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RECORDS

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NOTES ON AUSTRALIAN OCCURRENCES OF CERAMIC CLAYS.

By

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NEW SOUTH WALES.

Clergate (Mullion Creek) 10 miles north of Orange. "Low in plasticity; firing porperties satisfactory. Utilised in Sydney potteries in manufacture of whiteware". (1928)

Analysis	Per cent
H_2O at 100°C	0.84
H_2O above 100°C	3.58
SiO_2	66.95
Al_2O_3	20.20
Fe_2O_3	1.50
FeO	0.27
CaO	0.60
MgO	0.75
Na_2O	0.20
K_2O	2.56
MnO	0.02
TiO_2	0.63
P_2O_5	0.05
SO_3	trace
Cl	0.01
CO_2	0.02
BaO	0.06

No information on reserves.

Dunbible - 4 miles south of Murwillumbah. "Residual clay resulting from alteration of porphyry dyke about 20 feet wide. Clay remarkably white, used mainly for the manufacture of cold water paint. Said to be suitable for inclusion in whiteware body mixture". (1928)

Analysis	Per cent.
H_2O at 100°C	0.90
H_2O above 100°C	4.64
SiO_2	70.64
Al_2O_3	20.14
Fe_2O_3	0.80
CaO	0.24
MgO	0.10
Na_2O	1.13
K_2O	1.22

Marrangaroo (Lidsdale) 7 miles northwest of Lithgow. "Clay occurring as a bed 1 foot to 2 feet 6 inches thick at the base of No. 3 coal seam in the upper coal measures. Clay lacking in plasticity, very hard and strong when air dried. Becomes white and stell-hard on firing. Used in potteries when a vitrified body is required". (1928)

Analysis	Per cent
H_2O at 100°C	3.04
H_2O 100°C	4.54
SiO_2	67.84
Al_2O_3	16.86
Fe_2O_3	2.70
FeO	0.27
CaO	0.52
MgO	0.75

Marrangaroo.

Analysis (Cont.)	Per cent.
Na_2O	0.38
K_2O	3.06
TiO_2	0.10

Mudgee (Gulgong District) - A number of deposits of clay derived from alteration of silurian slates occur in the district. Low in plasticity, vitrify at a relatively low temperature, and have a good firing range between vitrification and the commencement of bloating. Extensively used in Sydney potteries.

Near Puggoon clays also associated with granite; are plastic; have a good body feel. (1928)

Analysis	Per cent.
H_2O at 100°C	0.34
H_2O above 100°C	3.82
SiO_2	70.18
Al_2O_3	19.16
Fe_2O_3	0.70
FeO	0.18
CaO	0.18
MgO	0.74
Na_2O	0.21
K_2O	4.12
TiO_2	0.60
P_2O_5	trace.

ARDM 1905 p. 161

Mudgee (Puggoon).

Analysis	Per cent.
SiO_2	56.76
Al_2O_3	28.75
Fe_2O_3	0.75
TiO_2	0.70

Sydney District - High-grade clays in the Sydney district are obtained from three sources, namely (a) Wianamatta shale, (b) Hawkesbury sandstone, (c) Dykes intrusive into (a) and (b).

(a) Wianamatta Shale Formation. Relatively small amounts of ceramic clays have been won from weathered shale beds, chiefly at Heathcote, Loftus and Engadine.

(b) Hawkesbury Sandstone Formation. Lenticular shale beds within 200 to 300 feet of the top of this formation, are an important source of supply of ball and semi-ball clays. Principal deposits are at Asquith, Brookvale, French's Forest and Hornsby. Brookvale deposit has been the main source of high-grade clay in New South Wales.

(c) Intrusive Dykes. Plastic clays containing noteworthy percentage of titanium occur in dykes intrusive into the Triassic rocks of the Sydney district. Exact details of occurrence are not stated, but they have been used in Sydney potteries for a long time.

Ceramic clays are also known to occur at the following localities -

Pambula.

Analysis	Per cent.
SiO_2	(72.80 (free and combined) (11.64
Al_2O_3	9.16

Pambula

Analysis (Cont.)	Per cent.
Fe_2O_3	1.05
FeO	0.14
MgO	0.18
CaO	0.16
Na_2O	0.05
K_2O	2.41
H_2O (+)	1.56
H_2O (-)	0.30
TiO_2	0.24
P_2O_5	0.06
Cl (as NaCl)	0.24

q. A.R.D.M. 1916 p. 2-3

Marulan

Analysis	Per cent.
H_2O at 100°C	0.42
H_2O above 100°C	5.23
SiO_2	74.80
Al_2O_3	16.77
Fe_2O_3	0.50
FeO	0.18
CaO	0.18
MgO	0.18
Na_2O	0.34
K_2O	1.06
MnO	0.64
P_2O_5	abs.
SO_3	abs.
Organic matter	trace

TiO?

a. Rpt. D.M. 1905 p. 161

Molong

Analysis	Per cent
H_2O at 100°C	0.34
H_2O above 100°C	8.77
SiO_2	66.42
Al_2O_3	21.95
Fe_2O_3	1.10
CaO	0.20
MgO	trace
Na_2O	0.08
K_2O	0.04
MnO	0.03
TiO_2	0.85
P_2O_5	trace.

