b. CaO = 1% – 5%

	10	11	12	13	14	15	16	17
Rock Name	Serpentinite	Serpentinite	Talc-chlorite Serpentinite	Serpentinized Harzburgite	Serpentinite	Serpentinite	Antigorite Serpentinite	Serpentinite
Locality	Ora Banda, W.A.	Toodyay, W.A.	Meeka-tharra, W.A.	Mary Valley, Qld.	Hannans Lake, Kalgoorlie, W.A.	Mt. Hunt, Kalgoorlie, W.A.	Bowling Alley Point, N. of Nundle, N.S.W.	Dolodrook Ck., Mt. Wellington, Vic.
Refer-ence	**271**, 48; **153**, 49; **447**, 70	**402**, 128	**456**, 118	**568**, 310	**445**, 75; **447**, 76; **521**, 637; **554**, 1145	**447**, 76; **460**, 61	**28**, 705	**548**
Analyst	H. Bowley	R. T. Prider	H. Bowley	T. R. Lowth	C. C. Williams	H. Bowley	W. N. Benson	A. G. Hall
Remarks	(Altered peridotite dyke)							
Sp. Gr.	—	—	2·74	—	2·81	2·72	—	2·663
SiO_2	40·60	40·33	40·32	40·00	39·35	39·06	38·23	38·17
Al_2O_3	1·48	2·75	6·63	1·09	6·15	3·36	0·43	3·75
Fe_2O_3	7·77	5·43	3·41	8·21	4·75	2·77	4·27	7·01
FeO	5·36	5·48	7·34	1·22	5·17	5·93	1·73	1·27
MgO	31·33	33·39	25·66	34·20	28·51	32·94	38·99	34·56
CaO	1·06	1·29	4·57	1·20	3·10	2·43	1·09	2·68
Na_2O	0·08	abs.	0·22	tr.	0·73	0·12	abs.	0·04
K_2O	0·03	abs.	tr.	tr.	0·15	0·08	abs.	tr.
H_2O+	10·01	10·16	7·16	13·60	9·05	8·38	12·80	11·68
H_2O-	1·13	0·10	1·32		0·14	0·54	0·55	1·27
CO_2	abs.	—	2·78	—	abs.	2·88	2·57	abs.
TiO_2	0·14	0·28	0·64	0·03	0·60	0·51	0·04	tr.
P_2O_5	0·09	abs.	—	0·01	0·01	0·26	—	abs.
MnO	0·21	0·14	nd.	0·14	1·21	0·77	0·21	0·20
Cr_2O_5	0·60	0·10	—	0·41	0·40	0·24	0·36	—
Other Con-stituents	FeS_2 = 0·02		C = 0·06	NiO = 0·33	V_2O_3 = tr. NiO = 0·36 FeS_2 = abs.	V_2O_3 = 0·01 SO_3 = 0·37 BaO = abs.	(NiCo)O = 0·06	SO_3 = abs. Cl = tr.
	99·91	99·45	100·11	100·44	99·68	100·65	101·33	100·63

TABLE R — SERPENTINITES AND ASSOCIATED ULTRAMAFIC ROCKS

c. CaO > 5%

	1	2	3	4	5	6	7	8	9
Rock Name	Tremolite Rock	Anorthosite (Pyroxene Andesinite)	Pyroxenite	Serpertinized Pyroxenite	Pyroxenite	Websterite	Eucrite Gabbro	Diopside Peridotite	Peridotite
Locality	Paling Yards, N.E. of Barraba, N.S.W.	Mt. Woodroffe, S.A.	Broken Hill, N.S.W.	Andersons Ck., Beaconsfield, Tas.	Dolodrook, near Mt. Wellington, Vic.	65 miles S.E. of Einasleigh, Qld.	Bowling Alley Point, Nundle, N.S.W.	Mt. Whinham, Mann Range, S.A.	Westonia, W.A.
Reference	**28**, 705	**584**	**352**, 198; **554**, 593	**508**	**270**, 174; **511**, 257; **554**, 705	**95**	**28**, 706; **29**, 171	**435**, 32	**447**, 78
Analyst	W. N. Benson	W. H. Herdsman	Not Stated	W. St C. Manson	G. Ampt	S. Baker	W. N. Benson	E. G. Robinson	H. Bowley
Remarks						*Loss on ignition	Corrected in **29***		(Slightly Serpentinized)
Sp. Gr.	—	—	3·144	—	3·222	—	—	—	—
SiO_2	54·51	53·78	52·00	51·97	51·87	51·20	48·45	47·77	46·28
Al_2O_3	2·00	23·42	10·72	1·66	5·28	0·31	16·96	4·87	7·11
Fe_2O_3	0·94	0·58	2·50	} 4·28	2·29	9·88	0·02	1·42	2·12
FeO	4·85	4·10	11·61	}	7·37	1·55	2·96	3·21	7·47
MgO	23·50	3·82	3·63	27·10	22·52	24·49	11·80	23·27	23·00
CaO	10·99	8·86	16·02	9·81	8·71	5·75	15·86	16·50	9·12
Na_2O	0·12	4·28	0·78	—	0·47	tr.	0·48	0·37	0·74
K_2O	0·34	0·70	0·37	—	0·31	tr.	0·26	0·02	0·30
H_2O+	1·46	0·22	0·18	} 3·90	0·97	6·60*	1·82	0·58	2·12
H_2O-	0·07	0·08	0·14	}	0·17	abs.	0·13	0·21	0·03
CO_2	abs.	—	0·05	—	—	—	abs.	—	abs.
TiO_2	0·24	0·14	1·40	—	tr.	—	0·30	0·12	0·59
P_2O_5	—	tr.	0·11	—	tr.	0·06	—	0·01	0·18
MnO	0·08	0·12	0·25	0·12	0·10	0·08	0·07	0·66	0·25
Cr_2O_3	0·29		—	0·56	0·21	0·22		0·79	0·49
Other Constituents	NiO = 0·05	BaO = tr.	V_2O_3 = 0·05 BaO = 0·01		NiO = 0·21 CuO = 0·06		FeS_2 = abs. Cr_2O_3 = 0·28		V_2O_3 = 0·03 FeS_2 = 0·39
	[99·44]	100·10	99·82	99·40	100·54	100·14	99·39*	99·80	100·22

TABLE R — SERPENTINITES AND ASSOCIATED ULTRAMAFIC ROCKS

c. CaO > 5%

	10	11	12	13	14	15
Rock Name	Serpentinite	Diallage Peridotite	Fragment in Basalt-peridotite Breccia	Pyroxene Rock	Olivine-biotite-diopside Rock	"Serpentine Conglomerate"
Locality	Rockwell, Broken Hill, N.S.W.	65 miles S.E. of Einasleigh, Qld.	Musa Valley, E. Papua, T.P. & N.G.	Dolodrook, near Mt. Wellington, Vic.	Norseman, W.A.	Dolodrook, near Mt. Wellington, Vic.
Reference	**53**, 47; **226**, 58	**95**	**182**, 14	**511**, 258	**195**, 24	**511**, 262
Analyst		S. Baker	D. H. Green	G. Ampt	J. D. Hayton	G. Ampt
Remarks		*Loss on ignition				? Breccia
Sp. Gr.	2·90	—	—	3·237	3·05	—
SiO_2	46·20	45·34	44·42	36·36	32·10	24·70
Al_2O_3	9·16	4·88	15·49	18·54	6·55	4·22
Fe_2O_3	1·77	13·69	3·05	4·18	6·61	0·75
FeO	4·13	1·80	6·92	1·15	11·51	5·36
MgO	28·67	15·25	12·13	8·29	14·77	3·99
CaO	7·13	13·09	9·78	23·44	8·37	11·75
Na_2O	0·40	tr.	2·31	0·68	1·03	0·22
K_2O	abs.	tr.	1·49	0·25	1·52	0·20
H_2O+	2·48	4·76*	1·70	5·97	3·74	3·54
H_2O-	0·24	0·02	0·84	0·82	1·43	0·53
CO_2	tr.	—	0·06	—	3·63	$CaCO_3$ = 44·09
TiO_2	—	0·15	1·15	0·62	7·54	0·19
P_2O_5	tr.	0·05	0·05	tr.	0·68	—
MnO	tr.	0·17	0·15	—	0·21	0·07
Cr_2O_3	—	0·35	0·07	tr.	0·05	0·23
Other Constituents	SO_3 = abs.	NiO = 0·04	NiO = tr. S = 0·11 Cl = 0·10		V_2O_3 = 0·04 SO_3 = 0·13 S = 0·36 F = 0·14	Ni = 0·19 Cu = 0·05 SrO = 0·03
			99·82		100·41	
Less O = Cl, F, S			0·07		0·15	
	100·18	99·59	99·75	100·30	100·26	100·11

TABLE R[1] — METAMORPHOSED ULTRAMAFIC ROCKS

a. CaO<5%

	1	2	3	4	5	6	7	8	9
Rock Name	Anthophyllite Rock	Hypersthenite	Cordierite-anthophyllite Rock	Anthophyllite Rock	Hornblende Hypersthenite	Biotite-cordierite-anthophyllite Rock	Talc-chlorite Schist	Tremolite Rock	Garnet-cordierite-hypersthene Rock
Locality	Loch Marvel, W.A.	Mt. Davies, Thompkinson Ra., W.A.	Clackline, W.A.	4 miles S. of Mt. Palmer, Yilgarn, W.A.	Dangin, W.A.	Toodyay, W.A.	Leonora, W.A.	Grassy, King Island, Tas.	Dangin, W.A.
Reference	**144**, 80; **456**, 107	**435**, 32	**455**, 115; **456**, 107	**45**b, 107	**404**, 152	**401**, 374	**222**, 19; **447**, 54	**139**, 66	**404**, 158
Analyst	H. P. Rowledge	E. G. Robinson	H. P. Rowledge	C. R. Le Mesurier	R. T. Prider	R. T. Prider	C. C. Williams	G. C. Carlos	R. T. Prider
Remarks							(Peridotite Dyke)		
Sp. Gr.	2·81	—	2·89	2·94	3·26	—	2·80	—	3·14
SiO_2	57·60	54·35	52·66	52·31	49·98	49·73	47·70	47·50	42·38
Al_2O_3	1·90	3·85	13·99	3·95	7·62	12·70	9·99	9·01	19·98
Fe_2O_3	1·56	1·85	2·15	3·26	3·14	4·56	1·60	0·90	2·54
FeO	5·45	7·08	7·08	5·37	7·78	12·27	7·33	9·84	15·88
MgO	26·35	28·23	20·20	26·39	25·81	16·59	22·49	24·06	12·18
CaO	1·60	2·48	0·25	3·17	4·62	tr.	0·69	4·42	1·04
Na_2O	0·01	0·73	0·08	0·12	0·53	0·40	0·43	tr.	1·39
K_2O	0·04	0·14	0·06	0·06	0·20	0·54	0·38	tr.	2·48
H_2O+	4·22	0·32	3·33	4·57	0·13	2·77	6·62	3·78	0·66
H_2O-	0·66	0·15	0·13	0·70	0·11	0·12	0·21	0·28	0·25
CO_2	abs.	—	0·02	0·05	—	—	1·35	abs.	—
TiO_2	0·09	0·22	0·36	0·23	0·17	0·21	0·52	0·15	1·09
P_2O_5	abs.	—	0·05	—	tr.	tr.	—	0·03	0·25
MnO	0·31	0·22	0·12	0·16	0·20	abs.	1·38	0·04	0·14
Cr_2O_3	0·57	0·68	0·19	0·31	—	abs.		—	—
Other Constituents	FeS_2=0·07								
	100·43	100·30	100·67	100·65	[100·29]	99·89	100·69	100·01	100·26

TABLE R[1] — METAMORPHOSED ULTRAMAFIC ROCKS

a. CaO<5%

	10	11	12	13	14	15
Rock Name	Talc-chlorite Schist	Tremolite-chlorite Schist	Corundum-spinel-antho-phyllite Rock	Olivine-spinel-antho-phyllite Rock	Biotite-clinochlore-corundum Rock	Chlorite Rock
Locality	Leonora, W.A.	Lower Forth River, W.A. Tas.	Toodyay, W.A.	Toodyay, W.A.	Toodyay, W.A.	Interview River,Pieman Area, Tas.
Refer-ence	**222**, 19; **447**, 70	**482**, 281	**401**, 377	**401**, 377	**401**, 377	**479**, 4
Analyst	C. C. Williams	W. St C. Manson	R. T. Prider	R. T. Prider	R. T. Prider	W. St C. Manson
Remarks	(? Pyrox-enite dyke)			*FeO not determined owing to pleonaste		
Sp. Gr.	2·85	—	—	—	—	—
SiO_2	42·17	36·32	33·20	30·91	30·83	24·96
Al_2O_3	9·29	5·39	19·75	21·36	20·47	22·61
Fe_2O_3	—	7·34	3·36	19·97*	9·23	2·13
FeO	8·18	4·83	13·23	—	11·28	23·50
MgO	24·71	32·08	21·57	23·57	16·10	15·50
CaO	4·06	2·90	abs.	tr.	tr.	abs.
Na_2O	0·45	0·08	0·24	abs.	0·36	abs.
K_2O	0·26	0·03	0·22	abs.	5·18	abs.
H_2O+	2·97	9·67	8·43	2·58	4·87	11·38
H_2O-	0·02	0·58	0·10	0·90	0·42	0·10
CO_2	6·70	—	—	—	—	—
TiO_2	0·55	0·10	0·06	1·66	0·70	0·10
P_2O_5	—	abs.	nd.	tr.	nd.	abs.
MnO	0·55	0·15	0·14	0·16	0·07	0·22
Cr_2O_3		0·45	abs.	0·17	abs.	—
Other Con-stituents	FeS_2=0·28					
	100·19	99·92	100·30	101·28*	99·51	100·50

TABLE R[1] — METAMORPHOSED ULTRAMAFIC ROCKS

b. CaO = 5% – 10%

	1	2	3	4	5	6	7	8
Rock Name	Cummingtonite Schist	Ultrabasic Rock	Ultrabasic Schist	Tremolite-chlorite Rock	Antigorite-talc-tremolite Schist	Olivine-spinel-tremolite Rock	Penninite-tremolite-ferroantigorite Schist	Ultrabasic Schist
Locality	Ninghanbour, W.A.	Near Wantabadgery, N.S.W.	Near Southern Cross W.A.	Cooma, N.S.W.	Near Wellington, N.S.W.	Grassy, King Island, Tas.	Near Wellington, N.S.W.	10 miles N.W. of Southern Cross, W.A.
Reference	**452**, 140	**535**, 206	**323**, 81	**256**, 191	**22**, 78	**139**, 66	**22**, 78	**323**, 81
Analyst	E. S. Simpson	T. G. Vallance	Not Stated	G. A. Joplin	E. M. Basnett	G. C. Carlos	E. M. Basnett	Not Stated
Remarks		(Inclusion in granite—F29)						
Sp. Gr.	2·86			2·95	2·84	3·115	2·88	
SiO_2	57·40	46·44	46·44	46·36	45·51	41·63	41·08	38·67
Al_2O_3	12·88	10·12	—	10·38	7·60	15·59	11·28	—
Fe_2O_3	0·93	3·98	—	5·68	6·40	1·30	2·16	—
FeO	8·02	8·30	—	3·24	2·87	7·20	6·72	—
MgO	11·73	21·32	19·52	24·69	26·30	24·09	23·25	24·76
CaO	5·23	6·54	7·78	5·08	4·25	6·58	7·40	5·73
Na_2O	2·06	0·78	0·30	0·46	0·05	0·02	0·55	0·20
K_2O	0·24	0·28	0·01	0·05	0·89	0·01	0·69	0·08
H_2O+	1·42	1·41	—	3·39	4·01	2·38	5·03	
H_2O-	0·06	0·08	—	0·19	1·79	0·03	1·10	
CO_2	—	abs.	abs.	—	—	tr.	—	pnd.
TiO_2	0·45	0·20		0·22	0·23	0·52	0·49	
P_2O_5	0·11	—	0·10	0·03	0·10	0·28	0·37	0·18
MnO	0·16	0·12	—	0·42	0·17	0·31	0·15	—
Cr_2O_3	0·24	—		—		—		
Other Constituents			Fe = 9·89 S = 0·03			Cl = 0·02 SO_3 = 0·02		Fe = 10·17 S = 0·43
	100·93	99·57		100·19	100·17	99·98	100·27	

TABLE R[1] — METAMORPHOSED ULTRAMAFIC ROCKS

c. CaO > 10%

	1	2	3	4
Rock Name	Tremolite Rock with some Pennine	Olivine-Tremolite Rock	Spinel Amphibolite	Olivine-spinel-hornblende Rock
Locality	Near Wellington, N.S.W.	Grassy, King Island, Tas.	Near Wellington, N.S.W.	Grassy, King Island, Tas.
Reference	**22**, 78	**139**, 66	**22**, 73	**139**, 66
Analyst	E. M. Basnett	G. C. Carlos	E. M. Basnett	G. C. Carlos
Remarks				
Sp. Gr.	3·02	3·088	3·10	—
SiO_2	51·31	48·49	45·49	42·55
Al_2O_3	5·13	6·27	10·49	10·97
Fe_2O_3	3·47	5·52	6·44	2·97
FeO	3·58	5·86	4·36	7·81
MgO	22·37	19·76	18·48	20·00
CaO	10·39	11·18	10·72	11·89
Na_2O	0·03	0·40	0·89	1·12
K_2O	—	0·21	1·25	0·98
H_2O+	2·78	1·24	1·55	1·50
H_2O-	0·25	0·10	0·11	0·05
CO_2	—	tr.	—	abs.
TiO_2	0·21	0·43	0·36	0·10
P_2O_5	0·05	0·30	0·24	0·02
MnO	0·15	0·29	0·15	0·06
Other Constituents		Cl = 0·01 SO_3 = 0·04		Cl = abs. SO_3 = 0·04
	99·72	100·10	100·53	100·06

TABLE R[2] — METASOMATIZED AND DEUTERICALLY ALTERED ULTRAMAFIC ROCKS

	Silicified		Silicified and Altered to Talc						Altered to Talc
	1	2	3	4	5	6	7	8	9
Rock Name	Silicified Serpentine	Siliceous Serpentine Rock	Soapstone	Soapstone	Soapstone	Talc Schist	Soapstone	Iron-stained Soapstone	Talc Rock
Locality	Yarra Yarra, W.A.	2½ miles S.S.E. of Nagus, N.S.W.	Wallendbeen, N.S.W.	Gumeracha, S.A.	Georges Plains, near Bathurst, N.S.W.	Mt. Taylor Yilgarn, W.A.	Wallendbeen, N.S.W.	Muttama, N.S.W.	Meekatharra, W.A.
Reference	**447**, 38	**533**, 103	**353**, 188	**587**, 70	**361**, 168	**144**, 80	**350**, 184	**380**, 265	**144**, 80; **147**, 74; **447**, 52
Analyst	J. H. Brooking	T. G. Vallance	Not Stated	S.A. Dept. Mines	N.S.W. Dept. Mines	E. S. Simpson	N.S.W. Dept. Mines	J. H. Pyle	A. J. Robertson
Remarks					*Loss on ignition			*Loss on ignition	(Peridotite Dyke)
Sp. Gr.	2·36	—	—	—	—	2·83	—		2·82
SiO_2	84·42	74·41	64·68	61·98	61·28	61·00	60·67	58·90	57·37
Al_2O_3	1·43	2·35	1·27	5·74	0·36	0·68	2·34	0·60	1·14
Fe_2O_3	7·17	5·68	1·10	1·93	0·60	nd.	1·00	6·21	0·51
FeO	—	0·30	2·87	abs.	0·45	6·14	4·05	—	6·52
MgO	0·52	10·86	28·52	25·60	32·17	27·88	27·25	28·39	26·98
CaO	0·08	0·22	—	0·18	0·10	abs.	1·72	abs.	0·53
Na_2O	0·24	0·15	0·18		0·28	tr.		0·36	0·25
K_2O	0·12	0·18	tr.		tr.	tr.			abs.
H_2O+	4·08	4·21	1·00	4·10	4·80*	4·72	2·14	5·14*	6·17
H_2O-	1·96	1·87			—	0·12	0·40		0·87
CO_2	abs.	abs.	—	abs.	—	abs.	—		tr.
TiO_2	—	tr.	—	—	abs.	0·01	abs.	abs.	—
P_2O_5	—	—	—	—	—	0·10	—		—
MnO	—	0·09	—	—	—	0·20	—		—
Cr_2O_3	—	—	—	—	—	0·01	—	0·66	—
Other Constituents	FeS_2=abs.					FeS_2=nd.			
	100·02	100·32	99·62	99·53	[100·04]	100·86	99·57	100·26	100·34

TABLE R[2] — METASOMATIZED AND DEUTERICALLY ALTERED ULTRAMAFIC ROCKS

	Altered to Talc					Carbonated			
	10	11	12	13	14	15	16	17	18
Rock Name	Talc Schist	Talc-chlorite Rock	Talcose Ultrabasic Rock	Talc-mesitite Rock	Talc-chlorite Rock	Carbonated Peridotite	Carbonated Peridotite	Fuchsite-quartz-carbonate Rock	Carbonated Peridotite
Locality	Blayney, N.S.W.	E. Coolgardie, Goldfield W.A.	Lord Bobs, Coolgardie, W.A.	Kalgoorlie, W.A.	Kalgoorlie, W.A.	Kalgoorlie, W.A.	Marda, W.A.	Kalgoorlie, W.A.	Meekatharra, W.A.
Reference	**351**, 183	**144**, 80; **161**, 73	553	**157**, 56	**157**, 56; **161**, 74; **447**, 76	**157**, 55; **447**, 76	**37**, 154 **447**, 78	**157**, 50	**147**, 80; **149**, 93; **447**, 68
Analyst	N.S.W. Dept. Mines	E. S. Simpson	V. N. Young	H. Bowley	H. Bowley	H. Bowley	E. S. Simpson	E. S. Simpson	H. Bowley
Remarks				(Carbonated peridotite)	(Peridotite dyke)	(Dyke)	(Dyke)	(Altered peridotite)	
Sp. Gr.	—	—	2·96	2·88	—	2·84	2·91	2·94	—
SiO_2	53·85	47·44	45·49	36·52	35·90	42·65	41·95	36·08	35·69
Al_2O_3	13·56	6·23	8·30	5·42	13·48	4·69	7·05	4·47	3·07
Fe_2O_3	2·70	0·76	1·11	0·86	7·04	0·61	0·31	0·19	0·87
FeO	0·34	6·78	9·44	9·88	4·12	7·64	11·22	8·63	8·59
MgO	26·56	26·68	21·87	23·17	15·69	15·22	16·97	17·05	20·46
CaO		3·39	6·47	4·84	5·81	7·94	0·64	4·65	0·81
Na_2O		0·33	0·22	0·38	0·26	0·30	0·10	0·29	0·08
K_2O		abs.	0·02	0·10	2·00	0·06	0·83	1·26	1·48
H_2O+	2·33	5·68	5·46	4·42	4·71	1·32	3·66	1·02	0·66
H_2O-	0·57	0·78	0·39	0·18	1·84	0·09	0·06	0·20	0·11
CO_2	—	2·06	abs.	13·78	9·22	18·07	16·20	25·64	26·20
TiO_2	0·04	0·20	0·44	0·20	—	0·20	0·32	0·26	0·98
P_2O_5	0·05	—	0·09	0·14	—	0·19	0·15	0·07	0·04
MnO	—	—	0·18	0·22	—	0·48	0·26	0·19	0·13
Cr_2O_3	—	0·22	0·35	0·42	—	0·40	0·34	0·45	0·40
Other Constituents			FeS_2=0·07 V_2O_3=tr.	FeS_2=0·17 V_2O_3=0·02		V_2O_3=abs. ZrO_2=0·01 FeS_2=0·30 BaO=abs.	FeS_2=0·09	FeS_2=0·10 V_2O_3=tr. B_2O_3=0·01	FeS_2=0·88 V_2O_3=abs.
	100·00	100·55	99·90	100·72	100·07	[100·17]	100·15	100·56	100·45

TABLE R[2] — METASOMATIZED AND DEUTERICALLY ALTERED ULTRAMAFIC ROCKS

	Carbonated							Chloritized
	19	20	21	22	23	24	25	26
Rock Name	Fuchsite-quartz-carbonate Rock	Carbonated Peridotite	Carbonated Peridotite	Carbonated Peridotite	Carbonated Serpentine	Magnesite Schist	Dolomitized Pyroxenite	Chloritized Peridotite
Locality	Kalgoorlie, W.A.	Marda, W.A.	Kalgoorlie, W.A.	Warra-woona, W.A.	Nundle, N.S.W.	Warra-woona, W.A.	Mt. Bischoff, Tas.	Mt. Bischoff, Tas.
Reference	**157**, 56; **447**, 76; **460**, 139; **521**, 637	**37**, 154; **447**, 78	**445**, 75; **447**, 76; **460**, 61; **521**, 637	**303**, 164; **447**, 68; **521**, 637	**28**, 705; **29**, 171	**447**, 66	**414**	**414**
Analyst	E. S. Simpson	H. Bowley		J. H. Brooking	W. N. Benson	J. H. Brooking	Not Stated	Tas. Dept. Mines
Remarks	(Peridotite Dyke)			(Dyke)		(Peridotite)	Probably unreliable	Probably unreliable
Sp. Gr.	2·97	3·09	—	2·91	—	2·86	—	—
SiO_2	33·80	33·04	31·07	30·63	28·78	26·65	6·24	24·16
Al_2O_3	5·72	8·63	5·05	1·68	0·63	2·03	4·50	2·40
Fe_2O_3	0·40	0·29	1·49	5·94	0·27	2·06	11·06	14·59
FeO	8·70	13·22	7·64	4·72	4·18	3·52	—	—
MgO	19·95	14·99	17·49	32·30	36·89	28·89	32·95	29·64
CaO	1·34	0·77	5·46	tr.	0·13	2·68	0·10	0·50
Na_2O	0·30	0·14	3·82	0·41	abs.	0·29	0·49	0·69
K_2O	2·11	0·76	0·11	0·11	abs.	0·09	abs.	abs.
H_2O+	0·59	3·49	0·05	0·52	1·26	0·92	12·10	4·52
H_2O-	0·09	0·08	0·07	0·15	0·08	0·16		
CO_2	25·98	13·07	27·24	23·03	25·19	32·60	28·55	13·08
TiO_2	0·33	0·71	0·26	0·52	tr.	0·16		—
P_2O_5	0·11	0·10	0·05	—	—	—		—
MnO	0·19	0·16	0·10	0·11	0·37	0·35	2·23	0·78
Cr_2O_3	0·50	0·18	0·35	—	0·55	—		
Other Constituents	FeS_2=0·24 V_2O_3=tr. ZrO_2=0·02 BaO=abs.	FeS_2=10·21 V_2O_3=0·01 C=0·12	FeS_2=0·06 V_2O_3=tr. NiO=0·12	FeS_2=0·20	FeS_2=0·22 (NiCo)O= 0·14	FeS_2=0·17	SO_3=0·41 FeS_2=2·39	SO_3=1·03 FeS_2=10·01 F=1·50
								102·90
Less O= Cl, F, S								0·63
	100·37	99·97	100·43	100·32	98·69	100·57	101·02	102·27

TABLE R[2] — METASOMATIZED AND DEUTERICALLY ALTERED ULTRAMAFIC ROCKS

	Mineralized		Other Types of Alteration			
	27	28	29	30	31	32
Rock Name	Altered Ultrabasic Schist	Altered Ultrabasic Schist	Crystalline Rock	Altered Ultrabasic Rock	Pseudophite	Pseudophite
Locality	Southern Cross, W.A.	Southern Cross, W.A.	Wallendbeen, N.S.W.	Meekatharra, W.A.	Nundle, N.S.W.	Nundle, N.S.W.
Reference	**323**, 81	**323**, 81	**596**, 72	**155**, 263	**28**, 705 **29**, 171	**28**, 705
Analyst	Not Stated	Not Stated	N.S.W. Dept. Mines	H. Bowley	W. N. Benson	J. C. H. Mingaye
Remarks	(Microscopic alteration)	(Megascopic alteration)				
Sp. Gr.	—	—	—	2·74	—	—
SiO_2	50·60	50·56	49·30	40·32	33·43	33·38
Al_2O_3			10·02	6·63	16·86	15·58
Fe_2O_3			2·20	3·41	0·55	0·74
FeO			3·83	7·34	4·18	3·33
MgO	13·12	15·64	19·36	25·66	33·71	34·54
CaO	8·78	9·86	11·82	4·57	abs.	abs.
Na_2O	1·54	0·68	1·14	0·22	abs.	0·17
K_2O	0·33	1·05	0·50	tr.	abs.	0·20
H_2O+			0·79	7·16	12·47	11·42
H_2O-			0·26	1·32	0·13	0·34
CO_2	abs.	pnd.		2·78	abs.	0·12
TiO_2				0·64	0·05	—
P_2O_5	0·09	0·11		—	—	—
MnO			abs.	—	0·22	0·07
Cr_2O_3			tr.		0·08	0·04
Other Constituents	S=0·08 Fe=10·11	S=0·03 Fe=9·84	NiO=tr.	C=0·06	(NiCo)O= 0·03	NiO=0·23 CoO=tr. SrO=tr. Li_2O=tr.
			[99·22]	100·11	101·71	100·16

TABLE R[3] — WEATHERED ULTRAMAFIC ROCKS

	1
Rock Name	Weathered Serpentine
Locality	Andersons Ck., Beaconsfield, Tas.
Reference	**508**, 35
Analyst	Mines Dept. Launc.
Remarks	*Loss on ignition
Sp. Gr.	—
SiO_2	40·00
Al_2O_3	1·02
Fe_2O_3	8·07
FeO	
MgO	37·34
CaO	
Na_2O	
K_2O	
H_2O+	12·05*
H_2O-	
CO_2	
TiO_2	
P_2O_5	
MnO	0·09
Other Constituents	Cr_2O_3 = 1·84
	100·41

TABLE R[5] — UNRELIABLE ANALYSES OF ULTRAMAFIC ROCKS

	1	2	3	4	5
Rock Name	Hypersthenite	Serpentinized Peridotite	Pseudophite	Peridotite	Peridotite
Locality	Waratah District, Tas.	Bald Hill, Tas.	Nundle, N.S.W.	Wilson River District, Tas.	Bald Hill, Tas.
Reference	**383**, 42	**413**, 24	**28**, 705	**413**, 22	**413**, 22
Analyst	Not Stated	W. D. Reid	W. A. Dixon	W. D. Reid	W. D. Reid
Remarks	*Loss on ignition	*Some MgO ppte. with Al_2O_3	*MgO ppte. with Al_2O_3	*Some MgO ppte. with Al_2O_3	*MgO ppte. with Al_2O_3
Sp. Gr.	—	—	—	—	—
SiO_2	45·36	36·60	35·72	35·39	33·56
Al_2O_3	16·92	19·89*	38·60*	16·71*	20·94*
Fe_2O_3	11·23	19·51	—	9·54	10·71
FeO	0·19		8·64		—
MgO	14·92	12·31	5·40	25·32	17·81
CaO	3·15	1·42	0·61	tr.	abs.
Na_2O	0·21				
K_2O					
H_2O+	8·36*	10·38	10·96	12·44	14·84
H_2O-					
CO_2					
TiO_2					
P_2O_5					
MnO					
Other Constituents	MnO_2=0·44				
	100·78	100·11	99·93	99·40	97·86

TABLE S — METAMORPHIC ROCKS OF GRANITIC COMPOSITION — SiO_2>70%

a. CaO<1%

	K_2O/Na_2O>1·25							K_2O/Na_2O= 1·25–0·75	K_2O/Na_2O< 0·75
	1	2	3	4	5	6	7	8	9
Rock Name	Garnetiferous Acid Granulite	Granite Gneiss	Orthogneissic Granite	Granite Gneiss	Orthogneissic Granite	Cordierite-hypersthene Gneiss	Augen Gneiss	Granite Gneiss	Garnet Granulite
Locality	Simon Hill, Frazer Ra., W.A.	Russell Range, W.A.	Eyre Pen., S.A.	Mt. Painter, S.A.	Eyre Pen., S.A.	Dangin, W.A.	South Para R., Humbug Scrub, S.A.	Poolamacca, Broken Hill, N.S.W.	Galena, Northampton Area, W.A.
Reference	**584**	**304**, 8; **582**, 73	**216**, 14	**95**	**216**, 14	**404**, 164	**4**, 171	**43**, 138	**598**, 199; **582**
Analyst	W. H. Herdsman	D. G. Murray	W. S. Chapman	A. McClure	W. S. Chapman	R. T. Prider	A. R. Alderman	D. R. Bowes	D. G. Murray
Remarks	(Charnockite)			*Loss on ignition					
Sp. Gr.	—	2·63	—	—	—	2·68	—	—	2·74
SiO_2	77·82	75·00	73·57	72·22	72·17	71·81	71·19	73·2	75·03
Al_2O_3	11·88	12·57	14·51	12·74	14·58	13·59	15·26	13·0	11·66
Fe_2O_3	0·24	0·85	0·61	1·58	0·86	0·63	1·66	0·51	1·37
FeO	1·19	1·00	1·17	1·92	1·42	2·33	1·05	2·9	3·78
MgO	0·29	0·17	0·06	1·70	0·21	1·74	0·78	1·2	1·56
CaO	0·56	0·87	0·31	0·19	0·77	0·48	0·56	0·73	0·62
Na_2O	2·06	2·90	2·96	2·48	3·68	0·86	2·64	4·2	2·82
K_2O	5·45	5·82	5·84	5·92	5·20	7·36	5·87	3·2	1·04
H_2O+	0·13	0·23	0·63	0·93*	0·62	0·85	0·96	0·63	1·58
H_2O-	abs.	0·04	0·09	0·09	0·10	0·06	—	—	0·09
CO_2	abs.	abs.	abs.	—	abs.	—	—	—	0·10
TiO_2	0·09	0·24	0·15	0·20	0·22	0·29	0·50	0·40	0·27
P_2O_5	tr.	0·07	0·23	0·13	0·24	0·14	—	0·14	0·09
MnO	0·06	0·15	0·03	0·05	0·03	0·03	—	0·23	0·17
Other Constituents		FeS_2=abs.	Cl=0·04 FeS_2=0·05		Cl=0·04 FeS_2=abs. BaO=abs.				FeS_2=tr.
			100·25		100·14				
Less O= Cl, F, S			0·01		0·01				
	99·77	99·91	100·24	100·15	100·13	100·17	100·47	100·3	100·18

TABLE S — METAMORPHIC ROCKS OF GRANITIC COMPOSITION — SiO_2>70%

a. CaO<1%			b. CaO=1%–2%						
	K_2O/Na_2O< 0·75		K_2O/Na_2O>1·25						
	10		1	2	3	4	5	6	7
Rock Name	Granite Gneiss		Mica Gneiss	Garnetiferous Gneiss	Garnetiferous Granulite	Granitic Gneiss	Gneissic Granite	Charnockite	Granite Gneiss
Locality	Poolamacca, Broken Hill, N.S.W.		Niagara, W.A.	Wyralinu, Fraser Ra., W.A.	Galena, Northampton, W.A.	Harts Ra., N.T.	Near Denmark, W.A.	Proclamation Island, Enderby Land, Ant.	Cape Riche, W.A.
Reference	**43**, 138		**273**, 21	**304**, 8	**598**, 199	**243**, 63	**582**, 73	**528**, 7	**89**, 28; **582**, 73
Analyst	D. R. Bowes		A. J. Robertson	J. N. A. Grace	B. W. Stenhouse	Avery & Anderson	J. N. A. Grace	Not Stated	W. H. Herdsman
Remarks									
Sp. Gr.	—		2·63	2·64	2·75	—	2·65	—	—
SiO_2	73·2		77·95	77·10	76·34	75·67	74·87	74·23	74·18
Al_2O_3	14·1		11·69	11·89	11·58	14·45	12·32	12·16	14·73
Fe_2O_3	1·4		0·95	0·36	1·03	0·37	0·72	0·96	0·60
FeO	1·5		0·34	0·80	3·19	—	1·59	2·34	0·79
MgO	0·89		0·07	0·44	1·52	0·18	0·30	0·43	0·18
CaO	0·51		1·22	1·31	1·07	1·77	1·32	1·74	1·84
Na_2O	4·9		2·70	1·68	1·60	2·94	2·59	2·44	2·64
K_2O	2·7		4·42	5·90	2·87	4·44	5·18	4·62	4·52
H_2O+	0·55		0·29	0·03	0·19	0·12	0·57	0·40	0·34
H_2O-	—		0·03	0·08	0·08	0·03	0·09	0·38	0·18
CO_2	—		abs.	0·06	—	—	0·03	—	abs.
TiO_2	0·34		0·17	0·29	0·52	0·08	0·27	0·39	0·19
P_2O_5	0·15		tr.	0·15	0·08	0·06	0·03	0·08	tr.
MnO	0·06		abs.	0·15	0·06	—	0·01	tr.	abs.
Other Constituents			S=abs.	FeS_2=abs.			FeS_2=abs.		
	100·3		99·83	100·24	100·13	100·11	99·89	100·17	100·19

TABLE S — METAMORPHIC ROCKS OF GRANITIC COMPOSITION — $SiO_2 > 70\%$

b. $CaO = 1\% - 2\%$

	$K_2O/Na_2O > 1{\cdot}25$								$K_2O/Na_2O = 1{\cdot}25 - 0{\cdot}75$
	8	9	10	11	12	13	14	15	16
Rock Name	Granite Gneiss	Granite Gneiss	Cordierite Aplite	Migmatitic Augen Gneiss	Hornblendic Acid Granulite	Augen Gneiss *Hanging Wall Gneiss*	Garnetiferous Granite	Granite Gneiss *Platy Gneiss*	Granitic Gneiss
Locality	Russell Ra., W.A.	Mt. Crawford, S.A.	Broken Hill, N.S.W.	N.W. of Mt. Fitton, S.A.	Musgrave Ra., S.A.	Broken Hill, N.S.W.	Arnhem Bay, N.T.	Broken Hill, N.S.W.	Near Cullalla, W.A.
Reference	**304**, 9; **558**, 112; **582**, 73	**328**	**53**, 325 **362**, 187	**39**, **40**, 93; **42**; **86**	**584**	**53**, 330	**95**	**53**, 330	**582**, 73
Analyst	D. G. Murray	K. J. Mills	H. P. White	D. R. Bowes	W. H. Herdsman	W. A. Greig	S. Baker	J. C. H. Mingaye	Not Stated
Remarks							*Loss on ignition		
Sp. Gr.	2·66	—	2·658	2·60	—	2·712	—	2·675	2·73
SiO_2	73·23	72·85	72·80	72·34	72·18	72·12	71·92	71·92	74·73
Al_2O_3	12·78	12·73	14·04	13·12	13·14	13·68	15·39	13·24	11·52
Fe_2O_3	1·06	1·29	0·40	1·37	1·88	1·20	1·47	0·80	1·97
FeO	1·98	2·13	1·53	1·90	2·03	2·70	0·80	2·52	2·80
MgO	0·50	0·63	0·88	0·41	0·62	0·66	0·44	0·84	0·30
CaO	1·27	1·32	1·18	1·35	1·22	1·18	1·49	1·42	1·86
Na_2O	3·66	2·91	2·47	2·73	2·47	2·16	2·86	2·76	3·54
K_2O	4·92	4·80	5·39	5·48	5·64	4·92	4·67	4·92	2·78
H_2O+	0·46	0·46	0·62	0·54	0·31	0·75	0·51*	0·93	0·35
H_2O-	0·03	0·07	0·12	0·09	0·03	0·15	0·05	0·21	0·06
CO_2	0·02	abs.	0·08	nd.	abs.	—	—	0·02	abs.
TiO_2	0·48	0·38	0·67	0·30	0·44	0·36	0·08	0·35	0·44
P_2O_5	0·17	0·15	0·09	0·08	0·08	0·14	0·05	0·08	tr.
MnO	0·15	0·04	tr.	tr.	0·11	0·03	0·04	0·04	0·14
Other Constituents	FeS_2=abs.		BaO=0·11	BaO=0·02 ZrO_2=0·20				BaO=0·06 SO_3=0·06	FeS_2=tr.
	100·71	99·76	100·38	99·93	100·15	100·05	99·77	100·17	100·49

