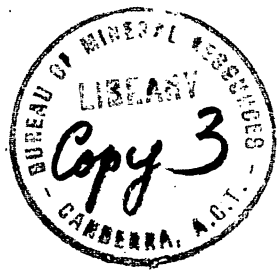
DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

REPORT No. 158

Bibliography of the Sydney Basin (to 31 December 1969)

BY

S.J. MAYNE AND M.J. RAINE



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BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS
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16. Southern and southwestern Sydney Basin.
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Thus a researcher interested, for example, in geophysical aspects of the southern part of the Basin would note all references having numbers 9, 16 (9 for geophysics and 16 for southern part of Basin).

INTRODUCTION

This Bibliography was originally planned to list works relevant to the occurrence of hydrocarbons in the Sydney Basin. It soon became clear that 'relevance' could be interpreted so broadly that the most useful objective was a bibliography that would comprise as many geological works as possible. This task was begun by Dr R. Pitt (formerly of BMR) and continued by several other officers of the Bureau.

The writing of annotations, being in itself a major undertaking, has not been completed, but it was felt that it was better to issue the Bibliography now (1971) rather than wait an indefinite time. The Bibliography was closed at the end of 1969, though a few more recent papers known to the authors have been included. No claim is made that it is complete, but reasonable confidence is felt that no major work has been omitted and that most minor works have been included.

The Bibliography is divided into two sections, published and unpublished works. The unpublished works include Records and some Reports of BMR university theses, reports for private companies, especially oil companies, and sundry manuscripts in the New South Wales Department of Mines and the Joint Coal Board. Many confidential company reports, chiefly concerned with geophysics, have also been written, but these have been excluded because they are not accessible.

In order to facilitate the use of the Bibliography the subject matter has been divided into nineteen topics and a number given to each. Appropriate numbers have been printed in the left-hand margin against each reference.

The topics and numbers are:

PUBLISHED INFORMATION

5, 14 ABBOTT, T.K., 1880 - On wells in Liverpool Plains. J. Roy. Soc. N.S.W., 14, 281-92.

10 ADAMS, R., 1875 - Coal in New South Wales. Min. J., 45, 647.

10 ADAMS, R., 1875 - Iron and coal in New South Wales. Min. J., 45, 647.

1, 3, 16 ADAMSON, C.L., 1956 - The geology of the Nattai Dome near Mittagong. Dep. Min. N.S.W. tech. Rep. 14, 80. In the centre of a small dome of diameter 2 miles, about 600 ft of Triassic sandstone (Hawkesbury) overlie 250 ft or more of Upper (Illawarra) Coal Measures which are split about 100 ft above the base by a Tertiary syenite sill. This sill and postulated plugs are given as the cause of the doming. Dips on the Hawkesbury are up to 23° on the flanks of the dome but become horizontal within a short distance.

6, 16 ADAMSON, C.L., 1958 - Bundanoon Creek dam site. Dep. Min. N.S.W. tech. Rep. 6, 80. There are two joint systems in Hawkesbury Sandstone at 040° & 325°.

6, 14 ADAMSON, C.L., 1959 - Hornsby 'Blue Metal' quarry. Dep. Min. N.S.W. tech. Rep. 7, 141. This is the site of a vent filled with material resulting from volcanic activity. As the fragments include coal, this rock extends down to the Permian beds.

6, 14 ADAMSON, C.L., 1960 - Northmead metal sand quarry. Dep. Min. N.S.W. tech. Rep. 1960, 8. This records prismatization of Hawkesbury Sandstone adjacent to a basaltic dyke, north of Northmead, county of Cumberland. Also in Morrison, 1904 (Burtons Quarry).

6, 15 ADAMSON, C.L., 1960 - Valley Heights volcanic breccia deposits. Dep. Min. N.S.W. tech. Rep. 1960, 8, 79-80. The extent is 1 x ½ mile.

6, 14 ADAMSON, C.L., 1960 - Volcanic breccia near Woy Woy. Dep. Min. N.S.W. tech. Rep. 1960, 8. Ref. Raggatt H.G., 1927, Dep. Mines. Ann. Rep.

2, 15 ADAMSON, C.L., 1962 - The Green Scrub Basalt deposit near Mountain Lagoon. Geol. Surv. N.S.W. Rep. 1963, 7. This covers an area of 20 acres. The Kurrajong Fault lies on the eastern side of the basalt which is on the steep eastern side of the valley of Lagoon Creek but does not reach the bottom.

6, 15 ADAMSON, C.L., 1963 - Construction materials and resources of the City of the Blue Mountains. Dep. Min. N.S.W. tech. Rep. 8, 55-7.

6, 16 ADAMSON, C.L., 1964 - Geological reports on quarry sites at Walcha, Pokolbin, Nowra and Warren - Suggested quarry sites in the Walcha district. Geol. Surv. N.S.W. Rep. 18, 5-8. The area is composed of Palaeozoic slate, phyllite, schist, and greywacke, together with some areas of Tertiary basalt overlying minor Tertiary lacustrine sediments. Several basalt localities and one greywacke locality are suggested for further investigation.

6, 16 ADAMSON, C.L., 1964 - Geological reports on quarry sites at Walcha, Pokolbin, Nowra and Warren - Geological examination of parts of Warren Shire. Geol. Surv. N.S.W Rep. 18, 9. A quarry is operated at Mt Foster, a granophyre hill 36 miles north-northwest of Warren. This rock is abrasive to crusher parts and an alternative less abrasive rock was desired. Adjacent outcrops are similar to Mt Foster and the closest different rock is a coarse-grained granite about 20 miles to the north-northwest.

6, 16 ADAMSON, C.L., 1964 - Geological reports on quarry sites at Walcha, Pokolbin, Nowra and Warren. Proposed quarry site at Pokolbin. Geol. Surv. N.S.W. Rep. 18, 11, 12. A site probably suitable for an aggregate quarry exists in Portion 63, Parish of Pokolbin. Carboniferous rhyolite and rhyolite breccia crop out on a prominent hill - much of the rock has a laminate structure which may produce an inferior-shaped aggregate.

6, 13 ADAMSON, C.L., 1964 - Short notes on various building stone deposits in N.S.W. - Sandstone for building stone near Muswellbrook. Geol. Surv. N.S.W. Rep. 19, 19-20. Two deposits of Permian sandstone were examined. A deposit in Quarry Reserve, Parish of Savoy, occurs in a bed about 50 ft thick. Another deposit occurs in Portion 10, Parish of Rowan as an apparently thin bed which is broken by frequent strong jointing.

6, 14 ADAMSON, C.L., 1966 - The crushed stone and gravel industry in the County of Cumberland N.S.W. Contracting and Construction Equipment, Sydney, 20 (4), 66-79.

2, 6, 14 ADAMSON, C.L., and FLACK, D.S., 1962 - Geological report on sources of igneous rock in the Shire of Blacktown. Geol. Surv. N.S.W. Rep. 12, 3-5. Known igneous rock occurrences in Blacktown Shire were assessed as sources of aggregate and road material. A search was made for new and unreported deposits without success. Small areas of old river gravels in the western part of the shire are discussed briefly.

4, 6, 16 ADAMSON, C.L., and FRENDA, G.A., 1964 - Geological reports on quarry sites at Walcha, Pokolbin, Nowra and Warren. Geol. Surv. N.S W. Rep. 18, 13-7. The Berry Siltstone as quarried near Mt Coolangatta weathers rapidly under atomospheric conditions, but is apparently stable under sea water. The siltstone contains up to 50% clay minerals. Silt-size quartz and feldspar constitute the remainder of the rock. It is postulated that the cation adjustment of clay minerals to the marine environment will be rapid and the effects of loss of silica by solution are negligible. As all clay minerals present are of the non-expanding lattice type the effects of shrinkage and bloating on rock stability will be of minor importance; hence, provided the material quarried is fresh and relatively unfractured, it should be quite suitable for use as rip-rap.

2, 14 ADAMSON, C.L., and TRUEMAN, N.A., 1960 - Notes on some recently discovered volcanic necks between Hornsby and the Hawkesbury River. Dep. Min. N.S.W. tech. Rep. 1960, 8. Four new necks and two dykes and two formerly reported necks are described.

6 ADAMSON, C.L., WALLIS, G.R., and FRENDA, G.A., 1964 - Short notes on various building stone deposits in N.S.W. Geol. Surv. N.S.W. Rep. 19.

2, 10 ADRIAN, J., 1967 - Some characteristics of the Greta Coal Measures with particular reference to the Balmoral area. Adv. Study Syd. Bas., 2nd Symp., 29-30. Sundry thicknesses are given, with remarks on splits and intersplit sediments. Extensive sills probably antedate the faulting.

1, 10, 14 ADRIAN, J., 1967 - Characteristics of the Newcastle Coal Measures and Narrabeen Group in the Tuggerah area, N.S.W. Adv. Study Syd. Bas., 2nd Symp., 30-1. This is the most southerly part of the Newcastle field yet explored systematically. The sequence, with thickness variations, from the Gosford drive to the Fassifern Seam is given. Several units are notably persistent: the Great Northern Seam, the Awaba Tuff Member of the Eleevana Formation, and even the Chain Valley Seam. The measures thin from 1 130 ft as Swansea to 870 ft at The Entrance.

9, 16 AGOSTINI, A., 1967 - A magnetometer survey of the Southern Coalfield N.S.W. Adv. Study Syd. Bas., 2nd Symp., 25-6. Some of the anomalies are known to be caused by basic igneous intrusions and some can be related to known structures. No anomalies were recorded over areas of known microsyenite intrusions.

10, 16 AINGE, R.F., BROWN, H.R., and WRIGHT, E.A., 1958 - The Southern Coalfield, N.S.W. and its potential development. Proc. Aust. Inst. Min. Metall., 188, 77-110. The authors identify the workable coal seams, their

distribution in relation to quality and economic occurrence, and relate their analytical characteristics to industrial use. The development of established collieries is also discussed with regard to increased production demand. The potential of the coal resources of the Southern District and their ultimate development are discussed.

8, 16 ALBANI, A.D., CARTER, A.N., and JOHNSON, B.D., 1971 - A study of the bedrock in Jervis Bay, N.S.W. Adv. Study Syd. Bas., 6th Symp., Newcastle, 13. A drowned stream system and two generations of sediments are present.

8, 14 ALBANI, A.D., and JOHNSON, B.D., 1971 - Pleistocene geomorphology of Broken Bay, N.S.W. Adv. Study Syd. Bas., 6th Symp., Newcastle, 14. Two generations of sediments fill former valleys.

7 AMOS, A.J., CAMPBELL, K.S.W., and GOLDING, R., 1960 - Australosutura gen. nov. (Trilobita) from the Carboniferous of Australia and Argentina. Palaeontology, 3, 227-36, pl. 39-40.

4 ANDERSON, A.J., LOUGHNAN, F.C., and GILES, C.N., 1958 - Bentonite and Fuller's Earth deposits of New South Wales. II Bonding properties. Proc. Aust. Inst. Min. Metall., 190, 105-11. Bentonites and active earths from N.S.W., previously analysed with respect to occurrence, mineralogy, and physical properties, are evaluated for use as bonding agents in quartzose moulding sands.

4, 16 ANDERSON, C., 1903 - On a mineral allied to montmorillonite from Exeter, New South Wales. Rec. Aust. Mus., 5, 67-8.

4 ANDERSON, C., 1905 - Mineralogical notes. Rec. Aust. Mus., 6(11), 89.

1, 10, 16 ANDERSON, W., 1887 - Report on the diamond drill bore near Mittagong. Dep. Min. N.S.W. Ann. Rep., 1887, 159-60. A 2-inch seam of bituminous coal was struck at 650 ft. Sections and analyses of coal from a further 47 feet of drilling are given.

1, 7, 15 ANDERSON, W., 1889-90 - On the stratigraphical position of the fish and plant bearing beds, on the Talbragar River, Cassilis district, N.S.W. Geol. Surv. N.S.W. Rec. 1889-90, 1, 137-9. The shales containing fossil fish occur near the Talbragar River, 20 miles north of Home Rule, between Mudgee and Gulgong.

10, 16 ANDERSON, W., 1892 - Report on the Bendithera silver fields and Currowan and Bimberamala gold fields. Dep. Min. N.S.W. Ann. Rep. 1891, 252-4. Gold occurs in reefs in limestone (Bendithera and Myambene); at Currowan and Bimberamala (12 miles north of Nelligen) it is in reefs in Silurian slates.

1, 16 ANDERSON, W., 1893 - Progress report of work in 1892. Dep. Min. N.S.W. Ann. Rep. 1892, 121. Devonian sediments rest unconformably on porphyry at the head of Shoalhaven River.

10, 16 ANDREWS, E.C., 1901 - Report on the Yalwal gold-field. Miner. Resour. N.S.W., 9.

8, 14, 15 ANDREWS, E.C., 1903 - Notes on the geography of the Blue Mountains and Sydney district. Proc. Linn. Soc. N.S.W., 28, 786-825. An account of differential erosion and the formation of the plateaux and canyons bordering the Sydney Basin. An attempt is also made to give the age of the formations. Subsidence and uplift nearer the coast form the drowned valleys, lagoons and tied islands which are typical of the Sydney coastal region.

0, 8, 13 ANDERSON, E.C., 1903 - An outline of the Tertiary history of New England. Geol. Surv. N.S.W. Rec. 7, 157. This is a discursive account of the physiography of the area.

8, 14 ANDREWS, E.C., 1912 - Beach formations at Botany Bay. J. Proc. Roy. Soc. N.S.W., 44, 420-80.

6 ANDREWS, E.C., 1914 - Report on proposed dam sites at Bickham, Woodlands and Woolombi. Dep. Min. N.S.W. Ann. Rep. 1914, 196. The topography and geology of the Bickham and Woolombi sites only are discussed, the Woodlands site having been described by J.E. Carne (Ann. Rep. 1907, 160).