Mount Werong

Analysis	Per cent.
SiO_2	71.4
Al_2O_3	20.0 (including any TiO_2 and P_2O_5 present.)

Ulladulla

Analysis	Per cent.
H_2O at 100°C	1.17
Combined water	13.88
SiO_2	43.45
Fe_2O_3	.40
FeO	.18
Al_2O_3	39.21
CaO	.23
MgO	.02
K_2O	.17
Na_2O	.25
P_2O_5	.06
V_2O_3	.03
TiO_2	1.05
NaCl	.06

A.R.D.M. 1903 p. 142

Needs clay conveyance

Other Localities - Dubbo, Goulburn, Rockley (Main Ridge) and Walcha. No analyses are available for these localities.

The following production of kaolin (including filler clays) is recorded for 1946 -

District	tons	£
Barraba	13	13
Blayney	8	24
Gulgong	13761	13869
Gunning	6	18
Mudgee	492	618
Oberon	10	14
Orange	253	507
Pambula	150	200
Parkes	26	99
Tumbarumba	2	2
Urana	6300	6029
	21021	21393

This does not include 935,160 tons valued at £170,482 of brick and pottery clays produced in Sydney District.

QUEENSLAND.

Pottery clay or kaolin has been recorded from the following localities. No analyses have been given.

Kobe Vale Colliery, Dinmore.

Maly Creek - 10 miles south-south-west of Kingaroy.

Nanango Gold and Mineral field.

VICTORIA.

Pottery clay is mined and marketed by various firms. Ball clay is obtained from the following localities.-

Rowsley

Analysis	Per cent.
Ignition loss	6.9
SiO_2	63.5
Al_2O_3	28.5
Fe_2O_3	.3
CaO	.9
MgO	.83
TiO_2	.89
K_2O	1.29
Na_2O	.06

Axedale

Analysis	Per cent.
Ignition loss	7.5
SiO_2	61.0
Al_2O_3	31.1
Fe_2O_3	1.28
CaO	.6
MgO	.81
TiO_2	1.57
K_2O	1.52
Na_2O	-

Campbellfield

Analysis	Per cent.
Ignition loss	5.7
SiO_2	68.8

Campbellfield

Analysis (Cont.)	Per cent.
Al_2O_3	23.4
Fe_2O_3	1.96
CaO	.69
MgO	.5
TiO_2	-

China clay is obtained from the following localities -

Gordon

Analysis	Per cent.
Ignition loss	13.2
SiO_2	48.4
Al_2O_3	37.4
Fe_2O_3	.01-.04
CaO	.4
MgO	.05
TiO_2	.4
MnO_2	.002

Lal Lal

Analysis	Per cent.
Ignition loss	12.8
SiO_2	49.0
Al_2O_3	37.9
Fe_2O_3	.05-.2
CaO	.4
MgO	.3
TiO_2	.64
MnO_2	.002

Other localities from which kaolin has been recorded are Briagolong, 17 miles north of Sale, Ballan, Ballarat District, Bendigo, Berringa, Bacchus Marsh, Heathcote, Lilydale, Linton - 20 miles west-south-west of Ballarat, Stawell.

SOUTH AUSTRALIA.

Most of the South Australian occurrences are described in Jack, R.C. "Clay and Cement in South Australia", Geological Survey of South Australia, Bulletin No. 12.

Most of the deposits of pottery clay occur within a few miles of Adelaide.

It might be possible to obtain a copy of Bulletin No. 12 by application to the South Australian Mines Department.

TASMANIA.

Many deposits of clay are known to exist, but no investigation of these has been made. Domestic pottery is manufactured in Launceston from local clay.

Ball clay has been recorded from Beaconsfield, Forcet and Chinaclay, from George's Bay, Hagley, Kingston, St. Helens, the Upper Derwent Valley and Zeehan. Most of these are said to be good quality clays, suitable for crockery.

WESTERN AUSTRALIA.

The State is said to be abundantly supplied with every type of clay. No details of analyses are available but white clay and ball clay have been recorded from -

Baker's Hill - 30 miles east-north-east of Perth (considered in 1919 to be suitable for chinaware).

Bolgart - 62 miles north-east of Perth.

Denmark - 30 miles west of Albany.

Donnybrook - 115 miles south of Perth.

Glen Forrest - 17 miles east of Perth.

Goomalling - 75 miles east-north-east of Perth.

Gosnells - 13 miles south-east of Perth.

Jimperding - 37 miles north-east of Perth.

Indee Station

Morawa West - 180 miles north of Perth.

Mount Helena - 25 miles east of Perth.

Mount Kokeby - 70 miles east-south-east of Perth.

Wagin - 130 miles south-east of Perth (semi refractory clay).

Westonia - 35 miles west of Southern Cross.

The Western Australian Department of Mines would no doubt supply further information on any of these deposits on request.

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