TABLE S — METAMORPHIC ROCKS OF GRANITIC COMPOSITION — SiO_2>70%

	b. CaO=1%–2%					c. CaO=2%–3%			
	K_2O/Na_2O=1·25–0·75			K_2O/Na_2O<0·75		K_2O/Na_2O>1·25		K_2O/Na_2O<0·75	
	17	18	19	20		1	2	3	4
Rock Name	Granite Gneiss	Granite Gneiss *Rathjen Gneiss*	Granite Gneiss	Acid Paragneiss		Hypersthene Acid Granulite	Hornblende-hypersthene acid granulite	Aplite Gneiss	Acid Charnockite
Locality	Mt. Painter, S.A.	Palmer Area, S.A.	Toodyay, W.A.	N. Block 59, Coolgardie Goldfield, W.A.		Near Mt. Curruthers, Musgrave Ra., S.A.	N.W. of Ernaballa, Musgrave Ra., S.A.	Broken Hill, N.S.W.	Dingo Ck., near Lake Grace, W.A.
Reference	**95**	**411**, 159	**402**, 110	**563**		**583**, 3	**583**, 4	**362**, 187; **495**, 364	**584**
Analyst	S. Baker	C. F. Wegener	R. T. Prider	W. Inglis		W. H. Herdsman		H. P. White	R. W. Lindsey
Remarks	*Loss on ignition								
Sp. Gr.	—	—	—	2·61		—	—	2·677	—
SiO_2	73·76	73·05	71·85	73·40		72·94	71·98	75·64	73·25
Al_2O_3	14·00	12·81	15·00	13·59		13·41	15·06	13·17	13·81
Fe_2O_3	2·00	1·54	0·55	1·69		0·67	1·16	0·75	1·19
FeO	1·67	2·30	1·20	0·56		2·03	0·96	1·39	1·30
MgO	0·35	0·64	0·42	0·82		0·50	0·36	0·28	0·65
CaO	1·47	1·74	1·52	1·27		2·02	2·74	2·08	2·54
Na_2O	3·41	3·42	3·67	6·01		2·38	2·76	5·09	4·08
K_2O	3·47	3·15	4·45	1·35		4·94	4·40	1·25	2·59
H_2O+	0·40*	0·49	0·54	0·82		0·32	0·27	0·24	0·31
H_2O-	abs.	0·16	0·02	0·15		0·06	0·05	0·07	0·10
CO_2	—	—	—	0·02		abs.	—	0·01	—
TiO_2	0·12	0·78	0·25	0·31		0·36	0·33	0·11	0·24
P_2O_5	0·03	0·10	0·11	0·04		0·05	0·07	0·22	0·08
MnO	0·10	tr.	tr.	0·02		0·08	0·01	0·08	0·03
Other Constituents		ZrO_2=0·09 S=0·05		FeS_2=0·11 Cr_2O_3=tr.			BaO=0·19 S=0·03 ZrO_2=0·05		V_2O_3=abs. Cr_2O_3=tr. Rare Earths =tr. F=0·03
							100·42		100·20
Less O= Cl, F, S							0·01		0·01
	100·78	100·32	99·58	100·16		99·76	100·41	100·38	100·19

TABLE S — METAMORPHIC ROCKS OF GRANITIC COMPOSITION — $SiO_2 > 70\%$

	c. CaO = 2% – 3%		d. CaO > 3%		
	$K_2O/Na_2O <$ 0·75		$K_2O/Na_2O >$ 1·25	$K_2O/Na_2O < 0{\cdot}75$	
	5		1	2	3
Rock Name	Augen Gneiss		Aplitic Gneiss	Gneissic Granite	Gneiss
Locality	Broken Hill, N.S.W.		Broken Hill, N.S.W.	Mt. Painter, S.A.	Bethanga, Vic.
Reference	**495**, 362		**495**, 364	**95**	**231**, 7
Analyst	H. Mills & A. Morris		G. T. Pyke	S. Baker	H. C. Jenkins
Remarks				*Loss on ignition	
Sp. Gr.	2·72		2·64	—	—
SiO_2	71·10		71·50	71·52	71·01
Al_2O_3	13·88		15·10	16·06	10·74
Fe_2O_3	2·01		1·20	1·58	5·19
FeO	3·68		3·08	0·28	
MgO	2·18		0·45	0·28	1·50
CaO	2·83		4·10	3·07	3·36
Na_2O	1·74		0·80	4·98	4·47
K_2O	1·24		3·20	1·26	2·38
H_2O+	0·10		0·12	0·55*	1·41
H_2O-	0·45		0·26	0·06	0·32
CO_2	0·14		0·14	—	—
TiO_2	0·46		0·08	0·14	—
P_2O_5	—		—	0·10	tr.
MnO	0·28		0·19	0·05	—
Other Constituents					
	100·09		100·22	99·93	100·38

TABLE T — METAMORPHIC ROCKS OF GRANITIC COMPOSITION — SiO_2<70%

a. CaO<1%				b. CaO=1%–2%				
K_2O/Na_2O>1·25				K_2O/Na_2O>1·25				
	1	2	3	1	2	3	4	5
Rock Name	Banded Augen Gneiss	Banded Gneiss	Cordierite-bearing Gneiss	Gneiss	Augen Gneiss	Cordierite-bearing Gneiss	Augen Gneiss	Augen Gneiss
Locality	South Para River, Humbug Scrub, S.A.	South Para River, Humbug Scrub, S.A.	Thurgoona, near Albury, N.S.W.	Middleback Ra. Area, S.A.	Broken Hill, N.S.W.	Thurgoona, near Albury, N.S.W.	Broken Hill, N.S.W.	South Para River, Humbug Scrub, S.A.
Reference	**4**, 171	**4**, 173	**250**, 107	**132**, 229	**53**, 330; **309**, 282; **352**, 198	**95**	**85**, 398	**4**, 170
Analyst	A. R. Alderman	A. R. Alderman	G. A. Joplin	G. C. Carlos	H. P. White	J. C. Watt	Searcy & Cooper	A. R. Alderman
Remarks								
Sp. Gr.	—	—	2·72	—	2·719	—	2·74	—
SiO_2	69·69	68·31	66·94	69·99	69·63	69·1	67·48	66·89
Al_2O_3	15·51	15·12	16·65	13·48	15·11	14·3	16·23	14·96
Fe_2O_3	2·22	2·52	0·40	4·42	0·70	0·69	0·70	2·53
FeO	1·29	1·46	4·77	3·06	2·79	4·45	4·32	1·73
MgO	1·10	1·22	2·19	0·22	1·22	2·00	1·42	1·57
CaO	0·44	0·91	0·94	1·80	1·64	1·02	1·16	1·59
Na_2O	2·84	2·41	2·11	1·22	2·39	1·45	2·02	2·13
K_2O	4·91	5·33	3·56	4·74	5·39	3·70	5·24	5·54
H_2O+	1·12	1·11	2·13	0·07	0·70	2·25	1·17	1·23
H_2O-	—		0·12	0·02	0·18	0·19	0·11	0·22
CO_2	—	0·55	—	0·18	0·01	—	0·02	0·89
TiO_2	0·90	0·82	0·60	0·61	0·36	0·69	0·62	0·80
P_2O_5	—	—	0·01	0·09	0·22	0·18	—	0·17
MnO	—	—	0·06	0·09	0·01	0·09	0·26	0·01
Other Constituents				Cl=0·01 SO_3=0·01	CO_2=tr. Cr_2O_3=tr.			
	100·02	99·76	100·48	100·01	100·35	100·11	100·75	100·26

TABLE T — METAMORPHIC ROCKS OF GRANITIC COMPOSITION — $SiO_2 < 70\%$

b. $CaO = 1\% - 2\%$				
$K_2O/Na_2O > 1 \cdot 25$		$K_2O/Na_2O < 0 \cdot 75$		
	6	7	8	9
Rock Name	Gneiss *Footwall Gneiss*	Biotite Granite Gneiss	Augen Gneiss	Gneiss
Locality	Broken Hill, N.S.W.	Yellari Rocks Area, Coolgardie, W.A.	Broken Hill, N.S.W.	Bethanga, Vic.
Reference	**53**, 324	**563**	**495**, 362	**231**, 7
Analyst	H. P. White	D. Burns	Moncrieff & Usher	H. C. Jenkins
Remarks				
Sp. Gr.	2·827	2·625	2·72	—
SiO_2	65·40	68·81	68·64	66·86
Al_2O_3	14·98	15·69	18·66	11·76
Fe_2O_3	1·05	1·44	1·53	6·72
FeO	6·07	0·68	2·73	
MgO	1·18	0·30	1·05	1·23
CaO	1·82	1·75	1·86	1·02
Na_2O	2·13	6·38	2·68	7·89
K_2O	5·91	3·86	1·47	3·86
H_2O+	0·50	0·17	0·10	0·48
H_2O-	0·10	0·10	0·35	0·67
CO_2	abs.	0·22	0·02	—
TiO_2	0·67	0·18	0·68	—
P_2O_5	0·22	0·28	—	tr.
MnO	0·12	0·01	0·14	—
Other Constituents	BaO = 0·16			
	100·31	99·87	99·91	100·49

TABLE T — METAMORPHIC ROCKS OF GRANITIC COMPOSITION — $SiO_2 < 70\%$

c. $CaO = 2\% - 3\%$

	$K_2O/Na_2O > 1 \cdot 25$			$K_2O/Na_2O = 1 \cdot 25 - 0 \cdot 75$	
	1	2	3	4	5
Rock Name	"Adamellite" Granulite	Gneiss	Augen Gneiss	Granite Gneiss	Granite Gneiss
Locality	Kersbrook, S.A.	Point Nuyts, near Nornalup W.A.	Carrow, S.A.	Bethanga, Vic.	Armadale, W.A.
Reference	**475**, 127	**89**, 28; **582** 73	**216**, 13	**231**, 7	**563**
Analyst	A. H. Spry	W. H. Herdsman	W. S. Chapman	H. C. Jenkins	Not Stated
Remarks					
Sp. Gr.	—	—	—	—	2·81
SiO_2	69·25	66·94	66·55	67·37	66·52
Al_2O_3	13·40	14·22	14·51	11·78	13·22
Fe_2O_3	2·69	0·30	1·21	5·43	4·99
FeO	1·47	8·92	4·68		3·29
MgO	1·53	1·42	0·42	2·37	0·58
CaO	2·47	2·20	2·18	2·50	2·84
Na_2O	3·03	0·74	2·89	3·05	3·45
K_2O	4·66	3·29	5·75	3·81	2·95
H_2O+	0·49	0·72	0·70	2·50	0·50
H_2O-	0·16	0·03	0·06	—	abs.
CO_2	—	abs.	abs.	—	0·03
TiO_2	0·91	1·01	0·59	—	0·66
P_2O_5	0·13	0·28	0·20	0·43	0·10
MnO	0·01	0·23	0·06	—	0·15
Other Constituents	BaO = tr S = tr.		Cl = 0·05 FeS_2 = 0·07		ZrO_2 = pnd FeS_2 = 0·07 V_2O_3 = 0·04 BaO = 0·53
	[100·20]	100·30	99·92	99·24	99·92

TABLE T — METAMORPHIC ROCKS OF GRANITIC COMPOSITION — $SiO_2 < 70\%$

d. $CaO = 3\% - 4\%$

	$K_2O/Na_2O > 1 \cdot 25$		$K_2O/Na_2O = 1 \cdot 25 - 0 \cdot 75$	$K_2O/Na_2O < 0 \cdot 75$	
	1	2	3	4	5
Rock Name	Gneiss *Footwall Gneiss*	Gneiss *Potosi Gneiss*	Granite Gneiss	Gneiss *Platy Gneiss*	Hypersthene-bearing Gneiss
Locality	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Westonia, W.A.	Broken Hill, N.S.W.	Point Irby, W.A.
Reference	**53**, 324; **364**, 77	**53**, 324	**156**, 293; **582**, 73	**495**, 362	**89**, 28; **582**, 73
Analyst	H. P. White	H. P. White	H. Bowley	H. N. Mills & A. Morris	W. H. Herdsman
Remarks			(Dyke)		
Sp. Gr.	2·799	2·793	—	2·67	—
SiO_2	68·46	65·26	68·61	69·30	68·40
Al_2O_3	12·47	15·67	14·24	14·40	16·53
Fe_2O_3	1·20	1·60	0·71	2·84	0·74
FeO	5·76	4·95	2·23	4·35	2·29
MgO	0·63	0·75	1·41	2·00	1·46
CaO	3·06	3·26	3·20	3·28	3·08
Na_2O	1·78	1·47	3·70	1·14	3·74
K_2O	4·04	4·60	3·04	0·84	2·15
H_2O+	1·48	1·21	0·30	0·15	0·32
H_2O-	0·14	0·17	0·06	0·60	0·46
CO_2	0·02	0·02	0·37	0·13	abs.
TiO_2	0·70	0·57	0·50	0·80	0·44
P_2O_5	0·18	0·18	0·19	—	0·15
MnO	0·35	0·37	0·10	0·17	tr.
Other Constituents	BaO = 0·01	BaO = 0·12	$Fe_7S_3 = 1 \cdot 24$ FeS = 0·11		
	100·28	100·20	100·01	100·00	[99·76]

TABLE T — METAMORPHIC ROCKS OF GRANITIC COMPOSITION — $SiO_2 < 70\%$

e. $CaO = 4\% - 5\%$

	$K_2O/Na_2O > 1{\cdot}25$				$K_2O/Na_2O < 0{\cdot}75$
	1	2	3	4	5
Rock Name	Gneiss *Platy Gneiss*	Granulite	Granulite	Gneiss *Footwall Gneiss*	Flaser-Gneiss
Locality	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.
Reference	**495**, 362	**495**, 373	**495**, 373; **553**, 303	**495**, 373	**320**, 280
Analyst	F. H. Searcy	H. Mills & A. Morris	F. H. Searcy	A. Kuehn	E. R. Segnit
Remarks					
Sp. Gr.	2·72	2·84	2·79	2·77	—
SiO_2	68·13	67·24	67·09	66·38	68·97
Al_2O_3	15·99	13·67	14·57	16·60	16·45
Fe_2O_3	0·18	2·93	0·17	1·43	0·36
FeO	4·42	5·00	6·33	5·27	3·38
MgO	0·43	1·81	0·96	0·64	1·00
CaO	4·88	4·25	4·10	5·00	4·32
Na_2O	0·67	1·04	0·35	0·91	3·14
K_2O	4·56	2·04	4·03	1·23	1·28
H_2O+	0·11	0·15	0·36	0·55	0·40
H_2O-	0·50	0·30	0·30	0·65	0·20
CO_2	0·02	0·12	0·04	0·10	—
TiO_2	0·62	0·67	0·65	0·53	0·10
P_2O_5	—	—	—	—	0·26
MnO	0·23	1·03	0·99	0·50	0·03
Other Constituents					BaO = 0·09 S = 0·01 Cl = 0·06
					100·05
Less O = Cl, F, S					0·02
	100·74	100·25	99·94	99·79	100·03

TABLE U — METAMORPHIC ROCKS OF DIORITIC COMPOSITION

a. CaO < 3%

	$K_2O/Na_2O > 1·25$							$K_2O/Na_2O = 1·25-0·75$	$K_2O/Na_2O < 0·75$
	1	2	3	4	5	6	7	8	9
Rock Name	Acid garnet-cordierite granulite	Garnet-sillimanite-cordierite Gneiss	Garnet Gneiss *Sleaford Gneiss*	Garnet-feldspar-cordierite Granulite	Garnet Granulite	Garnet Granulite	Hypersthene-garnet Granulite	Cordierite-bearing Gneiss	Garnet Gneiss
Locality	Mt. Carruthers, Musgrave Ra., S.A.	Sentinel Hill, Musgrave Ra., S.A.	Eyre Peninsula, S.A.	Albany, W.A.	Galena, Northampton Area, W.A.	Galena Northampton Area, W.A.	Near Simon Hill, Fraser Ra. W.A.	Bethanga, Vic.	Cape Riche W.A.
Reference	**584**	**584**	**525**, 307	**89**, 28; **457**; **582**, 73	**598**, 199	**582**, 73 **598**, 199	**582**, 73	**231**, 7	**89**, 28; **582** 73
Analyst	D. R. Bowes	W. H. Herdsman	C. E. Tilley	W. H. Herdsman	W. H. Herdsman	W. H. Herdsman	Not Stated	H. C. Jenkins	W. H. Herdsman
Remarks	(Kinzigite)	(Kinzigite)							
Sp. Gr.	—	—	—	2·85	2·80	2·73	—	—	—
SiO_2	64·78	64·56	64·35	61·04	59·32	58·38	56·75	58·14	63·22
Al_2O_3	16·43	17·04	16·21	18·45	19·53	20·87	18·03	17·92	14·63
Fe_2O_3	3·56	3·56	1·01	0·61	tr.	0·38	0·44	12·71	2·91
FeO	4·55	4·68	6·91	8·90	5·44	2·85	9·24		9·23
MgO	1·83	2·15	2·95	3·11	1·64	1·59	3·28	0·23	2·32
CaO	2·22	1·17	1·35	1·23	0·96	2·17	2·82	0·65	2·92
Na_2O	2·26	2·07	1·70	1·20	2·51	3·52	2·05	3·12	1·46
K_2O	2·91	3·06	5·25	2·64	9·23	8·01	5·68	3·02	0·85
H_2O+	0·47	0·38	0·32	1·34	0·52	0·68	0·19	3·60	0·75
H_2O-	0·22	0·37	0·14	0·17	0·12	0·13	abs	0·72	abs.
CO_2	—	abs.	—	0·50	—	—	—	—	abs.
TiO_2	0·70	0·76	—	1·18	0·38	0·76	1·08	—	1·06
P_2O_5	0·04	tr.	—	0·22	0·26	0·33	0·07	0·20	tr.
MnO	0·13	0·39	—	0·09	0·16	tr.	0·34	—	0·58
Other Constituents	$ZrO_2=0·05$ BaO = 0·11 S = 0·06			$FeS_2=0·15$	C = 0·10	C = 0·09		Cl = 0·15	
								100·46	
Less O = Cl, F, S								0·03	
	100·32	100·19	100·19	100·83	100·17	99·76	99·97	100·43	99·93

TABLE U — METAMORPHIC ROCKS OF DIORITIC COMPOSITION

	b. CaO = 3% – 4%		c. CaO = 4% – 5%			
	K_2O/Na_2O >1·25	K_2O/Na_2O <0·75	K_2O/Na_2O >1·25		K_2O/Na_2O <0·75	
	1	2	1	2	3	4
Rock Name	Gneiss	Granite Gneiss	Garneti-ferous Gneiss	Granulite	Hypersthene Granulite	Grandiorite Gneiss
Locality	Harts Ra, N.T.	Toodyay W.A.	Mt. Pleasant, Israelite Bay, Area, W.A.	Broken Hill, N.S.W.	Inindi, Musgrave Ra., S.A.	Bowgada, W.A.
Refer-ence	**243**, 67	**402**, 110	**304**, 8	**495**, 373; **553**, 303	**583**, 11	**582**, 73
Analyst	Avery & Anderson	R. T. Prider	J. N. A. Grace	F. H. Searcy	Not Stated	D. G. Murray
Remarks						
Sp. Gr.	—	—	3·02	2·87	—	2·79
SiO_2	63·80	63·28	60·86	60·34	61·36	61·22
Al_2O_3	16·00	14·56	14·79	19·10	16·13	16·88
Fe_2O_3	1·06	3·13	1·12	0·64	2·84	1·46
FeO	4·32	5·10	7·05	7·89	6·07	5·28
MgO	2·03	1·70	2·17	0·62	2·60	1·97
CaO	3·64	3·51	4·91	4·86	4·12	4·99
Na_2O	2·19	3·66	2·02	0·26	3·07	4·12
K_2O	5·13	2·58	4·48	3·83	2·23	1·66
H_2O+	0·37	0·52	0·22	0·16	0·32	1·24
H_2O-	0·35	0·15	0·08	0·97	0·13	abs.
CO_2	—	—	0·04	0·04	tr.	0·02
TiO_2	0·78	0·83	1·60	0·93	0·92	0·74
P_2O_5	0·29	0·45	0·46	—	0·15	0·29
MnO	—	0·09	0·28	0·93	0·21	0·13
Other Con-stituents						FeS_2 = 0·04
	99·96	99·56	100·08	100·57	100·15	100·04

TABLE U — METAMORPHIC ROCKS OF DIORITIC COMPOSITION

	d. CaO = 5%–6%			e. CaO = 6%–7%	f. CaO = 7%–8%	
	$K_2O/Na_2O > 1·25$	$K_2O/Na_2O = 1·25—0·75$	$K_2O/Na_2O < 0·75$	$K_2O/Na_2O < 0·75$	$K_2O/Na_2O < 0·75$	
	1	2	3	1	1	2
Rock Name	Granulite	Garnetiferous Orthogneiss	Gneiss *Footwall Gneiss*	Hornblende Granite Gneiss	Biotite-hornblende Gneiss	"Diopside Diorite" Granulite
Locality	Broken Hill, N.S.W.	Cape Bruce, MacRobertson Land, Ant.	Broken Hill, N.S.W.	Toodyay, W.A.	Niagara, W.A.	Kersbrook, S.A.
Reference	**495**, 373	**529**, 21	**53**, 324; **362**, 187; **495**, 373	**402**, 123	**273**, 21; **447**, 54	**24**, 122; **475**, 127
Analyst	F. H. Searcy	Not Stated	W. A. Greig	R. T. Prider	A. J. Robertson	W. N. Benson
Remarks			(Basic phase)			
Sp. Gr.	2·83	—	2·813	—	2·85	—
SiO_2	64·10	56·60	58·22	64·16	60·52	56·85
Al_2O_3	14·23	18·56	19·02	15·12	17·61	14·76
Fe_2O_3	0·17	0·63	2·90	1·95	1·21	4·48
FeO	8·71	7·64	5·85	2·90	4·33	1·21
MgO	1·15	5·02	1·58	2·13	3·57	3·84
CaO	5·20	5·27	5·04	6·63	7·03	7·91
Na_2O	0·21	2·11	2·95	4·48	3·25	5·34
K_2O	3·34	1·93	1·91	0·20	1·22	1·91
H_2O+	0·35	0·60	0·93	0·67	1·05	0·12
H_2O-	1·48	0·45	0·19	0·04	0·04	0·08
CO_2	0·03	abs.	—	—	abs.	abs.
TiO_2	0·82	0·92	0·92	0·74	0·46	3·11
P_2O_5	—	0·37	0·10	0·32	0·11	0·51
MnO	0·83	0·06	0·28	0·18	0·10	0·12
Other Constituents			Cl = 0·07	FeS_2 = 0·15	FeS_2 = tr.	F = 0·04 Cl = tr. ZrO_2 = tr. SrO = 0·01 (NiCo)O = 0·05
			99·96			100·34
Less O = Cl, F, S			0·01			0·02
	100·62	100·16	99·95	99·67	100·50	100·32

TABLE U — METAMORPHIC ROCKS OF DIORITIC COMPOSITION

g. $CaO > 8\%$

$K_2O/Na_2O < 0{\cdot}75$

	1	2	3	4	5	6	7	8	9
Rock Name	"Diorite"*	Quartz-hypersthene-augite Granulite	Salite-hypersthene Granulite	Augite-hypersthene-hornblende Granulite	Granulite Hornblende Schist	Hornblende Gneiss	Hornblende Gneiss	Biotite-pyroxene-hornblende Granulite	Pyroxene Granulite
Locality	Kersbrook, S.A.	Musgrave Ra., S.A.	Musgrave Ra., S.A.	Mt. Carruthers, Musgrave Ra., S.A.	Gibraltar, W.A.	Gibraltar, W.A.	Lower Pallinup River, W.A.	Cape Riche, W.A.	Fraser Ra., W.A.
Reference	**311**; **475**, 127	**583**, 12	**583**, 14	**584**	**151**, 72	**151**, 72; **447**, 62	**89**, 38; **560**, 9	**89**, 38; **559**, 33	**582**, 76; **583**, 17
Analyst	A. R. Alderman	Not Stated	Not Stated	W. H. Herdsman	W.A. Dept. Mines	E. S. Simpson	W.A. Geol. Surv.	V. N. Young	Not Stated
Remarks	*Granulite Sedimentary origin			(Basic Charnockite)					
Sp. Gr.		—	—	—	—	—	—	2·92	—
SiO_2	58·19	54·97	52·56	51·52	50·7	50·41	50·02	49·99	49·98
Al_2O_3	15·28	18·56	16·13	13·78	19·5	18·30	12·98	18·35	16·67
Fe_2O_3	1·58	2·54	0·90	3·00	2·7	2·11	2·75	2·15	0·68
FeO	1·23	6·58	8·12	9·88	8·5	11·20	12·16	5·97	11·16
MgO	3·85	4·37	8·68	7·76	4·8	3·27	6·16	6·19	7·64
CaO	8·72	8·20	10·02	9·32	9·6	9·15	10·13	10·39	9·22
Na_2O	4·76	2·73	2·44	2·52	2·6	2·07	2·04	3·79	1·87
K_2O	3·02	0·52	0·38	0·68	0·3	0·85	0·44	0·91	0·78
H_2O+	0·16	0·37	0·12	0·23	1·2	1·58	1·72	0·92	0·18
H_2O-	0·29	0·04	0·08	0·09	0·4	0·12	0·03	0·28	0·34
CO_2	—	tr.	—	abs.	abs.	0·61	0·06	abs.	abs.
TiO_2	2·65	0·64	0·42	0·98		—	1·42	0·87	1·19
P_2O_5	0·48	0·14	0·02	0·12		—	0·20	0·30	0·09
MnO	0·05	0·22	0·28	0·26		—	0·29	0·14	0·26
Other Constituents			BaO = tr.				$FeS_2 = 0{\cdot}06$	$FeS_2 = 0{\cdot}09$ $Cr_2O_3 = 0{\cdot}05$ $Cl = 0{\cdot}12$	
								[100·51]	
Less O = Cl, F, S								0·03	
	100·26	99·88	100·15	100·14	100·3	99·67	100·46	100·48	100·06

TABLE U — METAMORPHIC ROCKS OF DIORITIC COMPOSITION

g. CaO >8%

K_2O/Na_2O <0·75

	10	11	12	13	14	15	16	17
Rock Name	Pyroxene-bearing hornblende Granulite	Pyroxene Granulite	Augite-bronzite-hornblende Rock	Hornblende-pyroxene Granulite	Hornblende-pyroxene Granulite	Hornblende-pyroxene Granulite	Augite-hypersthene Granulite	Biotite-hornblende-pyroxene Granulite
Locality	Musgrave Ra., S.A.	Near Simon Hill, Frazer Ra., W.A.	Near Sentinel Hill, Musgrave Ra., S.A.	Point Irby, W.A.	Dangin, W.A.	Taljaritja, Musgrave Ra., S.A.	Nyabing, W.A.	Cape Riche, W.A.
Reference	**584**	**582**, 76; **583**, 18	**583**, 19	**89**, 38; **582**, 76	**404**, 161	**583**, 23	**584**	**89**, 38
Analyst	W. H. Herdsman	W. H. Herdsman	Not Stated	W. H. Herdsman	J. N. A. Grace	Not Stated	Not Stated	W. H. Herdsman
Remarks		(Basic Charnockite)						
Sp. Gr.	—	—	—	—	3·28			—
SiO_2	49·58	49·04	48·20	48·14	48·09	47·28	46·90	46·76
Al_2O_3	16·17	15·74	10·36	14·72	8·14	17·02	14·67	17·94
Fe_2O_3	3·98	2·50	1·96	1·93	2·91	4·39	2·15	3·16
FeO	7·78	12·13	9·09	12·92	12·40	7·88	9·83	8·78
MgO	6·01	6·52	16·91	6·78	14·50	8·62	9·68	6·84
CaO	8·74	9·27	10·32	10·53	10·47	10·54	12·28	10·22
Na_2O	3·56	1·56	0·88	2·26	0·92	2·23	1·52	2·97
K_2O	1·26	0·57	0·39	0·35	0·46	0·56	1·00	1·46
H_2O+	0·43	0·14	0·26	0·68	0·72	0·29	1·00	0·64
H_2O-	0·08	abs.	0·28	abs.	0·03	0·04	0·14	0·04
CO_2	abs.	abs.	abs.	tr.	0·10	tr.	—	abs.
TiO_2	1·29	1·92	0·97	1·44	0·79	0·70	0·77	0·93
P_2O_5	0·57	0·52	0·04	0·19	0·11	0·09	0·09	0·23
MnO	0·38	0·36	0·37	0·24	0·57	0·21	0·22	0·18
Other Constituents					FeS_2=0·01 Cr_2O_3=0·10 V_2O_3=0·25 ZrO_2=tr.			
	99·83	100·27	100·03	100·18	100·57	99·85	100·25	100·15

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

a. $SiO_2/Al_2O_3 > 5$

$CaO < 1\%$

	1	2	3	4	5	6	7	8	9
Rock Name	Black Slate	Black Slate	Grey Slate	Siliceous Slate	Andalusite-quartz-chlorite Schist	Siliceous Slate	Slate	Black Slate	Andalusite-quartz Schist
Locality	Jerrawa, near Yass, N.S.W.	Tallong, N.S.W.	S. of Cooma, N.S.W.	Binduli, W.A.	Quinns, Murchison Goldfield, W.A.	Kalgoorlie, W.A.	Yalgogrin, N.S.W.	Quaama, N.S.W.	Mt. Leonora, W.A.
Reference	**259**, 162	**259**, 162	**256**, 161; **259**, 162	**447**, 96	**158**, 18; **322**, 20	**445**, 77; **447**, 96; **496**, 47; **521**, 661	**363**, 125	**259**, 162	**87**, 25; **322**, 20
Analyst	G. A. Joplin	G. A. Joplin	G. A. Joplin	E. S. Simpson	H. Bowley	E. S. Simpson	N.S.W. Dept. Mines	G. A. Joplin	H. Bowley
Remarks					(Incipient Kyanite)				
Sp. Gr.			2·68	—	2·67	2·66		2·69	—
SiO_2	87·13	86·22	85·96	84·14	84·11	84·07	84·03	83·04	82·74
Al_2O_3	8·99	8·91	8·49	10·18	8·05	9·03	9·77	9·57	14·84
Fe_2O_3	0·17	0·24	0·33	0·44	abs.	0·42	0·35	0·77	0·43
FeO			0·19		0·62	0·45			—
MgO	0·32	0·28	0·65	0·82	4·21	0·24	0·36	0·35	abs.
CaO	tr.	abs.	0·10	0·22	0·18	0·21	0·12	0·05	0·09
Na_2O	0·10	0·19	0·48	0·05	0·25	1·64	2·38	0·30	0·40
K_2O	1·56	1·57	1·91	2·41	0·18	2·21		1·87	0·26
H_2O+	1·16	1·11	1·37	1·56	2·15	1·05	2·44	0·91	0·17
H_2O-		0·09	0·07	0·18	0·06	0·20		0·08	0·03
CO_2	—	—	—	0·14	abs.	0·07	—	—	—
TiO_2	0·32	0·49	0·49	0·25	0·05	1·16	0·55	0·52	1·33
P_2O_5	0·15	0·11	0·07	0·02	0·01	—	—	0·24	tr.
MnO	tr.	tr.	tr.	abs.	abs.	tr.	—	tr.	abs.
Other Constituents	C=0·38	C=1·51	C=0·04	B_2O_3=0·05 FeS_2=0·06 C=0·12	ZrO_2=tr. FeS_2=0·02	FeS_2=0·04 C=tr.		C=1·88	
	100·28	100·72	100·15	100·64	99·89	100·79	100·00	99·58	100·29

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

a. $SiO_2/Al_2O_3 > 5$

$CaO < 1\%$

	10	11	12	13	14	15	16	17	18
Rock Name	Slate	Slate	Sillimanite Schist	Chiastolite Slate	Slate	Slate	Slate	Quartz-mica Schist	Black Slate
Locality	Yalgogrin, N.S.W.	Ungarie, N.S.W.	Westonia, W.A.	Berridale, N.S.W.	Glenmaggie, Vic.	Bullenga-rook, near Gisborne, Vic.	Glenmaggie, Vic.	Middleback Range, S.A.	N. of Weja, N.S.W.
Refer-ence	**363**, 125	**363**, 125	**456**, 563; **582**, 75	**256**, 161; **259**, 162	**548**	**548**	**548**	**132**, 229	**259**, 162
Analyst	N.S.W. Dept. Mines	N.S.W. Dept. Mines	Not Stated	G. A. Joplin	Vic. Dept. Mines	F. F. Field	Vic. Dept. Mines	G. C. Carlos	G. A. Joplin
Remarks					*Loss on ignition		*Loss on ignition		
Sp. Gr.	—	—	—	2·68	—	2·64	—	—	2·63
SiO_2	82·62	81·46	80·52	80·37	80·08	79·34	79·14	79·05	78·89
Al_2O_3	10·49	10·08	12·68	10·04	11·42	9·21	9·10	11·95	13·10
Fe_2O_3	0·45	0·15	0·15	0·35	1·63	2·14	2·10	1·76	0·68
FeO	—	0·27	0·86	1·44	—		—	0·35	
MgO	0·44	0·58	0·30	0·57	0·17	1·31	0·36	0·19	0·30
CaO	0·18	0·54	0·03	0·37	tr.	tr.	tr.	0·48	0·18
Na_2O	nd.	0·18	0·42	0·93	3·28	tr.	2·59	1·64	0·38
K_2O		2·16	3·66	2·09		2·59		3·84	2·09
H_2O+	nd.	4·08	0·87	2·44	3·12*	2·21	6·30*	0·04	1·01
H_2O-	—	0·12	0·08	0·17	0·30	0·95	0·41	0·41	0·23
CO_2	—	—	0·02	—		abs.		tr.	nd.
TiO_2	0·42	0·45	0·28	0·52		0·53		0·34	0·64
P_2O_5	—	nd.	0·01	0·19		tr.		0·01	abs.
MnO	—	nd.	0·08	tr.		abs.		tr.	tr.
Other Con-stituents			BaO = 0·08 FeS_2 = abs.	C = 1·17		Cl = tr. C = 1·60		SO_3 = 0·02 Cl = tr.	S = 0·14 C = 2·15
		100·07	100·04	100·65	100·00	99·88	100·00	100·08	[99·79]

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

a. $SiO_2/Al_2O_3 > 5$

$CaO < 1\%$

	19	20	21	22	23	24	25	26	27
Rock Name	Chiastolite Slate	Slate	Andalusite-quartz-chlorite Schist	Quartzose Phyllite	Slate	Mica Schist	Schist	Mica Schist	Phyllite
Locality	Wagga, N.S.W.	W. of Cooma, N.S.W.	Quinns, Murchison Goldfield, W.A.	Ensay, Vic.	Bermagui-Cobargo Road, N.S.W.	Omeo, Vic.	Walters Marsh, Tas.	Omeo, Vic.	7 miles S.S.W. of Nagus, N.S.W.
Reference	**259**, 162	**259**, 162; **256**, 161	**158**, 18; **322**, 20	**207**, 69	**259**, 162	**212**, 33	**482**, 119	**212**, 33	**533**, 93
Analyst	G. A. Joplin	G. A. Joplin	H. Bowley	A. W. Howitt	G. A. Joplin	A. W. Howitt	W. St C. Manson	A. W. Howitt	T. G. Vallance
Remarks			(Incipient Kyanite)	*Dried		*Dried before analysis		*Dried before analysis	
Sp. Gr.	2·60		2·70	2·665		—	—	—	—
SiO_2	78·82	78·45	78·28	77·50	77·32	77·03	76·92	76·70	76·28
Al_2O_3	12·25	12·92	9·48	13·11	14·43	10·62	12·08	11·64	12·87
Fe_2O_3	0·64	1·48	0·40	1·62	0·48	2·18	0·68	1·73	1·68
FeO		0·95	2·65	—		1·86	1·89	1·08	1·09
MgO	0·28	0·36	5·60	0·98	0·61	1·51	1·61	1·27	0·73
CaO	abs.	0·19	0·11	0·82	abs.	tr.	tr.	0·06	0·18
Na_2O	0·26	0·23	0·23	2·64	0·29	0·86	1·47	2·64	0·82
K_2O	3·27	2·39	0·19	2·32	3·11	3·47	2·59	2·90	3·67
H_2O+	1·52	2·32	3·19	2·08	1·90	1·86	1·86	1·52	1·90
H_2O-	0·22	0·25	0·06	(0·50)*	0·12	0·23*	0·03	0·27*	0·36
CO_2	nd.	—	0·02		—		—	—	—
TiO_2	0·71	0·42	0·04		0·80		0·42	—	0·27
P_2O_5	0·01	0·06	0·05		0·28		0·04	—	nd.
MnO	tr.	0·01	0·03		tr.		0·01	—	0·05
Other Constituents	S=0·08 C=1·67	C=pnd.	ZrO_2=tr. FeS_2=abs.		C=0·18				
	99·73	100·03	100·33	101·07	99·52	99·39	99·60	99·54	99·90

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

a. $SiO_2/Al_2O_3 > 5$

$CaO < 1\%$

	28	29	30	31	32	33	34	35	36
Rock Name	Slate	Quartz-chlorite-mica Schist	Schist	Phyllite	Quartz-mica Schist	Graphite Schist	Staurolite Schist	Phyllite	Slate
Locality	Bullengarook, near Gisborne, Vic.	Por. 150, Cullarin, 1½ mls. N.W. Cullarin, N.S.W.	Mt. Lyell, Tas.	N.N.E. of Cooma, N.S.W.	Mt. Kenneth, Yalgoo Goldfield, W.A.	Kalgoorlie, W.A.	Cullalla, W.A.	Mt. Mary, Tas.	Wedderburn, Vic.
Reference	**293**, 455	**585**	**186**, 187	**257**, 163	**322**, 20; **505**,	**157**, 50; **496**, 47	**582**, 75	**482**	**292**, 14
Analyst	Vic. Dept. Mines	G. I. Wilson	A. S. Wesley	G. A. Joplin	D. G. Murray	H. Bowley	D. G. Murray	W. St C. Manson	P. G. W. Bayly
Remarks			*Loss on ignition						"Indicator"
Sp. Gr.	2·64	2·64	—	—	2·72	2·69	2·80	—	—
SiO_2	76·08	76·06	76·0	75·63	75·35	74·89	74·79	74·32	74·16
Al_2O_3	10·56	14·53	14·0	12·92	11·35	14·56	10·28	12·90	15·44
Fe_2O_3	3·71	1·59	—	4·23	0·79	1·62	2·69	0·43	0·77
FeO	—	2·36	—		1·76	0·51	4·18	2·69	nd.
MgO	1·88	1·02	—	1·79	4·69	0·71	3·44	3·27	0·87
CaO	tr.	0·13	0·4	0·21	tr.	0·10	abs.	abs.	abs.
Na_2O	tr.	0·95	1·8	—	0·30	1·86	0·22	0·44	nd.
KaO	2·56	2·09	1·5	—	2·06	1·04	2·24	3·08	nd.
H_2O+	2·62	0·87	2·3*	2·36	3·10	2·11	1·60	2·90	3·05
H_2O-	0·45	0·15			0·10	0·30	0·08	0·20	0·45
CO_2	abs.	—			0·03	0·12	abs.	—	—
TiO_2	0·45	0·13			0·51	0·61	0·47	0·35	0·60
P_2O_5	—	0·87			0·07	0·07	tr.	0·05	—
MnO	—	tr.			0·12	0·09	0·10	tr.	—
Other Constituents	FeS_2=abs. C=1·50 SO_3=abs.		Fe=3·6		ZrO_2=pnd. FeS_2=0·17	C=0·18 FeS_2=0·97			C=0·35
	99·81	100·75			100·40	99·74	100·09	100·63	95·69