8, 14 ANDREWS, E.C., 1916 - Shoreline studies at Botany Bay. J. Proc. Roy. Soc. N.S.W., 50, 165-76, xxxvi-xl. A geomorphological account of beach features observed over several years, with diagrams and photographs.

7 ANDREWS, E.C., 1916 - The geological history of the Australian flowering plants. Amer. J. Sci., 42 (4th Ser.), 171-232.

2, 6, 14 ANDREWS, E.C., 1923 - Volcanic breccia from Hornsby. Dep. Min. N.S.W. Ann. Rep. 1923, 80. The occurrence of the rock is briefly described. General examination indicates its possible rise in concrete work.

6, 14 ANDREWS, E.C., 1923 - Pressure tunnel, Potts Hill to Waterloo. Dep. Min. N.S.W. Ann. Rep. 1923, 80. The problems of tunnelling through a dyke and providing support for the tunnel in Wianamatta Shale are briefly considered.

10 ANDREWS, E.C., 1926 - The coal resources of New South Wales. Proc. Aust. Inst. Min. Metall., 63, 96.

10 ANDREWS, E.C., 1928 - Mineral industry of New South Wales. Dep. Min. N.S.W. Ann. Rep. 1928.

10 ANDREWS, E.C., 1928 - Coal. Miner. Indust. N.S.W., 1928.

3, 8 ANDREWS, E.C., 1934 - The origin of modern mountain ranges with special reference to the Eastern Australian highlands. J. Proc. Roy. Soc. N.S.W., 67, 251-350.

0, 3 ANDREWS, E.C., 1938 - The structural history of Australia during the Palaeozoic (the stabilization of the continent). J. Proc. Roy. Soc. N.S.W., 71(2), 118-87.

17 ANDREWS, E.C., 1942 - The heroic period of geological work in Australia. J. Proc. Roy. Soc. N.S.W., 76 (2), 96-128. In Part IV of this paper the following topics are discussed: the age of the coal measures in the Sydney Basin and the underlying 'Lower Carboniferous' of the Hunter Valley; Permian and Carboniferous glacials in the Hunter Valley; the physiography of the Sydney district; and the structure of the Permian of the Sydney area.

3, 7, 10, 13 ANDREWS, E.C., and DUN, W.S., 1925 - Oil boring in the Singleton district. Dep. Min. N.S.W. Ann. Rep. 1925, 103. In the Belford, Loder, and Sedgefield Domes 'there is nothing in the nature of evidence to justify a belief in the existence of commercial supplies of oil or gas in the domes under consideration.' Dun, in an appendix, chooses the Chaenomya Beds, the Fenestella Beds, and possibly the Brachiopod Bed 800 ft below the Muree as likely source rocks.

1, 15 ANDREWS, E.C., and MORISSON, M., - The 'Lithgow' coal seam. Dep. Min. N.S.W. Ann. Rep. 1952, 102. The Marangeroo Sandstone (with pebbles) is considered a shoreline feature. The Lithgow seam commences as a mere feather-edge near the Marangeroo shoreline.

1, 8, 13 ANDREWS, P.B., 1949 - A contribution to the stratigraphy and physiography of the Gloucester district. J. Proc. Roy. Soc. N.S.W., 83, 1. A generalized section of the Carboniferous on the western side of the Stroud-Gloucester Trough is given. The Permian succession is assumed to belong to the Upper Coal Measures, and appears to be separated from the Carboniferous volcanics by an erosional disconformity.

7 ANDREWS, S.M., GARDINER, B.G., MILES, R.S., and PATTERSON, C., 1967 - 'Pisces' in the 'Fossil record'. Quart. J. geol. Soc. Lond., 632-83.

9 ANON., 1892 - Report of committee on seismological phenomena in Australia. Aust. Ass. Adv. Sci., 4, 200-29.

0, 14 ANON., 1932 - Notes on the geology and physiography of the Sydney region. Aust. Ass. Adv. Sci., 1932. Handbook for New South Wales, 57-82.

0 ANON., 1952 - The geology of New South Wales. Aust. Ass. Adv. Sci., 1952 Handbook. About 10 pages are given to the period Carboniferous to Triassic, providing a handy broad outline.

10 ANON., 1960 - Summary of oil research activities in Australia and New Guinea to June 1959. Bur. Miner. Resour. Aust. Rep. 41A.

2, 14 ANON., 1960 - Volcanic breccia from Minchinbury, New South Wales. Sci. ind. Res. Org., Melb., mineragr. Inv. Rep. 821. An amygdaloidal lava is described, probably basic, the amygdales consisting of chlorite, analcite and carbonate. Rock fragments are mostly altered volcanics, with some sedimentaries including coal.

1, 4 ANON., 1965 - Summary of data and results. Drilling operations in the Sydney Basin, New South Wales 1958-1962. Bur. Miner. Resour. Aust. Petrol. Search Subs. Act Publ. 12. Deals with Mulgoa, Mount Hunter, Stockyard mountain and Kurrajong Heights Wells.

0, 13 ANON., 1967 - The Hunter Valley - a 20-page supplement. Australian Financial Review, No. 1 573, Friday, February 24, 1967.

10 ANON., 1967 - Siderite and pyrite in two Australian coals. Sci. ind. Res. Org., Melb., Coal Res., 31, 2-4.

8, 10 ANON., 1968 - Some local aspects of sedimentation within the Sydney Basin. J. Univ. N.S.W. Min. geol. Soc., 5, 50-6. The numerous authors deal with 1. Avalon Beach-Bilgola Beach area. 2. Shoreline south of Maroubra Beach. 3. North Era Beach-Royal National Park.

0 ANON., 1969 - Decisions of the Standing Committee on coalfield geology of New South Wales. Geol. Surv. N.S.W., 1969.

7 ARBER, E.A.N., 1905 - On Sporangium - like organs of Glossopteris browniana Brongn. Quart. J. geol. Soc. Lond., 61, 324-48. Sporangium-like bodies are possibly microsporangia. The specimens came from the Newcastle region and were collected in the mid-19th century.

7, 13 ARMSTRONG, J., 1969 - The Martiniacean species occurring at Glendon, New South Wales, the type locality of Notospirifer darwin (Morris). J. Proc. Roy. Soc. N.S.W., 101, 197-204.

7 ARMSTRONG, J.D., DEAR, J.F., and RUNNEGAR, B., 1967 - Permian ammonoids from eastern Australia. J. geol. Soc. Aust., 14(1), 87-97. Known ammonoid occurrences in Queensland and New South Wales are listed and new species of Uraloceras from Homevale and a specimen of Neocrimites from Frenchmans Creek described.

2, 4, 13 AUROSSEAU, M., 1915 - Igneous rocks and tuffs from the Carboniferous of New South Wales. Proc. Roy. Soc. N.S.W., 40, 294. From Martins Creek, near Paterson pyroxene-amphibole-mica andesite; from Eelah, hypersthene andesite, pyroxene andesite, pyroxene-amphibole microandesite, biotite dacite, oligoclase-biotite rhyolite, tuffaceous porphyritic rhyolite, and porphyroid tuff; from Hudsons Peak porphyritic pitchstone and feldspathic andesite; from Knockfin, porphyritic rhyolite.

10, 15 AUSTRALIAN PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS, 1945 - Report with minutes of evidence relating to the Baerami shale oil proposal. Government Printer, Canberra.

5 AUSTRALIAN WATER RESOURCES COUNCIL, 1968 - Research into the hydrogeology of the Sydney Basin. Water Resources Newsletter, 11, Dec. 1968. A short progress report on iron in water in the sandstones and shales of the Triassic. See also Vol. 11 of Records of Geol. Surv. N.S.W.

10 BADDELEY, J.M., 1927 - Notes on the utilization of the coal resources of New South Wales. Dep. Min. N.S.W.

1, 4, 16 BAKER, G., 1956 - Pellet claystone from the Southern Coalfield, New South Wales. Aust. J. Sci., 18(4), 126-7. A distinctive pellet claystone 1 to 6 feet thick and sufficiently extensive to serve as a marker horizon below the Hawkesbury Sandstone in the Southern Coalfield is used in mapping by geologists of BHP Pty Ltd, who regard it as a transition bed at the top of the middle Narrabeen.

6 BAKER, R.T., 1915 - Building and ornamental stones of Australia. Government Printer, Sydney. (Tech. Museum Sydney). Descriptions and illustrations of building stones cut from igneous, metamorphic, and sedimentary rocks. The latter include sandstones from Frogshole, Newcastle, Ravensfield, and Sydney. Appended are results of crushing and heat tests on some of these sandstones.

7, 14 BAKER, R.T., 1931 - On a specimen of fossil timber from the Sydney Harbour Colliery. J. Proc. Roy. Soc. N.S.W., 65, 96. The specimen is clearly 'of Gymnospermous origin'. Its nearest affinities are with the genus Callitris, and closely resembles Antarcticoxylon priestleyi Seward. It was found in 1898 in a band of hard greenish micaceous sandstone which extended from 2 219 to 2 322 feet.

1, 7 BALME, B.E., 1969 - The Permian-Triassic boundary in Australia. Geol. Soc. Aust. spec. Pub. 2, 99-112. This deals largely with palynological problems. Permian-Triassic marine and non-marine successions are considered for key areas beyond Australia. Within Australia the Perth, Canning, Carnarvon, Sydney, Bowen, and Tasmania Basins are dealt with. The most appropriate horizon for the lower limit of the Triassic in eastern Australia appears to be the base of Unit Tr-16 of Evans. '...the Scythian stage in the Sydney Basin is represented by the upper part of the Scarborough Sandstone, the Stanwell Park Claystone and the Bulgo Sandstone to the south of Sydney, and by the upper part of the Munmorah Conglomerate in the northern area', i.e. the Permian-Triassic boundary lies about halfway through the Scarborough Sandstone and the Munmorah Conglomerate.

4, 7, 16 BALME, B.E., and BROOKS, J.D., 1953 - Kaolinite petrifactions in a New South Wales Permian coal seam. Aust. J. Sci., 16(2), 65. Small lenticular patches of honey-yellow material contain excellently preserved plant tissue (Dadoxylon) in pure kaolinite. They are associated with small siderite concretions at a number of levels in the Tongara Seam, Southern Coalfield, N.S.W. If the comparison with 'tonstein' is valid, the kaolinite is formed in coal swamps by precipitation from alumina-rich solutions.

7 BALME, B.E., and HENNELLY, J.P.F., 1955 - Bisaccate sporomorphs from Australian Permian coals. Aust. J. Bot., 3(1), 89-98.

7 BALME, B.E., and HENNELLY, J.P.F., 1956 - Monalete, monocolpate and alete sporomorphs from Australian Permian sediments. Aust. J. Bot., 4(1), 54-67.

7 BALME, B.E., and HENNELLY, J.P.F., 1956 - Trilete sporomorphs from Australian Permian sediments. Aust. J. Bot., 4(3), 240-60.

7 BANKS, M.R., et al., 1954 - Contributions to the correlation and fauna of the Permian in Australia and New Zealand. J. Geol. Soc. Aust., 2, 83-107.

7 BANKS, M.R., CAMPBELL, K.S.W., DICKINS, J.M., and DE JERSEY, N.J., 1970 - Correlation charts for the Carboniferous, Permian, Triassic and Jurassic Systems in Australia. Rev. Assoc. geol. argent.

5, 11 BARSDELL, L., 1946 - Drifting sand provides groundwater supply in Australia. Water Works Eng., 99, 1 442-3.

0, 13 BASDEN, Helen, 1969 - Greta coal measures. J. geol. Soc. Aust., 16(1), 323-9.

4, 16 BAYLISS, P., 1964 - Some properties of alunogen from N.S.W. Amer. Miner., 49, 1 763-6. A mineralogical account of material from Joadja, beneath a calcareous sandstone within the Shoalhaven series.

4 BAYLISS, P., LOUGHNAN, F.C., and STANDARD, J.C., 1965 - Dickite in the Hawkesbury Sandstone of the Sydney Basin, Australia. Amer. Miner., 50(3 & 4), 418-26. Dickite is widespread in the Triassic Hawkesbury Sandstone of the Sydney Basin. It is associated with kaolinite, illite, and mixed layered minerals and is concentrated in the greater than 2μfraction. It appears as rouleaux and vermicular crystals which yield hexagonal plates on dispersion. The absence of any evidence of hydro-thermal activity indicates that the dickite is authigenic, although the mechanism of formation is still conjectural.

1, 16 BEMBRICK, C.S., and HOLMES, G.G., 1971 - Preliminary report on DM Callala DDH 1. Quart. Notes, Geol. Surv. N.S.W., 4, 1-3. The interpretation of the log is: Wandrawandian 0-165', Currumbene Dolerite - 483', Snapper Point - 905', Pebbly Beach - 1 585', Clyde/ Yarrunga Coal Measures - 1 710', Tallong Conglomerate - 1 870', T.D. in metamorphosed sediments.

1, 10, 16 BENNETT, A.J.R., SHIBAOKA, M., and SMYTH, Michelle, 1971 - Sedimentary structure of the Bulli Seam in the northern part of the Southern Coalfield. Adv. Study Syd. Bas., 6th Symp., Newcastle, 16. Many coal seams could have been deposited during rhythmic changes in environment.

2, 4, 14 BENSON, W.N., 1911 - The volcanic necks of Hornsby and Dundas near Sydney. J. Proc. Roy. Soc. N.S.W., 44, 495-555. The basaltic volcanic necks at Hornsby and Dundas contain inclusions of more or less

basic plutonic rock, both in the neck and in the surrounding breccia. Field relationships of the bodies are outlined and plutonic inclusions described - anorthosite, gabbro, pyroxenite, peridotite, etc. The eruptive and included rocks probably had a common magma source.