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

a. $SiO_2/Al_2O_3 > 5$

$CaO < 1\%$

	37	38	39	40	41	42	43	44	45
Rock Name	Graphite Slate	Schist	Slate	Quartzose Mica Schist	Kyanite-quartz-chlorite Schist	Cordierite Hornfels	Slate	Slate	Slate
Locality	Yandanhoo Hills, W.A.	Cooma, N.S.W.	Cardup, W.A.	Hinnomunjie morass, Omeo, Vic.	Mt. Kenneth, Yalgoo Goldfield, W.A.	Indigo Creek, Vic.	Chatsbury, near Goulburn, N.S.W.	Bullengarook, Vic.	Burdett, near Canowindra, N.S.W.
Reference	**457**, 475; **582**, 75	**256**, 168	**563**	**209**, 108	**322**, 20; **505**, 10; **582**, 75	**507**, 36	**360**, 178	**548**	**488**, 140
Analyst		G. A. Joplin	D. G. Murray	J. C. Frazer	H. Bowley	C. M. Tattam	N.S.W. Dept. Mines	F. F. Field	N. C. Stevens
Remarks		Finely banded psammopelite							
Sp. Gr.	—	2·78	2·77	—	—	—	2·756	2·67	2·62
SiO_2	73·84	73·64	73·42	72·60	72·57	72·50	71·54	70·43	70·17
Al_2O_3	13·65	13·89	12·51	9·03	10·15	13·72	12·48	9·21	13·00
Fe_2O_3	nd.	0·70	3·81	10·00	0·49	0·56	1·50	5·57	5·22
FeO	2·09	4·04	1·56	1·05	2·70	3·49	3·42		1·26
MgO	0·90	1·98	1·91	3·12	9·38	2·24	2·37	0·72	1·83
CaO	0·17	0·28	abs.	0·50	abs.	0·63	0·76	0·18	0·32
Na_2O	0·36	1·12	0·86	2·62	0·34	0·98	0·64	tr.	1·15
K_2O	4·06	2·88	3·02	2·44	0·28	3·49	2·85	2·52	3·17
H_2O+	1·96	0·42	2·38	0·50	3·19	1·26	2·58	5·62	2·47
H_2O-	0·32	0·07	0·12	—	0·02	0·20	0·10	1·24	0·96
CO_2	abs.	—	0·02	—	—	—	—	abs.	—
TiO_2	0·69	0·63	0·25	—	0·57	1·19	0·60	0·45	0·97
P_2O_5	0·04	nd.	0·12	—	0·20	0·08	0·18	tr.	0·14
MnO	0·09	0·06	0·43	—	0·05	0·04	0·20	abs.	0·06
Other Constituents	C=1·89 FeS_2=0·21		C=0·03 FeS_2=abs.			BaO=0·04	BaO=0·32 Organic=0·22	C=1·85 Cl=tr.	
	100·27	99·71	100·44	101·86	99·94	100·42	99·76	100·62	100·72

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

a. $SiO_2/Al_2O_3 > 5$

	CaO < 1%					CaO > 1%			
	46	47	48	49	50	51	52	53	54
Rock Name	Phyllitic Slate	Slate	Slate	Slate	Chlorite-muscovite Schist	Pelite	Biotite-plagioclase Hornfels	Schist	Mica Gneiss
Locality	Cowra, N.S.W.	Synnott Tableland, Kimberley, W.A.	Boulder, Kalgoorlie, W.A.	Mt. Oxide, Cloncurry Area, Qld.	Youanmi, W.A.	Yass, N.S.W.	Hartley, N.S.W.	Broken Hill, N.S.W.	Harts Range, N.T.
Reference	**488**, 140	**447**, 100	**563**	**33**, 31	**563**	**444**, 74	**251**, 27	**85**, 399	**243**, 75
Analyst	N. C. Stevens	C. G. Gibson	D. G. Murray	Not Stated	D. G. Murray	K. Sherrard	G. A. Joplin	G. T. Pyke	Avery & Anderson
Remarks				(Key bed)					
Sp. Gr.	2·69	2·64	2·69		2·81	—	—	—	—
SiO_2	69·98	68·60	68·12	66·7	64·63	83·25	82·27	79·20	77·56
Al_2O_3	12·74	11·70	12·53	6·5	8·89	7·63	9·32	11·50	10·64
Fe_2O_3	6·25	tr.	0·81	—	2·88	1·48	abs.	0·28	0·23
FeO		6·02	4·40	—	13·54		2·65	3·48	3·09
MgO	4·19	5·36	4·05	0·8	4·07	0·23	1·09	0·25	1·41
CaO	0·76	0·18	abs.	0·5	0·01	2·24	1·80	2·89	2·02
Na_2O	pnd.	0·94	0·84		0·08	1·21	0·83	0·65	1·34
K_2O	pnd.	3·18	2·28		0·12	1·58	1·27	1·20	2·26
H_2O+	—	2·64	3·51		5·16	2·48	0·72	0·41	0·74
H_2O-	—	0·20	0·14		0·14	0·49		0·23	0·17
CO_2	—	abs.	0·84		abs.	—	—	0·06	—
TiO_2	0·82	0·64	0·14		0·30	—	0·47	0·26	0·37
P_2O_5	—	—	0·09		0·26	—	abs.	—	0·22
MnO	0·23	abs.	0·09	0·4	0·20	—	nd.	0·18	—
Other Constituents			C=2·01 FeS_2=0·32	Fe=13·2	FeS_2=0·19				
		99·46	100·17		100·47	100·59	100·42	100·59	100·05

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

a. $SiO_2/Al_2O_3 > 5$					
	CaO > 1%				
	55	56	57	58	59
Rock Name	Quartz Schist	Garnet-sillimanite-cordierite Gneiss	Quartz-biotite Hornfels	Slate	Slate
Locality	Ensay, Vic.	Broken Hill, N.S.W.	Rosetta Head, S.A.	Mudgee, N.S.W.	Cowra, N.S.W.
Reference	**207**, 81	**495**, 367	**41**, 189	**363**, 125	**488**, 140
Analyst	A. W. Howitt	H. Mills & A. Morris	D. R. Bowes	N.S.W. Dept. Mines	N. C. Stevens
Remarks	*Dried before analysis				(Slightly weathered)
Sp. Gr.	2·85	2·70		—	2·54
SiO_2	74·27	71·68	68·92	64·58	62·23
Al_2O_3	13·14	14·20	12·65	12·05	12·20
Fe_2O_3	1·01	2·40	1·60	1·93	6·49
FeO	2·11	3·92	5·07	3·96	0·84
MgO	2·56	2·37	2·52	2·26	3·07
CaO	1·33	1·25	2·06	4·26	3·23
Na_2O	2·91	1·18	2·80	0·50	3·21
K_2O	1·49	1·44	2·10	3·56	2·48
H_2O+	2·13	0·21	0·96	2·35	3·34
H_2O-	(0·28)*	0·91	0·04	0·13	2·07
CO_2	—	0·09	—	3·58	—
TiO_2	—	0·68	0·88	0·56	1·30
P_2O_5	—	—	0·17	0·12	pnd.
MnO	—	0·18	0·02	0·07	0·14
Other Constituents			ZrO_2 = pnd. BaO = 0·01 S = 0·18	$S(FeS_2)$ = 0·22	
			99·98		
Less O = Cl, F, S			0·07		
	100·95	100·51	99·91	100·13	100·60

b. $SiO_2/Al_2O_3 = 5-4$

$CaO < 1\%$

	1	2	3	4	5	6	7	8	9
Rock Name	Andalusite Schist	Quartz-sericite-chloritoid Schist	Slate	Slate	Slate	Slate	Quartz* Sericite Schist	Slate	Cordierite Granulite
Locality	Mt. Walton, W.A.	The Frenchman, Eyre Pen., S.A.	Whim Well, Pilbara Goldfield, W.A.	Mersey R., 2 miles S. of Fisher R. junction, Tas	Nowa Nowa, Vic.	Mersey R., 2 miles S. of Fisher R. junction, Tas.	Yilgarn Goldfield, W.A.	Wedderburn, Vic.	8 miles S.W. of Adelong, N.S.W.
Reference	**456**, 81	**526**, 311	**175**, 44; **447**, 100	**482**, 119	**555**, 449	**483**, 119	**150**, 54	**292**, 14	**533**, 93
Analyst	D. G. Murray	C. E. Tilley	H. Bowley	W. St. C. Manson	F. F. Field	W. St. C. Manson	W.A. Dept. Mines	P. G. W. Bayley	T. G. Vallance
Remarks							*Wrong anal copied	"Indicator"	
Sp. Gr.	2·77	—	2·75	—	—	—		—	—
SiO_2	82·30	74·48	72·73	72·56	71·22	70·82	70·76	70·62	69·98
Al_2O_3	16·50	15·96	17·45	15·03	14·38	16·72	14·83	17·59	14·66
Fe_2O_3	0·08	0·87	abs.	1·85	3·63	0·53	1·46	0·84	1·91
FeO	0·10	2·02	0·43	1·02	—	1·28	3·09	nd.	4·45
MgO	abs.	0·35	0·44	1·07	1·52	1·22	1·99	0·77	2·39
CaO	tr.	0·28	0·11	0·04	0·56	0·38	0·36	abs.	0·19
Na_2O	0·18	0·72	0·62	1·11	2·26	1·02	0·47	nd.	0·50
K_2O	0·12	3·88	4·14	3·91	2·23	4·29	3·50	nd.	3·92
H_2O+	0·48	2·02	1·52	2·34	2·72	2·08	2·70	3·40	0·89
H_2O-	abs.	0·13	0·11	0·20	0·80	0·20	0·09	0·31	0·18
CO_2	0·01	—	0·12	—	abs.	—	—	—	—
TiO_2	0·23	—	0·35	0·62	0·28	0·77	—	1·50	0·71
P_2O_5	0·08	—	0·38	0·03	0·26	0·07	—	—	—
MnO	abs.	—	abs.	0·01	—	0·03	—	—	0·04
Other Constituents			$FeS_2 = 1·23$ $C = 0·16$		Cl = tr.			C = 0·33	
	100·08	100·71	99·79	99·79	99·86	99·41	[99·25]	95·36	99·82

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

b. $SiO_2/Al_2O_3 = 5-4$

$CaO < 1\%$

	10	11	12	13	14	15	16	17	18
Rock Name	Schist	Garnet Schist	Muscovite-sillimanite Schist	Biotite Psammo-pelite	Slate	Slate	Slate	Andalusite-cordierite Hornfels	Feldspathic pinite Gneiss
Locality	Omeo, Vic.	Cardigan River, Tas.	Poothlar-ingla, S.A.	5 miles S.S.E. of Wanta-badgery, N.S.W.	Chatsbury, near Goul-burn, N.S.W.	Millamurrah, near Bath-hurst, N.S.W.	Armadale, W.A.	Hartley, N.SW.	Ensay, Vic.
Refer-ence	**209**, 122	**482**, 119	**308**, 197	**533**, 93	**360**, 178	**367**, 106	**563**	**251**, 23	**507**, 38
Analyst	A. W. Howitt	W. St. C. Manson	W. S. Chapman	T. G. Vallance	N.S.W. Dept. Mines	N.S.W. Dept. Mines	C. R. Le Mesurier	G. A. Joplin	C. M. Tattam
Remarks	*Dried								
Sp. Gr.	2·720	—	—		2·785	—	2·69		
SiO_2	69·79	69·28	68·54	68·17	67·94	67·40	67·20	67·00	66·80
Al_2O_3	16·47	15·64	17·08	16·76	15·00	16·49	15·06	16·34	15·80
Fe_2O_3	0·53	0·57	0·08	2·34	2·70	2·20	—	0·75	1·62
FeO	2·97	4·61	0·88	2·51	2·79	2·88	4·14	4·34	3·63
MgO	1·95	1·48	0·21	2·06	2·51	1·70	2·43	1·16	2·25
CaO	0·73	0·68	0·97	0·28	abs.	0·54	0·11	0·66	0·47
Na_2O	1·68	1·93	1·13	0·76	0·55	0·80	0·42	2·14	1·00
K_2O	3·44	3·42	2·86	3·08	3·99	3·53	4·94	5·44	5·02
H_2O+	0·99	1·96	1·62	2·59	2·60	4·00	3·39	2.38	2·10
H_2O-	(0·49)*	0·10	0·47	0·38	0·16	—	0·29		0·34
CO_2	—	—	0·16	—	—	—	abs.	—	—
TiO_2	—	0·45	0·80	0·88	0·75	0·42	0·46	0·03	0·69
P_2O_5	0·06	0·05	0·20	0·22	0·10	0·19	0·01	abs	0·66
MnO	—	tr.	0·04	0·05	0·19	—	0·05	pnd.	0·08
Other Con-stituents			$FeS_2 = 0·62$ $C = 4·21$		$BaO = 0·09$ Organic = 0·52 (Co.Ni)0 = 0·02		$FeS_2 = 1·07$ $C = 0·46$ B_2O_3 = tr.		$BaO = 0·10$ $S = 0·04$
	98·61	100·17	99·87	100·08	99·91	100·15	100·03	100·24	100·60

b. $SiO_2/Al_2O_3 = 5-4$

$CaO < 1\%$

	19	20	21	22	23	24	25	26	27
Rock Name	Slate	Slate	Slate	Contact altered Shale	Slate	Phyllite	Slate	Slate	Phyllite *Bunya Phyllite*
Locality	Chatsbury, near Goulburn, N.S.W.	Mt. Useful, Vic.	Mt. Useful, Vic.	Prospect, near Sydney, N.S.W.	Armadale, W.A.	Canbelego, N.S.W.	Kangaroo Gully, near Bendigo, Vic.	Kempsey, N.S.W.	Finneys Hill, near Brisbane, Qld.
Reference	**356**, 190	**548**	548	**575**, 15	**400**, 39; **582**, 75	**9**, 23	**464**, 381	**363**, 125	**63**, 30
Analyst	N.S.W. Dept. Mines	F. F. Field	F. F. Field	J. H. Pyle	C. R. Le Mesurier	H. P. White	H. C. Richards	N.S.W. Dept. Mines	Not Stated
Remarks							Fragment in Agglomerate		
Sp. Gr.	—	—	—	2·56	—	2·758	—	—	—
SiO_2	66·60	65·89	65·81	65·65	65·22	64·88	64·87	63·80	63·00
Al_2O_3	16·14	16·27	15·83	15·74	16·71	15·71	13·82	14·17	14·53
Fe_2O_3	3·15	4·46	2·86	2·08	1·93	5·05	3·95	—	3·81
FeO	2·84	2·19	2·70	2·32	3·23	1·39	3·50	5·45	4·80
MgO	2·56	2·36	2·23	1·14	2·87	2·09	1·23	2·23	2·28
CaO	0·54	0·08	0·13	0·57	0·05	0·60	tr.	0·48	0·55
Na_2O	0·81	0·09	0·24	0·36	0·76	0·87	1·78	2·50	0·92
K_2O	4·31	3·70	3·59	2·35	5·98	4·95	5·70	2·40	2·75
H_2O+	1·56	4·43	4·24	5·19	2·12	3·36	—	3·02	4·33
H_2O-	0·16	0·74	0·70	2·79	0·16	0·47	2·40	0·42	0·59
CO_2	—	abs.	abs.	0·24	0·05	tr.	—	—	0·14
TiO_2	0·65	0·84	0·87	1·06	0·35	0·35	2·41	0·70	0·70
P_2O_5	0·11	abs.	abs.	0·22	0·08	0·09	—	0·07	0·20
MnO	0·12	tr.	tr.	0·05	0·03	0·03	—	0·08	0·63
Other Constituents	Organic = 0·76	Cl = tr FeS_2 = 0·34	FeS_2 = 0·32	C = 0·53 BaO = 0·05 CuO = 0·02 SO_3 = tr., ZiO_2 = tr., F = tr., S = tr. V_2O_3 = tr., Cr_2O_3 = tr., (Ni.CO)O = tr.	BaO = 0·11 SO_3 = 0·11 C = 0·05 Cr_2O_3 = 0·01, V_2O_3 = 0·03	Cl = tr. V_2O_3 = tr. (Ni.Co)O = tr. BaO = 0·09		$S(FeS_2)$ = 3·23 Cr_2O_3 = 0·01 BaO = 0·06 C = 1·38 V_2O_3 = tr.	BaO = 0·05 PbO = 0·32 S = 0·06 C = 0·12
	100·31	101·42	99·52	100·36	99·85	99·93	99·66	100·00	99·78

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

b. $SiO_2/Al_2O_3 = 5-4$

	CaO < 1%				CaO > 1%				
	28	29	30	31	32	33	34	35	36
Rock Name	Contact-altered Shale	Slate	Garnet-orthoclase Rock	Slate	"Slate"	Quartz-Biotite Schist	Slate	Slate	Schist
Locality	Prospect, near Sydney, N.S.W.	Glen Osmond, S.A.	Broken Hill, N.S.W.	Mt. Lyell Tas.	Boulder, Kalgoorlie, W.A.	Rosetta Head, S.A.	Newbridge, near Bathurst, N.S.W.	Bendigo, Vic.	Cooma, N.S.W.
Reference	**575**, 15	**433**, 33	**497**, 27	**491**, 230	**496**, 47	**41**, 189	**23**, 537	**548**	**256**, 168
Analyst	J. H. Pyle	T. W. Dalwood	Avery & Anderson	Not Stated	C. R. Le Mesurier	D. R. Bowes	H. J. Meldrum	Vic. Dept. Mines	G. A. Joplin
Remarks				(Low grade Ore)					(Finely banded psammopelite)
Sp. Gr.	2·54	—	—	—	2·76	—	—	—	2·76
SiO_2	62·05	61·08	59·12	58·64	71·43	68·76	68·67	68·34	68·06
Al_2O_3	15·27	15·08	14·66	12·52	14·96	13·79	16·99	14·08	16·32
Fe_2O_3	1·86	2·74	0·30	3·82	—	0·66	1·11	5·30	0·99
FeO	6·06	4·70	8·66	11·06	0·87	4·60	1·87	—	4·15
MgO	1·36	5·09	1·20	0·36	0·92	2·65	2·34	1·52	2·21
CaO	0·65	0·33	0·56	0·20	1·73	2·81	2·33	1·77	1·09
Na_2O	0·62	2·15	0·34	1·52	0·63	2·54	1·07	2·97	1·29
K_2O	1·97	2·84	5·60	0·40	3·31	2·29	2·88	1·67	3·59
H_2O+	6·05	4·12	abs.	1·00	1·22	0·53	1·92	2·99	0·93
H_2O-	2·61	0·22	abs.	—	0·14	0·04	—	0·07	0·11
CO_2	0·32	—	abs.	—	2·42	—	—	—	—
TiO_2	1·02	1·64	0·93	—	0·09	0·74	pnd.	—	0·63
P_2O_5	0·19	—	0·20	—	0·02	0·21	—	—	0·19
MnO	0·18	—	7·79	—	0·04	0·07	—	—	0·04
Other Constituents	ZrO_2=0·01 ZnO=tr. SO_3=tr., F=0·01, S=0·01 CuO=0·01 (NiCo)O=tr.	Cl=tr.	SO_3=0·27 BaO=0·25	$BaSO_4$=0·45 FeS_2=3·06 $CuFeS_2$=5·67 Volatiles=0·93	FeS_2=2·01 C=0·22	ZrO_2=0·19 BaO=0·14 S=0·13		FeS_2=0·41 P=0·08	
Less O=Cl, F, S	100·25					100·15			
	0·01					0·05			
	100·24	99·99	99·88	99·63	100·01	100·10	99·18	99·20	99·60

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

b. $SiO_2/Al_2O_3 = 5-4$

$CaO > 1\%$

	37	38	39	40	41	42	43
Rock Name	Cordierite-anthophyllite Hornfels	Biotite-actinolite Schist	Biotite-quartz-actinolite Schist	Chlorite Schist	Phyllite	Biotite Hornfels	Slate
Locality	Havilah, near Mudgee, N.S.W.	Gumeracha, S.A.	Gumeracha, S.A.	Mt. Lyell, Tas.	Adelaide, S.A.	King Island, Tas.	Walhalla, Vic.
Reference	**265**	**111**, 41	**111**, 41	**186**, 187	**221**, 26	**139**, 69	**548**
Analyst	G. A. Joplin	T. W. Dalwood	T. W. Dalwood	P. G. W. Bayly	W. S. Chapman	G. C. Carlos	Vict. Dept. Mines
Remarks							
Sp. Gr.	—	—		—	—	—	—
SiO_2	63·92	63·50	63·26	61·05	59·66	56·81	42·13
Al_2O_3	15·68	14·20	13·98	14·24	14·87	14·10	9·80
Fe_2O_3	0·86	4·15	2·02	1·61	6·54	1·93	12·64
FeO	7·73	0·58	4·08	4·33	—	9·67	—
MgO	3·03	5·08	5·28	2·09	6·60	3·48	10·07
CaO	1·35	2·22	1·80	1·04	1·22	1·53	10·18
Na_2O	3·99	3·74	2·84	1·86	2·38	3·15	1·30
K_2O	0·19	2·18	3·28	1·17	2·10	5·63	0·46
H_2O+	1·02	1·57	1·20	3·96	2·06	1·34	1·51
H_2O-	0·38	0·15	0·04	0·23	0·18	0·02	
CO_2	0·42	—	—	—	2·35	abs.	3·15
TiO_2	1·03	1·71	1·47	0·67	1·39	2·14	—
P_2O_5	abs.	0·33	0·37	(0·51)	—	0·06	0·16
MnO	0·28	—	—	1·26	—	0·11	—
Other Constituents		Cl = 0·01	Cl = 0·01	FeS_2 = 5·08 BaO = tr.	Cl = tr.	Cl = 0·01 SO_3 = tr.	Cu_2S = 6·76 FeS_2 = 0·16
	99·88	99·42	99·63	99·10	99·35	99·98	98·32

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

c. $SiO_2/Al_2O_3 = 4-3$

$CaO < 1\%$

	1	2	3	4	5	6	7	8	9
Rock Name	Kyanite-quartz-andalusite Schist	Quartz-sericite Schist	Andalusite Schist	Sericite Schist	Graphitic Garnet Schist	Slate	Slate	Slate	Slate
Locality	Mt. Leonora, W.A.	Warra-woona, W.A.	Yandanhoo Hills, W.A.	Southern Cross, W.A.	Southern Cross, W.A.	Wedderburn, Vic.	Wedderburn, Vic.	Wedderburn, Vic.	Wedderburn, Vic.
Reference	**222**, 19; **322**, 20; **447**, 96	**303** 156	**456**, 81; **582**, 75	**150**, 54; **447**, 102	**150**, 53; **154**, 72; **447**, 102; **582**, 75	**292**, 14	**292**, 14	**292**, 14	**292**, 14
Analyst	C. C. Williams	E. S. Simpson	H. Bowley	H. Bowley	H. Bowley	P. G. W. Bayly	P. G. W. Bayly	P. G. W. Bayly	P. G. W. Bayly
Remarks					*Probably in excess owing to presence C	"Indicator"	"Indicator"	"Indicator"	"Indicator"
Sp. Gr.	2·81	2·85	2·77	—	2·84	—	—	—	—
SiO_2	76·71	76·0	74·28	71·24	69·77	68·58	67·90	67·80	67·49
Al_2O_3	20·08	21·4	21·91	19·58	18·38	18·02	18·23	18·46	19·61
Fe_2O_3	1·70	—	tr.	0·76	2·16	1·61	1·40	1·40	1·89
FeO	—	0·3	0·54	0·26	0·28*	nd.	nd.	nd.	nd.
MgO	0·06	tr.	0·33	0·46	0·48	0·83	1·08	1·08	0·86
CaO	0·56	abs.	0·12	0·07	0·60	abs.	abs.	abs.	abs.
Na_2O	0·07	0·3	0·38	abs.	0·56	nd.	nd.	nd.	nd.
K_2O	0·11	0·4	0·30	5·62	0·46	nd.	nd.	nd.	nd.
H_2O+	0·24	1·6	0·51	2·27	2·35	4·31	3·92	4·02	4·54
H_2O-	0·21	—	0·10	0·13	0·52	1·00	0·48	0·94	0·60
CO_2	—	—	0·02	—	0·34	—	—	—	—
TiO_2	0·66	—	0·10	—	1·39	2·50	1·75	1·58	0·85
P_2O_5	—	—	tr.	—	0·18	—	—	—	—
MnO	abs.	—	0·05	—	tr.	—	—	—	—
Other Constituents			C=1·50 FeS_2=0·15		FeS_2=0·32 C=1·25	C=0·23	C=0·40	C=0·40	C=0·39
	100·40	100·0	100·29	100·39	99·94	97·08	95·16	95·68	96·23

c. $SiO_2/Al_2O_3 = 4-3$

$CaO < 1\%$

	10	11	12	13	14	15	16	17	18
Rock Name	Chloritoid-mica Schist	Slate	Slate	Fuchsite Schist	Carbonaceous Sericite Schist	Muscovite-sillimanite Schist	Spotted micaceous Hornfels	Slate	Slate
Locality	Mt. Magnet, W.A.	Wedderburn, Vic.	Wedderburn, Vic.	Bow Bells, Warrawoona, W.A.	Burrumbuttock, near Albury, N.S.W.	Poothlaringla, S.A.	King Island, Tas.	Wedderburn, Vic.	Wedderburn, Vic.
Reference	**447**, 22	**292**, 14	**292**, 14	**302**, 66; **303**, 164	**260**, 89	**308**, 197 **309**, 274	**139**, 69	**292**, 14	**292**, 14
Analyst	C. R. Le Mesurier	P. G. W. Bayly	P. G. W. Bayly	J. H. Brooking	G. A. Joplin	W. S. Chapman	G. C. Carlos	P. G. W. Bayly	P. G. W. Bayly
Remarks		"Indicator"	"Indicator"		(Slightly hornfelsed)			"Indicator"	"Indicator"
Sp. Gr.	2·76	—	—	2·58	—	—	2·714	—	—
SiO_2	66·68	66·58	65·80	65·75	65·73	65·69	65·50	65·29	64·97
Al_2O_3	20·21	17·29	19·35	19·39	21·04	17·59	17·38	20·26	17·24
Fe_2O_3	0·37	3·33	1·96	0·51	2·28	0·73	1·18	2·63	2·29
FeO	2·46	nd.	nd.	3·05		0·53	2·67	0·23	nd.
MgO	0·54	0·70	0·97	2·36	0·75	0·59	1·62	1·49	0·94
CaO	0·31	abs.	abs.	abs.	0·14	0·59	0·90	abs.	abs.
Na_2O	1·07	nd.	nd.	0·93	0·27	1·50	2·17	0·35	nd.
K_2O	4·18	nd.	nd.	4·66	4·77	3·98	4·99	2·03	nd.
H_2O+	2·97	4·51	4·17	1·78	2·57	1·78	2·43	5·11	4·51
H_2O-	0·10	0·73	0·49	0·10	0·25	0·17	0·22	0·45	1·28
CO_2	0·17	—	—	0·16	—	0·12	tr.	—	—
TiO_2	0·92	1·00	1·75	0·66	0·92	0·90	0·90	0·85	2·00
P_2O_5	0·22	—	—	—	0·08	0·26	0·02	tr.	—
MnO	0·01	—	—	abs.	—	0·03	0·03	—	—
Other Constituents	$FeS_2 = 0·04$	$C = 0·37$	$C = 0·32$	$FeS_2 = 0·23$	$C = 1·59$	$FeS_2 = 0·49$ C + Hydrocarb = 4·92	$Cl = 0·02$ $SO_3 = 0·03$	$Cl = 0·27$	$C = 0·19$
								98·96	
Less O = Cl, F, S								0·06	
	100·25	94·51	94·81	99·58	100·39	99·87	100·06	98·90	93·42

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

c. $SiO_2/Al_2O_3 = 4-3$

$CaO < 1\%$

	19	20	21	22	23	24	25	26	27
Rock Name	Schist	Slate	Slate	Slate	Mica Schist	"Granulite"	Slate	Staurolite Schist	Graphitic Slate
Locality	Walters Marsh, Tas.	Wedderburn, Vic.	Mt. Lyell, Tas.	Wedderburn, Vic.	Omeo, Vic.	10 miles W. of Adelong, N.S.W.	Wedderburn, Vic.	Cattle Ck., near Ballara, Qld.	Kelmscott, W.A.
Reference	**482**	**292**, 14	**491**, 187	**292**, 14	**209**, 112	**533**, 114	**292**, 14	**265**	**457**, 474; **582**, 75
Analyst	W. St C. Manson	P. G. W. Bayly	Not Stated	P. G. W. Bayly	A. W. Howitt	T. G. Vallance	P. G. W. Bayly	G. A. Joplin	
Remarks		"Indicator"	Footwall Rock	"Indicator"	*Dried before analysis				
Sp. Gr.	—	—	—	—	2·651	—	—	—	—
SiO_2	64·76	64·70	64·29	64·01	64·00	63·97	63·74	63·57	63·24
Al_2O_3	19·00	20·28	18·91	21·36	19·82	18·13	19·91	20·01	17·20
Fe_2O_3	1·07	2·67	12·01	1·19	3·50	1·92	4·07	5·02	nd.
FeO	3·20	nd.	—	nd.	—	4·34	0·45	1·87	5·88
MgO	1·16	1·15	0·76	1·16	2·14	2·83	2·10	1·58	2·94
CaO	0·08	abs.	tr.	abs.	0·32	0·19	abs.	0·30	abs.
Na_2O	1·72	nd.	0·12	nd.	1·10	0·92	0·55	0·78	0·11
K_2O	4·35	nd.	3·67	nd.	4·41	4·58	3·89	3·83	5·11
H_2O+	2·98	4·07	—	4·36	2·23	1·60	4·49	1·45	3·14
H_2O-	0·12	0·85	—	1·12	(0·85)*	0·26	0·47	0·30	0·25
CO_2	—	—	—	—	—	—	—	—	0·19
TiO_2	0·88	1·45	—	0·70	—	0·69	0·79	nd.	0·28
P_2O_5	0·08		—	nd.	0·10	0·27	tr.	0·83	tr.
MnO	0·04		—	—	—	0·03	—	—	0·66
Other Constituents		C=0·32	$BaSO_4$=0·26	C=0·29	C=3·32		Cl=0·11		FeS_2=tr. C=1·28
							100·57		
Less O = Cl, F, S.							0·03		
	99·44	95·49	100·02	94·19	100·94	99·73	100·54	99·54	100·28

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

c. $SiO_2/Al_2O_3 = 4-3$

$CaO < 1\%$

	28	29	30	31	32	33	34	35	36
Rock Name	Slate	Hornfels	Slate	Hornfels	Slate	Feldspathic Gneiss	Phyllite	Cordierite Hornfels	Slate
Locality	Noyang, Vic.	Dargo, Vic.	Hanging Wall zone, Great Cobar Mine, N.S.W.	Noyang, Vic.	Slape Gully, Mt. Lofty Ra., S.A.	Mitta Mitta Region, Vic.	Mt. Egerton, N.W. Division, W.A.	Mitta Mitta Region, Vic.	Footwall zone, Great Cobar Mine, N.S.W.
Reference	**206** 58	**208**, 133	**412**	**206**, 62	**433**, 33	**507**, 36	**447**, 100	**507**, 36	**412**
Analyst	A. W. Howitt	A. W. Howitt	J. H. Pyle	A. W. Howitt	T. W. Dalwood	C. M. Tattam	H. Bowley	C. M. Tattam	J. H. Pyle
Remarks		*Dried before analysis							
Sp. Gr.	2·727	2·744	—	2·738	—	—	2·83	—	—
SiO_2	62·30	62·28	62·10	61·92	61·76	61·54	61·24	61·20	61·19
Al_2O_3	19·22	20·16	17·16	20·74	16·19	18·49	17·33	19·47	17·46
Fe_2O_3	1·80	0·53	1·09	2·28	1·04	1·44	1·23	1·53	1·05
FeO	4·01	3·84	4·84	3·90	6·01	4·85	6·54	4·94	5·01
MgO	2·95	2·54	2·57	2·19	4·96	2·66	3·28	2·81	2·56
CaO	0·44	0·82	0·46	0·42	0·18	0·48	abs.	0·51	0·38
Na_2O	2·07	1·29	1·32	3·51	2·36	1·10	0·26	0·51	1·51
K_2O	3·60	6·40	4·26	2·28	2·58	6·30	4·72	5·33	4·11
H_2O+	2·36	1·86	4·21	2·12	2·63	1·87	3·96	2·37	4·27
H_2O-	0·40	(0·72)*	0·07	0·92	0·17	0·09	0·07	0·29	0·04
CO_2	—	—	abs.	—	—	—	0·15	—	0·04
TiO_2	—	0·17	1·76	—	1·25	0·69	0·52	0·71	2·21
P_2O_5	0·23	0·15	0·20	0·16	—	0·10	0·29	0·30	0·19
MnO	—	—	0·11	0·17	—	0·06	0·18	0·05	0·12
Other Constituents			NiO = tr.		$SO_3 = 0·12$ Cl = abs. C = 0·89	BaO = 0·06	$FeS_2 = 0·04$	BaO = 0·04 F = nd.	NiO = tr.
	99·38	100·04	100·15	100·61	100·14	99·73	99·81	100·06	100·14

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

c. $SiO_2/Al_2O_3 = 4-3$

	CaO < 1%						CaO = 1% – 5%		
	37	38	39	40	41	42	43	44	45
Rock Name	Banded Graphite Rock	Slate	Biotite-orthoclase Rock	Mica Schist	Sericite Schist	Slate	Banded Schist	Slate	Schist
Locality	Larkinville, Coolgardie, W.A.	Warrendyte, Vic.	Broken Hill, N.S.W.	Omeo, Vic.	Mt. Oxide, Cloncurry Area, Qld.	Mt. Lyell, Tas.	Cooma, N.S.W.	Macclesfield Area, Mt. Lofty Ra., S.A.	Mt. Lyell, Tas.
Reference	**160**, 26	**134**, 141	**497**, 27	**209**, 107	**123**, 92	**186**, 187; **491**, 228	**256**, 168	**221**, 38	**186**, 187
Analyst	C. R. Le Mesurier	G. C. Carlos	Avery & Anderson	A. W. Howitt	Not Stated	Not Stated	G. A. Joplin	W. S. Chapman	Mt. Lyell Co.
Remarks				*Spectroscopic	(Gangue)	Footwall Rock	Psammopelitic bands		*Loss on ignition
Sp. Gr.	2·26	—	—	—	—	—	2·75	—	
SiO_2	60·48	60·41	59·16	58·87	56·40	53·50	66·26	63·84	63·6
Al_2O_3	15·20	17·51	17·83	16·95	16·06	17·51	17·38	18·52	17·6
Fe_2O_3	0·31	2·04	0·03	8·62	3·23	23·02	0·24	5·04	5·8
FeO	—	4·95	5·67	3·93		—	3·01	—	—
MgO	0·24	2·93	0·81	2·32	1·41	0·52	2·63	0·46	—
CaO	0·92	0·31	0·57	0·97	tr.	0·37	1·02	2·52	3·48
Na_2O	6·33	2·77	0·64	1·48	0·88	0·47	2·63	2·09	1·8
K_2O	abs.	3·92	8·74	5·98	5·43	3·54	4·26	2·48	3·16
H_2O+	1·92	3·92	0·16	—	4·09	—	1·65	3·37	1·30*
H_2O-	2·17	0·13	abs.	—	11·43	—	0·15	0·65	
CO_2	0·08	0·32	abs.	—	abs.	—	—	abs.	
TiO_2	0·35	0·61	0·66	—	0·56	—	0·42	1·02	
P_2O_5	—	0·42	0·54	—	abs.	—	0·23	—	
MnO	abs.	0·10	0·68	—	abs.	—	0·04	—	
Other Constituents	FeS_2=0·05 C=11·75	Cl=tr. SO_3=0·17	SO_3=0·46 BaO=4·24	Li_2O=tr.* B_2O_3=tr.		$BaSO_4$=0·50		Cl=0·01	
	99·80	[100·51]	100·19	99·12	99·49	99·43	99·92	100·00	

c. $SiO_2/Al_2O_3 = 4-3$

$CaO = 1\%-5\%$

	46	47	48	49	50	51	52	53	54
Rock Name	Garnet-sillimanite-cordierite Gneiss	Cordierite-plagioclase Hornfels	Schist	Cordierite-garnet Gneiss	Phyllite	Cordierite-muscovite Schist	Quartz-albite-chlorite Schist	Quartz-biotite Schist	Purple Slate
Locality	Broken Hill, N.S.W.	Hartley, N.S.W.	Mt. Wagra, Vic.	Albany, W.A.	Macclesfield, Area, Mt. Lofty Ra., S.A.	May Downs, Mt. Isa, Qld.	Rosetta Head, Encounter Bay, S.A.	Rosetta Head, Encounter Bay, S.A.	Mt. Deception, S.A.
Reference	**495**, 367 & 373	**251**, 26	**507**, 35	**563**	**221**, 38	**265**	**41**, 193	**41**, 189	**321**, 278
Analyst	J. C. H. Mingaye	G. A. Joplin	C. M. Tattam	Not Stated	W. S. Chapman	Avery & Anderson	D. R. Bowes	D. R. Bowes	E. R. Segnit
Remarks			Xenolith in gneiss						
Sp. Gr.	—	—	—	2·84	—	—	—		—
SiO_2	62·56	61·50	61·25	61·04	60·54	60·28	60·07	58·82	58·30
Al_2O_3	19·41	19·84	18·48	18·45	17·11	18·03	17·65	18·34	15·64
Fe_2O_3	0·70	1·39	3·64	0·61	7·56	6·56	1·29	0·96	1·94
FeO	7·20	5·20	1·58	8·90	—	1·07	5·50	5·93	2·80
MgO	2·12	2·67	2·25	3·11	4·16	2·94	3·95	4·00	3·87
CaO	2·22	2·91	1·44	1·23	1·78	1·60	2·22	3·53	4·31
Na_2O	1·86	1·11	1·57	1·20	0·44	2·02	3·88	3·39	1·81
K_2O	2·41	4·39	4·41	2·64	2·92	3·66	1·89	3·28	3·16
H_2O+	0·09	1·28	2·47	1·34	3·39	2·42	2·20	0·27	2·56
H_2O-	0·61	0·04	0·30	0·17	0·64	0·38	0·07	0·10	0·30
CO_2	0·02	—	—	0·50	abs.	—	—	—	5·13
TiO_2	0·72	0·42	0·64	1·18	1·09	0·78	0·96	0·96	nd.
P_2O_5	0·07	abs.	0·20	0·22	—	0·22	0·16	0·19	0·16
MnO	0·29	tr.	0·03	0·09	—	0·09	0·05	0·05	0·10
Other Constituents	$BaO = 0·04$		$BaO = 0·11$ $C = 1·78$	$FeS_2 = 0·15$	$Cl = 0·07$		$ZrO_2 = 0·30$ $BaO = 0·08$ $S = 0·16$	$ZrO_2 = 0·05$ $BaO = 0·05$ $S = 0·03$	$BaO = 0·10$ $CuO = 0·02$ $Cl = 0·01$ $S = 0·02$
								99·95	
Less O = Cl, F, S								0·01	
	100·32	100·75	100·15	100·83	99·70	100·05	100·43	99·94	[100·23]