2, 4, 13 BENSON, W.N., 1912 - Preliminary notes on the nepheline-bearing rocks of the Liverpool and Mt Royal Ranges. J. Proc. Roy. Soc. N.S.W., 1911, 45, 176-86. Included in this petrological account is a mention of 'Tertiary basalt (at Mt Warrawalong 30 miles WSW of Newcastle) penetrated by dykes of coarse-grained olivine dolerite'.

2 BENSON, W.N., 1913 - Geology of the Great Serpentine Belt, New South Wales. Proc. Linn. Soc. N.S.W. 38, 491. This paper deals with the Tamworth region, but mention is made of 'slatey siliceous rocks, reddish banded cherts, and red jaspers' and 'quartz veins'.

4 BENSON, W.N., 1914 - Petrological notes on various New South Wales rocks. Proc. Linn. Soc. N.S.W., 39(2), 447-53. The petrology of igneous rocks is described from Murwillumbah (granophyre sill - outside Sydney Basin), Gerringong (metamorphic inclusions in a basalt dyke), and Dundas (metamorphic granite inclusions in volcanic necks). The inclusions are not cognate and are thought to have originated from the basement below the Permo-Carboniferous rocks of the Sydney Basin.

0, 4 BENSON, W.N., 1915 - The geology and petrology of the Great Serpentine Belt of New South Wales. Part IV: The dolerites, spilites and keratophyres of the Nundle district. Proc. Linn. Soc. N.S.W., 40, 121-73. The author discusses the use of the term spilite, and its geological occurrence. Petrographic characteristics with notes on other intrusions and structures, especially pillow structures, are given.

0 BENSON, W.N., 1915 - Geology and petrology of the Great Serpentine Belt. Part V: The geology of the Tamworth district. Proc. Linn. Soc. N.S.W., 40, 540-624. General geology and tectonics: Eastern Series (Lower Devonian); Tamworth Series (Middle Devonian); Barraba Series (Upper Devonian); tectonics and thickness of the Devonian System; conditions of the formation of radiolarian rocks; serpentines etc.; granites etc; Tertiary basalt; Terrace gravels; stream and superficial drift and alluvium; petrology summary bibliography.

0, 17 BENSON, W.N., 1917 - The geology and petrology of the Great Serpentine Belt. Part VI: A general account of the geology and physiography of the western slopes of New England. Proc. Linn. Soc. N.S.W.,

42, 223-45 and 250-81. An historical introduction is followed by notes on stratigraphy and tectonics, regional geology, and physiography of the area.

0, 7 BENSON, W.N., 1917 - The geology and petrology of the Great Serpentine Belt of New South Wales. Part VI: Appendix - The Attunga district. Proc. Linn. Soc. N.S.W., 42, 693-700. The geology of the area and the extent and size of the serpentine outcrops are discussed and the fossils obtained from the Attunga Limestones are mentioned.

0, 8 BENSON, W.N., 1918 - The geology and petrology of the Great Serpentine Belt. Part VII: The geology of the Loomberah district and a portion of the Goonoo Goonoo Estate. Proc. Linn. Soc. N.S.W., 43, 320-60, 363-84. Physiography; comparison of stratigraphical succession in Tamworth, Loomberah, and Nundle districts; Devonian sedimentary and igneous rocks; igneous rocks of the western series; general summary of the Devonian stratigraphical succession; petrology; bibliography.

0 BENSON, W.N., 1918 - Geology and petrology of the Great Serpentine Belt of New South Wales. Part VIII. Proc. Linn. Soc. N.S.W., 43, 593-8. The extension of the Great Serpentine Belt from the Nundle district to the coast to Port Macquarie is described.

7, 13 BENSON, W.N., 1921 - Census and index of the Lower Carboniferous Burindi fauna of New South Wales. Geol. Surv. N.S.W. Rec., 10, 12.

1 BENSON, W.N., 1923 - Palaeozoic and Mesozoic seas in Australasia. Trans. N.Z. Inst., 54, 1-62.

2, 4 BENSON, W.N., 1926 - Tectonic conditions accompanying the intrusion of basic and ultrabasic igneous rocks. Mem. nat. Acad. Sci. Wash., 19(1), 37-40.

0, 16, 17 BERRY, A., 1825 - Geology of the south coast of New South Wales. Geographic Memoirs on N.S.W., p. 246, published by Barron Field (1825). Berry gave the first record of the existence of pre-Permo-Carboniferous strata on the south coast, and described briefly the rocks outcropping in the vicinity of Batemans Bay and the newly discovered Clyde River. This was the first geological paper prepared in Australia and was read before the Philosophical Society of Australasia.

4, 10, 15 BERTRAND, C., 1900 - Description d'un échantillou de kérosene shale de Megalong Valley, N.S.W. Proc. Linn. Soc. N.S.W., 25, 637-49. Describes the nature of the material rather than the geology (in French).

10 BINNEY, E.W., 1871 - On bituminous minerals from New South Wales. Trans. Manch. geol. Soc., 10, 63.

3, 13 BLAYDEN, I.D., 1968 - Jointing in the Newcastle Coal Measures of the Macquarie Syncline, N.S.W Adv. Study Syd. Bas., 3rd Symp., 43-4. The syncline between the Lochinvar Anticline and the coast is described. Subsidiary structures include dykes and faults. Northwesterly striking joint sets are the most persistent, and five structural domains are defined from localized variations in the strike of the joints. The joint sets in some domains are ascribed to the Post-Triassic. In domain 1 there is a close relationship between faults/dykes and joints.

3, 13 BLAYDEN, I.D., 1971 - Bedding plane faults and associated structures in the coal measure rocks of the Newcastle and East Maitland Coalfields. Adv. Study Syd. Bas., 6th Symp., Newcastle, 20. Two systems are recognized.

2, 9 BOESEN, R. IRVING, E., and ROBERTSON, W.A., 1961 - The palaeomagnetism of some igneous rock bodies in New South Wales. J. Proc. Roy. Soc. N.S.W., 94, 227-32. The directions and intensities of magnetization of rock specimens from four igneous bodies were measured: the Prospect Intrusion, the Gibraltar Syenite, Gingenbullen Dolerite, and some Tertiary basalts. The first three at least are probably Mesozoic, the authors are not specific about the basalts.

2, 4, 13 BOESEN, R.S., and RITCHIE, A.S., 1971 - The structure and petrology of Warrawolong. Adv. Study Syd. Bas., 6th Symp., Newcastle, 11-3. Warrawolong is a complex plug of dolerites and theralites of alkali olivine basalt parentage.

9, 14 BOLT, B.A., 1962 - A seismic experiment using quarry blasts near Sydney. Aust. J. Phys., 15, 293-300.

7, 13 BOOKER, F.W., 1929 - Preliminary note on new subgenera of Productus and Strophalosia from the Branxton district. J. Proc. Roy. Soc. N.S.W., 63, 24-32. Wyndhamia dalwoodensis, W. valida, and Branxtonia typica n. spp. are described. The two new subgenera occur on the same horizon 2 250 feet below the Muree Beds.

7 BOOKER, F.W., 1930 - A review of some of the Permo-Carboniferous Productidae of New South Wales with a tentative reclassification. J. Proc. Roy. Soc. N.S.W., 64, 65-77. Specimens hitherto called Productus brachythaerus Sow, are reclassified into species of the new genus Terrakea. They are Terrakea brachythaera T. leve (sic), T. fragile (sic), and T. elongata.

2, 10, 15 BOOKER, F.W., 1938 - The Cherry Tree Hill alluvial deep lead. Dep. Min. N.S.W. Ann. Rep. 1938, 119-23. Tertiary basalt poured out on the top of the plateau, flowed over the edges of the Triassic cliffs (wherein Hawkesbury and Narrabeen Stages cannot be differentiated), and buried stream courses. The stream gravels contain gold from the older Palaeozoic rocks. Cross sections, geological map, and descriptions of eleven workings are given.

10, 16 BOOKER, F.W., 1941 - Coal seam at Brimstone Gully, Burragorang Valley. Geol. Surv. N.S.W. geol. Rep. 1939-45, 91. The seam is exposed in an old tunnel on M.L. 10, Parish Werriberrie, County of Camden, on the eastern side of Brimstone Gully, 6 miles from the junction with the Wollondilly River, and is the top or Bulli Seam. A section and a description of the seam are given.

10 BOOKER, F.W., 1943 - Coal seams on Portion 13, Parish Cox, County of Cook. Geol. Surv. N.S.W. geol. Rep. 1939-45, 88. This records a section of the coal measures and results of sample analyses from the Huon Colliery.

10 BOOKER, F.W., 1943 - Renown Extended Colliery. Geol. Surv. N.S.W. geol. Rep. 1939-45, 89-90.

10, 14 BOOKER, F.W., 1943 - Coal seams near Jamberoo, Portions 78 & 79, Parish Jamberoo, County Camden. Geol. Surv. N.S.W. geol. Rep. 1939-45, 91. Sections and analyses of the coal seams are given.

10, 13 BOOKER, F.W., 1944 - Open cut mining in the Muswellbrook district. Geol. Surv. N.S.W. geol. Rep. 1939-45, 99-104. Analyses and descriptions of seams in the vicinity of the following areas - Muswellbrook Common, Kayinga Colliery, Ramrod Creek (Portion 6, 7, and 14), Muscle Creek (Portion 1), and Saltwater Creek (Portion 89). The area is 2½ miles by ½ mile on the NW flank of the Muswellbrook Dome. There are several maps, and sections of some 8 boreholes.

10, 13 BOOKER, F.W., 1946 - Boring for coal in the Muswellbrook State Coal Mine Reserve. Dep. Min. N.S.W. Ann. Rep. 1946, 75-6. Outlines the geology of the area and gives sections of Muswellbrook No. 1 and No. 2 bores and Fletchers bore.

1, 10, 13 BOOKER, F.W., 1947 - Open cut coal mining at Liddell. Dep. Min. N.S.W. Ann. Rep. 1947, 66-70. The seam is believed to be referable to the Tomago Stage. Seams in these parts are generally lenticular. Sections of 16 shallow bores and analyses are given.

10, 13 BOOKER, F.W., 1947 - Open cut coal mining at Ravensworth and the behaviour of Lithgow Seam in Tyldesley Colliery. Dep. Min. N.S.W. Ann. Rep. 1947, 70-3.

10, 13 BOOKER, F.W., 1947 - Coal bearing areas in the Cessnock - Greta district. Dep. Min. N.S.W. Ann. Rep. 1947, 73-6. Geological details of a number of colliery holdings.

10, 13 BOOKER, F.W., 1948 - Ravensworth State Coal Mine Reserve, proposed open cut. Dep. Min. N.S.W. Ann. Rep. 1948, 66-9. Sections of 5 shallow bores, and some analyses.

1, 13 BOOKER, F.W., 1949 - Progress report on the geology of the Cranky Corner coal basin. Dep. Min. N.S.W. Ann. Rep. 1949, 64-6 (section and map opposite p. 136). This is 18 miles north of Branxton and consists of a Permian outlier in Carboniferous rocks. The Upper Marine, Greta, and Lower Marine beds are present. The Upper, Middle, and Lower Seams of coal have been recognized in the Greta. (See also Walkom, 1913, and Osborne, 1949).

10, 13 BOOKER, F.W., 1950 - Coal at Martindale Creek, near Denman. Dep. Min. N.S.W. Ann. Rep. 1950, 71. A brief note on the nature of the Greigs Creek Seam, its area of outcrop, its dip and area of optimum development.

10, 13 BOOKER, F.W., 1950 - Progress report on the investigation of possible open-cut coal mining areas at Liddell. Dep. Min. N.S.W. Ann. Rep. 1950, 66-9. Small sections, cross-sections, and analyses. The Liddell Seam and possibly Barretts Seam are potential sources of open-cut coal.

4, 13 BOOKER, F.W., 1950 - Progress report on alunite deposits from Buladelah. Geol. Surv. N.S.W. geol. Rep. 1939-45, 75. 'It is tentatively considered that these deposits may have been formed by K-bearing silicates, the constituents of the original trachyandesite which have been altered by unknown processes. The lava may come from the Kuttung.'

1, 13 BOOKER, F.W., 1954 - Correlation of the coal seams of the Greta Coal Measures in the Central and Lower Hunter River Valley. Aust. N.Z. Ass. Adv. Sci., Canberra (MSS). This deals briefly with the succession of the Upper and Lower Marine Series with brief note on seam correlation at Muswellbrook, Belford, Loder, and Cranky Corner.

0, 13 BOOKER, F.W., 1954 - The sedimentary environment of the coal measures of the central Hunter River Valley. Aust. N.Z. Ass. Adv. Sci., Canberra (MSS). The general geology of the Singleton-Muswellbrook Coalfield is described.

4, 14 BOOKER, F.W., 1955 - Dolomite deposit at Rooty Hill. Dep. Min. N.S.W. Ann. Rep. for 1947, 70.

1, 13 BOOKER, F.W., 1957 - The concept of cyclic sedimentation in Pennsylvanian of the United States and its application to the Permian of N.S.W. Aust. Inst. Min. Metall., Conf. 1957.

1, 3, 13 BOOKER, F.W., 1960 - Studies in Permian sedimentation in the Sydney Basin. Dep. Min. N.S.W. tech. Rep. 5, 10-62.

1, 13 BOOKER, F.W., and ADAMSON, C.L., 1951 - Correlation of coal seams at Ravensworth and Liddell. Dep. Min. N.S.W. Ann. Rep. 1951, 71.

1, 13 BOOKER, F.W., BURSILL, C., and McELROY, C.T., 1953 - Sedimentation of the Tomago Coal Measures in the Singleton-Muswellbrook Coalfield; an introductory study. J. Proc. Roy. Soc. N.S.W., 87(4), 137-51. Four cycles of sedimentation are recognized in the 1 400 to 1 500 ft Rixs Creek Formation (cf. Veevers, 1960) which, together with the basal 200 foot Bayswater Formation (cf. Reynolds, 1956), make up the Tomago Coal Measures. Each cycle is made up of rudites, arenite, and lutites, followed by coal seams. The succession is thought indicative of instability then quiescence.