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

c. $SiO_2/Al_2O_3 = 4-3$					d. ALUMINOUS $SiO/_2Al_2O_3 < 3$			
	CaO = 1% – 5%				CaO < 1%			
	55	56	57	58	1	2	3	4
Rock Name	Biotite-actinolite Hornfels	Slate	Garnet-feldspar Rock	Chloritoid Rock*	Quartz-sillimanite Gneiss	Schist	Schist	Porcellanite
Locality	King Island, Tas.	Echunga, S.A.	Broken Hill, N.S.W.	Kalgoorlie, W.A.	Williams-town, S.A.	Mt. Lyell, Tas.	Mt. Lyell, Tas.	Yalook Ck., Vic.
Reference	**139**, 69	**196**, 377	**362**, 187	**451**, 28	**91**, 110	**186**, 187	**186**, 187; **491**, 231	**128**, 230
Analyst	G. C. Carlos		W. A. Greig	E. S. Simpson	Not Stated	Mt. Lyell Co.	Not Stated	F. F. Field
Remarks		*Loss on ignition (includes CO_2)	(Lens in garnet silli-manite schist)	*(Massive) Foliated Rock contains more CaO – Xb18		*Loss on ignition		
Sp. Gr.	2·904	—	—	2·95	—	—	—	—
SiO_2	56·96	56·79	53·88	44·93	70·04	67·4	65·5	64·67
Al_2O_3	16·17	14·87	15·80	14·66	27·47	24·6	22·51	25·65
Fe_2O_3	6·80	5·53	5·00	2·68	0·42	tr.		1·80
FeO	6·65	—	16·30	20·12		—	—	1·62
MgO	3·55	5·60	2·73	4·63	abs.	—	tr.	1·10
CaO	4·54	3·60	1·34	2·17	0·02	abs.	0·08	0·30
Na_2O	0·67	1·56	0·66	0·02	0·62	3·03	1·8	0·09
K_2O	1·68	2·54	2·28	0·16	0·12	2·7	0·3	4·16
H_2O+	0·74	7·81*	0·69	6·16	0·62	3·03*	0·2	0·18
H_2O-	0·02		0·11	0·11	0·03			0·03
CO_2	tr.	(4·46)	0·14	3·34	—			—
TiO_2	1·42	0·71	0·50	0·90	0·97			0·80
P_2O_5	0·20	—	0·05	0·09				
MnO	0·48	—	0·59	0·38				
Other Con-stituents	Cl = abs. $SO_3 = 0·02$		$SO_3 = 0·14$ Cl = tr. BaO = 0·02	FeS_2 = abs.			Fe = 1·45 Cu = 1·0 S = 0·64 $BaSO_4$ = tr. Volatiles = 4·0	
	99·90	99·01	100·23	100·35	100·31	100·76	97·48	100·40

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

d. ALUMINOUS—$SiO_2/Al_2O_3 < 3$

$CaO < 1\%$

	5	6	7	8	9	10	11	12	13
Rock Name	Sericite Schist	Spotted "Granulite"	Slate	Sericite Schist	Slate	Sillimanite Gneiss	Slate	Paragneiss	Slate
Locality	South Para River, S.A.	Cooma, N.S.W.	Whim Ck., N.W. Division, W.A.	South Para River, S.A.	Wedderburn, Vic.	Broken Hill, N.S.W.	N. of Jingalee, N.S.W.	Albury, N.S.W.	Wedderburn, Vic.
Reference	**4**, 175	**256**, 181	**35**, 10; **175**, 59; **447**, 100	**4**, 175	**292**, 14	**53**, 299	**260**, 89	**260**, 88	**292**, 14
Analyst	A. R. Alderman	G. A. Joplin	H. Bowley	A. R. Alderman	P. G. W. Bayly	H. P. White	G. A. Joplin	G. A. Joplin	P. G. W. Bayly
Remarks			(Mixed sample of 4)						"Indicator"
Sp. Gr.	—	2·81	—	—	—	2·903	—	—	—
SiO_2	61·53	61·13	61·00	60·02	59·90	59·76	59·43	59·42	59·28
Al_2O_3	20·70	23·43	20·67	21·84	25·10	20·08	23·37	21·44	27·24
Fe_2O_3	2·96	0·09	—	4·67	0·85	2·20	2·84	1·09	0·10
FeO	2·35	4·84	6·11		0·13	7·38	1·13	5·23	0·11
MgO	1·69	1·99	3·18	2·11	2·31	2·32	1·59	2·53	1·16
CaO	0·26	0·63	0·92	0·43	abs.	0·40	0·14	0·11	abs.
Na_2O	0·71	1·08	1·06	1·09	0·58	0·99	0·61	0·66	0·31
K_2O	6·24	5·84	2·04	6·25	5·12	3·76	5·09	6·14	2·17
H_2O+	2·87	0·26	3·39	nd.	5·60	1·55	2·48	1·82	6·58
H_2O-		0·20	0·20	nd.	0·46	0·27	0·61	0·19	0·45
CO_2	—	—	0·10	—	abs.	0·01	—	—	—
TiO_2	0·75	0·72	1·00	—	0·96	1·05	0·98	0·96	nd.
P_2O_5	—	0·24	0·30	—	tr.	0·19	tr.	0·04	abs.
MnO	—	0·09	0·19	—	—	0·18	0·01	0·05	—
Other Constituents		ZrO_2=0·16	FeS_2=0·19 C=0·14		C=nd.	BaO=0·15 Cl=tr. V_2O_3=tr.	C=1·75		SO_3=0·26 Cl=0·99
									98·65
Less O= Cl, F, S									0·22
	100·06	100·70	100·49		101·01	100·29	100·03	99·68	98·43

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

d. ALUMINOUS—$SiO_2/Al_2O_3 < 3$

$CaO < 1\%$

	14	15	16	17	18	19	20	21	22
Rock Name	Garnet-cordierite-sillimanite Gneiss	Paragneiss	Sericite Schist	Mica Schist	Hematite Phyllite	Slate	Andalusite Schist	Sericite Schist	Slate
Locality	Broken Hill, N.S.W.	Cooma, N.S.W.	Broken Hill, N.S.W.	Cooma, N.S.W.	Uaroo, Ashburton Goldfield, W.A.	Wedderburn, Vic.	Snake Gully, S. of Cloncurry, Qld.	Broken Hill, N.S.W.	Talmalmo, near Albury, N.S.W.
Reference	**495**, 367	**256**, 181; **261**, 34	**53**, 302; **364**, 77	**256**, 164	**447**, 100; **519**, 171	**292**, 14	**265**	**53**, 302; **364**, 77	**260**, 89
Analyst	W. Grosse & W. Usher	G. A. Joplin	H. P. White	G. A. Joplin	C. C. Williams	P. G. W. Bayly	Avery & Anderson	W. A. Greig	G. A. Joplin
Remarks		Al_2O_3 corrected in **261**							
Sp. Gr.	3·46	2·82	2·842	2·78	2·81	—	—	—	—
SiO_2	59·18	59·05	58·88	58·87	58·84	58·66	58·64	57·92	57·74
Al_2O_3	24·02	22·04	21·83	21·25	21·59	23·26	20·31	21·30	23·06
Fe_2O_3	0·50	1·48	4·60	2·47	4·76	4·28	0·90	1·60	2·90
FeO	6·26	5·16	2·25	4·05	0·60	0·38	7·53	5·67	1·61
MgO	1·67	2·37	1·03	2·98	2·31	2·41	2·21	1·91	1·97
CaO	0·56	0·65	0·54	0·12	0·29	abs.	0·72	0·58	0·14
Na_2O	1·07	0·81	0·66	0·60	1·34	0·49	0·66	1·08	0·46
K_2O	4·83	5·85	5·94	5·73	5·34	3·44	4·98	5·41	5·38
H_2O+	0·14	1·17	3·42	2·59	2·52	5·60	2·45	3·54	3·76
H_2O-	1·01	0·18	0·16	0·22	0·16	1·02	0·06	0·16	1·03
CO_2	0·05	—	0·01		abs.	—	—	abs.	—
TiO_2	0·88	0·68	0·52	0·84	1·48	0·97	0·84	0·70	0·92
P_2O_5		0·18	0·18	0·05	0·36	abs.	0·33	0·11	0·10
MnO	0·08	0·05	0·03	0·02	0·26	—	0·26	0·10	0·04
Other Constituents		ZrO_2=0·19	BaO=0·11	C=0·16		Cl=tr. C=nd.		BaO=0·07	C=0·87
	100·25	99·86	100·16	99·95	99·85	100·51	99·89	100·15	99·98

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

d. ALUMINOUS—$SiO_2/Al_2O_3 < 3$

$CaO < 1\%$

	23	24	25	26	27	28	29	30	31
Rock Name	Schist	Slate	Slate	Chlorite-sericite Phyllite	Slate	Garnet-biotite-sericite Schist	Purple Slate	Andalusite Hornfels	Knotted Andalusite Schist
Locality	Broken Hill, N.S.W.	Bullenga-rook, Vic.	Bendigo, Vic.	Cooma, N.S.W.	Mt. Doran, near Elaine, Vic.	Broken Hill, N.S.W.	Tenterden, W.A.	Noorongong, Vic.	Cooma, N.S.W.
Refer-ence	**362**, 187	**548**	**548**	**256**, 164	**548**	**497**, 27	**563**	**507**, 35	**256**, 164
Analyst	H. P. White & W. A. Greig	F. F. Field	Not Stated	G. A. Joplin	Not Stated	Avery & Anderson	H. Bowley	C. M. Tattam	G. A. Joplin
Remarks					"Indicator"				
Sp. Gr.	—	—	—	2·76	—	—	—	—	2·85
SiO_2	57·70	57·39	57·32	57·07	56·82	56·63	56·54	56·52	56·40
Al_2O_3	21·48	21·41	24·00	20·95	32·02	22·25	23·96	23·13	23·25
Fe_2O_3	1·75	7·14	—	4·27	tr.	0·57	6·23	1·96	1·30
FeO	5·58	—	6·94	2·42	—	6·87	0·44	5·09	5·22
MgO	1·82	3·07	2·68	3·08	1·38	1·54	1·18	2·82	3·24
CaO	0·46	0·93	tr.	0·14	0·32	0·65	0·04	0·39	0·63
Na_2O	1·09	tr.	tr.	0·42	tr.	0·24	0·16	0·24	0·61
K_2O	5·39	4·67	3·60	4·50	3·32	6·84	7·62	6·14	5·65
H_2O+	3·49	4·37	5·70	3·71	6·36	2·16	3·30	2·27	2·77
H_2O-	0·19	0·27		1·03		0·21	0·30	0·20	0·30
CO_2	—	—	—	0·74	—	abs.	abs.	—	—
TiO_2	0·70	—	—	0·82	—	0·93	0·68	1·17	0·57
P_2O_5	0·16	tr.	—	0·06	—	0·17	0·04	0·22	0·06
MnO	0·10	—	—	0·05	—	0·71	abs.	0·06	0·01
Other Con-stituents	Cl=tr. V_2O_3=tr. BaO=0·08 SrO=pnd. Li_2O=pnd.	C=0·31		C=1·33		SO_3=0·59 BaO=0·14		BaO=0·11	C=0·51
	99·99	100·26	100·24	100·59	100·22	100·50	100·49	100·32	100·52

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

d. ALUMINOUS—$SiO_2/Al_2 < 3$

$CaO < 1\%$

	32	33	34	35	36	37	38	39	40
Rock Name	Phyllite	Knotted Schist	Paragneiss	"Gneiss"	Slate	Knotted Schist	Slate	Slate	Spotted "Granulite"
Locality	Ensay, Vic.	5 miles S.E. of Wanta-badgery, N.S.W.	Cooma, N.S.W.	Ensay, Vic.	Dunolly, Vic.	Albury, N.S.W.	Mt. Lyell, Tas.	Percydale, near Avoca, Vic.	Cooma, N.S.W.
Reference	**207**, 68	**533**, 94	**256**, 181	**207**, 75	**214**, 142	**260**, 88	**491**, 187	**548**	**256**, 181
Analyst	A. W. Howitt	T. G. Vallance	G. A. Joplin	A. W. Howitt	P. W. G. Bayly	G. A. Joplin	Not stated	M. K. Evans	G. A. Joplin
Remarks	*Dried before Analysis			*Dried before analysis					
Sp. Gr.	2·75	—	2·85	2·777	—	—	—	2·69	2·83
SiO_2	56·33	56·28	56·05	55·94	55·78	55·49	55·25	55·11	54·63
Al_2O_3	22·94	23·02	24·91	23·39	20·84—	24·45	22·44	22·04	25·35
Fe_2O_3	2·19	1·82	1·22	0·45	2·10	2·21	—	2·21	2·40
FeO	4·54	5·84	4·76	4·69	nd.	4·92	4·40	5·21	4·64
MgO	3·27	3·28	2·51	3·58	1·87	2·88	1·62	2·46	2·75
CaO	0·25	0·14	0·51	0·81	0·08	0·35	abs.	0·33	0·65
Na_2O	0·88	1·21	1·06	1·45	0·40	0·54	abs.	0·02	0·62
K_2O	6·10	4·97	6·12	6·98	5·15	— 5·21	6·97	5·68	6·28
H_2O+	3·87	2·82	1·23	3·60	4·18	2·09	—	4·76	1·25
H_2O-	(0·80)*	0·24	0·22	(0·43)*	7·26	0·07	—	0·22	0·26
CO_2	—	—	—	—	abs.	0·30	—	—	—
TiO_2	—	0·77	0·86	—	0·87	0·78	—	1·00	0·86
P_2O_5	0·13	0·10	0·14	0·10	tr.	0·20	—	—	0·20
MnO	tr.	0·06	0·11	—	—	0·09	—	—	0·05
Other Constituents			ZrO_2=0·09		C=1·59 SO_3=0·17 Cl=0·09	C=0·03	$BaSO_4$=0·45 FeS_2=6·17 Volatiles =3·57	SO_3=1·03	ZrO_2=0·15
					100·38				
Less O= Cl, F, S					0·02				
	100·50	100·55	99·79	100·99	100·36	99·61	100·87	100·07	100·09

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

d. ALUMINOUS—$SiO_2/Al_2O_3 < 3$

	$CaO < 1\%$								
	41	42	43	44	45	46	47	48	49
Rock Name	Chlorite-Sericite Phyllite	Garnet-cordierite-sillimanite Gneiss	Spotted "Granulite"	Slate	Mica Schist	Slate	Phyllite	Argillite	Spotted "Granulite"
Locality	Cooma, N.S.W.	Broken Hill, N.S.W.	10 miles W. of Adelong, N.S.W.	Jingellic, Albury Area, N.S.W.	Omeo, Vic.	Mt. Wagra, near Tallangatta, Vic.	W. of Humula, N.S.W.	Dargo, Vic.	8 miles S.W. of Adelong, N.S.W.
Reference	**256**, 164	**495**, 367	**533**, 114	**260**, 89	**212**, 32	**507**, 35	**533**, 95	**208**, 130	**533**, 94 & 114
Analyst	G. A. Joplin	Moncrieff & Usher	T. G. Vallance	G. A. Joplin	A. W. Howitt	C. M. Tattam	T. G. Vallance	A. W. Howitt	T. G. Vallance
Remarks					*Dried before Analysis			° Including C *Dried before analysis	
Sp. Gr.	2·80	2·89	—	—	—	—	—	—	—
SiO_2	54·18	54·02	54·01	53·88	53·44	52·91	52·55	51·33	49·53
Al_2O_3	25·48	27·24	24·41	27·95	24·76	24·49	23·55	25·69	26·53
Fe_2O_3	2·99	1·45	1·39	5·04	2·52	5·45	5·01	4·80	2·17
FeO	3·08	7·56	5·95	0·69	4·23	1·50	4·52	1·07	6·01
MgO	3·13	2·13	2·91	1·02	2·96	1·80	1·90	2·72	3·15
CaO	0·41	0·62	0·36	0·19	tr.	0·29	0·37	0·25	0·37
Na_2O	0·73	0·60	1·09	0·34	1·17	1·08	0·27	0·77	1·23
K_2O	5·70	4·21	5·45	5·64	6·75	6·60	6·64	6·13	5·90
H_2O+	2·88	0·22	2·64	3·44	3·87	3·81	3·48	6·73°	3·79
H_2O-	0·48	0·95	0·28	0·72	(0·31)*	0·61	0·55	(1·53)*	0·31
CO_2	—	0·06	—	—	—	—	—	—	—
TiO_2	0·73	1·20	0·85	1·12	—	0·83	0·75	0·49	1·03
P_2O_5	0·07	—	0·15	0·07	—	0·10	0·11	—	—
MnO	0·03	0·20	0·07	0·03	—	0·06	0·02	—	0·06
Other Constituents	C=0·34			C=0·53		BaO=0·06 C=0·19			
	100·23	100·46	99·56	100·66	99·70	99·78	99·72	99·98	100·08

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

d. ALUMINOUS—$SiO_2/Al_2O_3 < 3$

	CaO < 1%								
	50	51	52	53	54	55	56	57	58
Rock Name	Slate	Sericite Schist	Sericite Schist	Pinite-sillimanite-biotite Gneiss	Slate	Slate	Slate	Pinite Schist	Slate
Locality	Bendigo, Vic.	Armadale, W.A.	Meekatharra, W.A.	Towonga, Vic.	Wedderburn, Vic.	Wedderburn, Vic.	Egina, N.W. Division, W.A.	Ensay, Vic.	? Near Dunolly, Vic.
Reference	**548**	**400**, 49	**155**, 301	**507**, 36	**292**, 14	**292**, 14	**175**, 13; **447**, 100	**207**, 93	**230**, 80
Analyst	—	H. P. Rowledge	H. Bowley	C. M. Tattam	P. G. W. Bayly	P. G. W. Bayly	H. Bowley	A. W. Howitt	H. C. Jenkins
Remarks					"Indicator"	"Indicator" *By difference		*Dried	
Sp. Gr.	—	—	2·86	—	—	—	—	2·78	—
SiO_2	48·12	47·54	47·21	47·21	47·12	47·04	46·57	45·72	44·02
Al_2O_3	28·29	29·01	31·27	25·77	31·56	33·90	35·41	24·31	35·89
Fe_2O_3	4·83	3·59	1·43	1·14	5·76	1·40	—	4·72	2·44
FeO	—	1·33	0·33	8·53	0·21	0·34	0·25	7·32	1·70
MgO	3·03	1·53	1·64	4·37	1·39	1·58*	0·65	4·27	tr.
CaO	0·32	abs.	0·14	0·47	abs.	abs.	0·28	0·61	abs.
Na_2O	tr.	0·09	0·14	0·42	0·51	0·76	1·96	0·77	8·64
K_2O	3·73	10·25	11·12	6·26	4·56	6·02	7·11	6·47	2·42
H_2O+	10·03	4·42	4·37	3·77	7·73	7·45	4·37	5·83	5·12
H_2O-	0·50	0·06	0·06	0·35	0·56	0·43	0·50	(1·33)*	
CO_2	0·25	0·03	—	—	—	—	abs.	—	
TiO_2	—	0·85	2·56	1·46	1·08	1·08	2·00	—	
P_2O_5	—	abs.	—	0·17	tr.	tr.	0·47	tr.	
MnO	—	0·12	—	0·16	—	—	abs.	—	
Other Constituents	S=0·47	SO_3=0·07 BaO=1·01 Cr_2O_3=0·02 V_2O_3=0·13		BaO=0·07 S=0·06			FeS_2=0·13 C=0·40		Cu=abs. SbO=0·73
	99·57	100·05	100·27	100·21	100·48	100·00	100·10	100·02	100·96

d. ALUMINOUS—$SiO_2/Al_2O_3 < 3$

	CaO < 1%					CaO = 1% – 3%			
	59	60	61	62	63	64	65	66	67
Rock Name	Slate	Pinite-biotite Gneiss	Staurolite Schist	Slate	Slate	Phyllite *Bunya Phyllite*	Schist	Garnet-cordierite-sillimanite Gneiss	Schist
Locality	Bendigo, Vic.	Ensay, Vic.	Gillingarra, W.A.	Wedderburn, Vic.	Mt. Doran, near Elaine, Vic.	Brisbane, Qld.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Benalla, Vic.
Reference	**548**	**507**, 36	**448**, 74	**548**	**548**	**61**, 52; **63**, 34; **425**	**85**, 399	**495**, 367	**548**
Analyst	F. Moss	C. M. Tattam	H. Bowley	P. G. W. Bayly	Not Stated	G. R. Patten	G. T. Pyke	L. W. Cooper	P. G. W. Bayly
Remarks				"Indicator" * ? Low					
Sp. Gr.	—	—	2·91	—	—	—	2·96	2·75	3·2
SiO_2	41·03	40·85	40·81	39·94	30·62	61·62	60·40	60·30	60·20
Al_2O_3	25·16	27·12	30·69	30·91	22·12	21·20	25·93	23·60	31·75
Fe_2O_3	8·61	1·63	4·37	11·14	35·29	1·51	0·11	0·30	2·90
FeO	—	10·01	5·86	0·02	—	1·93	6·76	7·20	nd.
MgO	4·02	5·58	5·52	3·52	0·51	1·77	0·50	1·60	tr.
CaO	0·56	0·40	0·15	abs.	0·32	1·59	1·27	1·30	1·13
Na_2O	1·33	0·02	0·88	1·58	tr.	3·39	0·64	1·10	abs.
K_2O	5·36	5·68	6·58	0·71*	4·16	3·07	3·54	3·20	abs.
H_2O+	3·86	7·04	3·98	7·39	7·38	3·29	0·85	0·10	2·92
H_2O-	0·66	0·52	0·09	1·13	—	0·03	0·25	0·40	0·44
CO_2	2·64	—	—	—	—	—	0·21	0·03	—
TiO_2	1·12	1·14	0·90	—	—	0·92	0·31	0·80	—
P_2O_5	0·31	0·32	0·08	abs.	—	0·17	—	—	tr.
MnO	tr.	0·04	0·10	—	—	0·07	0·24	0·30	—
Other Constituents	SO_3 = 0·32 Cl = tr. FeS_2 = 2·79 C = 2·58	S = 0·04	S = abs.	Cl = tr.					Sb_3O_4 = 1·16 Cl = 0·29
									100·79
Less O = Cl, F, S									0·05
	100·35	100·39	100·01	96·34	100·40	100·56	101·01	100·23	100·74

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

d. ALUMINOUS—$SiO_2/Al_2O_3 < 3$

$CaO = 1\% - 3\%$

	68	69	70	71	72	73	74	75	76
Rock Name	Garnet-cordierite-sillimanite Gneiss	Cordierite Schist	Garnet-cordierite-sillimanite Gneiss	Schist	Phyllite	Garnet-cordierite-sillimanite Gneiss	Chiastolite Slate	Schist	Garnet-sillimanite Schist
Locality	Broken Hill, N.S.W.	Rosetta Head, Encounter Bay, S.A.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	9 miles W.N.W. of Adelong, N.S.W.	Broken Hill, N.S.W.	Mt. Howden, S.A.	Cooma, N.S.W.	Broken Hill, N.S.W.
Reference	**495**, 367	**41**, 195	**495**, 367	**85**, 400	**533**, 95	**495**, 367	**308**, 195 **309**, 274	**256**, 168	**53**, 299; **309**, 284; **352**, 198
Analyst	H. Lavers & R. Oliver	D. R. Bowes	F. N. Searcy	A. Keuhn	T. G. Vallance	H. Lavers & R. Oliver	W. S. Chapman	G. A. Joplin	J. C. H. Mingaye
Remarks									
Sp. Gr.	2·97	—	2·87	2·77	—	2·97	—	2·82	2·904
SiO_2	60·02	58·75	58·72	58·00	57·55	57·49	55·15	54·92	53·36
Al_2O_3	22·82	20·48	22·44	24·00	21·36	22·99	26·25	26·84	25·36
Fe_2O_3	0·46	0·63	0·18	1·57	2·60	0·37	2·71	2·66	0·70
FeO	7·35	3·97	8·88	9·38	1·76	8·42	0·46	4·11	7·83
MgO	0·75	5·93	2·02	1·15	0·98	0·90	0·52	3·47	2·11
CaO	2·32	1·78	1·35	1·50	1·34	1·57	1·11	1·98	1·22
Na_2O	0·73	3·33	0·32	1·03	3·16	2·24	1·44	0·76	0·76
K_2O	3·21	1·97	4·50	1·35	7·99	3·01	3·88	2·19	4·75
H_2O+	0·38	1·43	0·30	0·50	2·30	0·32	1·59	2·25	1·81
H_2O-	0·92	0·15	0·78	0·80	0·17	0·84	0·33	0·16	0·44
CO_2	0·06	—	0·05	0·20	—	0·05	0·12	—	0·05
TiO_2	1·52	0·70	0·66	0·50	0·81	1·21	0·80	0·68	1·20
P_2O_5	—	0·60	—	—	—	—	0·24	0·14	0·14
MnO	0·05	0·03	0·54	—	0·06	0·20	0·01	0·05	0·20
Other Constituents		$ZrO_2 = 0·21$ $BaO = 0·13$ $S = 0·15$					$FeS_2 = 0·47$ $C + Hydrocarb. = 4·27$		$SO_3 = 0·02$ $Cl = 0·04$ $ZnO = 0·02$ $Li_2O = tr.$ $V_2O_3 = 0·03$ $Cr_2O_3 = tr.$ $BaO = 0·09$ $(NiCo)O = 0·03$ $SrO = tr.$
		100·24							
Less O = Cl, F, S		0·06							
	100·59	100·18	100·74	[99·98]	100·08	99·61	[99·35]	100·21	100·16

TABLE V — METAMORPHOSED PELITIC ROCKS (NON-CALCAREOUS)

d. ALUMINOUS—$SiO_2/Al_2O_3 < 3$

	CaO = 1%–3%			CaO = 3%–6%	
	77	78	79	80	81
Rock Name	Staurolite Schist	Nodular Schist	Biotite Hornfels	Mica Schist	Anthophyllite-biotite Hornfels
Locality	Chittering Valley, W.A.	Dunolly, Vic.	King Island, Tas.	30 miles E. of Mt. Isa, Qld.	King Island, Tas.
Reference	**453**, 78; **582**, 75; **458**, 590	**548**	**139**, 69	**95**	**139**, 69
Analyst	C. Le Mesurier	P. G. W. Bayly	G. C. Carlos	S. Baker	G. C. Carlos
Remarks		"Indicator"		*Loss on ignition	
Sp. Gr.	2·84	—	2·945	—	2·96
SiO_2	53·01	48·98	45·60	59·56	45·85
Al_2O_3	20·38	28·64	17·99	20·20	18·46
Fe_2O_3	3·39	5·86	3·18	2·68	2·33
FeO	7·44	0·82	12·25	2·99	10·36
MgO	4·53	5·06	4·10	2·20	13·03
CaO	2·70	1·86	1·50	4·87	3·25
Na_2O	2·07	1·16	2·99	5·30	1·88
K_2O	3·43	2·24	3·28	1·87	0·05
H_2O+	1·30	4·51	2·04	0·58*	2·26
H_2O-	0·07	0·74	0·14	0·09	0·12
CO_2	0·45	—	abs.	—	tr.
TiO_2	1·18	tr.	3·98	0·25	1·64
P_2O_5	0·11	0·36	0·18	0·07	0·29
MnO	0·09	—	0·41	0·03	0·47
Other Constituents	FeS_2 = 0·08	Cl = tr.	Cl = 0·02 SO_3 = 2·37		Cl = tr. SO_3 = 0·02
	100·23	100·23	100·03	100·69	100·01

TABLE V[2] — METASOMATIZED PELITIC ROCKS

a. ALBITIZED AND/OR CHLORITIZED

	1	2	3	4	5	6	7	8	9
Rock Name	"Banded Aplite"	Albite-chlorite Rock	Albite Schist	Albite-chlorite Rock	Quartz-albite-chlorite Schist	Albite-chlorite Schist	Albite-chlorite Rock	Chlorite-albite Schist	Chlorite Schist
Locality	Broken Hill, N.S.W.	Rosetta Head, Encounter Bay, S.A.	Rosetta Head, Encounter Bay, S.A.	Rosetta Head, Encounter Bay, S.A.	Rosetta Head, Encounter Bay, S.A.	Rosetta Head, Encounter Bay, S.A.	Rosetta Head, Encounter Bay, S.A.	Rosetta Head, Encounter Bay, S.A.	Rosetta Head, Encounter Bay, S.A.
Reference	**96**, 68; **136**	**41**, 206	**41**, 195	**41**, 193	**41**, 193	**41**, 193	**41**, 206	**41**, 195	**41**, 195
Analyst	P. J. Sinnott	D. R. Bowes	D. R. Bowes	D. R. Bowes	D. R. Bowes	D. R. Bowes	D. R. Bowes	D. R. Bowes	D. R. Bowes
Remarks		(Vein in Schist)							
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	66·43	59·00	58·91	58·63	58·45	56·39	56·24	46·39	44·33
Al_2O_3	20·32	19·41	21·37	20·10	18·40	18·00	19·75	21·94	16·94
Fe_2O_3	0·18	0·34	0·82	1·01	0·94	2·04	0·76	0·65	4·02
FeO	0·20	3·59	1·90	2·08	5·65	4·00	1·63	5·95	4·35
MgO	0·76	6·44	4·50	6·15	4·09	8·14	7·00	11·61	16·17
CaO	0·38	1·00	0·78	1·09	2·63	1·29	0·75	1·28	0·70
Na_2O	9·17	6·42	8·72	6·95	4·44	5·36	8·62	4·53	1·17
K_2O	1·38	0·09	0·16	0·16	1·78	0·15	0·40	0·52	4·62
H_2O+	0·72	2·47	1·47	2·34	2·20	2·96	2·90	5·39	4·84
H_2O-		0·09	0·06	0·06	0·12	0·11	0·09	0·05	0·88
CO_2	abs.	—	—	—	—	—	—	—	—
TiO_2	0·35	0·72	0·85	0·73	1·03	0·92	0·98	1·28	1·10
P_2O_5	0·09	0·18	0·21	0·20	0·15	0·22	0·19	0·23	0·31
MnO	abs.	0·04	0·03	0·04	0·03	0·04	0·01	0·09	0·08
Other Constituents		ZrO_2=0·08 BaO=0·08 S=0·03	ZrO_2=0·04 BaO=0·13 S=0·06	ZrO_2=0·22 BaO=0·04 S=0·11	ZrO_2=0·20 BaO=0·08 S=0·08	ZrO_2=0·11 BaO=0·20 S=0·13	ZrO_2=0·15 BaO=0·13 S=0·03	ZrO_2=0·04 BaO=0·05 S=0·02 F=0·01	ZrO_2=0·12 BaO=0·12 S=0·15
		99·98	100·01	99·91	100·27	100·06	99·63	100·03	99·90
Less O= Cl, F, S		0·01	0·02	0·04	0·03	0·05	0·01	0·01	0·06
	99·98	99·97	99·99	99·87	100·24	100·01	99·62	100·02	99·84

TABLE V[2] — METASOMATIZED PELITIC ROCKS

a. ALBITIZED AND/OR CHLORITIZED		b. BARIUM ENRICHED		c. MINERALIZED (Mainly Iron Enrichment)			
	10	1	2	1	2	3	4
Rock Name	Chlorite Schist	Barium-rich Rock	Barium-rich Gneiss	Slate	Slate	Schist	Schist
Locality	Rosetta Hd., Encounter Bay, S.A.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Mt. Oxide, Qld.	Cobar, N.S.W.	E. Coolgardie, W.A.	Mt. Lyell, Tas.
Reference	**41**, 195	**53**, 338	**320**, 280	**33**, 31	**412**	**298**, 62	**186**, 187
Analyst	D. R. Bowes	H. P. White	E. R. Segnit	Not Stated	J. H. Pyle	Not Stated	Not Stated
Remarks				(Key Bed)		*Stated as Sol. & Insol. °Plus loss	
Sp. Gr.	—	2·887	—	—	—	—	—
SiO_2	43·81	55·12	49·10	79·5	68·75	51·271	48·0
Al_2O_3	24·60	20·72	25·43	2·6	9·05	13·845*	17·46
Fe_2O_3	1·20	0·75	0·04	—	2·24	1·541*	—
FeO	5·14	0·36	0·19	—	13·05	1·671*	—
MgO	12·74	abs.	—	0·2	1·19	1·159	3·4
CaO	0·53	10·08	7·65	0·3	0·49	0·313	—
Na_2O	1·80	1·13	1·68	—	0·48	0·606°	—
K_2O	2·62	0·39	0·73	—	0·42		—
H_2O+	5·74	1·36	0·35	—	3·69	1·809	—
H_2O-	0·17	0·22	0·08	—	0·03	0·402	—
CO_2	—	—	—	—	0·12		—
TiO_2	1·33	0·65	0·17	—	0·29	0·226	—
P_2O_5	0·32	0·25	0·06	—	0·16	tr.	—
MnO	0·08	—	tr.	0·3	0·16	tr.	1·66
Other Constituents	ZrO_2=0·08 BaO=0·17 S=0·06	BaO=9·23	BaO=14·72 S=0·04 Cl=0·04	Fe=11·5 Cu=0·1 S=0·1	NiO=tr.	Te=tr. Ag=tr. Au=tr. $FeCO_3$=1·553 Fe=3·990 S=4·417 $CaCO_3$=10·822 $MgCO_3$=6·315	Fe=25·79 ZnS=1·73 PbS=1·61
	100·39		100·28				
Less O=Cl, F, S	0·02		0·02				
	100·37	100·26	100·26		100·12	100·000	

TABLE V[2] — METASOMATIZED PELITIC ROCKS

c. MINERALIZED (Mainly Iron Enrichment)				d. OTHER TYPES OF ALTERATION	
	5	6		1	2
Rock Name	Slate	Oxidized Schist		Ferruginous Tourmaline Schist	Slate (Mutton Fat)
Locality	Cobar, N.S.W.	E. Coolgardie, W.A.		Hogans Find, W.A.	Woods Point, Vic.
Reference	**354**, 205	**298**, 61		**151**, 73	**567**, 14
Analyst	N.S.W. Dept. Mines	W.A. Dept. Mines		W.A. Dept. Mines	P. G. Bayly
Remarks					(Dyke contact)
Sp. Gr.	—	—		—	
SiO_2	44·20	39·760		55·44	52·12
Al_2O_3	5·66	14·605		12·95	27·32
Fe_2O_3	5·10	36·285		20·14	7·03
FeO	31·23	1·600		0·84	—
MgO	1·96	tr.		3·42	1·44
CaO	0·48	—		tr.	abs.
Na_2O	0·46	—		1·61	3·62
K_2O	2·05	—		0·11	1·89
H_2O+	8·75	5·951		1·57	5·08
H_2O-	— 0·33	0·730		0·24	1·30
CO_2	—	—		tr.	
TiO_2	tr.	—		—	
P_2O_5	tr.	—		—	
MnO	tr.	—		—	
Other Constituents		$CaSO_4$ = tr. MnO_2 = 0·969 Au = tr. Ag = tr.		B_2O_3 = 3·80	
	100·22	99·90		100·12	99·80

TABLE V[3] — WEATHERED PELITIC ROCKS

	1	2	3	4	5	6	7	8	9
Rock Name	Slate	Slate	Mixture Clay & Slate	Slate	Slate	Slate	Siliceous gritty Slate	Mixture Clay & Slate	Slate
Locality	Mt. Lofty Ranges, Yankalilla Area, S.A.	Longwood, S.A.	1½ miles from Mt. Lofty Station, S.A.	Mullion Ck., near Orange, N.S.W.	Teatree Gully, S.A.	Longwood, S.A.	Mt. Lofty Ranges, Kanmantoo Area, S.A.	Mt. Lofty Ranges, Noarlunga Area, S.A.	Longwood, S.A.
Reference	**170**, 80; **221**, 39	**552**, 39	**221**, 30	**374**, 99	**221**, 34	**221**, 29 **552**, 39	**221**, 41	**221**, 30	**221**, 29; **552**, 39
Analyst	W. S. Chapman	Not Stated	W. S. Chapman	N.S.W. Dept. Mines	W. S. Chapman	W. S. Chapman	W. S. Chapman	W. S. Chapman	W. S. Chapman
Remarks									
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	82·34	81·54	80·08	79·82	75·50	74·22	73·80	72·66	71·92
Al_2O_3	8·69	12·72	12·77	9·49	17·58	17·80	17·62	16·64	18·41
Fe_2O_3	1·30	0·22	0·94	0·40	0·92	0·81	1·06	1·88	1·01
FeO	—	—	—		—	—	—	—	—
MgO	1·02	abs.	0·28	—	0·32	abs.	0·12	0·26	0·18
CaO	0·74	abs.	0·16	—	0·22	abs.	0·36	0·14	abs.
Na_2O	0·16	0·22	0·50	—	tr.	0·01	0·24	0·10	0·50
K_2O	1·09	1·24	1·26	—	0·13	2·08	1·99	1·11	2·81
H_2O+	2·49	3·37	3·60	—	4·18	3·61	3·91	5·40	4·31
H_2O-	1·50	0·09	0·73	—	0·37	0·18	0·29	1·30	0·09
CO_2	abs.	abs.	abs.	—	abs.	abs.	abs.	abs.	abs.
TiO_2	0·45	0·30	0·07	0·07	0·36	0·68	0·72	0·84	0·71
P_2O_5	—	—	—	—	—	—	—	—	—
MnO	—	—	—	—	—	—	—	—	—
Other Constituents	Cl=0·01	Cl=abs.	Cl=0·03		Cl=0·02	Cl=abs.	Cl=0·23	Cl=0·01	Cl=abs.
			100·42				100·34		
Less O= Cl, F, S			0·01				0·05		
	99·79	99·70	100·41		99·60	99·39	100·29	100·34	99·94

TABLE V[3] — WEATHERED PELITIC ROCKS

	10	11	12	13	14	15	16	17	18
Rock Name	Slate	Slate	Slate	Slate	Slate	Slate	Slate	Slate	Slate
Locality	Cardup, W.A.	Peterborough S.A.	Mt. Lofty Ranges, Dutton Area, S.A.	Longwood, S.A.	1½ miles from Mt. Lofty Station, S.A.	Mt. Lofty Ranges, Macclesfield Area, S.A.	Crystal Brook Area, Area, S.A.	Armadale, W.A.	Mt. Lofty Ranges, Kanmantoo Area, S.A.
Reference	**44**, 213	**170**, 18; **221**, 35	**170**, 38; **221**, 35	**552**, 39	**221**, 30	**221**, 38	**170**, 35; **221**, 41	**44**, 213	**221**, 41
Analyst	D. G. Murray	W. S. Chapman	W. S. Chapman	Not Stated	W. S. Chapman	W. S. Chapman	W. S. Chapman	C. R. Le Mesurier	W. S. Chapman
Remarks									
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	70·06	70·04	69·90	69·52	68·48	67·46	67·32	67·20	65·68
Al_2O_3	18·29	17·98	21·18	20·83	20·66	19·59	20·52	15·06	23·18
Fe_2O_3	1·17	1·22	1·18	0·42	1·04	1·08	1·52	nd.	1·12
FeO	0·40	—	—	—	—	—	—	4·14	—
MgO	0·45	0·74	0·20	0·60	0·68	abs.	0·42	2·43	0·21
CaO	abs.	0·06	0·54	0·04	0·20	0·04	0·12	0·11	0·32
Na_2O	0·11	0·40	0·40	abs.	0·49	1·29	0·94	0·42	0·14
K_2O	3·72	2·03	1·28	2·46	4·04	0·34	1·93	4·94	1·60
H_2O+	4·17	5·13	4·75	5·26	4·79	7·62	5·37	3·39	6·66
H_2O-	0·86	1·74	0·41	0·38	0·40	0·64	0·98	0·29	0·72
CO_2	0·02	abs.	abs.	abs.	abs.	abs.	abs.	abs.	abs.
TiO_2	0·74	0·86	0·74	0·85	0·70	2·61	1·28	0·46	0·90
P_2O_5	0·60	—	—	—	—	—	—	0·01	—
MnO	0·07	—	—	—	—	—	—	0·05	—
Other Constituents	NaCl=0·48 C=abs.	SO_3=0·14 Cl=0·41	Cl=0·07	Cl=abs.	Cl=0·06	Cl=0·07	Cl=0·20	NaCl=tr. FeS_2=1·07 C=0·46	Cl=0·05
		100·75	100·65		101·54	100·74	100·60		100·58
Less O= Cl, F, S		0·09	0·01		0·01	0·01	0·04		0·01
	[101·14]	100·66	100·64	100·36	101·53	100·73	100·56	100·03	100·57

TABLE V[3] — WEATHERED PELITIC ROCKS

	19	20	21	22	23	24	25	26	27
Rock Name	Sillimanite Schist	Slate	Slate	Slate	Slate	Slate	Phyllite	Micaceous Schist	Slate
Locality	Clackline, W.A.	Mt. Lofty Ranges, Dutton Area, S.A.	Slape Gully, Mt. Lofty Ranges, S.A.	Near Cherry Gardens, S.A.	Glen Osmond, Mt. Lofty Ranges, S.A.	Burra Area, S.A.	Mt. Lofty Ranges, Macclesfield Area, S.A.	Mt. Lofty Ranges, Kanmantoo Area, S.A.	Eyre Pen., S.A.
Reference	**44**, 214	**170**, 38; **221**, 35	**433**, 33	**221**, 30	**433**, 33	**170**, 28	**221**, 39	**221**, 41	**221**, 42
Analyst	C. R. LeMesurier	W. S. Chapman	T. W. Dalwood	W. S. Chapman	T. W. Dalwood	S.A. Dept. Mines	W. S. Chapman	W. S. Chapman	W. S. Chapman
Remarks									
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	63·83	63·62	62·92	61·94	61·73	61·58	61·40	61·08	60·98
Al_2O_3	26·24	24·94	16·68	16·98	14·51	20·51	19·23	26·60	20·61
Fe_2O_3	0·60	2·50	4·27	6·54	5·10	0·75	6·36	0·82	7·94
FeO	abs.	—	2·53	—	2·27	—	—	—	—
MgO	0·22	0·20	2·50	0·52	4·82	2·94	2·00	0·10	0·24
CaO	abs.	0·30	0·14	0·08	0·28	0·02	0·44	0·26	abs.
Na_2O	0·09	0·29	2·80	0·28	2·00	0·44	0·10	0·37	0·48
K_2O	1·76	1·78	3·02	1·72	2·58	3·78	2·77	3·76	1·86
H_2O+	6·15	5·72	2·71	5·34	4·66	6·23	5·34	5·02	5·71
H_2O-	0·60	0·33	0·35	5·90	0·88	3·16	0·76	0·50	0·93
CO_2	0·03	abs.	—	abs.	—	—	abs.	abs.	abs.
TiO_2	0·58	0·72	1·38	1·40	1·44	1·08	1·13	1·02	1·13
P_2O_5	0·04	—	—	—	—	0·29	—	—	—
MnO	abs.	—	—	—	—	—	—	—	—
Other Constituents	NaCl=0·03 SO_3=0·02	Cl=0·01	SO_3=0·11 Cl=0·01 C=0·35	Cl=0·03	Cl=0·02		Cl=0·03	Cl=0·19	SO_3=0·12 Cl=0·29
							99·56	99·72	100·29
Less O= Cl, F, S							0·01	0·04	0·06
	100·19	100·41	99·77	[100·73]	100·29	100·78	99·55	99·68	100·23

TABLE V[3] — WEATHERED PELITIC ROCKS

	28	29	30	31
Rock Name	Slate	Slate	Slate	Pinite Schist
Locality	Littlehampton, S.A.	Balhannah, S.A.	Littlehampton, S.A.	Whyalla, S.A.
Reference	**221**, 38	**221**, 30	**221**, 38	**219**, 30; **327**, 72
Analyst	W. S. Chapman	W. S. Chapman	W. S. Chapman	W. S. Chapman
Remarks				
Sp. Gr.	—	—	—	—
SiO_2	59·16	58·50	52·06	41·42
Al_2O_3	21·28	20·08	24·62	35·79
Fe_2O_3	6·02	9·28	7·04	1·04
FeO	—	—	—	0·14
MgO	1·20	1·04	1·02	0·14
CaO	0·20	0·06	0·54	0·24
Na_2O	0·88	0·11	1·49	0·35
K_2O	2·10	1·68	1·19	8·60
H_2O+	7·34	5·91	9·10	4·08
H_2O-	1·22	1·28	2·74	0·32
CO_2	abs.	abs.	abs.	0·07
TiO_2	1·14	1·54	1·06	6·40
P_2O_5	—	—	—	0·06
MnO	—	—	—	0·22
Other Constituents	Cl=0·03	Cl=0·24 Sol. Salts=0·43	Cl=0·01	Cl=0·01 FeS_2=0·07 Cr_2O_3=1·01
	100·57	[100·15]		
Less O=Cl, F, S	0·01	0·05		
	100·56	100·05	100·87	99·96

TABLE V[4] — INCOMPLETE ANALYSES OF PELITIC ROCKS

	1	2	3	4	5	6	7	8	9
Rock Name	Porcellanite	Porcellanite	Mica-quartz Rock	Porcellanite	Mica Schist	Brecciated Porcellanite	Brecciated Porcellanite	Brecciated Porcellanite	Schist
Locality	Canning Basin, 320 miles S.E. Nullagine, W.A.	Canning Basin, 320 miles S.E. Nullagine, W.A.	Golconda District, Tas.	Canning Basin, 320 miles S.E. Nullagine, W.A.	Dargo, Vic.	Arrabury, Qld.	Tambo, Qld.	Tambo, Qld.	Mt. Lyell, Tas.
Reference	**95**	**95**	**416**, 12	**95**	**548**	**95**	**95**	**95**	**491**, 229; **186**, 188
Analyst	S. Baker	S. Baker	Tas. Dept. Mines	S. Baker	Vic. Dept. Mines	S. Baker	S. Baker		Not Stated
Remarks	*Loss on Ignition	* Loss on Ignition	*Loss on Ignition	*Loss on Ignition		Dried at 105°C.	Dried at 105°C.	Dried at 105°C.	(Typical Ore)
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	92·68	89·36	87·20	86·06	76·29	71·2	69·9	69·2	66·30
Al_2O_3	0·24	0·43	7·30	2·75	15·24	10·89	15·4	13·5	17·72
FeO_3	0·16	0·13	2·00	0·29	2·98	6·41	4·43	6·23	1·39
FeO			—						
MgO			1·09		0·23				0·21
CaO			—		—				0·24
Na_2O	0·13	0·10		0·10	2·65				
K_2O	0·16	0·11		0·12	2·60				
H_2O+	5·12*	9·42*	1·40*	9·92*					
H_2O-	0·70	0·50		0·65					
CO_2									
TiO_2			0·30			1·0	1·1	0·97	
P_2O_5									
MnO									
Other Constituents									$BaSO_4$=1·6 F=3·7 Cu=4·1, S=4·3
	99·19	100·05			100·62				

TABLE V[4] — INCOMPLETE ANALYSES OF PELITIC ROCKS

	10	11
Rock Name	Schist	Green Nodule in Schist
Locality	Mt. Lyell, Tas.	Mt. Lyell, Tas.
Reference	**186**, 187	**186**, 187
Analyst	Not Stated	G. F. Beardsley
Remarks		
Sp. Gr.	—	—
SiO_2	53·4	49·4
Al_2O_3	22·67	45·1
Fe_2O_3		
FeO	19·53	
MgO		
CaO		
Na_2O		
K_2O		
H_2O+		
H_2O-		5·6
CO_2		
TiO_2		
P_2O_5		
MnO		
Other Constituents	FeS_2=2·04 CuS=1·78	

TABLE V[5] — OLD ANALYSES OF PELITIC ROCKS

	1	2	3
Rock Name	Slate	Metamorphic Rock	Slate
Locality	Wollondilly River, near Goulburn	Mt. Tarrangower, Vic.	Cox's River, N.S.W.
Reference	**282**, 40	**443**, 94	**282**, 40
Analyst	A. Liversidge	J. C. Newbery	A. Liversidge
Remarks			
Sp. Gr.	2·58	—	2·706
SiO_2	75·566	62·42	61·012
Al_2O_3	16·466	23·31	21·343
Fe_2O_3			3·704
FeO		6·02	2·109
MgO	0·106	4·63	0·887
CaO	0·708	tr.	1·176
Na_2O	0·820	2·81	1·850
K_2O	2·274	tr.	1·223
H_2O+	3·990	1·12	5·106
H_2O-	0·301		0·861
CO_2			
TiO_2			
P_2O_5			
MnO	tr.		0·729
Other Constituents			
	100·231	100·31	100·00

TABLE W — METAMORPHOSED PSAMMITIC ROCKS

a. $SiO_2/Al_2O_3 > 5$

$CaO < 1\%$

	1	2	3	4	5	6	7	8	9
Rock Name	Quartzite	Quartzite	Quartzite	Quartzite	Quartzite	Boulder in Sandstone	Quartzite	Fuchsite-quartz Rock	Quartz-sericite Schist
Locality	Eyre Ra., W.A.	Billeranga Hills, W.A.	Marangaroo, N.S.W.	Marangaroo, N.S.W.	Marangaroo, N.S.W.	Moonabie Ra., S.A.	Morawa, W.A.	Larkinville, Coolgardie, W.A.	Mt. Ragged, Russell Ra., W.A.
Reference	**44**, 201	**44**, 201	**192**, 11; **358**, 195	**192**, 11; **358**, 195	**358**, 195	**216**, 43	**563**	**160**, 26	**89**, 25; **304**, 6; **558**, 6
Analyst	J. N. A. Grace	J. N. A. Grace	N.S.W. Dept. Mines	N.S.W. Dept. Mines	N.S.W. Dept. Mines	W. S. Chapman	D. G. Murray	C. R. Le Mesurier	H. P. Rowledge
Remarks							(Feldspathic)		
Sp. Gr.	—	—	—	—	—	—	2·62	2·65	2·69
SiO_2	99·63	99·22	97·00	96·30	96·30	95·61	92·67	92·57	92·46
Al_2O_3	0·16	0·32	1·35	2·20	2·02	0·48	3·71	4·16	4·11
Fe_2O_3	0·11	0·12	0·05	0·10	abs.	2·23	0·06	0·33	1·34
FeO	abs.	abs.	0·45	0·36	0·23	1·39	0·10	0·06	0·08
MgO	abs.	0·03	0·22	0·13	0·05	0·05	0·02	0·29	0·42
CaO	0·01	0·01	0·16	0·20	0·06	abs.	abs.	abs.	abs.
Na_2O	0·04	0·22	0·22	0·18	0·28	0·17	0·22	0·18	0·04
K_2O	abs.	abs.	0·43	0·43	0·39	0·19	2·72	0·90	1·26
H_2O+	0·06	0·08	0·28	0·34	0·62	0·30	0·18	0·78	0·53
H_2O-	abs.	0·01				abs.	0·05	0·03	0·08
CO_2	—	abs.			—	abs.	0·01	abs.	abs.
TiO_2	0·05	0·01	tr.	tr.	0·15	0·03	abs.	abs.	0·11
P_2O_5	—	abs.				abs.	tr.	abs.	abs.
MnO	abs.	abs.				0·04	abs.	abs.	0·09
Other Constituents	B_2O_3=tr. ZrO_2=tr.	B_2O_3=tr. ZrO_2=tr.				Cl=0·03	SO_3=0·10	Cr_2O_3=0·45 V_2O_3=0·06	ZrO_2=tr.
	100·06	100·02	100·16	100·24	100·10	100·52	99·84	99·81	100·52

TABLE W — METAMORPHOSED PSAMMITIC ROCKS

a. $SiO_2/Al_2O_3 > 5$

CaO < 1%

	10	11	12	13	14	15	16	17	18
Rock Name	Quartz Schist	Quartz-sericite Schist	Quartzite	Quartzite	Quartzite	Quartzite	Cordierite-quartz-biotite Hornfels	Quartz-rich Psammite	Gneiss
Locality	Bangemall, Gascoigne Goldfield, W.A.	Mt. Ragged, Russell Ra., W.A.	Marangaroo, N.S.W.	Stirling Ra., W.A.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Hartley, N.S.W.	5 miles S.E. of Wanta-badgery, N.S.W.	Quinns W.A.
Reference	**447**, 96; **519**, 162	**89**, 25; **558**	**192**, 11; **358**, 195	**503**	**495**, 371	**85**, 400	**251**, 25	**533**, 93	**563**
Analyst	D. G. Murray	H. P. Rowledge	N.S.W. Dept. Mines	H. Bowley	J. Whitelaw	Moncrieff & Usher	G. A. Joplin	T. G. Vallance	H. Bowley
Remarks				(Feldspathic)					
Sp. Gr.	2·61	2·69	—	—	2·69	2·69	—		2·67
SiO_2	92·30	90·46	89·14	87·47	86·40	86·10	84·23	84·21	84·11
Al_2O_3	2·98	4·88	5·78	4·84	7·20	7·32	7·13	9·12	8·05
Fe_2O_3	0·89	1·47	0·95	1·90	0·64	0·99	2·06	0·93	abs.
FeO	tr.	0·10	0·54	0·90	3·02	3·00	1·61	1·40	0·62
MgO	0·62	0·42	0·18	0·76	0·13	0·30	0·64	0·88	4·21
CaO	abs.	0·09	0·24	0·08	0·76	0·46	0·78	0·37	0·18
Na_2O	0·52	0·02	0·22	0·60	0·45	0·62	1·20	1·01	0·25
K_2O	1·06	1·49	1·15	1·98	0·84	0·89	1·53	1·23	0·18
H_2O+	0·33	0·67	1·30	1·08	0·10	0·31	0·57	0·55	2·15
H_2O-	0·12	0·04	—	0·04	0·65	0·17		0·28	0·06
CO_2	0·04	0·07	—	abs.	—	0·04	—	—	abs.
TiO_2	0·22	0·11	0·35	0·26	0·20	0·28	tr.	0·21	0·05
P_2O_5	0·04	0·05	—	0·07	—	—	abs.	0·11	0·01
MnO	abs.	0·15	—	0·04	0·13	0·12	tr.	nd.	abs.
Other Constituents	FeS_2=0·21 C=0·28	FeS_2=0·11		B_2O_3=tr. Cl=tr.					FeS_2=0·02
	99·61	[100·13]	99·85	100·02	100·52	100·60	99·75	100·30	99·89

TABLE W — METAMORPHOSED PSAMMITIC ROCKS

a. $SiO_2/Al_2O_3 > 5$

$CaO < 1\%$

	19	20	21	22	23	24	25	26	27
Rock Name	Groundmass Coarse Sandstone	Quartz-rich "granulite"	Sillimanite Gneiss	Gneiss	Psammopelite (subgreywacke)	Sandy Schist	Gneiss	Feldspathic Quartz Schist	Garnetiferous Granulite
Locality	Moonabie Ra., S.A.	4 miles N.E. of Wantabadgery, N.S.W.	Westonia, W.A.	Youanmi, W.A.	5 miles S. of Wantabadgery, N.S.W.	Cooma, N.S.W.	Quinns, W.A.	Broken Hill, N.S.W.	Simon Hill, Fraser Ra., W.A.
Reference	**216**, 43	**533**, 114	**563**	**563**	**533**, 93	**256**, 161	**563**	**53**, 303; **362**, 187	**582**, 339
Analyst	W. S. Chapman	T. G. Vallance	D. G. Murray	H. P. Rowledge	T. G. Vallance	G. A. Joplin	H. Bowley	J. C. H. Mingaye	Not Stated
Remarks		(Granitized)							
Sp. Gr.	—	—	2·72	2·69	—	2·67	2·70	2·733	—
SiO_2	82·33	81·85	80·52	79·79	79·37	79·25	78·28	77·84	77·82
Al_2O_3	9·55	8·75	12·68	12·85	11·47	11·86	9·48	10·76	11·88
Fe_2O_3	2·59	0·47	0·15	0·77	2·43	0·86	0·40	1·90	0·24
FeO	0·54	2·68	0·86	tr.	0·56	0·81	2·65	1·80	1·19
MgO	0·09	0·82	0·30	0·31	0·97	1·28	5·60	1·31	0·29
CaO	abs.	0·34	0·03	tr.	0·22	0·17	0·11	0·26	0·56
Na_2O	0·35	1·19	0·42	0·32	1·02	1·08	0·23	1·07	2·06
K_2O	3·32	2·54	3·66	4·10	2·50	2·33	0·19	2·86	5·45
H_2O+	1·16	0·96	0·87	1·74	0·79	1·30	3·19	1·72	0·13
H_2O-	0·08	0·24	0·08	abs.	0·25	0·19	0·06	0·22	abs.
CO_2	abs.	—	0·02	abs.	—	—	— 0·02	abs.	abs.
TiO_2	0·31	0·25	0·28	0·04	0·53	0·42	0·04	0·45	0·09
P_2O_5	abs.	0·10	0·01	0·03	0·10	abs.	0·05	0·04	abs.
MnO	0·03	0·05	0·08	0·10	0·04	0·01	0·03	0·01	0·06
Other Constituents	Cl=0·03 FeS_2=abs. BaO=abs.		BaO=0·08	BaO=0·11			FeS_2=abs.		
	100·38	100·24	100·04	100·16	100·25	99·56	100·33	100·24	99·77

TABLE W — METAMORPHOSED PSAMMITIC ROCKS

a. $SiO_2/Al_2O_3 > 5$

	CaO < 1%				CaO = 1% – 2%				
	28	29	30	31	32	33	34	35	36
Rock Name	Quartzite "Granulite"	Argillaceous Sandstone Matrix	Quartz-rich "granulite"	Garnet-biotite Quartzite	"Quartzite"	"Quartzite"	Quartzite	Granulite	Banded Magnetite Quartzite
Locality	Wilsons Downfall, N.S.W.	Moonabie Ra., S.A.	Wantabadgery Area, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Southern Cross, W.A.
Reference	**355**, 198	**216**, 43	**533**, 114	497, 17	**53**, 315; **85**, 397, **362**; 187	**53**, 315; **362**, 187; **495**, 371	**362**, 187; **495**, 371	**85**, 400	**150**, 100; **154** 72; **447**, 130
Analyst	W. A. Greig	W. S. Chapman	T. G. Vallance	Avery & Anderson	W. A. Greig	J. C. H. Mingaye	White & Greig	Grosse & Hamilton	H. Bowley
Remarks	*Includes undetermined								
Sp. Gr.	—	—	—	—	—	2·697	—	2·68	—
SiO_2	75·11	72·52	74·59	71·32	84·52	84·46	84·42	80·64	77·94
Al_2O_3	12·39	13·23	12·71	7·11	5·93	7·21	6·07	8·05	0·24
Fe_2O_3	abs.	3·48	0·61	0·47	1·00	0·90	1·00	1·70	9·47
FeO	2·06	0·91	4·21	10·66	2·88	1·62	2·88	2·92	7·72
MgO	0·20	0·45	0·78	1·48	0·68	0·51	0·64	0·31	1·91
CaO	0·70	0·51	0·67	0·81	1·50	1·66	1·44	1·23	1·17
Na_2O	4·14	1·48	1·31	0·03	1·31	1·42	1·26	2·14	0·04
K_2O	4·28	5·10	3·29	0·54	1·28	1·18	1·30	1·38	0·10
H_2O+	0·55	0·96	1·29	0·58	0·68	0·48	0·65	1·51	0·41
H_2O-	0·15	0·40	0·17	abs.	0·10	0·16	0·19	0·12	0·20
CO_2	0·37*	abs.	—	—	0·04	—	0·04	0·05	0·79
TiO_2	pnd.	0·58	0·63	0·30	0·24	0·25	0·21	0·35	abs.
P_2O_5	0·05	0·14	—	0·12	0·05	0·05	0·06	—	0·09
MnO	—	0·14	0·03	3·22	0·03	0·04	0·03	0·27	0·39
Other Constituents		$Cl = 0·02$ $FeS_2 = 0·13$ BaO = ab.		$Pb = 2·11$ $S = 1·50$	Cl = tr. BaO = tr.	BaO = tr.	Cl = tr. CuO = tr. BaO = tr. SrO = p. Li_2O = p.		$FeS_2 = 0·04$
	100·00	100·05	100·29	100·25	100·24	99·94	100·19	100·67	100·51

TABLE W — METAMORPHOSED PSAMMITIC ROCKS

a. $SiO_2/Al_2O_3 > 5$

$CaO = 2\% - 3\%$

	37	38	39	40	41	42	43
Rock Name	Quartzite	Granulite	Quartzite	Quartz-andesine-garnet Gneiss	"Quartzite"	Granulite	Quartzite
Locality	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Cape Bruce, MacRobertson Land, Ant.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.
Reference	**495**, 371	**53**, 315; **362**, 187	**495**, 371	**529**, 24	**53**, 315; **362**, 187	**85**, 400	**495**, 371
Analyst	J. Whitelaw	W. A. Greig	Lavers, Hobbs & Oliver	Not Stated	W. A. Greig	G. T. Pyke	Moncreiff & Usher
Remarks							
Sp. Gr.	2·70	2·730	2·68	—	—	—	2·78
SiO_2	86·60	84·34	84·29	83·24	81·44	77·20	76·98
Al_2O_3	5·85	6·92	7·50	7·96	8·74	11·30	11·01
Fe_2O_3	0·07	1·60	0·33	tr.	1·60	0·16	0·26
FeO	2·96	1·17	2·52	3·46	1·89	5·20	4·54
MgO	0·15	0·49	0·11	0·77	0·86	0·60	0·61
CaO	2·00	2·00	2·20	2·02	2·70	2·60	2·38
Na_2O	0·66	0·78	0·75	1·31	1·65	0·31	0·41
K_2O	0·82	1·15	1·47	0·45	0·53	1·80	1·95
H_2O+	0·20	0·90	0·01	0·40	0·60	0·33	0·11
H_2O-	0·22	0·12	0·51	0·40		0·28	0·64
CO_2	—	—	0·18	—		0·08	0·05
TiO_2	0·20	0·16	0·31	tr.	0·32	0·58	0·73
P_2O_5	—	0·05	—	tr.		—	—
MnO	0·19	0·03	0·04	0·13		0·25	0·22
Other Constituents		Cl = 0·10 SO_3 = tr. CuO = tr. SrO = p.					
		99·81					
Less O = Cl, F, S		0·02					
	99·92	99·79	100·22	100·14	100·33	100·69	99·89

TABLE W — METAMORPHOSED PSAMMITIC ROCKS

b. $SiO_2/Al_2O_3 < 5$			
	$CaO < 1\%$		
	1	2	3
Rock Name	Garnet-quartz-sericite Schist	Garnet-biotite Quartzite	Altered Sandstone (?)
Locality	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.
Reference	**497**, 17	**497**, 47	**362**, 187
Analyst	G. C. Carlos	Avery & Anderson	W. G. Stone
Remarks			Cf. Vd.
Sp. Gr.	—	—	—
SiO_2	67·17	58·26	56·74
Al_2O_3	16·78	13·50	22·45
Fe_2O_3	0·89	0·08	3·45
FeO	5·40	17·60	1·57
MgO	0·43	2·16	1·81
CaO	0·61	0·87	0·60
Na_2O	0·56	0·44	1·71
K_2O	2·92	1·34	7·16
H_2O+	1·48	nd.	3·25
H_2O-	0·08	nd.	0·41
CO_2	tr.	—	0·02
TiO_2	0·88	0·56	0·75
P_2O_5	—	0·06	0·12
MnO	2·73	3·58	0·02
Other Constituents	SO_3=0·02 Cl=0·02 F=0·13	S=0·52 Cl=0·31	Cl=0·05, SO_3=tr. BaO=0·10 SrO=p.
	100·10	99·28	100·21
Less O= Cl, F, S	0·06	0·29	0·01
	100·04	98·99	100·20

TABLE W[2] — METASOMATIZED PSAMMITIC ROCKS

a. SILICIFIED.

	1	2	3	4	5	6	7	8	9
Rock Name	Quartzite "Grey Billy"	Quartzite "Grey Billy"	Quartzite "Grey Billy"	Quartzite "Grey Billy"	Quartzite "Grey Billy"	Quartzite "Grey Billy"	Cemented Aeolian Sand	Quartzite "Grey Billy"	Quartzite "Grey Billy"
Locality	Bodalla, N.S.W.	Tallong, N.S.W.	Dalton, near Gunning, N.S.W.	Tallong, N.S.W.	Near Cooma, N.S.W.	Bodalla, N.S.W.	Minari, near Broome, W.A.	Ulladulla, N.S.W.	Ulladulla, N.S.W.
Reference	**192**, 19	**572**, 42	**572**, 42	**572**, 42	**572**, 42	**192**, 19	**572**, 41	**192**, 14	**192**, 14
Analyst	N.S.W. Dept. Mines	B. C. Terrell	B. C. Terrell	B. C. Terrell	B. C. Terrell	N.S.W. Dept Mines	B. C. Terrell	N.S.W. Dept. Mines	N.S.W. Dept. Mines
Remarks		(Sub-basaltic) *Calcinated	(Sub-basaltic) *Calcinated	(Sub-basaltic) *Calcinated	(Sub-basaltic) *Calcinated		*Dried at 105°C and loss on Ignition		
Sp. Gr.	—	—	—	—	—	—			—
SiO_2	99·50	99·14	99·07	99·03	99·02	98·94	98·82	98·80	98·56
Al_2O_3	0·37	0·28	0·14	0·22	0·32		abs.	0·66	0·85
Fe_2O_3	0·03	0·16	0·18	0·17	0·18	0·05	0·29	0·10	0·15
FeO	—								
MgO	tr.	tr.	tr.	tr.	tr.		0·01		
CaO	abs.	0·13	0·08	0·10	0·14		0·07		
Na_2O							nd.		
K_2O							nd.		
H_2O+		*	*	*	*		0·24	0·34	0·32
H_2O-							*		
CO_2									
TiO_2		0·18	0·53	0·32	0·29		tr.		
P_2O_5									
MnO									
Other Constituents									
		99·89	100·00	99·84	99·95		99·43	99·90	99·88

TABLE W[2] — METASOMATIZED PSAMMITIC ROCKS

a. SILICIFIED

	10	11	12	13	14	15	16	17	18
Rock Name	Quartzite "Grey Billy"	Quartzite "Grey Billy"	Cemented Aeolian Sand	Quartzite "Grey Billy"	Quartzite	Quartzite "Grey Billy"	Quartzite "Grey Billy"	Quartzite "Grey Billy"	Quartzite "Grey Billy"
Locality	Ulladulla, N.S.W.	Ulladulla, N.S.W.	Cape Levêque, W.A.	Bolairo, near Adaminiby, N.S.W.	Mirboo North, Vic.	Gulgong, N.S.W.	Tallong, N.S.W.	Tallong, N.S.W.	Tallong, N.S.W.
Reference	**192**, 14	**192**, 14	**572**, 41	**572**, 42	**548**	**245**, 134	**572**, 42	**572**, 41	**572**, 42
Analyst	N.S.W. Dept. Mines	N.S.W. Dept. Mines	B. C. Terrell	B. C. Terrell	Vic. Dept. Mines			B. C. Terrell	B. C. Terrell
Remarks			*Loss on Ignition and Dried	*Calcinated (Sub-basaltic)		*Loss on Ignition and Dried	*Calcinated	*Loss on Ignition and Dried (Sub-basaltic)	*Calcinated (Sub-basaltic
Sp. Gr.	—	—			—			—	—
SiO_2	98·50	98·48	98·29	98·27	98·16	97·9	97·84	97·27	97·15
Al_2O_3	1·16	1·08	0·19	0·39	0·32	0·5	0·60	0·10	0·10
Fe_2O_3	0·10	0·24	1·00	0·27	0·33	0·4	0·21	1·90	1·90
FeO					—				
MgO			0·01	tr.	abs.	0·1	tr.	0·05	0·05
CaO			0·08	0·13	0·37	0·1	0·06	0·20	0·39
Na_2O			nd.		0·03	0·2		nd	
K_2O			nd.		abs.			nd.	
H_2O+	0·18	0·36	0·41*	*	0·02	0·7*	*	0·55*	*
H_2O-					0·16				
CO_2					—				
TiO_2				1·08	0·30	0·1	1·27	0·20	0·20
P_2O_5									
MnO									
Other Constituents									
	99·94	100·16	99·98	100·14	99·69	100·0	99·98	100·27	99·79

TABLE W[2] — METASOMATIZED PSAMMITIC ROCKS

a. SILICIFIED

	19	20	21	22	23
Rock Name	Quartzite	Quartzite "Grey Billy"	Quartzite "Grey Billy"	Quartzite	Quartzite
Locality	Towrang, N.S.W.	Tallong, N.S.W.	Ulladulla, N.S.W.	Havilah, near Mudgee, N.S.W.	Havilah, near Mudgee, N.S.W.
Reference	**192**, 19	**572**, 42	**359**, 228	**366**, 99	**366**, 99
Analyst		B. C. Terrell	N.S.W. Dept. Mines		
Remarks		*Calcinated (Sub-basaltic)			
Sp. Gr.			—		
SiO_2	96·88	96·74	95·02	89·54	86·56
Al_2O_3	2·34	0·22	0·77	4·49	5·51
Fe_2O_3	0·40	2·18	1·50	1·20	2·10
FeO			—		
MgO	tr.	tr.	0·01		
CaO	tr.	0·08	1·90		
Na_2O			0·26		
K_2O			tr.		
H_2O+	0·58	*	0·40		
H_2O-					
CO_2					
TiO_2		0·14	0·12	0·65	0·45
P_2O_5			0·03		
MnO			tr.		
Other Constituents			Cl = 0·17		
			100·18		
Less O = Cl, F, S			0·04		
		99·36	100·14		

TABLE W[2] — METASOMATIZED PSAMMITIC ROCKS

b. IRON—ENRICHED

	1	2	3	4	5	6	7	8	9
Rock Name	Hematite Quartzite	Banded Hematite Quartzite	Banded Hematite Quartzite	Banded Hematite Quartzite	Hematite-dravite Quartzite	Banded Hematite Quartzite	Banded Hematite Quartzite	Hematite-magnetite Quartzite	Banded Hematite Quartzite
Locality	Cockatoo Island, Yampi Sound, W.A.	Edjudina, W.A.	Edjudina, W.A.	Edjudina, W.A.	Hogan's Find, W.A.	Southern Cross, W.A.	Edjudina, W.A.	Yampire Gorge, Hamersley Ra., W.A.	Southern Cross, W.A.
Reference	**69**, 71	**447**, 128	**300**; **447**, 126	**300**; **447**, 126	**151**; **447**, 128	**150**; **154**, 72; **447**, 130	**300**; **447**, 126	**324**, 30	**150**, 100; **154**, 72; **447**, 128
Analyst	Not Stated	E. S. Simpson	E. S. Simpson	E. S. Simpson	A. J. Robertson	A. J. Robertson	E. S. Simpson	H. P. Rowledge	H. Bowley
Remarks									
Sp. Gr.	—	—	—	—	—	—	—	3·26	3·25
SiO_2	63·2	61·19	60·82	59·55	55·44	53·01	51·76	51·54	51·26
Al_2O_3	abs.	—	—	—	12·95	1·12	—	abs.	0·52
Fe_2O_3	36·0	32·54	36·90	38·07	20·14	33·29	47·75	41·62	45·37
FeO	0·4	abs.	abs.	pnd.	0·84	8·36		6·05	1·13
MgO	tr.				3·42	2·49		0·29	0·30
CaO	tr.				tr.	0·67		—	abs.
Na_2O					1·61	0·19		0·03	0·12
K_2O					0·11	abs.		0·03	0·06
H_2O+	0·4	4·24	0·87	0·74	1·57	0·31	1·08	0·40	1·48
H_2O-		0·23	0·12	0·05	0·24	0·41	0·11	0·07	0·20
CO_2		abs.			tr.	abs.		—	0·08
TiO_2	nd.				—	abs.		—	tr.
P_2O_5	0·07	0·20	0·14	0·08	—	0·44	0·10	0·13	0·07
MnO	abs.				—	0·22		—	tr.
Other Constituents	SO_3=abs.	FeS_2=0·07	FeS_2=0·05 C=abs.	FeS_2=0·08 C=abs.	B_2O_3=3·80	FeS_2=0·30	FeS_2=0·06 C=abs.	FeS_2=0·07	FeS_2=0·07
	100·07	98·47	98·90	98·57	100·12	100·81	100·86	100·23	100·66

TABLE W[2] — METASOMATIZED PSAMMITIC ROCKS

b. IRON—ENRICHED

	10	11	12	13	14	15	16	17	18
Rock Name	Hematite Quartzite	Banded Hematite Quartzite	Banded Hematite Quartzite	Banded Hematite Quartzite	Banded Hematite Quartzite	Banded Hematite Quartzite	Hematite-bearing Quartzite	Hematite-bearing Quartzite	Banded Hematite Quartzite
Locality	Nannine, W.A.	Southern Cross, W.A.	Edjudina, W.A.	Southern Cross, W.A.	Edjudina, W.A.	Mt. Stuart, Upper Ashburton R., W.A.	Island Eureka, Murchison Area, W.A.	Island Eureka, Murchison Area, W.A.	Norseman, W.A.
Reference	**171**, 55	**150**, 100; **154**, 72; **447**, 128	**300**, **447**, 126	**150**, 100; **154**, **447**, 130	**447**, 128; **151**, 73	**447**, 124; **450**, 85; **519**, 174	**171**, 19	**171**, 19	**447**, 130
Analyst	Not Stated	A. J. Robertson	E. S. Simpson	H. Bowley	E. S. Simpson	C. C. Williams	W.A. Dept. Mines	W.A. Dept. Mines	Synnott
Remarks									
Sp. Gr.	—	3·42	—	—		3·58			3·95
SiO_2	47·48	47·42	45·05	44·81	43·10	40·21	38·42	36·38	11·31
Al_2O_3		0·43	—	0·04	—	1·80			3·84
Fe_2O_3		49·27	53·36	50·00	54·73	54·75			76·31
FeO		0·51	abs.	2·83	abs.	abs.			2·16
MgO		0·37		1·02		0·33			0·33
CaO		abs.		0·29		0·23			tr.
Na_2O		0·14		tr.		0·52			tr.
K_2O		0·11		tr.		0·39			tr.
H_2O+	3·89	0·59	0·49	0·48	0·93	0·97	4·03	2·49	4·55
H_2O-	0·28	0·78	0·17	0·19	0·12	0·05	0·12	0·14	0·85
CO_2		tr.		abs.	abs.	abs.			abs.
TiO_2		abs.		tr.	—	abs.			abs.
P_2O_5	0·31	0·41	0·10	0·18	0·15	0·24	0·068	0·106	0·06
MnO		abs.		abs.	—	0·14			tr.
Other Constituents	Fe=31·28 S=0·03	FeS_2=tr.	FeS_2=0·06 C=abs.	FeS_2=0·71 C=0·06	FeS_2=0·05	FeS_2=0·09	Fe=39·65 S=0·042	Fe=42·11 S=0·054	FeS_2=0·20
		100·03	99·23	100·61	99·08	99·72		81·28	99·61

TABLE W[2] — METASOMATIZED PSAMMITIC ROCKS

b. IRON—ENRICHED

	19	20	21	22	23	24	25
Rock Name	Hematite Rock	Hematite Rock	Hematite Rock	Hematite Rock	Hematite Rock	Hematite Rock	Hematite Rock
Locality	Mt. Narryer, Murchison Div., W.A.	Yampi, Island, W.A.	Yampi, Island, W.A.	Mt. Hale, Murchison Div., W.A.	Mt. Edith, upper Ashburton R., W.A.	Koolyanobbing Range, W.A.	Mt. Mason, W.A.
Reference	**447**, 124	**447**, 124	**447**, 124	**447**, 124	**447**, 124; **450**, 85; **519**, 59	**447**, 128	**148**, 30; **447**, 126
Analyst	F. S. Earp	E. S. Simpson	E. S. Simpson	F. S. Earp	E. S. Simpson	D. G. Murray	D. G. Murray
Remarks							
Sp. Gr.	—	—	—	—	4·93	—	
SiO_2	9·33	7·06	4·16	3·14	1·70	1·04	0·74
Al_2O_3	0·60	—		0·94	0·28		0·82
Fe_2O_3	81·91	92·67	94·88	92·62	96·73	98·75	96·88
FeO	tr.			0·97	0·90	abs.	—
MgO	abs.			0·55	0·14		tr.
CaO	3·32			0·11	0·12		tr.
Na_2O							
K_2O							
H_2O+	4·82	0·08	0·12	1·08	0·57	0·39	1·40
H_2O-		0·08	0·08		0·06		0·12
CO_2	abs.	abs.	abs.	abs.	0·06		
TiO_2	0·53	tr.	tr.	1·09	abs.		abs.
P_2O_5	tr.	0·03	0·14	0·17	0·06	0·04	0·22
MnO	tr.		—	0·50	0·03		0·22
Other Constituents	FeS_2=0·24	FeS_2=0·07	FeS_2=0·13	FeS_2=0·07	FeS_2=0·04		FeS_2=0·15
	[100·75]	99·99	99·51	101·24	100·69		[100·55]

TABLE W[2] — METASOMATIZED PSAMMITIC ROCKS

c. MANGANESE—ENRICHED

	1	2	3	4	5	6	7	8	9
Rock Name	Garnet Sandstone	Garnet Sandstone	Garnet Sandstone	Garnet Sandstone	Garnet Sandstone	Garnet Sandstone	Garnet Sandstone	Garnet Sandstone	Garnet Sandstone
Locality	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.
Reference	**497**, 27	**495**, 383	**495**, 383	**495**, 383	**85**, 401	**495**, 383	**85**, 401	**495**, 383	**85**, 401; **365**, 103; **495**, 383
Analyst	A. W. Hounslow	W. J. Grosse	G. T. Pyke	Lavers, Hobbs & Oliver	C. W. Reilly	Mills & Morris	C. W. Reilly	F. H. Searcy	J. Whitelaw
Remarks									
Sp. Gr.	—	—	—	—	—	—		—	—
SiO_2	41·31	40·19	38·60	38·12	36·80	36·40	36·32	36·31	35·40
Al_2O_3	17·37	19·46	23·10	19·82	20·48	21·44	20·02	20·01	21·34
Fe_2O_3	abs.	1·03	0·18	2·00	2·37	7·54	1·60	0·17	3·09
FeO	7·40	11·70	13·40	6·84	19·23	4·71	12·93	9·05	7·33
MgO	0·91	0·16	—	0·16	0·06	0·57	0·23	—	0·44
CaO	4·78	11·78	10·40	4·38	2·80	6·92	3·10	5·95	6·21
Na_2O	—	—	—	—	—	—		—	—
K_2O	—	—	—	—	—	—		—	—
H_2O+	abs.	—	—	0·24	0·23	—		0·16	—
H_2O-	0·03	—	—	0·30	—	—		0·11	—
CO_2	abs.	—	—	—	—	—		—	—
TiO_2	0·78	—	—	—	—	—	0·47	0·31	—
P_2O_5	0·11	—	—	—	—	—	—	—	—
MnO	26·50	14·93	14·40	27·96	17·82	22·74	25·16	27·88	19·49
Other Constituents		Pb=0·35							Zn=1·60 Pb=2·20 Cu=0·75 S=1·68
	99·19	99·60	100·08	99·82	99·79	100·32	99·83	99·95	99·53