10, 13 BOOKER, F.W., and McKENZIE, P.J., 1953 - The Ravensworth State Coal Mine Reserve. Dep. Min. N.S.W. tech. Rep. 1, 13-20.

2, 9, 16 BOOTH, E.H., 1935 - A detailed regional magnetic survey as an aid to geological interpretation. J. Proc. Roy. Soc. N.S.W., 69(1), 35-60. The survey was made to assist interpretation of the syenite intrusion forming Mt Gibraltar near Mittagong. However, the surrounding areas included such a complexity of magnetic formations that a detailed survey of the entire district would be required before deciding whether the intrusion is a volcanic plug or a subhorizontal sheet (although it does appear to be a laccolith-like body). The syenite intrudes Wianamatta Shales and Hawkesbury Sandstone.

1, 16 BOWMAN, H.N., 1970 - Palaeoenvironment and revised nomenclature of the upper Shoalhaven Group and the Illawarra Coal Measures in the Wollongong-Kiama area, New South Wales. Geol. Surv. N.S.W. Rec. 12(2), 163-82. Prodelta silts are assigned to the Berry Formation shoaldelta sands to the Budgong Sandstone, delta-plain sediments to the Pheasants Nest Formation. The Budgong Sandstone is redefined to include the 'Gerringong volcanic facies', the latites of which are classified as members,

whilst the interbedded sandstone are not. The Kulnura Marine Tongue is a member of the Erins Vale Formation. The term Appin Formation is dropped and the two members Bargo Claystone and Darkes Forest Sandstone are elevated to Formations. The sandstone near the base of the Bargo Claystone becomes the Austinmer sandstone member. The Bulli coal seam is redefined to include the Shale above the coal.

1 BOYD, G.L., and GINSWICKE, E., 1968 - Some local aspects of sedimentation within the Sydney Basin. J. Univ. N.S.W. geol. Soc., 5, 550-7.

2, 14 BOYD, G.L., JOHNSON, K.R., and MARSHALL, J., 1966 - The Stanwell Park Sill. J. Univ. N.S.W. Min. geol. Soc., 4.

1, 3, 15 BRANAGAN, D.F., 1960 - Structure and sedimentation in the Western Coalfield of New South Wales. Proc. Aust. Inst. Min. Metall., 196, 79-116. The stratigraphy is reviewed and important units of the Lithgow Coal Measures defined. The possibility of Tomago Coal Measures occurring near the edge of the Basin is discussed. Structure isopach and lithofacies maps show the influence of the basement. The prominent jointing in the overlying Triassic sandstones is related to jointing in the coal measures.

1, 3, 13 BRANAGAN, D.F., 1962 - Coal measure sedimentation and structure. Aust. N.Z. Ass. Adv. Sci., 36th Conf. Sydney. The formation of the Macquarie Syncline seems to have started at the same time as deposition of the Newcastle Coal Measures, and continued as they were laid down. It was asymmetrical and there is evidence of westerly migration of the axis. The structure may be closed at the southern extremity and does not appear to have been significant since Permian time. The distribution of sand/shale and coal deposition and the detailed behaviour of the Borehole Seam are discussed. The Sydney Basin area during Permian time was a shallow inclined shelf. Variations in the extent of sedimentation are related to tectonic and eustatic changes at various times. Major conclusions are that the long-held concept of a closed intracratonic basin is not valid, and the tectonic history of the area during Permian time must be revised.

1, 2 BRANAGAN, D.F., 1966 - Aspects of Triassic sedimentation and stratigraphy. Adv. Study Syd. Bas., 1st Symp., 6-7. This draws attention to 1. the problem of recognizing the base of the Hawkesbury Sandstone; 2. the distribution of shell bands within the Hawkesbury Sandstone and their significance; 3. the 'slumps' of the Hawkesbury Sandstone.

1, 14 BRANAGAN, D.F., 1968 - The Gosford Formation - Palm Beach to Long Reef. Adv. Study Syd. Bas., 3rd Symp. The exposures are described in detail. Four significant breaks in sedimentation are recognized.

1, 2 BRANAGAN, D.F., 1969 - Palaeovulcanology in N.S.W.: a stratigraphic summary. Geol. Soc. Aust. spec. Publ., 2, 155-61.

3, 15 BRANAGAN, D.F., 1969 - The Lapstone Monocline and associated structures. Adv. Study Syd. Bas., 4th Symp. These structures cover more than 100 miles. The age 'can only be suggested as late Tertiary.' Maps, cross-sections, and photographs show the nature of the structures in detail.

1, 16 BRANAGAN, D.F., 1969 - Permian of the southern and western parts of the Sydney Basin - Introduction. J. geol. Soc. Aust., 16(1), 355. This gives a table of present and former formation names for the Southern, Southwestern, and Western Coalfields.

0, 10, 15 BRANAGAN, D.F., 1969 - Illawarra Coal Measures. C. - Western Coalfield. J. geol. Soc. Aust., 16(1), 381-7. Several sections and isopach maps besides detailed descriptions of the formations.

7, BRANAGAN, D.F., 1969 - Triassic System - Hawkesbury Sandstone: Fauna and flora. J. geol. Soc. Aust., 16(1), 415-7.

1, BRANAGAN, D.F., 1969 - Introduction to history of sedimentation in the Sydney Basin. J. geol. Soc. Aust., 16(1), 423-6. Draws attention to the relative stability of the northeastern side of the Basin during the Permian and to the well-defined phases in migration of the western and southwestern boundary. Touches on hypotheses concerning the eastern boundary.

1, 2, 3 BRANAGAN, D.F., 1969 - History of sedimentation in the Sydney basin: B, Central, south and western parts of the Sydney Basin- Dalwood, Maitland and Shoalhaven Sedimentation. C. Tomago - Newcastle - Illawarra Coal measure sedimentation. J. geol. Soc. Aust., 16(1), 434-9. Includes isopach, sand-shale ratio, and tectofacies maps.

0, 15 BRANAGAN, D.F., 1969 - The Northwestern Coalfield. J. geol. Soc. Aust., 16(1), 444-55. A comprehensive account of an area northwest of the Liverpool Ranges and in the basin of the Namoi River, with sections and correlation tables.

1, 11, 14 BRANAGAN, D.F., 1969 - Cainozoic rocks of the Sydney district. J. geol. Soc. Aust., 16(1), 554-7. Post-Triassic sediments are considered under four headings: 1. Soils on old rocks; 2. Fine clays, sands, and peats of lacustrine and fluvial origin; 3. River and estuary deposits; 4. Beach and dune sands.

1, 14 BRANAGAN, D.F., 1971 - Ripples and megaripples in the Hawkesbury Sandstone. Adv. Study Syd. Bas., 6th Symp., Newcastle, 14. Ripples have waves - lengths of 5 m or more, and amplitudes up to 1 m.

1, 4 BRANAGAN, D.F., CONOLLY, J.R., LOUGHNAN, F.C., and McELROY, C.T., 1969 - General summary of mineralogical trends in Triassic sedimentation in the Sydney Basin. J. geol. Soc. Aust., 16(1), 554-7.

1, 13 BRANAGAN, D.F., and JOHNSON, M.W., 1969 - Permian sedimentation in the Newcastle Coalfield N.S.W. Aust. Inst. Min. Metall., Ann. Conf., Sec. E(7). Gives detailed information, including isopachs and sand: Shale ratios on the coal seams and inter-seam conglomerates. The region consisted of a Shallow basin bounded by the relatively stable uplifted block of the Lochinvar Dome on the west, and an unstable block to the east and north-east. In early coal measure time, conditions were largely controlled by 'normal' sedimentary factors. The coal seam development is closely related to a shallow edge of the basin present in the west, north, and east. Higher in the sequence the development of continuous parallel thick conglomerate zones still clearly of fluvial character west and east of the structural axis suggests an increase in tectonic instability of the source area and probably a rather stronger tectonic control of the depositional environment even during the formation of the higher seams.

4, BRANAGAN, D.F., and McKENZIE, P., 1954 - A field classification for fragmental sedimentary rocks. Aust. N.Z. Ass. Adv. Sci., Canberra. This draws attention to differences in nomenclature in classifications adopted by the Geological Survey of New South Wales and the Bureau of Mineral Resources.

1, 3, 15 BRANAGAN, D.F., and McKENZIE, P.J., 1961 - Structure and sedimentation in the Western Coalfield of New South Wales. Proc. Aust. Inst. Min. Metall., 199, 157-60. A criticism by McKenzie of certain points in Branagan's paper (in No. 196 of 1960) and Branagan's reply thereto.

0, BRANAGAN, D.F., and PACKHAM, G.H., 1967 - Field Geology of New South Wales. Sydney, Science Press. Pages 17 to 73 are notes for excursions to places of geologic interest in the Sydney Basin. There are numerous useful diagrams and sketches.

1, 14 BRANAGAN, D.F., PACKHAM, G.H., and WEBBY, B.D., 1966 - Notes on the Narrabeen Group (Triassic) coastal section north of Long Reef, Sydney Basin. Aust. J. Sci., 29(4), 117-8. The depositional history of the Collaroy Claystone and the Gosford Formation revealed in the Long Reef - Palm Beach section is more complex than previously thought. The units of the type section, based on the North Avalon cliff exposures, are difficult to recognize anywhere. Both the Collaroy Claystone and the Gosford Formation (especially) contain pockets of thin, nearly horizontal beds, which were deposited over several miles along the present coastline. These thin units have been recognized at intervals along the coast, notably at North Avalon, Bilgola, and Turimetta Head.

4, 11, 14 BREWER, R., 1948 - Mineralogical examination of soils developed on the Prospect Hill intrusion, New South Wales. J. Proc. Roy. Soc. N.S.W., 82(4), 272-85. Soil samples were collected along two lines up a hill slope, the top of which consisted of black earths developed in the chilled margin of an essexite intrusion and the lower slopes of podsolized soils developed on the Triassic series. The intermising of basaltic material in the weathered Triassic residues can be distinguished.

9 BRIDEN, J.C., 1965 - Ancient secondary magnetizations in rocks. J. geophys. Res., 70, 5205-21.

3, 12 BRIDEN, J.C., 1967 - Recurrent continental drift of Gondwanaland. Nature 205 (5108), 1 334-9.

1, 10, 13 BRITTEN, R.A., 1967 - Characteristics of the Tomago Coal Measures and their equivalents. Adv. Study Syd. Bas., 2nd Symp., 28-9. Sundry features of the major seams are given. The Ravensworth and Bayswater seams, although they converge within a few inches of each other, have quite different properties. The Ravensworth deteriorates from its best development into at least 7 unworkable subsections through 180 feet within a mile or so.

1, 10, 13 BRITTEN, R.A., 1968 - Some genetic features of the Great Northern Seam of the Newcastle Coal Measures. Adv. Study Syd. Bas., 3rd Symp. These features include the distribution of the two widely differing roof-rocks, subsidence rates, direction of sedimentary transport, and typical inter-relationship between the finer and coarser phases.

1, 13 BRITTEN, R.A., 1971 - A review of some geological characteristics of the Singleton Coal Measures, Hunter Valley, New South Wales. Aust. Ass. Adv. Sci., Brisbane, Sec. 3, Abst., 90. The Tomago Coal Measures equivalent has been divided into the Saltwater Creek, Vane, Burnamwood, Mount Olgivie, and Malabar Formations; the Newcastle Coal Measures equivalent into the Appletree Flat, Horse Shoe Creek, Doyle's Creek, and Glengallie Formations.

1, 13 THE BROKEN HILL PROPRIETARY COMPANY LIMITED, 1969 - Newcastle coalfield type sections. In 'Decisions of the Standing Committee or coalfield geology in New South Wales'. Geol. Surv. N.S.W., 8. 1/1-69.

10 BROOKS, J.D., 1971 - The use of coals as indicators of oil and gas in the Sydney Basin. Adv. Study Syd. Bas., 6th Symp., Newcastle, 17. In Australia, hydrocarbon appears to be generated when the carbon content of the coal approaches 80% and this depends on the geothermal gradient. Beyond 85% only natural gas remains.

0 BROWN, D.A., CAMPBELL, K.S.W., and CROOK, K.A.W., 1968 - The Geological evolution of Australia and New Zealand. Oxford, Pergamon.

4, 16 BROWN, Ida, A., 1925 - Some Tertiary formations on the south coast of N.S.W. with special reference to the age and origin of the so-called silica rocks. Proc. Roy. Soc. N.S.W., 59, 387. A 'hard flinty quartzite' has been formed by the action of ?Tertiary or later basalt flows on loose Tertiary sandstone. The 'flint' sometimes contains common opal. Upper Marine beds underlie the Tertiary rocks.

4, 16 BROWN, Ida, A., 1925 - Note on the occurrence of glendonites and glacial erratics in Upper Marine beds at Ulladulla, N.S.W. Proc. Linn. Soc. N.S.W., 50, 25-31. Glendonites occur abundantly in mudstone (of the Conjola Formation in current terminology) on a rock platform, and also in the cliffs, adjacent to Warden Head, Ulladulla. They occur in clumps, at an average of 3 clumps per sq yd, and many enclose fossils. Most are composed of iron carbonate but some are of CaC_3, similar to glendonites described from Huskisson. Erratics occur in rock platform and adjacent cliffs, ranging in size from a fraction of an inch to greater than 6 feet. Generally they are associated with section relatively poor in fossils. Many erratics are well faceted. Only one, a granite gneiss, has a reasonably identifiable source: it probably came from Tharwa. This and the orientation of long axes of the erratics indicate a source in the west and southwest.