TABLE W[2] — METASOMATIZED PSAMMITIC ROCKS

c. MANGANESE—ENRICHED					d. EPIDOTIZED		
	10	11	12		1	2	3
Rock Name	Garnet Sandstone	Garnet Sandstone	Garnet-quartz-magnetite Rock		Epidosite	Thulite Granulite	Epidote-zoisite Rock
Locality	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Broken Hill, N.S.W.		Broken Hill, N.S.W.	Galena, Northampton Area, W.A.	Broken Hill, N.S.W.
Reference	**365**, 103	**85**, 401	**53**, 339; **362**, 187		**53**, 320	**563**	**85**, 400
Analyst	W. G. Stone	G. T. Pyke	W. G. Stone		W. A. Greig	D. G. Murray	Grosse & Guyer
Remarks							
Sp. Gr.	4·212	—	3·809		2·791	2·88	3·04
SiO_2	35·36	34·65	31·34		84·55	71·00	66·06
Al_2O_3	17·96	22·95	8·34		6·80	13·06	15·26
Fe_2O_3	0·90	0·14	32·10		1·50	1·67	0·87
FeO	31·86	6·20	6·75		0·09	1·62	2·55
MgO	1·00	0·37	0·94		0·10	1·02	0·18
CaO	3·60	8·20	7·54		5·82	7·76	12·80
Na_2O	0·78	—	0·11		0·14	0·16	0·42
K_2O	0·17	—	0·05		0·13	0·46	0·19
H_2O+	0·16	—	0·52		0·71	1·80	0·39
H_2O-	0·12	—	0·36		0·07	0·19	0·12
CO_2		—	0·01		abs.	0·05	0·08
TiO_2	1·00	—	0·40		0·24	0·38	0·82
P_2O_5	0·22	—	4·67		0·13	0·20	—
MnO	6·93	22·16	7·08		0·03	0·61	—
Other Constituents	SO_3=tr. Cl=tr. ZnS=0·24 V_2O_3=tr.	MnS=5·60	Cl=0·09 V_2O_3=0·02		ZrO_2=abs.	FeS_2=0·19 Pb=tr. C=tr.	
			100·32				
Less O=Cl, F, S			0·02				
	100·30	100·27	100·30		100·31	100·17	[99·74]

TABLE W[3] — WEATHERED PSAMMITIC ROCKS

	1
Rock Name	Sheared Quartz Schist
Locality	Lobethal, S.A.
Reference	**393**, 108
Analyst	
Remarks	(Building sand)
Sp. Gr.	
SiO_2	88·88
Al_2O_3	7·48
Fe_2O_3	0·38
FeO	—
MgO	0·32
CaO	0·32
Na_2O	0·06
K_2O	0·24
H_2O+	2·48
H_2O-	0·15
CO_2	abs.
TiO_2	abs.
P_2O_5	
MnO	
Other Constituents	Cl=abs.
	99·99

TABLE W[4] — INCOMPLETE ANALYSES OF PSAMMITIC ROCKS

	1	2	3	4	5	6	7	8
Rock Name	Silcrete	Silcrete	Quartzite	Quartzite	Quartzite	Quartzite	Cordierite Granulite	Quartzite
Locality	7 miles W. of Oodnadatta	13 miles S. of Oodnadatta	Towrang, N.S.W.	Axedale, Vic.	Between Bulgine & Mt. Jackson, Yilgarn Goldfield, W.A.	Broken Hill, N.S.W.	Broken Hill, N.S.W.	Golconda District, Tas.
Reference	**572**, 41	**572**, 41	**192**, 19	**548**	**37**, 164	**362**, 186	**360**, 183	**416**, 12
Analyst	B. C. Terrell	B. C. Terrell	N.S.W. Dept. Mines	Vic. Dept. Mines	H. Bowley	N.S.W. Dept. Mines	N.S.W. Dept. Mines	Tas. Dept. Mines
Remarks	*Loss on ignition Sample dried at 105°C.	*Loss on ignition Sample dried at 105°C.		*Loss on ignition				*Loss on ignition
Sp. Gr.	—	—	—	—	2·65	—	—	—
SiO_2	96·44	96·22	95·24	93·18	86·96	82·16	79·86	68·80
Al_2O_3	0·96	0·73	3·12	6·14	10·24		11·72	17·20
Fe_2O_3	0·28	0·24	0·06		0·82		—	8·79
FeO							1·26	0·19
MgO	tr.	tr.	tr.		0·09		0·88	2·75
CaO	0·31	0·40	abs.		tr.	2·52	0·18	0·60
Na_2O	nd.	nd.				1·65	—	
K_2O	nd.	nd.				0·53	—	
H_2O+	0·58*	0·77	1·58	1·10*	1·96		—	1·50*
H_2O-					0·06		—	
CO_2								
TiO_2	1·80	1·71					tr.	0·20
P_2O_5								
MnO							tr.	
Other Constituents								
	100·37	100·07		100·42	100·13			

TABLE X — METAMORPHOSED CALCAREOUS ROCKS

a. CALCAREOUS PSAMMITES AND SILICEOUS LIMESTONES

CaO/MgO>1

	1	2	3	4	5
Rock Name	Tuffaceous Psammite	Pyroxene Granulite	Wollastonite-orthoclase-diopside Hornfels	Hornblende Schist	Garnet-plagioclase Granulite
Locality	Near Cooma, N.S.W.	Cape Royds, S. Victoria Land, Ant.	Hartley, N.S.W.	Near Cooma, N.S.W.	Broken Hill, N.S.W.
Reference	**256**, 167	**554**, 333	**251**, 60	**256**, 167	**497**, 27
Analyst	G. A. Joplin	Burrows & Walkon	G. A. Joplin	G. A. Joplin	G. C. Carlos
Remarks		(Erratic)			
Sp. Gr.	2·68	—	—	2·79	—
SiO_2	76·90	74·67	73·16	71·26	70·98
Al_2O_3	8·87	8·37	4·33	12·42	13·59
Fe_2O_3	1·85	0·95	0·07	0·68	0·29
FeO	2·98	3·37	1·66	4·47	5·12
MgO	2·72	2·52	0·49	2·13	0·55
CaO	2·75	5·19	17·15	7·73	4·68
Na_2O	2·41	2·09	0·38	0·31	0·22
K_2O	0·19	1·31	2·07	0·01	0·22
H_2O+	0·94	0·30	nd.	0·19	1·01
H_2O-	0·40	0·26	nd.	0·02	0·05
CO_2	abs.	—	—	0·13	—
TiO_2	0·30	1·10	0·22	0·47	2·22
P_2O_5	0·06	0·57	—	abs.	tr.
MnO	0·02	0·09	—	0·55	0·95
Other Constituents		ZrO_2=tr.			SO_3=tr. Cl=tr.
	100·39	100·79	99·53	100·37	99·88

b. CALCAREOUS PELITES, IMPURE LIMESTONES, ETC.

	CaO/MgO < 1			CaO/MgO = 1 – 5					
	1	2	3	4	5	6	7	8	9
Rock Name	Slate	Actinolite Hornfels	Calcareous Schist	Pyroxene Granulite	Grey Schist	Scapolite-biotite Schist	Scapolite-pyroxene-hornblende Granulite	Scapolite-biotite Schist	Scapolite-pyroxene Granulite
Locality	Mintaro, S.A.	King Island, Tas.	Wiluna, W.A.	Broken Hill, N.S.W.	Kalgoorlie W.A.	Cloncurry Area, Qld.	Duchess, Qld.	Cloncurry Area, Qld.	Duchess, Qld.
Reference	**305**, 33	**139**, 69	**280**, 28	**135**, 17	**445**, 67	**138**, 27	**138**, 13	**138**, 27	**138**, 13
Analyst	W. S. Chapman	G. C. Carlos	Not Stated	G. C. Carlos	C. C. Williams	G. C. Carlos	G. C. Carlos	G. C. Carlos	G. C. Carlos
Remarks									
Sp. Gr.	—	—	—		2·76	2·73	2·88	2·72	
SiO_2	54·70	50·00	49·92	64·60	60·73	59·96	57·41	56·63	55·07
Al_2O_3	14·68	15·06	4·98	4·45	12·93	12·77	13·69	17·67	15·72
Fe_2O_3	0·37	2·78	3·26	0·91	—	3·74	2·82	2·59	1·66
FeO	4·59	12·64	7·04	2·76	3·67	1·71	5·15	3·51	3·44
MgO	6·22	9·03	7·90	8·87	1·98	3·86	2·90	1·73	3·04
CaO	5·60	5·21	6·50	14·84	5·86	5·69	9·40	2·71	6·04
Na_2O	0·93	1·08	1·66	0·87	2·32	7·00	3·62	8·61	10·65
K_2O	2·71	0·55	0·50	1·14	1·54	0·26	1·76	1·75	3·00
H_2O+	2·19	1·55	2·25	0·44	1·08	2·24	0·82	1·42	0·02
H_2O-	0·03	0·01	0·28	0·11	0·29	— tr.	0·02	0·02	0·22
CO_2	7·46	tr.	9·46	tr.	8·32	0·22	0·19	0·16	0·11
TiO_2	—	2·10	0·48	0·34	0·33	0·95	0·98	1·81	0·07
P_2O_5	—	0·03	0·08	tr.	—	0·03	0·20	0·05	0·01
MnO	pnd.	0·12	0·23	0·64	0·13	0·02	0·14	0·04	0·07
Other Constituents	FeS_2=0·41 C=0·09	Cl=tr. SO_3=0·02	Fe=2·32 Sb=abs. Cu=tr. S=2·14 As=1·14	Cl=0·01		Cl=1·48 SO_3=0·11	Cl=0·98 SO_3=0·02	Cl=1·23 SO_3=0·01	Cl=1·00 SO_3=abs.
						100·04	100·10	99·94	100·12
Less O= Cl, F, S						0·32	0·21	0·42	0·22
	99·98	100·18	100·14	[99·98]	99·18	99·72	99·89	99·52	99·90

TABLE X — METAMORPHOSED CALCAREOUS ROCKS

b. CALCAREOUS PELITES, IMPURE LIMESTONES, ETC.

CaO/MgO = 1–5

	10	11	12	13	14	15	16	17	18
Rock Name	Scapolite-pyroxene Granulite	Scapolite-pyroxene Granulite	Slate	Slate	Slate	Scapolite-pyroxene Granulite	Diopside Rock	Scapolite-albite-hornblende Schist	Chloritoid Rock*
Locality	Dugald R., N.E. Cloncurry, Qld.	Trekelano, Qld.	Willunga, S.A.	Tapleys Hill, S.A.	Willunga, S.A.	Duchess, Qld.	King Island, Tas.	Cloncurry Area, Qld.	Kalgoorlie, W.A.
Reference	**138**, 13	**138**, 13	**586**, 58; **220**, 24	**196**, 377	**220**, 24	**138**, 13	**139**, 73	**138**, 27	**451**, 28; **460**, 142
Analyst	G. C. Carlos	G. C. Carlos	W. S. Chapman		W. S. Chapman	G. C. Carlos	G. C. Carlos	G. C. Carlos	E. S. Simpson
Remarks				*Loss on Ignition (Includes CO_2)			(Band in Hornfels)		(Thinly foliated) *Massive Rock contains less CaO—Vc 58
Sp. Gr.	2·84	2·84	—	—	—	2·950	3·261	2·89	2·88
SiO_2	54·17	54·11	53·64	52·93	52·86	52·31	52·01	51·64	50·94
Al_2O_3	13·52	14·60	14·90	16·54	13·78	13·12	abs.	9·65	12·04
Fe_2O_3	1·96	2·42	0·64	5·58	0·72	3·47	4·34	6·54	2·74
FeO	2·52	5·53	4·87	—	4·51	4·99	10·66	5·12	9·44
MgO	4·30	3·48	4·60	4·71	4·58	3·35	7·28	7·08	3·04
CaO	12·08	8·81	6·46	6·86	7·36	14·85	21·24	8·84	5·47
Na_2O	6·81	5·20	1·06	0·69	1·42	4·39	abs.	3·79	1·28
K_2O	0·36	2·74	3·02	1·99	2·75	1·38	abs.	1·77	0·66
H_2O+	0·46	1·19	4·65	9·19*	3·12	0·03	0·70	1·72	2·81
H_2O-	0·01	0·20	0·14	—	0·16	abs.	0·74	0·02	0·16
CO_2	0·21	0·06	4·75	(4·81)	7·79	0·16	tr.	0·11	8·24
TiO_2	2·18	0·62	0·75	0·83	0·79	0·32	2·36	3·16	1·09
P_2O_5	0·03	0·04	0·37	—	0·17	0·07	tr.	0·31	0·45
MnO	0·02	0·07	0·06	—	0·05	0·23	0·74	0·22	1·06
Other Constituents	Cl = 1·42 SO_3 = 0·08	Cl = 1·78 SO_3 = 0·01	FeS_2 = 0·54		FeS_2 = 0·28 Cl = 0·01	Cl = 1·54 SO_3 = 0·01	= abs.	Cl = 0·02 SO_3 = 0·01	FeS_2 = 0·77 V_2O_3 = 0·09 BaO = 0·02 ZrO_2 = tr.
	100·13	100·86				100·82			
Less O = Cl, F, S	0·31	0·39				0·34			
	99·82	100·47	100·45	99·32	100·35	99·88	100·07	100·00	100·30

TABLE X — METAMORPHOSED CALCAREOUS ROCKS

b. CALCAREOUS PELITES, IMPURE LIMESTONES, ETC.

	CaO/MgO = 1 – 5					CaO/MgO = 5 – 10			
	19	20	21	22	23	24	25	26	27
Rock Name	Biotite Schist	Diopside Rock	Argillite	Garnet-diopside Rock	Slate	Calcsilicate Rock	Pyroxene-Scapolite Rock	Calcsilicate Rock	Grossularite Rock
Locality	Bullfinch, W.A.	King Island, Tas.	Samford Area, Qld.	King Island, Tas.	Pitfield, Vic.	Canberra, A.C.T.	Tungkillo, S.A.	Canberra, A.C.T.	King Island, Tas.
Reference	**563**	**139**, 73	**397**, 378	**139**, 73	**548**	**353**, 188	**564**, 291	**353**, 188	**139**, 73
Analyst	H. Bowley	G. C. Carlos	W. H. Herdsman	G. C. Carlos	Not Stated	N.S.W. Dept Mines	H. J. R. White	N.S.W. Dept. Mines	G. C. Carlos
Remarks		(Band in Hornfels)		(Band in Marble)	*Loss on Ignition				(Band in Marble)
Sp. Gr.	—			—	—	—	—	—	—
SiO_2	50·67	48·18	47·68	44·24	37·95	48·05	47·76	46·12	43·18
Al_2O_3	15·79	3·56	17·21	11·62	14·39	10·93	11·36	14·61	10·59
Fe_2O_3	0·58	3·16	4·52	2·62	10·71	0·80	1·24	1·20	8·32
FeO	6·76	3·28	6·64	7·99	—	2·78	10·81	3·42	1·39
MgO	7·16	14·05	7·11	8·31	3·39	2·95	3·40	3·90	3·04
CaO	8·78	24·26	12·94	15·30	13·96	29·24	20·01	27·65	30·28
Na_2O	0·84	tr.	1·74	2·60	—	0·01	1·48	0·85	tr.
K_2O	2·98	tr.	0·44	0·56	—	0·11	0·33	0·31	tr.
H_2O+	1·84	0·94	0·89	2·61	13·63*	1·30	0·28	0·80	0·95
H_2O-	0·09	0·57	0·09	0·89	4·69	—	0·18	—	abs.
CO_2	2·94	tr.	abs.	tr.	—	4·04	1·35	1·27	abs.
TiO_2	0·66	1·75	0·64	3·08	—	—	0·76	—	2·28
P_2O_5	0·17	0·12	0·07	0·09	—	0·10	0·09	0·22	0·03
MnO	0·33	0·32	0·11	0·06	1·22		0·42	—	tr.
Other Constituents		Cl = abs. SO_3 = abs. WO_3 = abs.		Cl = abs. SO_3 = abs. WO_3 = 0·01			SO_3 = abs. Cl = 0·44		
							99·91		
Less O = Cl, F, S							0·10		
	99·59	100·19	100·08	99·98	99·94	100·31	99·81	100·35	100·06

TABLE X — METAMORPHOSED CALCAREOUS ROCKS

b. CALCAREOUS PELITES, IMPURE LIMESTONES, ETC.

	CaO/MgO =5–10	CaO/MgO >10							
	28	29	30	31	32	33	34	35	36
Rock Name	Grossularite Rock	Wollastonite Rock	Garnet Hornstone	Wollastonite-vesuvianite-garnet Hornfels	Calcflinta	Calcflinta	Garnet-pyroxene Hornfels	Calcsilicate Rock	Calcsilicate Rock
Locality	King Island, Tas.	Broken Hill, N.S.W.	Toodyay, W.A.	Marulan, N.S.W.	King Island, Tas.	King Island, Tas.	Marulan, N.S.W.	Canberra, A.C.T.	Canberra, A.C.T.
Reference	**139**, 73	**135**, 17	**563**	**389**, 309; **589**, 802	**139**, 73	**139**, 73	**389**, 309; **589**, 803	**353**, 188	**353**, 188
Analyst	G. C. Carlos	G. C. Carlos	H. P. Rowledge	W. R. Browne	G. C. Carlos	G. C. Carlos	A. B. Walkom	N.S.W. Dept. Mines	N.S.W. Dept. Mines
Remarks	(Band in Marble)					(Band in Hornfels)			
Sp. Gr.	—	—	—			3·342	—	—	—
SiO_2	41·76	50·79	50·68	44·82	40·78	39·96	39·49	36·18	30·23
Al_2O_3	8·04	0·85	12·63	5·94	14·30	13·65	15·97	10·27	8·38
Fe_2O_3	9·76	1·21	3·79	3·17	8·44	8·07	7·09	0·40	1·10
FeO	3·02	0·50	2·13	1·26	2·33	1·88	2·59	3·32	2·97
MgO	4·03	0·45	1·71	1·31	2·43	2·22	1·97	2·65	2·25
CaO	27·16	45·82	26·81	41·21	29·37	29·27	31·60	30·08	34·63
Na_2I	1·22	abs.	tr.	0·26	tr.	tr.	0·12	0·23	0·83
K_2O	0·80	abs.	tr.	0·06	tr.	tr.	abs.	2·10	1·67
H_2O+	0·98	0·01	0·35	0·26	0·98	0·71	0·13	1·12	0·73
H_2O-	abs.	0·36	0·26	0·14	0·11	0·49	0·04	0·22	—
CO_2	0·20	tr.	—	—	abs.	2·52	0·17	13·12	17·50
TiO_2	2·47	abs.	0·96	0·41	1·02	0·97	1·01	—	—
P_2O_5	0·20	abs.	—	—	0·28	0·09	—	0·23	0·15
MnO	0·12	0·05	1·02	0·13	0·02	0·11	0·32	—	—
Other Constituents	Cl=abs. SO_3=abs. WO_3=0·21	Cl=abs.			Cl=abs. SO_3=abs. WO_3=abs.	Cl=abs. SO_3=abs. WO_3=abs.			
	99·97	[100·04]	100·34	98·97	100·06	99·94	100·50	99·92	100·44

TABLE X — METAMORPHOSED CALCAREOUS ROCKS

c. MARBLES

	CaO/MgO = 1-10			CaO/MgO = 10 – 20	
	1	2	3	4	5
Rock Name	Clinohumite-brucite Marble	Marble	Dolomite Marble	Marble	Marble
Locality	King Island, Tas.	King Island, Tas.	Irregully Ck, N.W. Division, W.A.	Bangemall, N.W. Division, W.A.	Hamersley Range, W.A.
Reference	**139**, 80	**139**, 80	**447**, 92; **450**, 95; **519**, 166	**447**, 80; **519**	**447**, 80; **456**, 328; **519**
Analyst	G. C. Carlos	G. C. Carlos	H. Bowley	C. C. Williams	E. S. Simpson
Remarks					
Sp. Gr.	2·827	—	2·85	2·73	2·73
SiO_2	5·63	5·35	3·14	11·02	1·69
Al_2O_3	1·02	2·87	0·02	0·57	0·17
Fe_2O_3	2·61	2·48	0·33	tr.	0·57
FeO	0·94	0·55	0·39	0·95	0·88
MgO	10·34	7·38	20·70	3·53	0·38
CaO	42·00	45·13	29·53	45·68	53·24
Na_2O	tr.	0·20	0·05	0·32	0·35
K_2O	tr.	0·02	0·12	0·42	abs.
H_2O+	1·64	0·20	0·08	0·25	0·14
H_2O-	0·06	0·01	0·14	0·06	0·04
CO_2	32·96	35·90	44·89	37·24	42·65
TiO_2	0·98	tr.	abs.	—	—
P_2O_5	0·12	tr.	0·11	0·16	0·02
MnO	0·32	tr.	0·68	0·16	0·64
Other Constituents	SO_3 = tr. Cl = tr. F = 1·58	Cl = abs. SO_3 = abs.	SO_3 = 0·13	SO_3 = 0·26	SO_3 = tr. Organic = tr.
	100·20	100·09	[100·31]	100·62	100·77

TABLE X — METAMORPHOSED CALCAREOUS ROCKS

c. MARBLES

	CaO/MgO>20				
	6	7	8	9	10
Rock Name	Marble	Marble	Marble	Marble	Marble
Locality	King Island, Tas.	King Island, Tas.	Ravens-thorpe, W.A.	King Island, Tas.	Tungkillo, S.A.
Refer-ence	**139**, 80	**139**, 80	**456**, 328	**139**, 80	**220**, **564**, 291
Analyst	G. C. Carlos	G. C. Carlos	B. R. Synnott	G. C. Carlos	W. S. Chapman
Remarks					
Sp. Gr.	—	2·78		2·78	—
SiO_2	7·85	7·54	5·38	4·93	2·30
Al_2O_3	1·99	2·21	1·02	1·23	1·31
Fe_2O_3	0·85	1·61	1·44	1·63	0·11
FeO	0·29	0·17	0·14	0·17	0·49
MgO	0·72	0·70	0·56	0·71	0·73
CaO	49·91	50·02	50·73	52·09	52·14
Na_2O	0·19	0·09		0·04	0·09
K_2O	0·02	0·02		tr.	0·23
H_2O+	0·04	0·11	tr.	0·03	0·10
H_2O-	0·01	0·11		0·01	0·15
CO_2	38·21	37·44	40·51	39·17	42·00
TiO_2	0·01	0·01		tr.	0·03
P_2O_5	tr.	tr.	0·12	tr.	0·12
MnO	tr.	tr.	—	tr.	0·16
Other Con-stituents	Cl=abs. SO_3=abs.	Cl=tr. SO_3=tr.	Organic=tr. SO_3=tr.	Cl=abs. SO_3=abs.	SO_3=0·07 Cl=0·01
	100·09	100·03	99·90	100·01	100·04

TABLE X[2] — METASOMATIZED CALCAREOUS ROCKS

	1	2	3	4	5	6
Rock Name	"Red Rock"	"Red Rock"	"Red Rock"	Diopside-biotite Gneiss	Garnet-diopside Rock	Garnet Rock
Locality	Duchess, Qld.	Dugald River N.E. Cloncurry, Qld.	Trekelano, Qld.	24 mls. S. of Southern Cross, W.A.	Ben Bullen, N.S.W.	Piper's Flat, N.S.W.
Reference	**138**, 16	**138**, 16	**138**, 16	**563**	**249**, 109	**228**, 59
Analyst	G. C. Carlos	G. C. Carlos	G. C. Carlos	J. N. A. Grace	G. A. Joplin	A. Liversidge
Remarks				(metasomatized dolomite)		
Sp. Gr.	2·72	2·83	2·70	2·94	3·35	—
SiO_2	62·22	58·03	56·38	52·34	41·65	32·54
Al_2O_3	17·06	19·46	16·75	13·23	13·43	1·13
Fe_2O_3	1·83	1·54	6·02	1·19	5·19	39·91
FeO	1·31	0·59	3·37	6·31	1·11	0·56
MgO	0·53	1·09	0·34	5·84	1·50	1·00
CaO	1·88	3·66	3·94	12·25	32·89	24·44
Na_2O	8·84	9·32	7·82	0·66	0·17	nd.
K_2O	1·99	2·00	1·39	2·72	abs.	nd.
H_2O+	0·87	1·57	2·00	0·60	0·32	1·14
H_2O-	0·05	0·03	0·21	0·05	0·36	0·21
CO_2	0·38	0·29	0·32	0·94	3·05	1·66
TiO_2	1·73	0·10	1·36	0·70	0·72	—
P_2O_5	0·05	0·03	0·05	0·08	0·05	—
MnO	0·10	0·38	0·03	0·27	0·08	1·62
Other Constituents	Cl=1·56 SO_3=0·01	Cl=1·96 SO_3=0·01	Cl=0·06 SO_3=tr.	FeS_2=0·73 FeAsS=2·33		
	100·41	100·06	100·04			
Less O= Cl, F, S	0·34	0·43	0·01			
	100·07	99·63	100·03	100·34	100·52	[104·21]

TABLE X[4] — INCOMPLETE ANALYSES OF CALCAREOUS ROCKS

MARBLES									
	CaO/MgO<1		CaO/Mgo=1–10		CaO/MgO=10–20			CaO/MgO>20	
	1	2	3	4	5	6	7	8	9
Rock Name	Magnesian Marble	Magnesian Marble	Micaceous Marble	Mixture of Dolomite Marble & Brucite-forsterite Marble	Forsterite-spinel Marble	Dactylitic Calcite-dolomite Marble	Dactylitic Calcite-dolomite Marble	Marble	Tremolite-diopside-scapolite Marble
Locality	Weekeroo Hill Area, S.A.	Weekeroo Hill Area, S.A.	South Para R. near Williams-town, S.A.	Ben Bullen, N.S.W.	Ben Bullen, N.S.W.	Ben Bullen, N.S.W.	Ben Bullen, N.S.W.	Rapid Bay, Fleurieu Pen., S.A.	Weekeroo Hill Area, S.A..
Refer-ence	**66**, 17	**66**, 17	**325**, 22	**592**, 378; **250**, 394	**592**, **250**, 394	**250**, 388	**250**, 388	**239**, 14; **573**, 145	**66**, 17
Analyst	S.A. Dept. Mines	S.A. Dept. Mines	S.A. Dept. Mines	N.S.W. Dept. Mines	N.S.W. Dept. Mines	G. A. Joplin	G. A. Joplin	Not stated	S.A. Dept. Mines
Remarks	*Insol. °Given as Carbonate	*Insol. °Given as Carbonate	*Insol. °Given as Carbonate	*Gangue °Given as Carbonate	*Gangue °Given as Carbonate			°Given as Carbonate	°Given as Carbonate
Sp. Gr.	—	—	—	—	—				
SiO_2	21·50*	20·9*	9·72*	1·34*	0·80*			6·80	6·72
Al_2O_3				0·58	0·76			1·83	
Fe_2O_3									
FeO									
MgO	28·30°	21·7°	20·40°	5·95°	4·34°	2·44	2·76	1·07°	0·21°
CaO	5·49°	14·2°	26·73°	47·58°	49·96°	47·97	49·26	49·91°	52·06°
Na_2O									
K_2O									
H_2O+									
H_2O-									
CO_2	35·51	34·9	43·51	44·42	44·02			40·40	41·16
TiO_2									
P_2O_5									
MnO				0·04°					
Other Con-stituents									

TABLE X[4] — INCOMPLETE ANALYSES OF CALCAREOUS ROCKS

MARBLES								
	CaO/MgO>20							
	10	11	12	13	14	15	16	17
Rock Name	Diopside-biotite-orthoclase Marble	Marble	Tremolite-diopside-scapolite Marble	Forsterite-spinel Marble	Marble	Forsterite Marble	Diopside-biotite-orthoclase Marble	Forsterite-spinel Marble
Locality	Ben Bullen, N.S.W.	Broken Hill, N.S.W.	Weekeroo Hill Area, S.A.	Ben Bullen, N.S.W.	Elbow Valley, Qld.	Ben Bullen, N.S.W.	Ben Bullen, N.S.W.	Ben Bullen, N.S.W.
Reference	**592**; **249**, 100; **250** 394	**309**, 246	**66**, 17	**592**; **250**, 394	**430**, 105	**79**, 244; **250**, 394	**592**, 378; **249**, 100; **250**, 394	**592**; **250**, 394
Analyst	N.S.W. Dept. Mines	J. C. H. Mingaye	S.A. Dept. Mines	N.S.W. Dept. Mines	Not Stated	N.S.W. Dept. Mines	N.S.W. Dept. Mines	N.S.W. Dept. Mines
Remarks	*Gangue °Given as Carbonate	°Given as Carbonate	*Insol. °Given as Carbonate	*Insol. °Given as Carbonate	*Insol. °Loss on ignition	*Insol. °Given as Carbonate	*Insol. °Given as Carbonate	*Insol. °Given as Carbonate
Sp. Gr.	—	—	—	—	—	—	—	—
SiO_2	4·22*	3·95	3·94*	1·70*	1·2*	0·96*	0·94*	0·50*
Al_2O_3 / Fe_2O_3	0·54	1·73		0·22	0·6	0·18	0·28	0·22
FeO								
MgO	0·27°	0·91°	2·21°	2·40°	0·3	1·63°	0·09°	1·17°
CaO	52·92°	51·56°	49·69°	52·20°	54·7	53·53°	55·19°	54·18°
Na_2O								
K_2O								
H_2O+								
H_2O-								
CO_2	41·88	41·52	41·48	43·66	43·0°	44·89	43·47	43·87
TiO_2								
P_2O_5						0·03		
MnO	0·02°	tr.		0·04°		0·03°	tr.	
Other Constituents								
	99·87			100·28	99·8	100·25	99·97	

TABLE Y — METAMORPHOSED AND/OR METASOMATIZED MISCELLANEOUS SEDIMENTARY ROCKS
(Including old and incomplete analyses)

a. CHERTS AND JASPERS

	1	2	3	4	5	6	7
Rock Name	Siliceous Schist	Metamorphosed Sediment	Metamorphosed Sediment (Adinole)	Graphitic Chert	Red Jasper	Jasper	Jasper
Locality	Middleback Range, S.A.	Heathcote, Vic.	Heathcote, Vic.	W. of Mt. Hunt, Kalgoorlie, W.A.	3 Miles N.W. of Nagus, N.S.W.	Sandstone, W.A.	Warriedar, Yalgoo Goldfield, W.A.
Reference	**327**, 45	**211**	**211**	**563**	**533**, 101	**447**, 126	**159**, 18
Analyst	S.A. Dept. Mines	A. W. Howitt	A. W. Howitt	C. R. Le Mesurier	T. G. Vallance	H. Bowley	H. Bowley
Remarks	(Cherty banded iron formation)		*Loss on ignition			* Not graphite	*Loss on ignition
Sp. Gr.	—	—	—	2·62	—	—	—
SiO_2	93·16	92·74	91·08	90·30	85·51	56·45	43·13
Al_2O_3	1·07		6·00	3·85	0·21	4·37	
Fe_2O_3	1·79		tr.	1·66	12·94	30·81	53·25
FeO	0·18		—	nd.	0·61	abs.	1·28
MgO	0·08		0·25	0·14	tr.	abs.	
CaO	1·24		0·14	0·13	tr.	0·54	—
Na_2O	0·22	0·84	0·16	0·12	0·09	0·62	—
K_2O	0·90		1·82	1·24	0·05	0·18	—
H_2O+	0·81		0·96*	1·56	0·18	5·87	2·70*
H_2O-	0·07			0·33	0·20	0·98	—
CO_2	0·74			abs.	—	abs.	—
TiO_2	0·06			0·15	abs.	—	—
P_2O_5	0·01			0·04	tr.	—	0·05
MnO	0·03			abs.	0·30	—	—
Other Constituents	Cl=0·01 FeS_2=0·06 BaO=abs.			FeS_2=0·07 C=0·24 V_2O_3=0·03		C=0·26*	S=0·01
	100·43		100·41	99·86	100·09	100·08	100·42

TABLE Y — METAMORPHOSED AND/OR METASOMATIZED MISCELLANEOUS SEDIMENTARY ROCKS
(Including old and incomplete analyses)

b. ARKOSES, ETC.

	1	2	3	4	5	6	7	8	9
Rock Name	Basified Arenite	Basified Arenite	Quartz-feldspar-"Migmatite"	Quartz-feldspar-biotite "Migmatite"	Granite Tillite	Feldspathized Tillite	Granite-gneiss Tillite	Sericitized Tillite	Arkose-Gneiss
Locality	Monarto, S.A.	Monarto, S.A.	Mt. Fitton, S.A.	Mt. Fitton, S.A.	W.N.W. of Poolamacca, Broken Hill, N.S.W.	Mr. Fitton, S.A.	Poolamacca, Broken Hill, N.S.W.	Mt. Fitton, S.A.	S.W. of Binduli, W.A.
Reference	**240**, 132	**240**, 132	**42**, 468; **86**	**42**, 468; **86**	**43**, 138	**42**, 468; **86**	**43**, 138	**42**, 468; **86**	**152**, 71; **447**, 102
Analyst	R. J. Johns	J. M. Kruger	D. R. Bowes	D. R. Bowes	D. R. Bowes	D. R. Bowes	D. R. Bowes	D. R. Bowes	A. J. Robertson
Remarks	(Less basic portion)	(More basic portion)							
Sp. Gr.	—	—	2·54	2·58	—	2·65	—	—	2·65
SiO_2	90·73	84·25	79·05	77·72	76·9	76·25	72·2	70·99	70·83
Al_2O_3	4·01	8·64	11·82	10·50	12·4	11·36	14·5	14·39	12·66
Fe_2O_3	0·68	0·18	0·34	1·17	0·53	0·39	1·4	2·07	2·36
FeO	0·26	1·10	0·22	0·97	1·0	2·08	1·5	1·23	2·79
MgO	0·05	0·23	0·17	0·19	0·54	0·86	0·85	0·79	4·67
CaO	0·18	0·19	0·35	1·08	0·34	1·72	0·49	0·50	0·29
Na_2O	3·66	4·06	0·71	0·94	2·8	1·32	5·3	0·13	2·63
K_2O	0·31	0·84	6·27	6·31	4·7	5·29	2·7	7·54	1·22
H_2O+	0·03	0·36	0·53	0·47	0·57	0·52	0·76	1·13	2·81
H_2O-	0·05	0·02	0·05	0·05	—	0·02	—	0·10	0·20
CO_2	—	—	—	—	—	—	—	0·25	abs.
TiO_2	0·13	0·18	0·16	0·15	0·14	0·36	0·34	0·25	—
P_2O_5	0·04	0·04	0·04	0·07	0·18	0·08	0·14	0·17	—
MnO	tr.	tr.	tr.	0·01	0·02	0·04	0·06	0·01	—
Other Constituents	ZrO_2=0·05 BaO=tr. S=0·13	ZrO_2=0·04 BaO=tr. S=0·12	BaO=0·05 S=0·11	BaO=0·20 ZrO_2=0·06 S=0·05		BaO=0·06 S=0·03		BaO=0·02 ZrO_2=0·12 S=0·03	
	[100·31]	[100·25]	99·87	99·94		100·38		99·90	
Less O= Cl, F, S	0·05	0·05	0·04	0·02		0·01		0·01	
	100·26	100·20	99·83	99·92	100·1	100·37	100·2	89·89	100·46

TABLE Y — METAMORPHOSED AND/OR METASOMATIZED MISCELLANEOUS SEDIMENTARY ROCKS

b. ARKOSES, ETC.			c. IRON-RICH OR MAGNESIA-RICH ROCKS		
	10		1	2	3
Rock Name	Basified Tillite		Riebeckite Rock	Enstatite-sapphirine-cordierite Rock	Enstatite-sapphirine-cordierite Rock
Locality	Mt. Fitton, S.A.		Yampire Gorge, Hamersley Ra., W.A.	Mawson Area, Mac-Robertson Land, Ant.	Mawson Area, Mac-Robertson Land, Ant.
Reference	**42**, 475; **86**,		**168**, 49; **324**, 30	**441**, 693	**441**, 693
Analyst	D. R. Bowes		C. R. Le Mesurier	Hemingway & Lewis	Hemingway & Lewis
Remarks					
Sp. Gr.	2·91		3·29	—	—
SiO_2	51·99		45·51	46·34	38·00
Al_2O_3	14·86		0·78	23·21	23·58
Fe_2O_3	1·38		26·05	0·77	1·03
FeO	9·34		15·07	0·66	1·03
MgO	6·92		2·49	24·00	32·57
CaO	10·76		0·11	0·36	0·16
Na_2O	1·72		5·43	1·24	1·72
K_2O	0·23		0·05	2·42	1·70
H_2O+	0·60		3·50	1·19	0·35
H_2O-	0·10		1·24	0·08	0·07
CO_2	—		0·03	—	—
TiO_2	1·45		abs.	0·34	0·32
P_2O_5	0·13		abs.		0·02
MnO	0·19		abs.		—
Other Constituents	BaO=0·03 ZrO_2=0·10 Cr_2O_3=0·01 S=0·08			SO_3=0·03 Cl=0·04	SO_3=0·03 Cl=abs.
	99·89			100·68	
Less O= Cl, F, S	0·03			0·01	
	99·86		100·26	100·67	100·58

TABLE Z — NATURAL SLAGS, SINTERS, AND CLINKERS

	1	2	3	4	5	6	7	8	9
Rock Name	Natural Sinter	Scoriaceous Pebble in Clay	Silica Glass	Natural Sinter	Natural Slag	Silica Glass	Vesicular "Spherulitic Rock"	"Ropy Lava"	Clinker
Locality	Tempe Downs, S.A.	Between Mile End and Hindmarsh, S.A.	O.B. Flat, S.A.	Mt. Remarkable, S.A.	Horsham, Vic.	Compton Downs, S.A.	Springfield Basin, near Cradock, S.A.	Springfield Basin, near Cradock, S.A.	Leigh Creek, S.A.
Reference	**16**, 29	**203**, 34	**163**, 321	**16**, 29	**18**, 75	**163**, 321	**241**, 253	**241**, 253	**15**, 7
Analyst	G. C. Carlos	W. S. Chapman	T. W. Dalwood	G. C. Carlos	G. C. Carlos	T. W. Dalwood	P. C. Hemingway	P. C. Hemingway	G. C. Carlos
Remarks		(fire in tree stump)	(straw stack)			(straw stack)	*Loss on ignition	*Loss on ignition	Fused coal ash
Sp. Gr.	—	—	—	—	—	—	—	—	—
SiO_2	76·08	71·48	66·04	63·54	60·04	57·40	52·26	50·04	32·23
Al_2O_3	10·27	12·17	1·55	18·59	1·75	1·81	17·73	17·88	20·68
Fe_2O_3	1·67	1·73	0·59	1·56	0·18	0·59	9·3	12·7	4·29
FeO	2·59	3·32	—	3·48	0·13	—	13·9	12·3	0·75
MgO	1·83	2·02	3·80	1·50	3·90	5·56	0·28	0·24	3·93
CaO	3·05	3·12	6·00	5·94	9·28	8·56	0·32	0·36	24·67
Na_2O	0·77	1·06	6·88	0·61	10·63	8·98		—	2·28
K_2O	2·34	0·92	11·98	2·20	11·53	13·58		—	0·87
H_2O+	0·23	2·07		0·16	1·06		0·43*	0·92*	1·51
H_2O-	0·03	1·45		0·04	0·18		0·31	0·43	0·53
CO_2	abs.	—		abs.	0·32			—	1·02
TiO_2	0·78	0·52		0·61	tr.		1·62	1·53	1·97
P_2O_5	0·31	—		1·61	0·73			—	1·56
MnO	0·08	pnd.		0·18	0·47		0·16	0·25	0·32
Other Constituents	C=abs. Cl=abs. SO_2=abs.		Carbonaceous matter=2·69	C=abs. Cl=abs. SO_3=abs.	C=0·08 Cl=0·03 SO_3=0·02	Carbonaceous matter=3·16	SO_3=0·08 Cl=0·01	SO_2=0·10 Cl=0·03	BaO=0·01 Cl=0·09 S=2·13, Cr_2O_3=tr. (CoNi)O=tr.
	100·03	99·86	99·53	100·02	100·33	99·64	96·40	96·78	98·84

TABLE Z — NATURAL SLAGS, SINTERS, AND CLINKERS

	10	11	12	13
Rock Name	Clinker	Vesicular Rock	Clinker	Clinker
Locality	Leigh Creek, S.A.	Springfield Basin, near Cradock, S.A.	Leigh Creek, S.A.	Leigh Creek, S.A.
Reference	**15**, 7	**241**, 253	**15**, 7	**15**, 7
Analyst	G. C. Carlos	P. C. Hemingway	G. C. Carlos	G. C. Carlos
Remarks	Fused coal ash	*Loss on ignition	Fused coal ash	Fused coal ash
Sp. Gr.	—	—	—	—
SiO_2	31·51	26·54	19·44	18·43
Al_2O_3	20·42	6·43	19·71	25·48
Fe_2O_3	7·72	45·20	16·06	21·26
FeO	4·39	17·0	2·61	5·85
MgO	5·05	0·10	4·18	4·14
CaO	24·28	0·16	23·51	21·12
Na_2O	0·46	—	5·37	0·05
K_2O	0·15	—	0·22	0·01
H_2O+	0·81	0·14*	1·87	0·80
H_2O-	0·62	0·20	0·35	0·15
CO_2	0·60	—	1·02	0·60
TiO_2	1·58	0·92	1·04	0·92
P_2O_5	1·88	—	3·21	1·36
MnO	tr.	0·48	0·07	0·02
Other Constituents	Cl=0·09 S=0·50 CuO=tr. (CoNi)O=tr.	SO_3=0·19 Cl=0·01	BaO=0·01 Cl=0·60 S=1·62 CuO=tr. (CoNi)O=tr.	Cl=0·03 S=0·01 CuO=tr. (CoNi)O=tr.
	100·06	97·37	100·89	100·23

INDEX OF ROCK NAMES

showing Tables where they are listed.

Actinolite hornfels—X
Actinolite shist—V
Adamellite—A, B
Adinole—Q, Y
Albite dolerite—L
Albite syenite—C
Albite porphyry—C, H, I
Albite schist—V^2
Albitite—C
Amphibolite—LM^1, N^1, O^1
Analcite basalt—N, O
Analcite dolerite—N, O
Analcite syenite—K
Andalusite hornfels—V
Andalusite schist—V
Andesite—H, I
Anorthosite—Q, R
Anthophyllite hornfels—V
Anthophyllite rock—R^1
Aplite—A, B
Appinite—D
Arkose gneiss—Y
Augen-gneiss—S, T
Banatite—J
Basalt—L, M, N, O
Basanite—N, O
Bostonite—J
Brucite marble—X, X^4
Calcareous pelite—X
Calcareous psammite—X
Charnockite—D, S
Chert—Q, Y
Chiastolite slate—V
Chinastone—A, B
Chlorite schist—LM^1, N^1, O^1, L^2-O^2, V^2
Chloritoid dolerite—L^2-O^2
Chloritoid schist—V, X
Comendite—H
Contaminated rock—G
Cordierite gneiss—S, T, U
Cordierite hornfels—V, W
Covite—N
Crinanite—N, O
Cummingtonite schist—R^1
Dacite—H, I
Dellenite—H
Diallage rock—Q, R
Diorite—D
Diorite-gabbro—D
Dolerite—L, M, N, O
Dunite—Q
Eclogite—Q
Enderbite—A
Epidiorite—LM^1, N^1
Epidosite—L^2-O^2, W^2
Epidote amphibolite—N^1
Essexite—M, N
Essexite-gabbro—N
Fayalite basalt—N
Fayalite gabbro—O^1
Fayalite granophyre—L
Felsite—H
Forsterite marble—X^4
Forsterite rock—Q
Fourchite—O
Fuchsite schist—V
Gabbro—N
Gabbro (hornblende)—E, Q
Garnetized gabbro—L^2-O^2
Garnet granulite—Q, S, O
Garnet 'sandstone'—W^2
Garnet schist—V
Glaucophane schist—N^1
Gneiss—S, T, U, W
Granite—A, B
Granite gneiss—S, U
Granite porphyry—A, B
Granodiorite—A, B, D
Granodiorite porphyry—A, B, D
Granophyre—A, B, D
Granulite—S, T, U, W
Graphite schist—L^2-O^2, V
Greenstone—N^1, O^1, L^2-O^2, L^5-O^5
'Grey Billy'—W^2
Grossularite hornfels—X
Hornblende schist—N^1, O^1, X
Hornblendite—E, Q
Hematite quartzite—W^2
Hybrid rock—G
Hypersthenite—R, R^1
Ignimbrite—H
Jasper—Y
Keratophyre—H, I
Kyanite schist—V
Lamprophyre—D, M, N, O
Latite—L, M
Leucite-bearing rocks—P
Leucogranite—A
Lherzolite—Q
Limburgite—N, O

Macedonite—M
Marble—X, X^4
'Melaphyre'—N
Melilite basalt—O
Melilite fosinite—O
Melteigite—O, L^2-O^2
Metabasalt—F, LM^1, N^1
Metadolerite—N^1
Minette—D
Monchiquite—O
Monzonite—L
Mugearite—M, O
Natural slags, sinters & clinkers—Z
Nepheline basalt—O
Nepheline basanite—N, O
Nepheline monzonite—N
Nepheline syenite—K
Nephelinite—O
Nevadite—H
Norite—E, N^1
Obsidian—H
Orthophyre—J
Pantellerite—H
Pegmatite—A, B
Peridotite—Q, R, R^2
Phonolite—K
Phyllite—V
Picrite—O
Picrite basalt—N
Pitchstone—H
Porcellanite—V, V^4
Porphyrite—H, I
Porphyry—H, I
Prehnite rock—L^2-O^2
Propylite—L^2—O^2
Pseudophite—R^2, R^5
Pulaskite porphyry—J
Pyroxene granulite—Q, U, X
Pyroxenite—O, Q, R, R^2
Quartz diorite—B, D, G
Quartz dolerite—L, M
Quartz keratophyre—H
Quartz monzonite—D
Quartz porphyry—H
Quartzite—W, W^2
'Red Rock'—X^2
Rhyodacite—H
Rhyolite—H
Riebeckite rock—Y
Sapphirine rock—Y
Scapolite granulite—X
Scapolite marble—X^4
Scapolite rock—X, X^4
Schafferite—L^2—O^2
Schist—V
Serpentinite—R, R^2
Shonkinite—N
Silcrete—W^2
Sillimanite gneiss—V, W
Sillimanite schist—V
Slate—V
Soapstone—R^2
Soda trachyte—J
Soda pegmatite—C
Sölvsbergite—J
Spilite—M, N
Spinel-bearing marble—X^4
Spinel-bearing xenolith—F
Staurolite schist—V
Syenite—J
Tachylyte—L, M, N
Talc schist—O^1, R^1, R^2
Teschenite—O
Tholeiite—M, N
Thulite granulite—W^2
Tillite (feldspathized)—Y
Tinguaite—K
Tonalite—D, G
Toscanite—H
Trachyandesite—I, M
Trachybasalt—M, N, O
Trachyphonolite—K
Trachyte—J
Tremolite schist—LM^1, R^1
Troctolite—Q
Trondhjemite—D
Uralitized dolerite—L^2-O^2
Variolite—N, L^2—O^2
Vitrified shale—Q
Websterite—R
Wollastonite hornfels—X
Woodendite—N
Xenolith—F

Antarctica

Balleny Islands
Buckle Island—Nb56
Borradaile Island—Ob17
Enderby Land
Proclamation Island—Ad1, Sb6
Heard Island Od8
Atlas Cove—Ka2, Ma4,
Cave Bay Hill—Jc7
Corinthian Bay—Ma19
Mt Drygalski—Nc35
Moraine—Jc16, Mb15
Rogers Head—Oc28, Od22
King George Land
Horn Bluff—Md24
MacRobertson Land
Cape Bruce—Ud2, Wa40
Mawson—Dc2, Yc2, Yc3
South Victoria Land
Cape Royds—Md11, Md12, Pa12, Xa2
Knob Head Moraine—Md20

Australian Capital Territory

Boboyan—Bc4
Canberra—Xb24, Xb26, Xb35, Xb36
Canberra-Queanbeyan Road—Ib1
Fitz's Hill—Bc11
Mt Stromlo—Hb20
Tharwa—Aa40, Ab10, Ac4, Ac5, Ac6, Ac13, Ad2
Tidbinbilla—Aa40

New South Wales

Adaminaby—W^{2}a13
Adelong—Bc43, D^{2}7, Eb5, N^{1}d49, Vb9, Vc24, Vd43, Vd49, Vd72
Albion Park—Ma13
Albury—Aa30, Aa68, Aa97, Aa108, Aa118, Aa125, Aa155, Ac24, Bb3, Bc31, Bc33, F17, F18, F26, F28, Ta3, Tb3, Vc14, Vd12, Vd22, Vd37, Vd44
Allandale—If5, I^{2}2
Amosfield—Bd4, Bd21
Ardglen—Mb25
Armidale—Bd26, Ob30, LM^{1}a5, N^{1}d63, O^{1}d6, O^{1}d9, O^{1}d11, O^{1}d12, O^{1}d13, O^{1}d17, Qa5
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Attunga—De1
Ballina—Nb44
Barigan—Ka5
Barraba—Ra34, Rc1
Barren Jack—Id4
Barrier Ranges—Ha20, Ha77
Barrington Tops—Od42
Bathurst—Bb18, H^{2}27, H^{2}33, Oc33, L^{5}-O^{5}16, L^{5}-O^{5}19, L^{5}-O^{5}20, R^{2}5, Vb15, Vb34
Beacon Hill—Od19
Bedulluck—Hc22
Bellambi—Od24
Ben Bullen—Df8, Dg18, Ea3, Eb17, Eb18, Eb19, Eb20, Gb9, Gb10, Gb11, Gb12, N^{1}d48, X^{2}5, X^{4}4, X^{4}5, X^{4}6, X^{4}7, X^{4}10, X^{4}13, X^{4}15, X^{4}16, X^{4}17
Bergalia—He7
Berkley Trig Station—Ma1
Bermagui—Va23
Berridale—Va13
Berry Mountain—La1
Berthonga—N^{1}d10, Ra12
Bigga—Dc20, De7
Bingera—Mb62, Nb90, L^{2}-O^{2}9, Qa32, Qa33, Qa34
Black Jack Mountain—Kd3, Ob9, Ob15, Ob18, Ob22, Ob24, Ob34, Ob35, Ob36
Blair Duguid—If5, I^{2}2
Blayney—Mc1, R^{2}10, Nd3
Bodalla—W^{2}a1, W^{2}a6
Boggabri—Hc17
Bolairo—W^{2}a13
Bolaro (Par. of)—De15
Bolivia—Aa76, Ab5
Bombala—Od7
Bondi—Oa2, Ob38, Ob39, L^{3}-O^{3}13
Bookookoorara Falls—Nb53
Boorowa—Eb8
Boro—Ac1
Boro Creek—J^{5}3
Bowenfels—Aa11
Bowling Alley Point—Mb65, Nb98, Nb103, Nc58, Rb16, Rc7
Bowral—Jc3, Jc15, Jd6, Oc42
Braidwood—Ac15, Bd2, Dd2
Bredbo—Bc16, F21, H^{1}3
Brindabella—Aa24
Brogo—Bd11, Ea6
Broke—Ob11
Broken Hill—Aa63, Aa89, Aa154, Aa159, Aa162, Ab57, Ab100, Ba6, Ea4, Eb14, Eb21, H^{1}4, LM^{1}d1, LM^{1}d3, LM^{1}d5, LM^{1}d9, LM^{1}d10, LM^{1}d11, LM^{1}d16, LM^{1}d18, LM^{1}d21, LM^{1}d24, N^{1}d2, N^{1}d4, N^{1}d5, N^{1}d6, N^{1}d8, N^{1}d19, N^{1}d20, N^{1}d21, N^{1}d23, N^{1}d60, O^{1}c1, O^{1}c2, O^{1}d2, O^{1}d5, O^{1}d7, O^{1}d8, O^{1}d10, L^{2}-O^{2}6, L^{2}-O^{2}101,

L²-O²103, L²-O²107, L²-O²108, Rc3, Rc10, Sa8, Sa10, Sb10, Sb13, Sb15, Sc3, Sc5, Sd1, Tb2, Tb4, Tb6, Tb8, Td1, Td2, Td4, Te1, Te2, Te3, Te4, Te5, Uc2, Ud1, Ud3, Va53, Va56, Vb30, Vc39, Vc46, Vc57, Vd10, Vd14, Vd16, Vd21, Vd23, Vd28, Vd42, Vd65, Vd66, Vd68, Vd70, Vd71, Vd73, Vd76, V²a1, V²b1, V²b2, Wa14, Wa15, Wa26, Wa31, Wa32, Wa33, Wa34, Wa35, Wa37, Wa38, Wa39, Wa41, Wa42, Wa43, Wb1, Wb2, Wb3, W²c1, W²c2, W²c3, W²c4, W²c5, W²c6, W²c7, W²c8, W²c9, W²c10, W²c11, W²c12, W²d1, W²d3, W⁴6, W⁴7, Xa5, Xb4, Xb29, X⁴11, Yb5, Yb7
Broughton Village—Mb38, Mb55, Nb47
Bulladelah—Ha50
Bulli—Ob40, Ob42, Ob46, Ob49, Ob57, L⁴-O⁴6
Bungonia—J⁵1
Bunyan—Aa12, Aa51
Burdett—Va45
Burraga—H²27, H²33
Burrumbuttock—Vc14
Burrinjuck—Aa130, Aa131, Aa132, Aa137, Aa172, Ab23, Ab58, Ab87, Ac27, Be10, Dc19, De18, Dg21, Ha15, Ha42, Ha45, Ha46, Ha54, Ha55, Ha59, Ha61, Ha64, Ha65, Ha66, Ha67, Ha73, Ha86, Ha90, Ha104, Hb12, Hb30, Hb33, Hb34, Hb35, Hb37, Hb39, Hb40, Hb43, Hb45, Hb61, Hc1, Hc2, Hc3, Hc8, Hc12, Hc18, Hc32, Hd6, Hd9, Hd15, He4, Ia3, Ia5, Ib2, Ic2, Id3, Id4, Id7, Id9, Nc38, Oc13, Oc14
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Byrock—Aa86, Pa10, P⁴2
Cabramurra—Aa74, Bb13, Bc9, Bc14, Bc17, Bc36, Bd7, Oc67, Oc70, Od19, Od25
Cambewarra—Nc42
Camden Park—Nc33
Canbelego—Ea5, Ha9, Ha40, Ha82, Vb24
Canowindra—Va45
Canterbury—Oc53
Capertee Valley—Ob3
Charlotte Pass—Bc38
Chatsbury—Va43, Vb14, Vb19
Clarencetown—Hb11, Hb42, Hb60
Cobar—Aa67, Ha4, Ha31, Hb17, Hb19, Hb25, Vc30, Vc36, V²c2, V²c5
Cobargo—Bd16, AB²15, Dg19, Va23
Colinton—AB⁴6
Collaroy—Oc9
Colo River—Oc63, Oc72
Cooma—Aa4, Aa12, Aa41, Aa47, Aa51, Aa60, Aa82, Aa123, Ac3, Ac10, Bc4, Bc7, Bc10, Bc15, Bc16, Bc18, Bc21, AB⁴5, Dc6, Dd1, Dd5, F21, F23, F24, F30, F33, Ga5, Hc31, Jc5, Oc60, LM¹d6, LM¹d8, LM¹d14, R¹b4, Va3, Va20, Va31, Va38, Vb36, Vc43, Vd6, Vd15, Vd17, Vd26, Vd31, Vd34, Vd40, Vd41, Vd75, Wa24, W²a5, Xa1, Xa4
Coonabarabran—Ja1, Na1
Copes Creek—Nc52
Copeton—Mb39, Mb51
Cowra—Ab33, Ac31, Bc44, Bd22, Be13, F32, Va46, Va59
Cox's River—Dg7, Dg22, V⁵3
Crow Mountain—Rb3
Cudgegong River—H⁵3
Cullarin—Va29
Currabubula—Hd18, Id12
Dairy Mountain—Kb8
Dalton—W²a3
Dapto—Oc56
Darby Falls—Bd20
Delegate—Od44, Qa6, Qa13, Qa18, Qa19 Qa23, Qa24, Qa25, Qa26, Qa27, Qa28, Qa29, Qa30, Qa31
Deua River—Ha19
Dubbo—Ja5, Ka3, Kc3, Ma18
Dunedoo—Aa151
Dundas—Ob5, L⁵-O⁵10, Qa11, Qa15, Qa16, Qa22
Dural—Nb89
Durras Mountain—Mb11, Nb7
Eden—Ha23, Nc7, Nc66
Eilah—Ha8
El Capitan—Pb2, P⁴1
Eucumbene-Tumut Tunnel—Nb11, Qa3, Qa4, Qa12
Fingal Head—Ha35
Five Islands—La7
Florida—Ha9, Ha82
Geehi—Ac29
Georges Plains—R²5
Glen Alice—Oc24
Glen Innes—Db10, Na12
Glenugie Peak—Od20
Gloucester—Ha7, Ha89, Hb56
Gloucester Buckets—Hb54, L²-O²11
Good Dog Mountain—Id25, Jf7, Lb8, Ma15, Oc2
Good Hope—Hd11
Goulburn—L³-O³15, Va43, Vb14, Vb19, V⁵1
Grafton—Od20
Guilford—Od32
Gulgong—Aa165, Nc21, W²a15
Gunnedah—Kd3, Ob9, Ob15, Ob18, Ob22, Ob24, Ob34, Ob35, Ob36
Gunning—AB⁵4, W²a3
Gurragangamore—H⁵2
Hanging Rock—Ia13

Hartley—Aa7, Aa17, Aa182, Ab20, Ac7, Bb20, Bc13, Be9, AB^{5}2, Dc17, De5, Dg6, Dg7, Dg22, Eb22, Ga1, Ga6, Ga17, I^{1}5, O^{1}d15, O^{1}d18, L^2-O^{2}17, Va52, Vb17, Vc47, Xa3, Wa16
Havilah—Vb37, W^{2}a22, W^{2}a23
Helensburgh—L^3-O^{3}14
Hermidale—Eb2
Hill End—Hb29, Ob25
Hillgrove—Ab89, Bc2, Bc32, Bc45, Dg1, Dg4, Dg12
Honeybugle—Eb2
Hornsby—Nb50
Hudsons Peak—Hd17, Ic13
Humula—Vd47
Hurstville—Ob43
Inverell—Ab92, AB^{2}2, AB^{2}6, AB^{2}8, Lb1, Mb18, Mc30, Oc20, Oc31, Oc52, N^{1}a4
Jamberoo—La6, La9, Ma13, Mb22, Od16
Jellore—Nc39, Od31
Jenolan Caves—Dd7, D^{2}5, Hb4, Hc28, Ic4, Ic15, Ic20
Jenolan District—Eb16
Jerangle—Ab24, Be6
Jerrawa—Va1
Jerrys Plains—Jd7, Ob33
Jimmy Jimmy—Kb9
Jingellic—Vd11, Vd44
Junction Shaft—De17, Df10, D^{2}2, D^{2}3, D^{2}4, Od47
Kangaroo Mountain—Nc42
Kangaroo Valley—Kc4
Kembla Colliery—Ob28
Kempsey—Vb26
Khancoban—Aa70
Kiandra—Be1, Be7, Df4, Df5
Kiama—Kb6, Kd2, La1, La4, La8, La10, Ma2, Ma3, Ma7, Mb9, Nb67, Ob10, Od9, Qa8
Lake Cudgellico—Pb1
Lake George—Ac1
Little Dromedary—Nb3, Od2, Od5, L^2-O^{2}5, L^2-O^{2}8
Long Bay—Oc51
Long Reef—Oc9
Loomberah—Lb2, Md72
Luddenham—Ob37
Lue—Kb8, Kb9
Lumley Creek—H^{5}4
MacPherson Range—Ha47
Maitland—Hd17, Ic13
Marangaroo—Wa3, Wa4, Wa5, Wa12
Martins Creek—He6, Ib7, Ib12
Marulan—De10, Df3, F19, F20, Ga3, Ga4, Gb6, Hb10, Xb31, Xb34
Michelago—Aa133
Millamurrah—Vb15
Milton—Ba7, Ma14, Mb4, Mb6, L^2-O^{2}12, L^2-O^{2}15
Minumurra River—Kb6, Kd2, Ob10
Mittagong—Jb13, Nc39, Od31
Molong—If3, If4
Monteagle—Eb8
Morna Point—Ha27
Moruya—Ab1, Ac23, Bd28, Be2, Be14, Bf1, Dd11, De11, Dg11, Eb1, F10, Ha19, He7
Mount Apsley—Oc33, L^5-O^{5}19
Mount Bright—Ha6
Mount Canobolas—Ha95, Ha99, Ha101, Ja16, Jb6, Kd1, Mb28, Nb30, Nb36
Mount Dromedary—Jd3, La2, Mb12, Nb3, Od2, Od5
Mount Gahan—H^{2}11
Mount Gibraltar—Jc3, Jc15
Mount Gilmore—Hb11
Mount Jellore—Jb13
Mount Johnstone—Hb42
Mount Kosciusko—Bc38, Kb10, Kb11, Kb12
Mount Lambie—I^{5}1
Mount Lindsay—Hb1, Hb16
Mount Midderula—Oc24
Mount Molong—Na5
Mount Muruin—Oc71
Mount Murray—Ob50, Od15, Od23
Mount Nebo—Nb84, Nc40, Ob44, Ob47, Ob48, Ob52, Ob53, Ob59, Ob61, Oc10, Oc27, Oc30
Mount Tomah—Nb81
Mount Warning—Ha32
Mount Warrawalong—Ob26
Mudgee—Aa165, Va58, Vb37, W^{2}a22, W^{2}a23
Mullet Creek—Mb7
Mullion Creek—V^{3}4
Murramarrang—Oc8
Murrumbucka—Dc6, Dd1, F24, F30
Murrumburrah—Pb3, Pb4, Pb5, P^{2}2
Murwillumbah—Ha25, Ha32, Ha43
Muswellbrook—Je11, Nb95
Muttama—R^{2}8
Nagus—R^{2}2, Va27, Ya5
Nambucca—AB^{4}3
Nandewar Mountains—Hc17, Ic25, Ja2, Ja8, Jb1, Jc2, Kb2, Ke2, Mb37, Nd4, Od34
Nanima—Ha75, Hc22, Ia1
Nemingha—Hc26, Mb66, Nc44
Nepean River—Qa9, Qa14, Qa21
Nethercote—Nc7, Nc66
Newbridge—Vb34
Nimmitabel—Be4, Oc5
Nowra—Id25, If7, Lb8, Ma15, Nb35, Oc2
Nundle—Ia13, Ia14, La13, Mb68, Na9, Nb101, Rb16, Rc7, R^{2}23, R^{2}31, R^{2}32, R^{5}3
Nuthernugie—Ha20, Ha77

incorrect

Nymagee—Aa71, Aa84
Nymboida—Nc52, Ob60
Oakey Creek—Mb51
Oberon—Ob32, Qa7
Orange—Ha95, Ha99, Ha101, Ja16, Jb6, Kd1, Mb28, Mb33, Nb30, Nb36, L²-O²81, V³4
Oura—Aa101, Ab46, Ab55
Paling Yards—Ra34, Rc1
Pambula—Ha34, H²9, H²11
Paterson—Hc24
Peats Ridge—Na11, Nc59, Nc65, Oc19, L²-O²19, Qb1, Qb2, Qb3
Pipers Flat—X²6
Plashett—Jd7, Ob33
Pokolbin—Ha6, Ie12, Ig2
Pomeroy—AB⁵1
Poolamacca—Aa89, Aa154, Aa162, Aa187, Sa8, Sa10, Yb5, Yb7
Pooles Point—Od3
Porcupine Mountain—Ka5
Port Kembla—La7, Mb20, L²-O²13, L²-O²14, L²-O²16
Port Stephens—Ha27, Ha35, Hb7, Hc25, H⁴1, H⁴2, Ic7, Ie2
Prospect—Kc6, Kd4, Kd5, Kd6, Ke1, Ke3, La3, Mb3, Nb94, Nb109, Nc36, Nc43, Nc63, Nc64, Ob6, Ob7, Ob20, Ob21, Ob27, Ob29, Oc12, Oc21, Oc23, Oc34, Oc35, Oc36, Oc40, Oc44, Oc45, Oc47, Oc59, Oc61, Oc62, Oc64, Oc65, Oc66, Oc68, Oc69, Od26, Od27, Od28, Od29, Od36, Od40, Od41, Od43, Od46, L²-O²18, L²-O²74, L²-O²76, L⁵-O⁵ 21, Vb22, Vb28
Puddledock—O¹d11, O¹d13
Putty Creek—Oc63, Oc72
Quaama—Va8
Raymond Terrace—Ha87
Richmond River—Nb44
Rivertree—Aa77
Rixons Pass—Ob40, Ob42, Ob46, Ob57
Robertson—Na4, L³-O³19
Rookwood—Oc32
Rosebrook—Hb14
Round Head—Hb7
Ruby Hill—Nb90, Qa32, Qa33, Qa34
Rydal—I⁵1
Sapling Flat—Ob3
Savoy Hill—Je11, Nb95
Seal Bay—Oc51
Shannons Flat—Aa4, Ac3, Ac10, Bc10, Bc15, Bc18, Bc21, AB⁴5
Snowy Mountains—De17, Df10, D²2, D²3, D²4, Nb11, Od47, Qa3, Qa4, Qa12
Sodwalls—Bc3
Square Top Mt.—Na9
Staggy Creek—Mb39
St Georges Head—Nb35
Sydney—Nb50, Nb89, Nc33, Nc59, Nc65, Oa2, Ob5, Ob37, Ob38, Ob39, Ob43, Oc9, Oc32, Oc34, Oc35, Oc51, Oc53, Od32, L³-O³13, Qa11, Qa15, Qa16, Qa22
Taemas—Ha45, Ia3
Tallong—Va2, W²a2, W²a4, W²a16, W²a17, W²a18, W²a20
Talmalmo—Vd22
Tenterfield—Aa29, Aa75, Aa81, Bd27
Termeil—Nb5
The Basin—Qa9, Qa14, Qa21
Thurgoona—Aa118, Bb3, F17, F18, F26, F28, Ta3, Tb3
Tibooburra—Bc61
Tilba Tilba—Mb2, Nc1
Tilba Tilba Lake—Mb8, Od3
Tilbuster—LM¹a5, N¹d63, O¹d6, O¹d9, O¹d12, O¹d17
Tinderry Range—Aa133
Tingha—Aa5, Aa140, Ac8, Bd18
Tooloom—Ha98
Torrington—Bb11
Towrang—W²a19, W⁴3
Tumbalong—Ab60, LM¹a4
Tumut Pond—Bc36
Tweed Heads—Id6, Mb45
Tweed River—Hb1
Twofold Bay—Ha23
Two-mile Flat—H⁵3
Ulladulla—Mb11, W²a8, W²a9, W²a10, W²a11, W²a21
Undercliffe—Nb53
Ungarie—Va11
Uralla—Bb8
Wagga Wagga—Aa101, Ab36, Ab46, Ab60, Bb15, Bc25, Bc28, Va19
Walcha—Bd13
Wallendbeen—N¹d10, Ra12, R²3, R²7, R²29
Wantabadgery—Aa146, Bb15, F12, F29, R¹b2, Vb13, Vd33, Wa17, Wa20, Wa23, Wa30
Warrawolong—Ob26
Warrumbungle Mountains—Ia7, Ia8, Ja3, Ja7, Ja10, Kb1, Kb3, Ma9, Qb4
Wee Jasper—Df2
Weja—Va18
Wellington—Ga9, Ga10, Ga13, Ia2, Ia6, Ic24, Md2, N¹c4, N¹d3, L²-O²95, R¹b5, R¹b7, R¹c1, R¹c3
Whartons Mill—Od42
Whipstick—Aa148, AB²3, AB²5
Willans Hill—Bc25, Bc28
Williams River—Hb60
Wilsons Downfall—Dc11, Wa28
Wingello—Od30

Wollondilly River—He1, V⁵1
Wollongong—Ma1, Nb73, Nb84, Nb110, Nc40, Ob16, Ob31, Ob41, Ob44, Ob47, Ob48, Ob50, Ob52, Ob53, Ob59, Ob61, Oc10, Oc27, Oc30, Od15, Od23
Wongawilli—Ob31
Woodburn—Nb7
Woodstock—Aa32
Woomargama—Bc31
Wombeyan—He1
Wuuluman—Ga9, Ga10, Ga13, Ia2
Wyalong—Df7
Wyangala Dam—Aa33, Bd22
Yalgogrin—Va7, Va10
Yarrawyk—Ja4
Yass—Ha75, Hc4, Hc22, Ia1, Ia4, Va1, Va51
Yerranderie—Da5, Ia9, Ib5, Id1, Oc49
Yetholme—Ba1
Yaouk—Aa4, Aa41, Bc7

Northern Territory

Arnhem Bay—Sb14
Arnhem Land—Ab43
Ayres Range—Nd22, Nd24
Brocks Creek Siding—Ab35
Burrundie—Bb2, Bb14
Calvert Hills—Bc26
Daly River Track—Aa85
Darwin Area—Aa177, Ab19, Bb9, Bb16, Bb17, Bc19, Db4, Dc4, Gb8
Edith River—Aa92
Fenton Airstrip—Aa95, Gb8
Finnis River—Ab82
Goodparla Track—Aa117
Harts Range—Dd3, LM¹d38, Sb4, Ub1, Va54
Hermit Hill—Aa85
Inkamulla Bore—Dd3
Kangaroo Bore—Aa110
Kulgera—Aa110, Bd19, AB¹4, Nd18, Nd20
Mount Barton—Aa90
Mount Bundy—Ab51, Ab91, Jc9, Je6
Mount Cavenagh—Nd22, Nd24
Mount Goyder—Jc9, Je6
Mount Litchfield—Aa50, Ac28
Mount McMinn—Nc2
Mount Shoebridge—Ab54, Ab59
Prices Spring—Bb2, Bb14
Rum Jungle—Aa90, Aa100, Aa127, Ba3
South Alligator River—Aa18, Aa48
Strangways Range—Md66
The Granites—Ac19
Wolfram Hill—Ba5

Papua and New Guinea

Manus Island—Ic1
  Tuluman Volcano—Hb58, Hb59
New Britain—I⁵2, I⁵3
New Guinea
  Aitape—Mb43, Mb50, Mb57, Nd5
  Manam Volcano—Md21, Md23, Md25, Md31, Md56, Md58, Md59, Md60, Md61, Md62, Md63, Md64
  Rohm Point—Nd5
  Tumleo—Eb15, Ie9, Ig3, Qa17
New Ireland—H⁵5
Papua
  Cape Vogel—Ie3, Ld8, Ld10, Mb5, Mc21, Md13, Md68, Nc62, Nd29
  Goropu Mountains—If1
  Kokoda—Ra1, Ra32
  Mount Lamington—Id11, Id13, Id14, Id15, Id18, Id19, Ie5, Ie6, Ie7, Ie10, Ie11,Ie13, Ie15, Ie16, If2, If7, Qa10, Qa20
  Musa Valley—Ra7, Ra11, Ra13, Ra14, Ra16, Ra21, Ra25, Ra31, Rb8, Rc12
  Port Moresby—Ie15

Queensland

Almaden—Be3
Arrabury—V⁴6
Ashgrove—AB²14
Ballandean—Ab95
Ballara—Vc26
Bauhinia Creek—Ra2
Berserker Range—Ib14
Binna Burra—Ha68, Ha96
Bowen River—L²-O²29, L²-O²30
Brisbane—LM¹c12, Vb27, Vd64
Bundamba—Mc24
Burketown—Bc26
Burleigh Heads—Mb24
Cainbable Creek—Jc4
Cairns—Aa158, Aa161, Aa163, Bb22
Capalaba—Nc57
Cattle Creek—Vc26
Charters Towers—Aa113, Ac18, Bc58, Be11, Dc15, De14, Dg15, Dg17, Hc30, Id21, Ig9
Chillagoe—Ab73, Bc62, Dc16, Id22
Chinghee Creek—Nc47, Nc54
Cloncurry—Aa87, Aa98
Cloncurry Area—Aa175, Ab53, Ab83, Ab85, Ab90, LM¹d20, N¹d16, N¹d17, N¹d46, Va49, Vc41, Vd20, Xb6, Xb8, Xb10, Xb17, X²2
Conandale Range—N¹d59
Coopers Plains—Mc35
Croydon—Aa31, Bb10
Dajarra—Ac9, Ac11, Ac30, N¹d11

Dobbyn—Nb10
Doomadgee Mission Station—Bc42
Duchess—Aa102, Ab30, Ab32, Ac11, Bb1, Md47, Md80, Od11, N^1b4, N^1c7, $X^2$1, Xb7, Xb9, Xb15
Dugald River—Xb10, $X^2$2
Eborac Island—Ha29
Einasleigh Area—Aa8, Aa19, Aa27, Aa28, Aa46, Aa129, Aa142, Aa153, Aa178, Ab25, Ab38, Ab48, Ab56, Ab71, Ab80, Ab84, Ab102, Ac14, Ac21, Ac25, Ac33, Ac36, Bc33, Bc47, Bc55, Bd33, Da4, Dc7, Dc10, De9, De12, Df9, Eb3, Ha11, Ha13, Ha14, Ha16, Ha28, Ha39, Ha60, Ha85, Hb6, Hb9, Hb15, Hb36, Hc9, Hc14, Ib4, Id5, Ig6, Je8, Ra17, Ra28, Ra30, Rc6, Rc11
Elbow Valley—$X^4$14
Engelsberg—Jb16
Enoggera—Ab76, Ac20, Dd12
Esk—Hb3, Hb32, Hb50, Id23, Ja19, Jc17
Eskdale—De2, F13, F14
Eumundi—Ic18
Finneys Hill—Vb27
Forsayth—Ab64, Db2
Georgetown—Ab11, Ab37, Ab97, Ac35
Gilbert District—$D^2$9
Gladstone—Ja6, $J^4$2
Glass House Mountains—Ha44, Ha58, Ha69, Ib11, Ja9
Greymare—Bc54
Gympie—L^2-$O^2$85, L^2-$O^2$94, L^5-$O^5$12
Herberton—Aa43, Ab8
Ipswich—Mb29, Mc8, Nb1
Kajabbi—Aa38
Kholo Creek—Dc12
Kittys Plain—Aa169, Aa183, F27, N^1c11
Kuridala—Aa160, Mc17, N^1d18
Lake Eacham—Nb52
Lowood—Od12
Lucky Valley—Hc21
McKellars Bore—Ab29
MacPherson Range—Ha47
Main Range—Jb14, Ma17, Mb44
Mapleton—Ma16
Mareeba—Aa2, Aa10, Ac2, Ac34
Mary Kathleen—Ab28
Mary Valley—Ra3, Ra18, Rb13
May Downs—Aa58, Ca5, Vc51
Mica Creek—Ab49
Minnages Mt.—Bd25
Monserrat Lookout—Bc49, Bc50
Moogerah—Ab62, Ha10, Nb55
Mossman—Aa163, Bb22
Montville—Hb28, Mb27
Mount Alford—Dd14, Ib15
Mount Barney—Aa25, Aa83, Ab14, Bc46, Bc49, Bc50, Bd25, Db7, De16, Dg10, Dg14, Hb5, Mb35, Nb66
Mount Beerwah—Ja9
Mount Boorambool—Nb69
Mount Carbine—Aa158
Mount Conowrin—Ha58
Mount Coolum—Ha56
Mount Cooroy—Db13
Mount Flinders—Ja14, Jb3, Kc5
Mount Isa Area—Aa23, Aa58, Aa169, Aa183, Ab29, Ab49, Bb6, Bb21, Bb23, Ca5, Db14, Db16, F27, Ga2, Ga8, Ga15, Gb1, Nb2, Nc16, Nd10, Nd16, LM^1d17, LM^1d19, N^1c1, N^1c2, N^1c3, N^1c6, N^1c11, N^1c12, N^1d22, N^1d24, N^1d41, Vc51, Vd80
Mount Lindsay—Hb1, Hb16, Nb64
Mount Mee—N^1d26
Mount Moon—Ab62, Ha10, Nb55
Mount Morgan—Dd15, $H^4$3, L^4-$O^4$1, L^4-$O^4$2
Mount Nebo—Dg16
Mount Oxide—Va49, Vc41, V^2c1
Mount Wheeler—$H^5$1
Newcastle Range—Aa178, Ab71, Ab102, Ha28, Ha39, Ha85, Ig6
Ngun-Ngun—Ha44
Noose Head—De13
Paddys Gully—$H^4$6
Pittsworth—Nb42
Point Arkwright—Id16
Port Curtis—Ja6
Quamby—Ab55, Bc12
Ravenswood—$J^5$4
Rockhampton—Dg2, Ha100, Ib14
Rocksberg—LM^1c12
Samford—Dc8, Dg16, F16, Lb10, O^1d16, Xb21
Scotts Well—Nb82
Selwyn—Aa78, Ab99
Silverwood—Ha91, Hb51, Id24, Ie17, Lb11, Mb19, Md67
Snake Gully—Vd20
Soldiers Cap area—Aa175, Vd20
Spicers Gap—Jb14
Spicers Peak—Ma17
Springbrook—Ha62, If8
Springsure—Ka1, Nb69, Nb82
Stanthorpe—Ab2, Ab61
Tambo—$V^4$7, $V^4$8
Tambourine Plateau—Id20
Toowoomba—Mb53
Trekelano—Xb11, $X^2$3
Tweed Heads—Id6,
Upper Cape Diggings—Ha33
Virgin Rock—Ka1
Yandina—Ha56, Nb23