2, 14, 16 BROWN, Ida, A., 1925 - Geology of the Milton district, New South Wales. Proc. Linn. Soc. N.S.W., 50, 448-65. A 'Monzonite porphyry' laccolith intrudes the 'Nowra grits' in the Milton district of New South Wales. Tertiary olivine-basalt and Permo-Carboniferous sediments and Tertiary sediments are briefly mentioned. The monzonite is genetically related to flows which are interbedded with Permo-Carboniferous beds of the Upper Marine sequence (but younger than the 'Nowra grits') north of the Shoalhaven River. The correlatable flows are the Bumbo, Cambewarra, Minnamurra, and Dapto-Saddleback, of the Kiama district. Three types were

recognized: (1) monzonite, (2) monzonite porphyry, banakite (latite). Peculiarities in the association of these types suggest that they resulted from separation in an intercrustal reservoir.

0, 16 BROWN, Ida, A., 1928 - The geology of the south coast of New South Wales. Part I: the Palaeozoic geology of the Moruya district. Proc. Linn. Soc. N.S.W., 53, 151-92. The salient features in the Palaeozoic geology are: 1. the deposition of a series of argillaceous and fine-grained sediments during the Ordovician or Silurian; 2. the subsequent meridional folding and faulting during regional metamorphism, probably late Silurian; 3. the alteration in the trend lines to a north-northwesterly and south-southeasterly direction, probably at the close of Devonian time. A map of the Moruya area (about 100 sq. ml.) is included.

2, 16 BROWN, Ida, A., 1929 - Preliminary note on monzonitic and nepheline - bearing rocks of Mount Dromedary, N.S.W. Proc. Linn. Soc. N.S.W., 54(2), 89-90. The monzonitic plutonic complex at Mount Dromedary consists of acid, intermediate, basic, and ultrabasic phases, and some nepheline - bearing rocks. Some of the rocks are described as quartz-monzonites and are similar to those at Milton, which are intruded into Permian sediments, and the igneous rocks of the Illawarra district.

0, 16 BROWN, Ida, A., 1930 - The geology of the south coast of New South Wales. Part II. Devonian and older Palaeozoic rocks. Proc. Linn. Soc. N.S.W., 55, 146-58. The folded slates, quartzites, grits, quartz schists, phyllites, and cherts of the far south coast include fossiliferous Ordovician and Upper Devonian rocks. Silurian (fossiliferous) rocks are known only to the west. The Upper Devonian, from Eden to Yalwal, shows marked increase in folding intensity from south to north, and this may reflect the crustal warping which initiated the Sydney Basin. Accompanied by two text figures, and palaeontological notes by W.S. Dun.

2, 4, 16 BROWN, Ida, A., 1930 - The geology of the south coast of New South Wales. Part III. The monzonitic complex of the Mount Dromedary district. Proc. Linn. Soc. N.S.W., 55, 637-98. Detailed description of a complicated series of igneous rocks outcropping in the Mount Dromedary district and on Montague Island on the South Coast of New South Wales.

1, 13, 16 BROWN, Ida, A., 1931 - The stratigraphical and structural geology of the Devonian rocks of the south coast of New South Wales. Proc. Linn. Soc. N.S.W., 56(5), 461-96. Field relations and associations are described and petrological and chemical characters of the igneous rocks discussed. The sediments were deposited unconformably on older rocks along a 'geosynclinal trough' inland from the present coast. Only Upper Devonian

sediments remain, whether or not Lower Devonian rocks were laid down. They can be divided into 3 stages - lower volcanics (Eden), littoral sediments with lavas (middle[Yalwal] stage) and (upper) marine sediments (Lambie Stage).

0, 16 BROWN, Ida, A., 1933 - The geology of the south coast of New South Wales, with special reference to the origin and relationships of the igneous rocks. Proc. Linn. Soc. N.S.W., 58, 335-60. The sedimentary record (Cambrian, Upper Ordovician, Upper Silurian, Upper Devonian, Kamilaroi, Tertiary and Post Tertiary); igneous rocks; Devonian Kamilaroi, Tertiary tectonic history and igneous activity; magnetic differentiation.

7, 17 BROWN, Ida, A., 1946 - Presidential address: An outline of the history of palaeontology in Australia. Proc. Linn. Soc. N.S.W., 71, V-XVIII. The topic is dealt with under the headings 1. Status of palaeontology elsewhere in the 19th century. 2. Maritime and inland expeditions. 3. Individual workers. 4. Geological surveys, Universities and Museums 1852-1892; 1892-1932; 1932 to present.

7 BROWN, Ida, A., CAMPBELL, K.S.W., and ROBERTS, J., 1965 - A Visean cephalopod fauna from New South Wales. Palaeontology, 7(4), 682-94, pls 102-103.

1, 15 BROWN, Ida, A., and JOPLIN, Germaine, A., 1938 - Upper Devonian sediments at Mount Lambie, N.S.W. Proc. Linn. Soc. N.S.W., 63(304), 219-23. Upper Devonian marine sediments (quartzites and vertically cleaved shales) up to 2500 feet thick occur in a broad south-plunging syncline. They are overlain by almost horizontally-bedded coarse sediments of the Upper Marine Stage (Kamilaroi) of the Permian system in the area north of Rydal.

4, 13 BROWNE, W.R., 1922 - Note on the occurrence of calcite in a basalt from the Maitland district N.S.W. J. Proc. Roy. Soc. N.S.W., 56, 278-84. The solutions from which the calcite was deposited were essentially magmatic.

1 BROWNE, W.R., 1923 - Recent work on the Carboniferous and Permo-Carboniferous of New South Wales. Carboniferous and Permian of Australia Committee. Correlation of Carboniferous and Permian of Australia. Aust. Ass. Adv. Sci., 16, 51.

2, 4, 13 BROWNE, W.R., 1923 - Albitization and kindred phenomena in certain Carboniferous and Permian lavas of New South Wales (abstract). Aust. Ass. Adv. Sci., 16, 345.

2, 4, 14 BROWNE, W.R., 1924 - Notes on the petrology of the Prospect intrusion, with special reference to the genesis of the so-called secondary materials. J. Proc. Roy. Soc. N.S.W., 58, 240-54. The Prospect Laccolith is about 300 feet thick and basic but varies in texture and composition. Minerals such as analcite, chlorite, and serpentine may be late magmatic or deuteric. The original name essexite is replaced by olivine-analcite-dolerite.

0, 13 BROWNE, W.R., 1924 - Notes on the physiography and geology of the Upper Hunter River. J. Proc. Roy. Soc. N.S.W., 58, 128-44. A general physiographic and geological description of the Upper Hunter Valley region. A fault, the Wingen Fault, is described and discussed in detail. Its age is thought post-Triassic and pre-basalt Tertiary; it trends meridionally from Muswellbrook to Wingen.

0, 13 BROWNE, W.R., 1926 - The geology of the Gosforth district, Part I. J. Proc. Roy. Soc. N.S.W., 60, 213-77. The rocks are chiefly Kuttung igneous and glacials, which are overlain by 'Permo-Carboniferous' beginning with the Lochinvar Shales. There are several faults. The region is in the core of the Lochinvar Dome. (Includes geological map and sections.)

2, 4, 13 BROWNE, W.R., 1926 - The hypersthene-andesite of Blair Duguid, near Allandale, N.S.W. J. Proc. Roy. Soc. N.S.W., 1926, 60, 372-87. A detailed petrographic and chemical account. The rock is locally altered to a keratophyre by the addition of K and Na in solutions of magmatic origin. The andesite is thought to be probably of Carboniferous age.

2, 4 BROWNE, W.R., 1927 - Petrological notes on some New South Wales alkaline basic rocks. J. Proc. Roy. Soc. N.S.W., 61, 371. 'Specimens from some half dozen outcrops in widely separated localities...(have) ..... certain mineralogical characters which permit of a Tertiary age being assigned to all of them.....'

11 BROWNE, W.R., 1928 - On the probable Tertiary age of certain New South Wales sedentary soils. J. Proc. Roy. Soc. N.S.W., 62, 251-62. Conflicting theories on soil formation are discussed including those of Barrell (1917), - no deep regolith on peneplains because watertable close to surface; Van Hise (1904) - formed on moderate slopes and elevations; and Woolnough (1927) - peneplains and deep soils connected. The accumulation of residual sedentary soil depends on the ascendancy of chemical weathering over mechanical erosion, but other factors besides physiography are important; the author tends to agree with Woolnough that mature landscapes are most favourable. If thick soils are found in an eroding youthful area, they may be fossil. Soils of this

type are found in eastern Australia, an area of low relief in late Tertiary but uplifted during Pliocene (Koscuisko uplift). Thick soils are found in places on the uplifted plateaux and on the slopes of mature, as yet unrejuvenated, valleys. There are examples in the Blue Mountains and in the Sydney area, where sandy iron-stained soils occur on flat-topped ridges between streams. Wianamatta soils (containing 'ironstone nodules') are thick in flat area but thinner on slopes. In Shoalhaven River area Tertiary basalt rests on soils and gravels (e.g. silicified sands at Ulladulla; Brown, 1925). Factors which possibly assisted the survival of these fossil sedentary soils are: decrease in rainfall since formation; porosity of the sandy soils; and alternating wet and dry climate.

8 BROWNE, W.R., 1928 - On some aspects of differential erosion. J. Proc. Roy. Soc. N.S.W., 62, 273-89. The physiography of New South Wales is closely dependent on structure and the composition of rock units. Differential erosion is considered from such aspects as fault-scarp and erosion-scarp control, variability in physiographic behaviour of rock masses, and antecedent deep weathering. Examples are given (including some in the Sydney Basin), and a generalized geologic map of the Hunter Valley (16 miles: 1 inch) is presented.

2, 3 BROWNE, W.R., 1929 - An outline of the history of igneous action in New South Wales till the close of the Palaeozoic era. Proc. Linn. Soc. N.S.W., 54(1), ix-xxxix. An attempt was made to correlate the eruptive episodes with the tectonic episodes recorded in the strata. The Carboniferous and Permo-Carboniferous are treated on pages xxvii-xxxiv.

1 BROWNE, W.R., 1931 - Bathyliths and some of their implications. J. Proc. Roy. Soc. N.S.W., 1931, 65, 140. In the small section dealing with 'The Permo-Carboniferous granites of Eastern Australia' evidence is given to show that the area of deposition of the freshwater and marine sediments of the Permo-Carboniferous extended far to the east of the main coal province.

2, 3 BROWNE, W.R., 1933 - An account of post-Palaeozoic igneous activity in New South Wales. J. Proc. Roy. Soc. N.S.W., 67(1), 9-95. The last 'horizontal' tectonic movements, at the close of the Permian, folded Carboniferous and Permian sediments in eastern Australia and were associated with intrusion of the New England granites, although some Cretaceous folding may have occured in the Clarence Basin. Mesozoic movements were mainly 'vertical' and there is some evidence of volcanic activity during this time; extensive volcanic deposits could have been removed by the late Mesozoic peneplanation. The author

describes chronologically and in detail Tertiary intrusions and extrusions (of three ages). The Tertiary eruptions are thought to have been closely connected with 'vertical' tectonic movements in what are now the highland and coastal regions.

8 BROWNE, W.R., 1934 - Some peculiarities in the drainage systems of the Australian continent. Aust. Geogr. 2(4), 13-9.

2 BROWNE, W.R., 1940 - The Cenozoic igneous rocks of Australia. Proc. 6th Pacif. Sci. Congr. 2, 881-7.

8 BROWNE, W.R., 1945 - An attempted post-Tertiary chronology for Australia. Proc. Linn. Soc. N.S.W., 70(1 & 2), v-xxv. In the discussion of river deposits, mention is made of Pleistocene flood-terraces on the Nepean at Wallacia and on the Hawkesbury between Penrith and Windsor. Mention is made of 150 foot benches around Sydney, submarine valleys in valleys around Port Jackson and other evidence of strandline movements. Evidence of recent emergence is also quoted but not from Sydney Basin area. Coast dunes at Narrabeen and Port Kembla are described.

0 BROWNE, W.R., 1947 - A short history of the Tasman Geosyncline in Eastern Australia. Sci. Progr., 35, 623-37.

1 BROWNE, W.R., 1949 - Some thoughts on the division of the geological record in the Commonwealth of Australia. Aust. N.Z. Ass. Adv. Sci., 27, 39.

0, 14 BROWNE, W.R., 1960 - The geology of the Sydney district. Aust. N.Z. Ass. Adv. Sci., 27, 39.

18 BROWNE, W.R., 1963 - Pleistocene and Recent climates in Australia. Aust. nat. Hist., 8, 267.

8 BROWNE, W.R., 1969 - Geomorphology - General Notes. J. geol. Soc. Aust., 16(1), 559-69. General notes on the geomorphology of New South Wales.

1, 13 BROWNE, W.R., and DUN, W.S., 1924 - On the stratigraphy of the basal portions of the Permo-Carboniferous system in the Hunter River district. J. Proc. Roy. Soc. N.S.W., 58, 198-206. The three fossiliferous horizons (the limestone, plant-bearing sandstone, and Eurydesma hobartense beds) are definitely of Permo-Carboniferous age, and the base of the Permo-Carboniferous system is to be placed, as originally suggested by David (Geol. Surv. N.S.W., Mem. 4), at the base of the Lochinvar Shale.

2, 4, 16 BROWNE, W.R., and WHITE, H.P., 1928 - Alkalization and other deuteric phenomena in the Saddleback trachybasalt at Port Kembla. J. Proc. Roy. Soc. N.S.W., 62, 303-40. The partly altered Saddleback 'dolerite' or trachybasalt/trachyandesite is described from Port Kembla quarry. Chemical and micrometric analyses are listed.

2, 4, 13 BROWNE, W.R., and WALKOM, A.B., 1911 - The geology of the eruptive and associated rocks of Pokolbin, N.S.W. J. Proc. Roy. Soc. N.S.W., 45, 379-408. The authors make the following points: (1) Partly underlain by earlier plutonic rocks, a complex of Upper Carboniferous volcanic lavas exists 6 miles from Cessnock. (2) A series of basaltic rocks occurs in the Lower Marine. (3) The two series together form a succession from rhyolite to basalt, with a second 3-component phase, dacite, trachyte, and basalt. The lavas may have been fissure-eruptions. (4) The rocks have been much faulted.

1, 16 BRUNKER, R.L., 1969 - Triassic system, Narrabeen Group, the South Coast State Coal Mine Reserve. J. geol. Soc. Aust., 16(1). 'The formations of the coastal outcrop section tend to maintain their identity over most of the area.....', and these are described.

1, 10, 13 BRUNKER, R., and FRENDA, G., 1962 - Geological report on the No. 2 drift, Wyee State Coal Mine. Geol. Surv. N.S.W. Rep. 30. No. 2 drift, Wyee State Coal Mine, excavated for the State Coal Mines Authority, is inclined at 17°, intersecting flat-lying strata within the Permo-Triassic Sydney Basin. Correlatable beds include the Munmorah Conglomerate of the Narrabeen Group, and the Wallarah Seam, Teralba Conglomerate, and Great Northern Seam of the Newcastle Coal Measures. Both seams encountered were commercial with few clay bands. The conglomerates were very similar, except for the top of the Munmorah Conglomerate, where pebble counts revealed more greenish grey shale and less sandstone. Chert was the major constituent. Shale horizons and a small dolerite dyke were the only visible threats to tunnel stability.

0 BRUNKER, R.L., OFFENBURG, A.C., and ROSE, G., 1967 - 1:3 000 000 geological map N.S.W., explanatory notes. N.S.W. Dep. Min., 15-24. This includes a brief account of the Carboniferous, Permian, and Triassic sequences in New South Wales.

1, 16 BUNNY, M.R., 1967 - The stratigraphy of the Sydney Sub-group in the Southern Coalfield. Adv. Study Syd. Bas., 2nd Symp., 24, 25. Recent Mines Dep. work has enabled subdivision of the complete sequence of this Subgroup. Structurally gentle sub-meridional folds were superimposed on the regional saucerlike basin. They were active at the time of deposition and the most prominent, the Bulli-Woronora Structure, is a hingeline to the northeast of which sedimentation was faster.

1, 4, 10, 13 BUNNY, M.R., 1970 Geology and coal resources of the Liddell State Coal Mine Holding, Hunter Valley, New South Wales. Geol. Surv. N.S.W., Rec. 12(2), 81-123. Three seams, Pikes Gully, Arties and Liddell are of economic potential. Sediments have been derived from a Carboniferous provenance to the north. A diagram shows relationship between the seams of the Howick area and the Liddell area, also numerous isopach and structure maps of the seams and a multiple section showing seam correlation. There are notes on the occurrence of dolomite, siderite and pyrite.

1 BUNNY, M.R., and HERBERT, C., 1971 - The lower Triassic Newport Formation, Narrabeen Group, southern Sydney Basin. Geol. Surv. N.S.W., Rec. 13(2), (in press).

10, 16 BURDON, R.G., 1961 - Flotation of fine coal from Bulli, Greta and Victoria Tunnel seams. Proc. Aust. Inst. Min. Metall., 200, 65-74. Factors of importance in the utilization of coal fines are mentioned, and the results of flotation tests on coal fines from three important seams in N.S.W. are presented. The Bulli Seam is ortho-bituminous, the Greta Seam para - bituminous, and the Victoria Tunnel Seam meta-lignitous.

10, 16 BURDON, R.G., 1962 - A note on selective fracturing in vitrain. J. Proc. Roy. Soc. N.S.W., 95(b), 195-6. Fracturing of the vitrain bands of some Bulli Seam coal is regular. The fracturing is important with respect to dust formation and selective concentration.

10 BURDON, R.J., 1967 - Coal preparation in Australia. Aust. Min., 59(3), 8-17.

10 BUREAU OF MINERAL RESOURCES AUST., 1969 - Sedimentary basins of Australia and Papua - New Guinea and the stratigraphic occurrence of hydrocarbons. This was compiled by the Bureau for the E.C.A.F.E. symposium at Canberra in 1969 on the Development of Petroleum Resources of Asia and Far East. It updates the papers of the 1965 Tokyo Symposium.

11, 14 BURGES, N.A., and DROVER, D.P., 1953 - The rate of podzol development in sands of the Woy Woy district N.S.W. Aust. J. Bot., 1, 83-94.

7 BURGES, N.A., 1935 - Additions to our knowledge of the flora of the Narrabeen Stage of the Hawkesbury Series in New South Wales. Proc. Linn. Soc. N.S.W., 60(3 & 4), 257-64. Descriptions of Lycopodiales,

Filicales, Fern Stems, Pteridosperms?, Ginkgoales, Coniferales, petrified materials, Cupressinoxylon novae-valesiae, ?Cedroxylon triassicum.

9 BURKE-GAFFNEY, T.N., 1952 - Seismicity of Australia. J. Proc. Roy. Soc. N.S.W., 85, 47-52.

10 BURNETT, 1866 - Descriptive comparison of coalfields of New South Wales, from a New Zealand point of view. New Zealand Exhibition 1865. Report and Awards, 10-16. Dunedin 1866.

0 BRYAN, J.H., McELROY, C.T., and ROSE, G., 1966 - Sydney N.S.W., 1:250 000 geological series. Geol. Surv., N.S.W. explan. Notes SI/56-5.

12 BRYAN, W.H., 1944 - The relationship of the Australian Continent to the Pacific Ocean - Now and in the Past. J. Proc. Roy. Soc. N.S.W., 1944, 78, 42-62. Evidence is adduced which is consistent with the proposition that a great Australasian continent existed to the west of the Marshall Line, from Precambrian times till its dismemberment in the early Tertiary.

9 BRYAN, W.H., and WHITEHOUSE, F.W., 1938 - The Gayndah Earthquake of 1935. Qld Univ. geol. Dep. Pap., 1(6).

CALLCOTT, T.G., 1971 - An appraisal of the significance of the Sydney Basin. Adv. Study Syd. Bas., 6th Symp., Newcastle, 9.

1, 11 CAMBAGE, R.H., 1905 - Notes on the native flora of New South Wales IV: The occurrence of Casuarina stricta ait., on the Narrabeen Shales. Proc. Linn. Soc. N.S.W., 30(3), 376-91.

10 CAMBAGE, R.H., 1924 - Australian resources of liquid fuels. J. Proc. Roy. Soc. N.S.W., 58, 15-60. The following topics are discussed: origin of mineral oil, its geological occurrence, the possibilities of oil discovery in Australia, its recovery as a by-product from solid fuels and Australian coal, cannel, and oil shale reserves. Natural mineral oil exploration has not been encouraging to date and emphasis should be placed on its secondary recovery.

6, 16 CAMBAGE, R.H., 1924 - Landslides near Picton and notes on the local vegetation. J. Proc. Roy. Soc. N.S.W., 58, 207-12. Recent landslides occur along the Donalds Range near Picton. Water-saturated jointed sandstone is thought to slide on wet shale below; these sediments are referred to the Wianamatta Beds. Chemical analyses of the sandstone and an overlying unit are given.

11 CAMBAGE, R.H., 1925 - Presidential address. Proc. Linn. Soc. N.S.W., 50, i-xxxiii. Emphasizes the importance of geological formations in influencing the distribution of Australian flora. Examples of floral differences in Hawkesbury Sandstone and 'Narrabeen Shale' are given, and related occurrences growing on patches of basic igneous rock, e.g. at Milton, are given.

7 CAMPBELL, K.S.W., 1955 - Phricodothyris in New South Wales. Geol. Mag., 92, 374-84. The relations of the genera Torynifer Hall & Clark, Pnricodothyris George, and Kitakamithyris Minato are discussed, and the diagnosis of Phricodothyris emended. The phricodothyrid species of New South Wales all bear dental lamellae and a median septum in the pedicle valve. Four new species from three horizons within the Carboniferous (Dungog - Clarencetown area) are described.

7 CAMPBELL, K.S.W., 1956 - Some carboniferous productid brachiopods of New South Wales. J. Paleont., 30, 463-80.

7 CAMPBELL, K.S.W., 1961 - Carboniferous fossils from the Kuttung rocks of New South Wales. Palaeontology, 4(3), 428-74.

7 CAMPBELL, K.S.W., 1962 - Marine fossils from the Carboniferous glacial rocks of New South Wales. J. Paleont., 36(1), 38-52.

7 CAMPBELL, K.S.W., 1965 - Australian Permian terebratulids. Bur. Miner. Resour. Aust. Bull. 68.

7 CAMPBELL, K.S.W., and ROBERTS, J., - Two species of Delepinea from New South Wales. Palaeontology, 8(3), 514-24, pl. 80-2.

10, 15 CANE, R.F., 1943 - A rich torbanite from Marangaroo. Aust. J. Sci., 5, 156. During mining operations at Lithgow Oil Company's holding at Marangaroo, a small deposit of what is believed to be the richest known torbanite in the world was found. One sample produced 237 gallons per ton on pyrolysis. The deposit occurred in a lenticular patch about 30 ft across above the main seam. The paper records the physical features of the torbanite and discusses some of its properties.

10, 15 CANE, R.F., 1963 - The torbanite of New South Wales and its pyrolysis. Aust. J. Sci., 26(6), 168-70. Analyses the composition of torbanite, with a note on pyrolysis.

2, 4, 15 CARD, G.W., 1903 - Petrological notes on the olivine basalts of the Capertee district. Appendix I in Geol. Surv. N.S.W. Mem., 3. (J.E. Carne: Kerosene shale deposits of N.S.W.).

4, 11 CARD, G.W., - On Fuller's Earth from Wingen. Geol. Soc. N.S.W. Rec. 4, 30-1.

2, 4 CARD, G.W., 1903 - On the occurrence of nepheline in post-Triassic basalts of the Hawkesbury Sandstone area. Geol. Surv. N.S.W. Rec. 7(3), 236-8. The presence of primary analcite in certain of these basalts has already been recorded; the occurrence of nepheline has been known and suspected but not definitely recorded. The two known localities are the Peak (Upper Burragorang) and a neck at North Dural. It appears that all these similar basaltic rocks emanated from a common magma of low silica, high alumina, and high alkalies - a very basic parent rock.

2, 15 CARD, G.W., 1903 - Nepheline basalt from the Capertee Valley. Geol. Surv. N.S.W. Rec. 7, 40.

4 CARD, G.W., 1903 - Mineralogical notes. Geol. Surv. N.S.W. Recs 7, 8, 9.

6, 10, 16 CARD, G.W., 1904 - Report on the road metal from the Kiama Road Metal Company, Limited. Dep. Min. N.S.W. Ann. Rep. 1904, 149-50. Typical rock of the Bumbo Flow and good quality dolerite (diabase) are compared with granite, in terms of - hardness, toughness, and recementing properties.

1, 2, 16 CARD, G.W., and JAQUET, J.B., 1903 - The geology of the Cambewarra Range, New South Wales, with special reference to the volcanic rocks. Geol. Surv. N.S.W. Rec. 7(3), 103-40. The stratigraphy of the area is described (from the base) as: shales and argillaceous sandstone, red tuff, a trachyte flow, upper tuffs, Upper (Newcastle) Coal Measures (all Permo-Carboniferous), followed by an olivine basalt flow and the Hawkesbury Sandstone at the top (Triassic). Intrusive rocks include lamprophyre dykes and necks and andesite dykes.

2, 4, 14 CARD, G.W. MINGAYE, J.C.H., and WHITE, H.P., 1902 - Analcite-basalt from near Sydney. Geol. Surv. N.S.W. Rec. 7(2), 93-101. The presence of analcite in the diabase intrusive in the Hawkesbury Series at Prospect, near Parramatta, is described. Both secondary and primary analcite are thought present. It is thought that analcite formed in dykes and sills, but that nephelinites formed in extrusive rocks.

0, 13 CAREY, S.W., 1934 - Geology of the Myall Lakes region. Sci. J. Univ. Syd., 13(3), 42.

1, 3, 13 CAREY, S.W., 1934 - The geological structure of the Werrie Basin. Proc. Linn. Soc. N.S.W., 59, 351-74. The name Werrie Basin is proposed for the great trough, nearly 50 miles long, which centres

on Werrie Creek and stretches towards the Namoi River in the north-northwest, and to within a few miles of the Liverpool Range in the south. The structural geology of the region is described in detail, and the stratigraphy in more general terms.

3, 13 CAREY, S.W., 1934 - Note of the implications of the irregular strike lines of the Mooki Thrust System. Proc. Linn. Soc. N.S.W., 59, 375-9. 'During the examination of the geological structure of the Werrie Basin it was found that the fault-surfaces of the Mooki thrusts displayed large scale irregularities. In the Werrie Basin area it has been possible to obtain some idea of the nature and genesis of the irregularities'.

1, 7, 13 CAREY, S.W., 1935 - Note on the Permian sequence in the Werrie Basin with description of new species of fossil plants. Proc. Linn. Soc. N.S.W , 60(5 & 6), 447-56. This deals with the Lower Coal Measures under the headings 1. Economic importance; 2. Fossil flora - genus Palaeoyittaria, Noeggerathiopsis hislopi, Gangamopteris sp. A & B, Gangamopteris cyclopteroides, Cordaitean wood; 3. the Werrie basalts and the Upper Coal Measures and its flora - Neocalamites, Striatifolia, Phyllotheca of Etheridge, Cordaitean wood.