Yaringa Creek—Bb23, Db14
Yarraman—Bd15

South Australia

Adelaide—AB^{3}4, AB^{3}5, AB^{3}6, Vb41
Ardrossan—AB^{3}7
Armchair Rocks—Ab17
Balhannal —AB^{3}8, V^{3}29
Binnies' Water—Ab9
Birdwood—Aa119
Blinman—Mb48, Nb28, Nc19, N^{1}d33
Boolcoomatta Hills—Ca9, Ma20
Burra—V^{3}24
Cape Radstock—Ab52
Cape Willoughby—Ca2
Carrow—Tc3
Cherry Gardens—V^{3}22
Cocata—Aa145
Compton Downs—Z6
Corunna Station—Ha52
Cradock—Z7, Z8, Z11
Crotty's Knob—Ab70
Crystal Brook—V^{3}16
Dutton—V^{3}12, V^{3}20
Echunga—Vc56
Encounter Bay—Aa20, Aa22, Aa45, Aa171, Ab44, Bb5, Bc6, Bc20, Bc56, Bd6, AB^{4}1, AB^{4}2, Ca7, F3, F6, Gb2, Gb3, Gb4, L^2-O^{2}97, Va^{2}2, Va^{2}3, Va^{2}4, Va^{2}5, Va^{2}6, Va^{2}7, Va^{2}8, Va^{2}9, Va^{2}10
Ernabella—Bd23, Nd26, Sc2
Everard Range—Aa14, Ab94, Bd10
Eyre Peninsula—Aa42, Aa96, Aa128, Ab52, Bb12, Ca6, Ca8, LM^{1}b2, Sa3, Sa5, Ua3, Vb2, V^{3}27
Fleurieu Peninsula—X^{4}8
Flinders Range—Mb48, Nb28
Franklin—Aa96, Hd7
Glen Osmond—Vb29, V^{3}23
Giants Head—Aa174, Aa184
Gumeracha—Aa119, Aa166, Aa173, Aa181, Cb3, R^{2}4, Vb38, Vb39
Humbug Scrub—Sa7, Ta1, Ta2, Tb5
Hindmarsh—Z2
Inindi—Uc3
Kangaroo Island—Aa126, AB^{2}1, AB^{3}12, Ca2, Md3, Md4, Md22, Md30
Kanmantoo Area—V^{3}7, V^{3}18, V^{3}26
Keith—Aa136, Aa138, Ha36
Kersbrook—Tc1, Uf2, Ug1
Kingston—Bd9
Kolbolla—Aa72
Leigh Creek—Z9, Z10, Z12, Z13
Littlehampton—V^{3}28, V^{3}30
Lobethal—W^{3}1
Longwood—V^{3}2, V^{3}6, V^{3}9, V^{3}13
Lyndoch—Aa114, Aa164, Aa185, Aa187
Macclesfield Area—Vc44, Vc50, V^{3}15, V^{3}25
Mann Range—Rc8
Mannum—Aa122, Ab78, Dg20
Marcollat—Hb47
Middleback Range—Aa62, Aa66, Aa91, Aa105, Ab27, Ab63, Ac17, Bc34, F1, LM^{1}c7, N^{1}c5, N^{1}d7, N^{1}d13, O^{1}a1, O^{1}a2, O^{1}b2, O^{1}b3, Tb1, Va17, Ya1
Mile End—Z2
Minnipa Hill—Aa104
Mintaro—Xb1
Monarto—Ab79, Ab81, Yb1, Yb2
Moonabie Range—Aa62, Hd7, Wa6, Wa19, Wa29
Moonta—Ha41, H^{1}7, H^{1}8
Mount Barker Junction—N^{1}d39
Mount Barker Springs—N^{1}d35
Mount Carruthers—Sc1, Ua1, Ug4
Mount Crawford—N^{1}d47, Sb9
Mount Deception—Vc54
Mount Fitton—N^{1}d30, N^{1}d31, N^{1}d34, Sb11, Yb3, Yb4, Yb6, Yb8, Yb10
Mount Gambier—Nc26, Qa2
Mount Howden—Vd74
Mount Lofty—Dd6, De8, Dg3, Dg5, Dg8, Jc1, Jf5, Jf6, Nd11, Nd16, Nd23, Vc32, Vc44, Vc50, V^{3}1, V^{3}3, V^{3}7, V^{3}8, V^{3}12, V^{3}14, V^{3}15, V^{3}18, V^{3}20, V^{3}21, V^{3}23, V^{3}25, V^{3}26
Mount Monster—Aa64, Aa103, Bb7, Ha36
Mount Painter—Aa106, Aa112, Ab93, Ac16, Sa4, Sb17, Sd2
Mount Remarkable—Ha84, Z4
Mount Whinham—Rc8
Mount Woodroffe, N^{1}d12, Rb4, Rc2
Muloowurtie—AB^{3}3
Murray Bridge—Aa144, Ab69, Ab74
Musgrave Range—Bc29, Bd24, Dc1, Ea2, Eb10, Nd12, Nd26, N^{1}d12, N^{1}d45, L^2-O^{2}4, Sb12, Sc1, Sc2, Ua1, Ua2, Uc3, Ug2, Ug3, Ug4, Ug10, Ug12, Ug15
Noarlunga Area—V^{3}8
Olary—Aa180
Ombagunda—Eb10
O. B. Flat—Z3
Oodnadatta—Ma8, W^{4}1, W^{4}2
Oraparinna Head Station—Na3
Palmer—Ab67, Ab72, Dd9, Sb18
Paney Bluff—Ha49, Hb18
Papineau Rocks—Hb46
Peterborough—V^{3}11
Pimba-acla—N^{1}c9
Poothlaringla—Vb12, Vc15
Port Augusta—Bc51
Port Elliot—Aa45, Aa171

Radium Hill—Aa186, O¹d14
Rapid Bay—X⁴8
Rosetta Head—Va57, Vb33, Vc52, Vc53, Vd69, V²a2, V²a3, V²a4, V²a5, V²a6, V²a7, V²a8, V²a9, V²a10
Sentinel Hill—Ua2, Ug12
Slape Gully—Vc32, V³21
South Black Hill—Ea1
South Para River—Gb7, Sa7, Ta1, Ta2, Tb5, Vd5, Vd8, X⁴3
Springfield Basin—Z7, Z8, Z11
Swanport—Ab69
Taljaritja—Ug15
Tanunda Creek—Aa134
Tapley's Hill—Xb13
Tarcoola—Aa152
Tea Tree Gully—V³5
Tempe Downs—Z1
The Bluff—Md3, Md4
The Frenchman—Vb2
The Pinnacles—Aa170
Thompson's Well—Aa128
Tintinara—Aa21, Ab17, Ab47
Tjatja—Ea2
Tolmer's Rock—Ab47
Tungkillo—Xb25, Xc10
Umberatana—Aa170
Wallaroo—Aa15, Aa52, Aa65
Weekeroo Hill—X⁴1, X⁴2, X⁴9, X⁴12
Wertigo Rock Hole—F1
Whyalla—Ab15, Da1, V³31
Williamstown—Vd1, X⁴3
Willunga—Xb12, Xb14
Woodside—N¹d56
Wooltana—Nb45, Nb106, Oc1
Yankalilla—V³1
Yorke Peninsula—AB³3

Tasmania

Andersons Creek—Md6, Md79, L²-O²10, Ra6, Ra9, Ra27, Rb5, Rc4, R³1
Arm River—Nc8
Avoca—Ob45
Bald Hill—R⁵2, R⁵5
Barrington—Nd9
Beaconsfield—Ga7, L²-O²10, Ra6, Ra9, Ra27, Rb5, Rc4, R³1
Bellerive—Nb79
Ben Lomond—Md9, Md17, Md27, Md51
Beulah—Na7, Nb8
Blue Tier—Aa13, Aa61, Ab39, Bd1, AB²10, AB²11, AB²12
Bridgewater—Mc10
Burnie—Lb6, Ob2, Ob13
Butlers Gorge—Md29, Md34, Md39, L³-O³8
Campbelltown—Ld7, L³-O³4, L³-O³9
Cardigan River—Vb11
Circular Head—Na2, Nb92, Ob23, Oc17, Oc41
Coles Bay—Be5
Collins Vale—Ld1, Md45
Comstock—Ha63
Corinna—Aa55, I¹4, N¹d61
Cradle Mountain—Md7, Md57
Crown Hill—Ie4
Deloraine—Od39, L³-O³16
Derby—Oc55
Detention River—Lc1
Dianas Lagoon—Dd4
Dundas—L²-O²75, L⁴-O⁴5
Elizabeth Town—Od39, L³-O³16
Eureka—L²-O²13
Forth River—Nc48, Nc50, N¹c8, O¹d25, R¹a11
Golconda—Be8, AB⁴7, AB⁴8, AB⁴9, Dc18, Ha53, H³3, I²32, J⁴3, V41, V⁴3
Grassy—Bd32, R¹a8, R¹b6, R¹c2, R¹c4
Gretna—Db11
Grooms Slip—Nb99
Gunnings Sugarloaf—Lc11, Ld6, Md5, Md32, Md33, Md46, Md49
Hampshire—Oc37
Hickmans Hill—Dc5
Hobart—Lb9, Na10, Oa1
Interview River—R¹a15
King Island—Bd32, Mb63, Mb67, Nb100, Nc25, Nd30, Od17, R¹a8, R¹b6, R¹c2, R¹c4, Vb42, Vc16, Vc55, Vd79, Vd81, Xb2, Xb16, Xb20, Xb22, Xb27, Xb28, Xb32, Xb33, Xc1, Xc2, Xc6, Xc7, Xc9
Lake Margaret Tram Line—Ic23
Launceston—Md48, Nc18
Lileah—Oc39
Llewellyn—Ob45
Longley—Ld5, Md6
Lorinna—Je1, Je2, Je3, Je4, Jf1, Jf2
Lyell Highway—LM¹d7
Lymington—Je7
Lynch Creek—Nc23, Nc29
Lynchford—I²26, Jc18, Mb14
Mathinna—L²-O²66
Mersey Bluff—Nc18
Mersey River—Nc30, Vb4, Vb6
Moina—Ha12
Montana Flat—L²-O²20
Mount Bischoff—Ha24, Ha48, Ha70, H²10, H²14, H²15, H²17, H²18, H²20, H²21, H²22, H²24, H²25, H²26, H²28, H²29, H²30, H²31, H²34, H⁴5, L²-O²79, L²-O²80, Rb2, R²25, R²26
Mount Jukes—Ha38
Mount Lyell—Ha63, I²24, I²25, I²26, I²28, Va30, Vb31, Vb40, Vc21, Vc42, Vc45, Vd2, Vd3, Vd38, V²c4, V⁴9, V⁴10, V⁴11

Mount Mary—Va35
Mount Nelson—Lc2, Lc5, Md15, Md35, Md36, Md37, Md38, Md50, Md52, Md55
Mount Nicholas Range—Md44
Mount Read—Hc20
Mount Sedgwick—Md1, Md41, Md42, Md53
Mount Wellington—Lc4, Lc7, Lc10, Lc12, Md2, Md8, Md19, Md28, Md40, Md43, Md54
North West Bay—Lb9
O'Brien's Hill—Db8, Lb4, Lb7, Lc3, Mc4, Mc5
One Tree Hill—Na10, Oa1
Ouse—Ld2, Mc25, Md71
Paloona Bridge—Jb4
Penguin—Nb99
Pieman River—Nc17, N^1b3, N^1c13, R^1a15
Port Arthur—Ld3
Port Cygnet—Ga11, Ga12, Ga14, Ga16, Jb2, Jd1, Jd2, Jd4, Je7, Je9, Jf3, Jf4, Kc1, Kc2, Lc8, Lc9, Nc3, LM^1a2, L^2-$O^2$84, L^2-$O^2$86
Port Davey—O^1d23
Preston—Nd19
Queenstown—Ic23, Ie4, Nc23, Nc29
Red Hill—Bc24, Bd3, Db12, Dc9, De3, De4, Lb3, Lc13
Remarkable Cave—Ld3
Renison Bell—Ra4, Ra10
Rocky River—$I^1$2
Rosebery—Ha37, Ha72, Ha74, Ha92, Hb23, Hb27, Je5
Rossarden—Aa9, Aa35, Aa39, Aa49, Aa53, Aa93, Aa157, $AB^2$7, F2, Ha5,
Saddle Creek—Je5
Sandy Bay—Na10, Oa1
Shannons Tier—Ob54, Oc57, Od33, Od48, Od49
Smithton—$I^2$36, $I^2$37, Ma21, Mc20, Nb102, Nd28, Ob1, Od37
Snug River—Lc6, Ld4, Md14, Md16, Md26
South Darwin—Aa54, Aa111, Aa135
St Leonards—Md18, L^3-$O^3$7, L^3-$O^3$11, L^3-$O^3$18
St Mary's Pass—He3
Tasmania—Ld9
Trial Harbour—Eb12
Upper Castra—Od13
Walters Marsh—Va25, Vc19
Waratah—Cb2, Jb12, Nc15, L^2-$O^2$21, L^2-$O^2$23, $R^5$1
West Queen River—Hb55
Whyte River—$I^1$2
Wilson River—$R^5$4
Wineglass Bay—Nc41
~~Zeehan—L^2-$O^2$13~~

Victoria

Aberfeldy—$H^2$12, Ic16, Ig7, Nb93, Nc20, Nc46, Ob14, Oc3, Od4, Qa1, Rb9
Alfredton—Mc18, Mc36, Mc37, Mc39, Nb29, Nc31, Nc46, Nc60, Nc67, Oc26, Oc58
Ararat—Ia12
Avenel—L^2-$O^2$28
Avoca—Vd39
Axedale—$W^4$4
Babbington Hill—Jc12
Bacchus Marsh—Oc54
Bairnsdale—Ab26
Baldwyn—Ob12
Ballan—Nb4
Ballarat—Aa16, Aa32, Aa73, Aa80, Aa141, Ab42, Ab50, Ab96, Ac26, Bc37, Be12, Mb52, Mb54, Mb56, Mb58, Mb59, Mb60, Mb64, Mc9, Mc12, Mc14, Mc18, Mc32, Mc33, Mc34, Mc36, Mc37, Mc39, Nb17, Nb24, Nb26, Nb29, Nb51, Nb59, Nb62, Nb68, Nb72, Nb75, Nb77, Nb78, Nb80, Nb83, Nb86, Nb96, Nb97, Nb105, Nc5, Nc6, Nc14, Nc22, Nc24, Nc28, Nc31, Nc34, Nc46, Nc49, Nc55, Nc56, Nc60 Nc67, Oc26, Oc58, L^5-$O^5$1, L^5-$O^5$7, L^5-$O^5$13, L^5-$O^5$15, L^5-$O^5$18
Balmoral—Aa124
Barfold—L^5-$O^5$2, L^5-$O^5$8
Barnawartha—Aa115
Barrabool Hills—L^5-$O^5$4, L^5-$O^5$14
Baynton—Mb40
Bayswater—Hc5
Beechwood—$AB^3$13
Belgrave—Bd20
Bellarine Peninsula—L^5-$O^5$27
Benalla—Vd67
Bendigo—Ob51, Oc11, Od10, Od45, L^5-$O^5$23 Vb25, Vb35, Vd25, Vd50, Vd59
Berrys Creek—Od14
Bethanga—Aa116, Aa147, Db1, Sd3, Tb9, Tc4, Ua8
Black Spur—Ic12
Blue Mountain—Jc13, Jd5
Broadmeadow—Bc22, $AB^4$4, Mb49, Ob19
Brocks Monument—Ja18, Nb34
Buchan—Ha1, Ig5, $I^2$33
Buffalo Mts.—Aa88
Bulla—Bd8
Bullengarook—Oc22, Va15, Va28, Va44, Vd24
Bullarto—Kb4, Kb5
Buninyong—Mb60
Burrumbeet—Aa80, Mb54, Nb62, Nb78
Callanans Hill—Nb71
Camels Hump—Ja20
Campaspe River—Mb23, Na8, Nb49, L^5-$O^5$2, L^5-$O^5$8

Camperdown—Mb47, Mc31, Nb16, Nb38, Nb87, Nb88, Oc15, Oc25
Cape Paterson—Oc50
Cape Woolamai—Aa139
Carapook—Jb5
Carlsruhe—Nc32
Casterton—Ab12, Jb11, Od38
Castlemaine—Ab86
Cathedral Range—Hb21
Chatsworth—Ig4, Jb10
Chiltern—Aa179
Chinton—Ob4
Clarendon—Nb77
Clifton Hill—Nb54
Coburg—Mc28, Mc38
Colac—Dg9, Nc13
Coleraine—Ja12, Jb5, Jb17, Jc11, J[4]1
Coliban Gorge—Nb31
Corryong—Ab13
Coynton—Mb40
Cudgewa—Aa26, Bc23, Hb2
Dandenong—Bc35, Bd34, Dc14, Hb44, He9, Ic22, Id2, Id10
Dargo—Ab3, Df12, Vc29, Vd48, V[4]5
Dargo High Plains—L[5]-O[5]9
Darlingford—Nc37
Daylesford—Nb57
Dergholm—Ab12
Diamond Creek—H[2]19, Nb108
Dog Rocks—Aa36, L[2]-O[2]99
Dolodrook—Ra26, Rb17, Rc5, Rc13, Rc15
Doncaster—Ob12
Dunolly—Vd36, Vd58, Vd78
Dromana—Ab21
Drouin—Ob8, Ob58
Dunkeld—Bc59, Bf2
Durham Lead—L[5]-O[5]6
Eildon—Ha17, Ha21, Ha22, Hc16, Hd14, Mb1
Elaine—Vd27, Vd63
Ensay—Ab6, Db17, Dd8, Va22, Va55, Vb18, Vd32, Vd35, Vd57, Vd60
Euroa—Od1
Evelyn—Hd12
Ferny Creek—Ic19
Footscray—Mc29, Nc45
Frenchmans Hill—Kb7
Gabo Island—Ab31
Gaffneys Creek—D[2]1
Geelong—Aa36, L[2]-O[2]99, L[5]-O[5]4, L[5]-O[5]14
Glen Lyon—Ma12
Glenmaggie—Va14, Va16
Gisborne—H[3]2, Mb30, Mb34, Nb14, Nb18, Nb32, Oc22, Va15, Va28
Grampian Mountains—Ic26
Greendale—Oc48
Greensborough—Nb108
Grenville Hill—Mb56
Gong Gong—Aa16, Ac26, Bc37, Mb59, Nb51, Nc14
Hanging Rock—Ja17
Harcourt—Aa168, Ac22
Hardies Hill—Nb96
Healesville—Hb8, Hb24, Hd3, Hd21
Heathcote—Id17, La12, L[2]-O[2]82, L[4]-O[4]5, Ya2, Ya3
Hesket—Bd14, Ib6, I[2]18
Hinnomunjie Morass—Aa143, Va40
Horsham—Z5
Howqua—La11, Nd31
Indigo Creek—Va42
Ingliston—Ab42
Jerralong North—L[3]-O[3]20
Jim Jim—Mb26, Mb32, Mc6
Kangaroo Gully—Od45, Vb25
Keilor—Nb21
Kilcunda—Nb27, Nb58, Nb107, Ob55, Oc29
Koetung—Bc8
Korkuperrimul Creek—Nd8
Kyneton—Mb61, Na6, L[5]-O[5]3
Lake Boga—Aa120
Lake Burrimbeat—Nb24
Lake Terang—Mb47
Lal Lal—Aa32
Lal Lal Falls—Mb58, Nb97
Lancefield—Ma5, Ma10, Nb6, Nb20, Nb33, Nb43, Oc4
Lauriston—Nb12, Nb22, Nb60, Ic3, Ic14
Learmouth—Aa141
Lilydale—Ac12, Ha71, Hb8, Hb38, Hc13, Hd12, Ib8, Ic5
Little Coliban River—Nd2
Lysterfield Hills—Hd2, Hd10
Maldon—AB[2]13
Malmsbury—Nb19, Nb31, Nb48, Nc9
Maryborough—H[3]4
Marysville—Aa99, Bc48, F4, F5, F7, F8, Hb26, Hc7, I[1]3, I[1]7, N[1]b1
Melbourne—Mb16, Mc28, Mc29, Mc38, Nb54, Nb85, Nc45, Nc53, Oc18, L[3]-O[3]10, L[3]-O[3]17
Melbourne Hill—Ma5,
Meredith—Mb10, Mb41
Mirboo North—Wa[2]14
Mitchells Gorge—Mb23, Na8, Nb49
Mitta Mitta—Vc33, Vc35
Monbulk—Hc6, He2
Morang (South)—Bb19, Bd12
Moroka Snow Plain—Nb25
Moorabool—Od21
Morwell—L[3]-O[3]20
Mount Adam—Jb17
Mount Alexander—Aa168

Mount Beckworth—Ab50
Mount Blowhard—Nc5
Mount Bullengarook—H[3]2
Mount Burrowya—Ha18
Mount Bute—Aa73
Mount Callender—Nb26
Mount Cole—Ab96
Mount Dandenong—Hc29, Hd16, Hd19, Hd20, Qb5
Mount Doran—Vd27, Vd63
Mount Dryden—Ic26
Mount Gellibrand—Bc22, AB[3]10
Mount Gisborne—Mb34
Mount Gorong—Nb70
Mount Hollowback—Nb83
Mount Juliet—Ic12
Mount Leinster—Aa44, Bd17, Jc6
Mount Lookout—Nb93, Nc20
Mount Macedon—Ab40, Bd14, Db9, Ha105, Hd1, Ia10, Ib10, Ic10, Ic11, Ja11, Ja17, Ja18, Ja20, Jb9, Jb15, Jc8, Jc10, Jf8, J[5]2, Ma11, Ma22, Mb32, Mc6, Mc7, Mc16, Nb13, Nb34, Nb39, Ob56, Oc6, Oc7, Oc38, Oc43
Mount Mercer—Nb105, L[5]-O[5]1, L[5]-O[5]7, L[5]-O[5]13, L[5]-O[5]15, L[5]-O[5]18
Mount Mittamatite—Ab13
Mount Noorat—Nc10
Mount Pisgah—Nb59
Mount Porndon—Mc26
Mount Rowan—Nb72
Mount Stavely—Db18, Id17
Mount Tara—Hb13, Hb31
Mount Tarrangower—V[5]2
Mount Taylor—Ab26
Mount Terang—Oc25
Mount Timbertop—Ra19
Mount Towong—J[4]4
Mount Useful—Vb20, Vb21
Mount Wagra—Aa109, F15, Vc48, Vd46
Mount Warrenheip—Nb86
Mount Wellington—Ha2, Ha3, Nb25, Od18, L[4]-O[4]3, Ra15, Rb17, Rc5, Rc13, Rc15
Mount Williams—Bd31
Mount Wilson—Kb4, Kb5
Moyston—Ie8
Narbethong—Ha30, Hd5
Navigation Creek—De19, Ha94
Newlyn—Nb65
Noorongong—Vd30
Nowa Nowa—Ha93, Ic6, Vb5
Noyang—Aa156, De6, De19, Ha76, Ha81, Ha94, Vc28, Vc31
Omeo—Aa69, Aa121, Aa143, Ba2, Ba4, Bb24, Bd30, Da3, Id8, Ja13, Ja15, Jb8, Ka4, Va24, Va26, Va40, Vb10, Vc23, Vc40, Vd45
Packenham—Dc13
Pattens Hill—Mb19, Nb19, Nb48
Percydale—Vd39
Pentridge—Nc53
Philip Island—L[5]-O[5]5, L[5]-O[5]17, L[5]-O[5]22, L[5]-O[5]25, L[5]-O[5]26, L[5]-O[5]28, L[5]-O[5]29
Piggbreet—Mb64
Pine Mountain Creek—Aa26
Pirron Yallock—Nb74, Nc13
Pitfield—Xb23
Pitfield Plains—L[2]-O[2]67
Poowong—Nb61
Portland Peninsula—L[5]-O[5]11
Port Arlington—L[5]-O[5]24, L[5]-O[5]27
Preston Vale—AB[5]3
Queenstown—Df11
Royal Park—Oc18, L[3]-O[3]10, L[3]-O[3]17
Sassafras—Hd4, Hd8, Ic8
Seymour—L[2]-O[2]28
Sherbrook Forest—Ic19
Smeaton—Mc12, Mc34, Nb17, Nb80, Nc56
Spring Hill—Ic17
Stawell—Ac32, Bd31, Hb52, Hb53, H[3]6, H[3]8
Stoney Rises—Nc13
Strathbogie Range—Hc10
Sunbury—Mb42, Nb46
Sydenham—Mb16, Nb85
Taggerty—Ha57, Ig1
Tallangalook—Bc1
Tallangatta—Aa107, Bc8, Vd46
Tambo Crossing—Aa156, De6
Tanjil—Mb36
Tara Range—Jb7
Taradale—Ib9, Nb40
Tarilta—L[2]-O[2]24
Tarnagulla—Ab4
Terang—Mc31, Nc10
The Basin—Hc5, Hd4, Hd8, Ib13
Tintaldra—Hc15, Ig8
Toolern Area—Nb91, Oc16
Toolern Creek—Nb91
Toombullup—Oc46
Towanga—Aa94, Vd53
Trawool—Bc5
Trentham—Jc13, Jd5, Nb15, Nb41, Nb63
Trentham Falls—Nb37
Tullamarine—Ob19
Turritable Falls—Jb15
Tylden (Par. of)—Jc14
Tylden Falls—Nd2
Tynong—Ab98
Upwey—Ic9
Violet Town—Hc10

Walhalla—Db3, D²10, D²12, Eb13, I²11, I²16, I²17, I²20, I²21, I²22, Mc2, Mc3, Nc4, Nc12, Vb43
Walhalla—Woods Pt. Area—D²1
Walwa—Aa56, Ha26
Waratah Bay—L³-O³5
Warburton—Db5, Ha88, Hd13, Ib3
Warrendyte—Vc38
Warrnambool—Mc15
Watts Creek—Ab6
Wedderburn—Va36, Vb8, Vc6, Vc7, Vc8, Vc9, Vc11, Vc12, Vc17, Vc18, Vc20, Vc22, Vc25, Vd9, Vd13, Vd19, Vd54, Vd55, Vd62
Wellington Valley—Nb104
Werribee River—Nb70
Woodend—Je10, Mb26, Nb13, Nb39, Ob56, Oc6
Woods Point—Dg13, D²8, D²11, D²13, V²d2
Yackandandah Creek—Bc27
Yalook Creek—Vd4
Yendon—Mb52
Yering (Par. of)—Hb41

Western Australia

Albany—Ab16, Bc30, Ua4, Vc49
Armadale—F35, Gb5, N¹a1, N¹b2, L²-O²106, Tc5, Vb16, Vb23, Vd51, V³17
Ashburton Goldfield—Mc22, Vd18
Ashburton River—W²b15, W²23
Avon—Df1
Balfour Downs—H³9
Bamboo Creek—H²2, L²-O²36
Bangemall—H³5, L²-O²55, Wa10, Xc4
Bannister—Ab34
Barjar (Dadja) Hill—Pa4
Beeragoona—Ab68
Bickley Brook Reservoir—N¹d36, L²-O²96, L²-O²100
Billeranga Hills—La5, Wa2
Binduli—Hc33, H²5, H²32, Ia11, I¹6, Va4, Yb9
Bonnie Vale—Aa176, Db15, LM¹d37
Boodalyerri—AB²9
Boulder—Hb57, H²6, H²7, H⁴7, Ic21, If6, I²5, I²14, I²27, LM¹b1, LM¹d23, LM¹d33, N¹d42, N¹d43, O¹b1, O¹c3, O¹c4, O¹d4, O¹d19, L²-O²35, L²-O²43, L²-O²49, L²-O²61, L²-O²65, L²-O²72, Va48, Vb32
Bow Bells—Vc13
Bowgada—La5, LM¹d26, Uc4
Box Soak—LM¹d34, Ra22
Boya—Ab77, L²-O²98, L²-O²105
Braeside—Ha51
Broome Bay—LM¹a3, L²-O²27, W²a7
Buldania Rocks—Bc53
Bulgine Trg. Station—H³1, W⁴5
Bullabulling Rocks—Ab88
Bullfinch—LM¹d25, N¹a3, Xb19
Bunbury—Nd15
Bunker Bay—N¹d55
Burbanks—Mc40
Burracoppin—Mc23, Md74, O¹d26
Canning Basin—V⁴1, V⁴2, V⁴4
Canning Dam—Ab66, F34
Cape Gosselin—Mc27
Cape Levêque—W²a12
Cape Naturaliste—N¹d55
Cape Riche—N¹c10, Sb7, Ua9, Ug8, Ug17
Cardup—F31, Va39, V³10
Cavanagh Range—Eb6, Md70
Charnley River—Mb13, L²-O²91
Chittering Valley—Vd77
Clackline—R¹a3, V³19
Cockatoo Island—W²b1
Comet Vale—Ra20, Ra29
Coodardy—AB¹2
Coolgardie—Aa57, Aa150, Aa176, Ab41, Ab43, Ab88, Ad3, Db15, Hc27, I²3, Mc40, Md69, Md75, Md77, Md78, Nd14, LM¹d37, N¹d32, N¹d62, L²-O²111, L²-O²116, Ra5, Ra33, R²11, R²12, Sb20, Tb7, Vc37, V²c3, V²c6, Wa8
Corrigin—Bc39
Cue—Bf3, Dd10, Eb11, F11, Hb48, H¹6, Mc11, LM¹c10, N¹d50, N¹d51, N¹d64, N¹d66, L²-O²113
Cullalla—Sb16, Va34
Dadja (Barjar) Hill—Pa4
Dangin—R¹a5, R¹a9, Sa6, Ug14
Darling Range—L²-O²93, L²-O²98, L²-O²105, L³-O³6
Darlington—L²-O²92, L²-O²93
Denmark—Sb5
Dilling—Bc39, Df1
Dingo Creek—Sc4
Donnelly River—Md73
Edjudina—AB¹3, H²3, W²b2, W²b3, W²b4, W²b7, W²b12, W²b14
Egina—Vd56
Esperance—Ab45
Eulaminna Siding—L²-O²2, L²-O²7, L²-O²90, Ra24
Eyre Range—Wa1
Fraser Range—LM¹c3, N¹d14, N¹d15, N¹d54, N¹d57, Sa1, Sb2, Ua7, Ug9, Ug11, Wa27
Gabanintha—L³-O³12
Galena—L²-O²109, Sa9, Sb3, Ua5, Ua6, W²d2
Gascoyne Goldfield—Wa10
Geraldine—Nc61
Glen Forrest—LM¹d28
Gibraltar—Aa150, LM¹d32, Ug5, Ug6
Gilgarna—Bc60

Gillingarra—Vd61
Gnarlbine Rock—Ab41
Golden Ridge—L²-O²26
Gosnells—Aa149
Greystones—Bc41
Hall's Creek Track—Lb5
Hamersley Range—W²b8, Xc5, Yc1
Hamersley Siding—Df6
Hannan's Lake—Rb14
Hardman Range—Lb5
Harvey Weir—LM¹c5, N¹d44
Helena River—Bc41
Hell's Gate—LM¹d12
Hill C—P²1
Hill P—Pa2
Hill's Cone—Pa1
Hogan's Find—V²d1, W²b5
Irregully Creek—Nc51, Xc3
Isdell River—LM¹b3, L²-O²87
Island Eureka—W²b16, W²b17
Israelite Bay—Uc1
Jackson Trig Station—H³1
Jerramungup—Bc52, Dc3
Jibberding—Bd5
Jitarning—Db6
Kalgoorlie—AB³9, Ha102, Ha103, Hb57 Hc19, He8, H²6, H²7, H²23, H³7, H⁴7, Ic21, If6, I²1, I²4, I²5, I²6, I²7, I²8, I²14, I²15, I²19, I²23, I²27, Md65, Nd21, LM¹b1, LM¹c4, LM¹d13, LM¹d23, LM¹d31, LM¹d33, N¹d25, N¹d40, N¹d42, N¹d43, N¹d65, O¹b1, O¹c3, O¹c4, O¹d4, O¹d19, O¹d20, L²-O²31, L²-O²32, L²-O²33, L²-O²35, L²-O²38, L²-O²40, L²-O²41, L²-O²43, L²-O²44, L²-O²45, L²-O²49, L²-O²50, L²-O²51, L²-O²53, L²-O²54, L²-O²56, L²-O²57, L²-O²60, L²-O²61, L²-O²62, L²-O²63, L²-O²64, L²-O²65, L²-O²68, L²-O²69, L²-O²70, L²-O²72, L²-O²110, L²-O²117, Rb6, Rb14, Rb15, R²13, R²14, R²15, R²17, R²19, R²21, Va6, Va33, Va48, Vb32, Vc58, Xb5, Xb18, Ya4
Kanowna—AB³1, AB³2, AB³11, Ha97, L²-O²73
Kimberley (East)—Mb17, Mb21, Mb31, Mc13, Mc19
Kimberley (North)—Md10
Kimberley (West)—Pa1, Pa2, Pa3, Pa4, Pa5, Pa6, Pa7, Pa8, Pa9, Pa11, P²1, P²3
Kimberley Division—Mb46, Nc27, LM¹b3, L²-O²25, L²-O²87, L²-O²91, Va47
Kookynie—Ab65, Bd35
Koolyanobbing Range—W²b24
Lake Goongarrie—Ra29
Lake Grace—Sc4
Lake Miranda—L²-O²112
Larkinville—Vc37, Wa8
Laverton—LM¹b4
Lawnswood—F9
Leonora—AB¹1, LM¹c11, L²-O²37, L³-O³1, R¹a7, R¹a10
Loch Marvel—L²-O²39, R¹a1
Lockyer's Gap—I²31
Mahogany Creek—Ab22
Malcolm—N¹d27, N¹d52, LM¹d29
Mamilu Hill—Pa3, Pa5, Pa7
Marble Bar—Hb49
Marda—Hc11, R²16, R²20
Mathinna—L²-O²60
Meekatharra—Ca1, Ca4, Cb1, Ha80, H²8, H²16, N¹a2, L²-O²46, L²-O²71, Rb12, R²9, R²18, R²30, Vd52
Minari—W²a7
Moolyella—Ca3
Morawa—Bc57, Nd13, N¹d29, Wa7
Mosquito Creek—Da2
Mount Anketell—L²-O²88
Mount Catherine Range—Hc27
Mount Charlotte—L²-O²64, L²-O²70, L²-O²110
Mount Davies—R¹a2
Mount Edgar—Ie1
Mount Edgerton—Vc34
Mount Edith—W²b23
Mount Gytha—Pa8
Mount Hale—W²b22
Mount Hassell—L²-O²104
Mount Hilda—Nb76
Mount Holmes—Nc11
Mount Hunt—Rb15, Ya4
Mount Jackson—W⁴5
Mount Jackson Range—N¹d38
Mount Kenneth—Va32, Va41
Mount Leonora—Va9, Vc1
Mount Lyell—Nc27
Mount Magnet—Vc10
Mount Malcolm—Nd25
Mount Margaret Gold Field—Nd25
Mount Mason—W²b25
Mount Monger—Ie14, I²9, I²10, I²30
Mount Mortimer—H¹2
Mount Mulgine—Ab7
Mount Narryer—W²b19
Mount Norcote—Ab101
Mount North—Pa6, Pa9, Pa11
Mount Palmer—R¹a4
Mount Pleasant—Uc1
Mount Ragged—Wa9, Wa11
Mount Ridley—Aa79
Mount Singleton—LM¹d27, LM¹d30
Mount Stuart—W²b15
Mount Taylor—R²6, L⁴-O⁴1
Mount Walton—Vb1
Mundaring—Bc40

Muradup—Md76
Murchison Goldfield—Va5, Va21, W²b16, W²b17, W²b19, W²b22
Murchison River—Nc61, L²-O²109
Nannine—W²b10
Napier—LM¹a3, L²-O²27
Niagara—Aa59, Aa167, AB²4, H¹1, H²13, LM¹d29, N¹d27, Sb1, Uf1
Ninghanboun Hills—Ra8, R¹b1
Noonkanbah—Pa2
Nornalup—Tc2
Norseman—Aa3, Eb4, Eb9, Ha78, Ha79, Hc23, Nd27, Od6, Od35, LM¹a1, LM¹d36, N¹d1, N¹d28, Rb1, Rc14, W²b18
Northampton—L²-O³89, Sa9, Sb3, Ua5, Ua6, W²d2
North Pole—LM¹b5
Nullagine—LM¹c8, V⁴1, V⁴2, V⁴4
Nyabing—Ug16
Ora Banda—Eb7, I²13, I²29, I²34, I²35, N¹d9, N¹d58, L²-O²59, Rb10
Pallinup River—LM¹d39, Ug7
Parkerville—L³-O³6
Peak Hill—L³-O³3
Peeawah—N¹d53
Perth—Ab75
Phillips River—L²-O²83
Pilbara Goldfield—Ca3, Da2, AB²9, H¹5, H²2, I²12, L²-O²36, L²-O²88, Vb3
Point Hillier—Bb4, L²-O²58, Nb9
Point Irby—Nd6, Td5, Ug13
Point Nuyts—Tc2
Poona—Nd1
Port Hedland—Ra22
Prince Regent River—Mb46
Quinns—Va5, Va21, Wa18, Wa25
Rabbit Proof Fence (No. 1)—Aa6, N¹d67
Ravensthorpe—Ab103, Bd29, H⁴4, L²-O²1, Xc8
Rocky Creek—LM¹d12
Russell Range—Sa2, Sb8, Wa9, Wa11
Sandstone—O¹d3, L²-O²22, L²-O²114, L²-O²115, L³-O³2, Ya6
Sherlock River—I²12
Simon Hill—Sa1, Ua7, Ug11, Wa27
Soanesville—Ra23
Somerville—LM¹d31
Southern Cross—Aa37, Ab18, I¹1, LM¹c9, LM¹d2, LM¹d15, LM¹d22, N¹d37, O¹d1, R¹b3, R¹b8, R²27, R²28, Vc4, Vc5, Wa36, W²b6, W²b9, W²b11, W²b13, X²4
Station Peak—L²-O²47
Stirling Range—Dd13, L²-O²104, Wa13
Swan River District—LM¹d28
Synnott Creek—Mb13, L²-O²25
Synnott Tableland—Va47
Tampi—Ha83, H²1
Tenterden—Vd29
Thompkinson Range—R¹a2
Toodyay—F22, F25, LM¹c1, L²-O²102, Rb11, R¹a6, R¹a12, R¹a13, R¹a14, Sb19, Ub2, Ue1, Xb30
Uaroo—Vd18
Udandarra Creek—L²-O²89
Violet Range—L³-O²112
Warburton Range—Hb22, Nb76
Warrawoona—He5, H²4, LM¹c6, LM¹d35, O¹b4, O¹d21, O¹d22, O¹d24, L²-O²34, L²-O²48, L²-O²52, L²-O²77, R²22, R²24, Vc2, Vc13
Warriedar—Ya7
West Cape Howe—Nd7
Westonia—D²6, LM¹d4, Rb7, Rc9, Td3, Va12, Wa21
Whim Creek—Vd7
Whim Well—H¹5, Vb3
Wiluna—L²-O²42, Xb3
Wolgidee Hills—P²3
Wyemandoo Hill—N¹d67
Wyndham—Ma6
Wyralinu—Sb2
Yalgoo Goldfield—Va32, Va41, Ya7
Yaloginda—Ca4
Yampi Island—W²b20, W²b21
Yampi Sound—W²b1
Yampire Gorge—W²b8, Yc1
Yandahoo Hills—Va37, Vc3
Yarra Yarra—R²1
Yarri—N¹d62
Yellari Rocks—Tb7
Yilgarn—H³1, L²-O²3, L²-O³39, R¹a4, R²6
Yilgarn Goldfield—L²-O²78, Vb7, W⁴5
Youlingoorina—LM¹c2
Youanmi—Aa1, Va50, Wa22

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