1, 13 CAREY, S.W., 1937 - The Carboniferous sequence in the Werrie Basin. Proc. Linn. Soc. N.S.W., 62, 341-76. This deals with the following topics: 1. stratigraphical sections of the Carboniferous rocks of the Werrie Basin - the Woodlands section, Turi Valley, Landslide, Royston, Merlewood sections; 2. palaeontological notes and summary of fossil plants; 3. analysis of the Carboniferous sequence - correlation of sections, sequence of sedimentation - relation of Carboniferous to Devonian lateral variation and overlap in the Carboniferous sequence, relation to Carboniferous of Kamilaroi; 4. effect of marine sedimentation in the Lower Kuttung; 5. sequence of climates; 6. interpretation and significance of Lower Kuttung conglomerates; 7. significance of Lithostrotion horizon; 8. climatic interpretation of the Lower Kuttung, climatic evidence of the tuffs, reconstruction of the climatic sequence; 9. sequence of vulcanism, distribution in time and in area, extrusive character of the andesites, relation of lithoidal and glassy andesites; 10. sequence of physiographic expression.

3, 12 CAREY, S.W., 1958 - The tectonic approach to continental drift. In Continental drift, a Symposium. Geol. Dep. Univ. Tasmania, 177-355. The paper includes a discussion of the tectonic evolution of the Australian - New Zealand region involving a Palaeozoic approximation of these areas.

9 CAREY, S.W., 1963 - Asymmetry of the Earth. Aust. J. Sci., 25, 369-84 and 479-88.

3, 12 CAREY, S.W., 1969 - Tectonic framework of the Sydney Basin. Adv. Study Syd. Bas., 4th Symp. This deals with crustal growth, the expanding Pacific and the Australian polygon. For the latter the overall pattern is a simple spreading with the marginal orogen progressively separating from the continental shield and disjunctive seas developing behind. The missing eastward extension of the Sydney Basin should be sought in the Lord Howe Rise resting on a Palaeozoic basement and linking into the Permian and Mesozoic syncline in shelf facies which run from Hamilton in Invercargill via the Alpine fault.

1, 13 CAREY, S.W., and BROWNE, W.R., 1937 - Review of the Carboniferous stratigraphy, tectonics and palaeogeography of New South Wales and Queensland. J. Proc. Roy. Soc. N.S.W., 71, 591-614. A review of the Carboniferous of the Hunter Valley; deduces (1) the Burindi of N.S W. represents the whole of the Lower Carboniferous of Europe (Tournaisian and Visean); (2) Along a narrow belt of lowland from Babbindron to the Lower Hunter, deposition of the terrestrial Lower Kuttung was synchronous with Upper Burindi marine sedimentation.

3, 13 CAREY, S.W., and OSBORNE, G.D., 1938 - Preliminary note on the nature of the stresses involved in the late Palaeozoic diastrophism in New South Wales. J. Proc. Roy. Soc. N.S.W., 72, 199-208. A consideration of the patterns of faults, thrusts, and serpentine lines in the Upper Hunter-Stroud-Buladelah-Gloucester area leads to the conclusion that the Hunter Thrust System is of late Palaeozoic age. Important shearing and horizontal elements accompanied by conjugate tension and compression have contributed largely to the tectonic evolution of the late Palaeozoic orogeny.

1, 15 CARNE, J.E., 1896 - On certain coal and shale bands in the Capertee Valley district. Geol. Surv. N.S.W. Rec. 4, 39.

6, 13 CARNE, J.E., 1897 - Appendix 7. Report on the natural foundations at the site of the proposed dam with the Hunter River Flood Prevention Scheme. Dep. Min. N.S.W.Ann. Rep. 1897, 160. The site is at Woodlands on the Hunter River, on the limb of a slight anticline in the Coal Measures.

1, 15 CARNE, J.E., 1902 - Report on the strata underlying Mount Clarence. Dep. Min. N.S.W. Ann. Rep. 1901, 163.

6, 11, 14 CARNE, J.E., 1902 - 'Ironstone' deposits at Long Bay. Dep. Min. N.S.W. Ann. Rep. 1902, 128. The ironstone occurs as a shallow capping to the Hawkesbury sandstones near intruding basalt dykes. The stone makes an excellent road metal.

4, 10, 13 CARNE, J.E., 1903 - Gold find near Denman on the Hunter River, N.S W. Dep. Min. N.S.W. Ann. Rep. 1903, 125. The gold occurs in joints in a flat pavement of Coal Measure sandstone. It is associated with stranded boulders of basalt, porphyry, quartzite, etc., and is mistakenly thought to originate in nearby basaltic dykes or in a thin bed of fossiliferous coal measure chert.

10, 15 CARNE, J.E., 1903 - The kerosene shale deposits of New South Wales. Geol. Surv. N.S.W. Mem., 3. This is a comprehensive work including 1. general remarks on kerosene shale; 2. features of N.S.W. kerosene shale; 3. localities of N.S.W. kerosene shale. It includes petrological notes on the olivine basalts of the Capertee Valley district by G.W. Card.

10 CARNE, J.E., 1904 - The occurrence of kerosene shale at South Greta Colliery, Fort Hill, West Maitland. Dep. Min. N.S.W. Ann. Rep. 1904, 139-40. Analyses from Greens Estate, Fort Hill (South Greta Colliery), West Maitland.

2, 10, 16 CARNE, J.E., 1907 - Discovery of gold near Moss Vale. Dep. Min. N.S.W. Ann. Rep. 1907, 165. The gold occurs in fairly coarse pieces in chalcedonic quartz in a wide diorite dyke which has intruded the coal measures and overlying Hawkesbury and Wianamatta Series after the manner of the Gibraltar Syenite at Bowral. It is not an economic proposition

1, 14 CARNE, J.E., 1907 - Report on Bungaree Norah bore. Dep. Min. N.S.W. Ann. Rep. 1907, 165-8. This is on the coast 6½ miles east and a little south of Wyong bore. A complete section to 1 141 ft is given. The Wallarah, Great Northern, Pilot, and Australasian seams are present. There are at least 4 basalt dykes in the neighbourhood.

0, 15 CARNE, J.E., 1908 - Geology and mineral resources of the Western Coalfield. Geol. Surv. N.S.W. geol. Mem., 6.

1, 10, 13 CARNE, J.E., 1908 - Discovery of coal at Muswellbrook. Dep. Min. N.S.W. Ann. Rep. 1908, 166, 167. The seam belongs to the Lower (or Greta) Coal Measures. The quality of the various seams is shown in tables.

10 CARNE, J.E., 1911 - The tin-mining industry and the distribution of tin ores in New South Wales. Miner. Resour. N.S.W., 14, 344-50.

11 CARNE, J.E., 1911 - Note on the occurrence of a limestone flora at Grose Vale. Proc. Linn. Soc. N.S.W., 35, 849. A small patch of vegetation occurs on an outcrop of limestone at Grose Vale, Hawkesbury district.

There is a chemical analysis of the rock with a note on a 'limestone' fron Auburn, Sydney. Flora is listed.

10 CARNE, J.E., 1913 - Supposed oil deposit, Hallidays Point, Tuncurry. Dep. Min. N.S.W. Ann. Rep. 1913, 181. The rocks cropping out on the coast near Hallidays Point are Carboniferous sandstone, slate, and claystone. The kerosene shale may have been brought down by the Manning River waters, which drain from the main range in the neighbourhood of the coal measures.

0 CARNE, J.E., 1914 - Handbook Sydney meeting. Brit. Ass. Adv. Sci., 605.

10, 13 CARNE, J.E., 1914 - Report on possible sites for a State Colliery in the Muswellbrook district. Dep. Min. N.S.W. Ann. Rep. 1914, 194-5. A geological reconnaissance of the country between Muswellbrook and Aberdeen for the purpose of tracing the trend of the Lower or Greta Coal Measures and estimating the probable depths at which these strata underlie certain points proposed as possible sites for a State Colliery.

10 CARNE, J.E., 1914 - Reported occurrences of iron oxide at Turrawan and Wingen suitable for colour purposes. Dep. Min. N.S.W. Ann. Rep. 1914, 195. The Turrawan deposit consists of small patches of iron oxide in sandstone and shale of the Hawkesbury Series. The bands are thin and erratic. The bright red oxide at Wingen proved to be calcined shale of the Lower Coal Measures resulting from the firing of the Greta coal seams at Burning Mountain.

10, 14 CARNE, J.E., 1915 - Resumption of shale land fronting Cooks River Road. Dep. Min. N.S.W. Ann. Rep. 1915, 174. Wianamatta Shale overlies Hawkesbury Sandstone, the top of the latter being exposed in the plaintiff's shale quarry. The uses of the top clay are discussed and a supplementary report deals with figures.

6, 13 CARNE, J.E., 1915 - Storage dam on the Chichester River. Dep. Min. N.S.W. Ann. Rep. 1915, 175. The geology consists of massive-bedded quartzose tuffs of Carboniferous age. In the solid rock of the river bed at the dam site master joints and crossjoints are due to original desiccation and shrinking; they can be plugged.

6, 16 CARNE, J.E., 1916 - Proposed line of railway from Picton Lakes to Yerranderie. Dep. Min. N.S.W. Ann. Rep. 1916, 193-7. The economics of the construction of a railway are discussed with reference to the development of each mine in the Yerranderie field.

10, 13 CARNE, J.E., 1916 - Sections and analysis of the Lymington Coal Seam. Dep. Min. N.S.W. Ann. Rep. 1916, 198, 199. Analyses of three coal samples from the Lymington Colliery, Cardiff.

10, 13 CARNE, J.E., 1917 - Report on sections of seam and composition of coal in No. 2 Ashtonfield Colliery, near Thornton. Dep. Min. N.S.W. Ann. Rep. 1916, 205, 206. Sections of seams (p. 206); the seam worked is the 'fourth' or 'Big Ben' seam of the Tomago or Middle Coal Measures.

10, 15 CARNE, J.E., 1917 - Report on the Vulcan coal, lime and cement syndicates property in the vicinity of Brogans Creek and Carloo Gap, in the Parishes Clandulla, Airly and Hearne, County of Roxburgh. Dep. Min. N.S.W.Ann. Rep. 1917, 157, 158. Coal sections and analyses of samples are included in an economic appraisal of the property.

10, 15 CARNE, J.E., 1918 - Notes on the occurrence of coal and kerosene shale in Baerami and Widdon Valleys, Goulburn River district. Dep. Min. N.S.W. Ann. Rep. 1918, 155-8. The seams belong to the Upper Coal Measures; analyses made and sections measured are tabled with a note on the economic aspects of the seams.

10 CARNE, J.E., 1918 - Annual report of Government Geologist. Dep. Min. N.S.W. Ann. Rep. 1917, 152. This is a 10-line reference to investigations for oil at Penrith, Mulgoa Creek, Muswellbrook. None was found.

6, 13 CARNE, J.E., and ANDREWS, E.C., 1914 - Additional report on a proposed dam site at Moonan Flat - Upper Hunter River. Dep. Min. N.S.W. Ann. Rep. 1914, 199. The rock structures of this low spur are suitable for water storage to a depth of 150 feet. Precautions in the location of a spillway and the sealing of a dyke against weathering are discussed.

10, 16 CARNE, J.E., and HARPER, L.F., 1915 - Proposed Federal Colliery near Exeter. Dep. Min. N.S.W. Ann. Rep. 1915, 177-9. The Upper or Newcastle-Bulli Coal Measures crop out under the Mesozoic sandstone cliffs. No. 3 Illawarra Seam represents the top of the measure. The report gives sections and the results of analyses.

10 CARNE, J.E., and JONES, J.L., 1919 - The limestone deposits of New South Wales. Miner. Resour. N.S.W., 25, 133-9.

10, 15 CARNE, J.E., and MORRISON, M., 1915 - Report on the Ballimore or Talbragar River, Coal Field. Dep. Min. N.S.W. Ann. Rep. 1915, 179-81. The report quotes extracts from earlier reports on the same topic beginning in 1852, and gives the results of some recent assays.

1, 4 CARROLL, D., 1949 - Possibilities of heavy mineral correlation of some Permian sedimentary rocks, New South Wales. Bull. Amer. Ass. Petrol. Geol., 24(4), 636-48. Describes the heavy-mineral residues of samples representing about 30 feet of coarse sandstone or grit obtained as core samples from a bore in the Permian sediments at Kulnura, N.S.W. The mineralogy of the Upper and Lower Marine Series is described for the first time, and several lines for further investigation are suggested.

4, 13 CARROLL, D., BREWER, R., and HARLEY, J.E., 1949 - Pebbles from the Upper Hunter River Valley, New South Wales. J. Proc. Roy. Soc. N.S.W., 1949, 83, 288-301. A detailed description of some pebbles from the lower Narrabeen and the Permian, which make up a large part of present-day pebbles.

10, 16 CASTLE, J., and SCOTT, A.G., 1964 - Ores from Yerranderie. J. Syd. Uni. Student geol. Soc., 2, 24-30. Ore minerals from the Yerranderie silver-lead mining field were examined.

4, 16 CHALMERS, R.O., 1941 - The petrology of the Five Islands, Port Kembla, N.S.W. Rec. Aust. Mus., 21(1), 27.

4 CHALMERS, R.O., 1955 - Clarke Memorial Lecture: Some aspects of New South Wales gemstones. J. Proc. Roy. Soc. N.S.W., 89, 90.

4 CHALMERS, R.O., 1967 - AUSTRALIAN ROCKS MINERALS AND GEMSTONES. Sydney, Angus & Robertson.

7, 14 CHAPMAN, F., 1909 - On some microzoa from the Wianamatta Shales, New South Wales. Geol. Surv. N.S.W. Rec. 8, 334-9.

7 CHAPMAN, F., 1920 - On some Palaeozoic Ostracoda from New South Wales. Geol. Surv. N.S.W. Rec. 9, 98. Describes Leperdita prominens, Primitia dunii, and Jonesina etheridgei from Farley and Cessnock.

7 CHAPMAN, F., and HOWCHIN, W., 1905 - A monograph of the Foraminifera of the Permo-Carboniferous limestones of New South Wales. Geol. Surv. N.S.W., palaeont. Mem., 14, 1-22.

7 CHAPMAN, F., HOWCHIN, W., and PARR, W.J., 1934 - Revision of the nomenclature of the Permian Foraminifera of New South Wales. Proc. Roy. Soc. Vic., 47(N.S.) (1), 175-89. A revision of early records with correlative notes on published occurrences elsewhere in Australia.

7, 14 CHILTON, C., 1917 - A fossil isopod belonging to the freshwater genus Phreatoicus. J. Proc. Roy. Soc. N.S.W., 51, 365-88. Describes freshwater shrimps from shales (Wianamatta Shale) at St Peters Brickworks, Newtown, Sydney, to which the author gives the specific name Phreatoicus wianamattensis (after Tillyard, 1916). The age of the shales is given as Trias-Jura, possibly Upper Triassic.

7 CHILTON, C., 1929 - Note on a fossil shrimp from the Hawkesbury Sandstones. J. Proc. Roy. Soc. N.S W., 62, 366-8. The fossil was recovered from a shale band about the middle of the Hawkesbury Sandstone. It is said to be similar to Anaspides, a freshwater shrimp still living in Tasmanian streams, but exact identification proved impossible. The author tentatively named it Anaspides (?) antiquus.

7 CLARKE, W.B., 1848 - On the genera and distribution of plants of the Carboniferous System of New South Wales. Quart. J. geol. Soc. London, 4, 60-3. Gives a list of plants and mention sundry other fossils; distinguishes the Hawkesbury rocks and the Wianamatta Basin; considers the Australian series as the representative of the Silurian and Devonian rocks, including the Carboniferous system of England.

7 CLARKE, W.B., 1848 - Genera and distribution of plants in Carboniferous of New South Wales. J. Proc. Roy. Soc. Lond., 3.

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4, 16 CLARKE, W.B., 1849 - On dykes of marble and quartz in connection with plutonic rocks of the Upper Wollondilly in Argyle County N.S.W. Tas. J. Nat. Sci., 3, 51.

1 CLARKE, W.B., 1849 - On the Carboniferous formations of New South Wales. Tas. J. nat. Sci., 3, 1.

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1 CLARKE, W.B., 1855 - Notes on the geology of New South Wales. Quart. J. geol. Soc. Lond., 11, 408.

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7 CLARKE, W.B., 1861 - A communication on Prof. McCoy's 'new Taeniopteris' from the coal bearing rocks of the Cape Paterson district in particular and on the evidence bearing on the question of the age of Australian coal belts in general. Trans. Roy. Soc. Vic., 5, 89-95.

7 CLARKE, W.B., 1862 - On the occurrence of Mesozoic and Permian fauna in Eastern Australia. Quart. J. geol. Soc. Lond., 18, 244, Phil. Mag., 23, 558, and Geologist, 5, 184. Specimens from the Maranoa and Fitzroy Downs.

1, 7 CLARKE, W.B., 1862 - On the age of New South Wales coalfields. Ann. Mag. nat. Hist., 10, 81.

0, 11, 14 CLARKE, W.B., 1865 - Alleged gold-field at the head of the Nepean River, New South Wales. Geol. Mag., 2(13), 330-4. Describes the Nepean and Macquarie headwater systems, the basic stratigraphy and igneous intrusive rocks, besides the drift in which traces of alluvial gold had been reported. Wianamatta Beds, 'Hawkesbury rocks', coal-measures, and underlying fossiliferous beds are mentioned.

1, 13 CLARKE, W B., 1865 - On the coal seams near Stony Creek (junction of Singleton and Wollombi Roads), West Maitland district. Proc. Roy. Soc. Vic., 6, 27-31. A brief account of the geology of the area containing the Palaeozoic fossiliferous beds.

1, 7, 13 CLARKE, W.B., 1865 - On the Carboniferous and other geological relations in the Maranoa district in Queensland in reference to a discovery of zoological fossils in Wollombilla Creek and Stony Creek, West Maitland. Trans. Roy. Soc. Vic., 6, 32-42.

1, 10 CLARKE, W.B., 1866 - On the occurrence and geological position of oil-bearing deposits in New South Wales. Quart. J. geol. Soc. Lond., 22(2), 439-48. The stratigraphy of the coal-bearing and associated beds of New South Wales is summarized as Wianamatta Beds, Hawkesbury

rocks, Upper Coal Measures, Upper Marine beds, Lower Coal Measures, Lower Marine beds, and 'basement'. Most cannels occur in the Upper Coal measures which contain Glossopteris.

1 CLARKE, W.B., 1867 - Remarks on sedimentary formations in New South wales. Sydney Govt Printer, (1st Ed.).

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1, 10 CLARKE, W.B., 1873 - Anniversary address: Exploration in Australia - Coal. Trans. Roy. Soc. N.S.W., 7, 17. Contains predictions on the extent of the New South Wales coal seams.

1 CLARKE, W.B., 1875 - Sedimentary formations in New South Wales. Mines & Min. Strat. N.S.W., 161.

1 CLARKE, W.B., 1878 - Remarks on the sedimentary formations of New South Wales. Sydney Govt Printer, (4th Ed.).

1, 7, 13 CLARKE, W.B., 1884 - (Reprint) Appendix F. On the fossil pine-forest of Kurrur Kurran (Lake Macquarie). Dep. Min. N.S.W. Ann. Rep. 1884, 156-9.

1, 10 CLARKE, W.B., and MACKENZIE, J., 1863 - Coal fields of New South Wales. Min. J , 33, 749.

9 CLEARY, J.R., DOYLE, H.A., and MOYE, D.G., 1964 - Seismic activity in the Snowy Mountains region and its relationship to geological structures. J. geol. Soc. Aust., 11, 89-106.

13 COFFEY, W.G., 1964 - A bibliography of the Hunter Valley region, New South Wales. Hunter Valley Res. Fdn Monogr. 19.

10 COLLINS, D., 1802 - An account of the English Colony in New South Wales. (Coal at Newcastle, p. 48) London, 1798, 1802, Vol. II.

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5, 14 CONAGHAN, H.F., 1957 - Water from test bore at Dural. Dep. Min. N.S.W. tech. Rep. 5, 273. An analysis of water from Permian sediments at 5 200 feet in a bore at Dural.

5, 13 CONAGHAN, H.F., and HARRISON, E.J., 1956 - Upper Hunter groundwater investigation Part III - Field conductivity measurement in groundwater investigation. Dep. Min. N.S.W. Ann. Rep. 1948, 107.

10 CONDON, M.A., FISHER, N.H., and TERPSTRA, G.R.J., 1958 - Summary of oil-search activities in Australia and New Guinea to the end of 1957. Bur. Miner. Resour. Aust. Rep. 41.

1, 3 CONOLLY, J.R , 1964 - Trough cross-stratification in the Hawkesbury Sandstone. Aust. J. Sci., 27, 113. Sandwaves similar in size to those in the Mississippi were probably responsible for the deposition of cosets of cross-strata in the Hawkesbury Sandstone, which was deposited in the fluvial region of a large delta.

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3 CONOLLY, J.R., 1965 - Large-scale cross-stratification in Triassic sandstones, Sydney, Australia. J. sediment. Petrol., 35, 765-7.

12 CONOLLY, J.R., 1967 - Quaternary Tasman geosyncline of southeastern Australia. Adv. Study Syd. Bas., 2nd Symp., 22-3. 'The general tectonic and sedimentary setting of the Tasman abyssal plain shows that it is an actively sinking area which is filling with sediments derived mainly from the continental margin. It probably represents the Quaternary equivalent of the Tasman Geosyncline of earlier geological eras'.

1, 3 CONOLLY, J.R., 1968 - Models for Triassic deposition in the Sydney Basin. J. geol. Soc. Aust. spec. Publ. 2, 209-23. Fluvial deltaic and tidal-marine depositional models may be referred to different sequences of Triassic rocks of the Sydney Basin. Tidal-flat models can be applied to parts of the Wianamatta-Hawkesbury sequences, and various deltaic

and fluvial models to the Narrabeen sequences. Around Sydney, rocks of the Hawkesbury and Narrabeen sequence contain sediment tongues which must derive from two and perhaps three vastly different source areas. The chocolate claystones of the Narrabeen are considered to be formed in inter-distributary bays, open at times to influxes of seawater, and to be derived mainly from a basaltic volcanic complex lying towards the now open Tasman Sea.

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3, 10, 16 COOK, A.C., 1969 - Trend-surface analysis of structure and thickness of Bulli Seam, Sydney Basin, New South Wales. Math. Geol., 1(1), 53-78. Methods are presented which permit the analysis of structural and thickness variations of a stratigraphic interval into a number of components, and testing of the components for relationship between structure and thickness. The methods are tested first in the

axial region of the South Bulli Syncline where the Bulli Seam is thicker. Maps of the residual values from the structural and thickness first-degree trends are similar and there is a significant inverse relationship between the residuals. Data also give seam structural and thickness residuals which have a significant inverse relationship. Local exceptions are mostly due to laccolithic doming or lithology changes in the Bulli Seam. Some of the trend components of structural and thickness variation also show on inverse relationship. It is postulated that most of the present structures defined at the Bulli Seam horizon were active during deposition of the seam, and within the limits of the conditions suitable for peat accumulation, controlled thickness of the Bulli Seam. Thickness changes in overlying units suggest that a major part of the warping of the Bulli Seam horizon had occurred by the end of the Triassic Period.

4, 10, 16 COOK, A.C., and READ, H.W., 1968 - The petrography of a coal seam from the Clyde River Coal Measures, Clyde River Gorge, N.S.W. J. Proc. Roy. Soc. N.S.W., 101, 109-18. The coal is only moderately rich in vitrinite and contains significant amounts of exinite. The petrography, chemical analyses, and rank of the Greta and Clyde River Coal Measures' coals are very similar. Most of this Clyde coal is authochthonous.

10, 13 COOK, A.C., and WILSON, R.G., 1969 - Rank and type variations in coals from the Southern and Southwestern Coalfields, New South Wales, and their influence upon coking. Proc. Aust. Inst. Min. Metall., 232, 27-40.

3, 4, 10, 16 COOK, A.C., and WILSON, R.G., 1969 - Rank and type in coals from the Southern and South Western Coalfields, N.S.W., and their influence upon coking. Aust. Inst. Min. Metall. Ann. Conf. 1969, Sec. E, 4. Rank increases to the north and east. The main local departure from this trend is related to the Bulli Anticline and South Bulli Syncline; also to proximity to igneous rock. Rank is conveniently expressed by reflectance of vitrinite. The types of coal can be expressed in terms of vitrinite content free of mineral matter.

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2, 9, 13 COOPER, J.A., RICHARDS, J.R., and WEBB., A.W., 1963 - Some potassium argon ages in New England, New South Wales. J. geol. Soc. Aust., 10(2), 313-16. The results of K-Ar measurements on 3 samples from the southern end of the New England bathylith confirm its Permian age (240-245 m.y.). Two samples of 'pre-Permian' granite confirm its Lower Permian, or older, age (Hillgrove, 270 m.y.; Barrington Tops, 260 m.y.). The andesite lava from the Lower Kuttung (near Wallabadah) should be of the order of 300 + m.y.; the result obtained (250 m.y.) suggests argon loss which is understandable as adjacent sediments have suffered zeolite facies burial metamorphism.

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9 COTTON, L.A., 1915 - Some geophysical observations at Burrinjuck. J. Proc. Roy. Soc. N.S.W , 49, 448.

9, 15 COTTON, L.A., 1921 - The Kurrajong Earthquake of August 15, 1919. J. Proc. Roy. Soc. N.S.W., 1921, 55, 83-104. The isoseismals have an L-shaped distribution. The eastern limb is related to the Kurrajong Fault whilst the direction of the western limb 'corresponds to that of a very important fault system in the Maitland area' and coincides 'in both direction and position with the trough of this Permo-Carboniferous and Triassic geosyncline.....' '.....the earthquake was due to block-faulting, in which one corner of a crustal block was simultaneously displaced along two intersecting fault-planes'.

8 COTTON, L.A., 1946 - The pulse of the Pacific. J. Proc. Roy. Soc. N.S.W., 80(2), 41-76. Quaternary strandline changes in the Pacific region, including many along the New South Wales coast, and correspond to a

striking degree throughout the area. Benches between 300 ft above and 300 ft below sea level are therefore considered to be due to eustatic changes; other causes are suggested for strandlines outside these limits.

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10 COX, S.K., 1890 - The coalfields of Australasia. Trans. fed. Inst. Min. Engrs, 1891, 11, 331-43.

8, 15 CRAFT, F.A., 1928 - The physiography of the Cox River Basin. Proc. Linn. Soc. N.S.W., 53(3), 207-54. This paper deals with physiographic classification of the region (inc. Blue Mountains), the geology of the main structural features, the main folds and warps (including the Mulgoa Step, the Kowmung Warp and the Old Blue (Mountain) Anticline), streams and past history of the area.

8, 16 CRAFT, F.A., 1928 - The physiography of the Wollondilly River Basin. Proc. Linn. Soc. N.S.W., 53(5), 618-50. This describes the geology of the area, topographic divisions (Blue Plateau, Jenolan Plateau, Western Wollondilly - Abercrombie Block, Shoalhaven Plateau, Lake George Complex and Nepean Ramp), physiographic type, warps and faults of the area.

5, 8, 16 CRAFT, F.A., 1930 - The topography and water supply of Coxs River, N.S.W. Proc. Linn. Soc. N.S.W., 55(4), 417-28. Coxs River drains 1 300 sq miles of plateau country west of Sydney; its water flows into the Hawkesbury - Nepean System. The valley of Coxs River and its main tributary the Kowmung, form a line of demarcation between Permian and Triassic strata on the south and east, and Silurian and Devonian beds on the west. The Hawkesbury Sandstone is essentially non water-bearing, e.g. evidence from various bores in the Sydney Basin and the Balmain Shaft. The Narrabeen Beds give little seepage into Coxs River. Coal Measures below Narrabeen Beds are usually quite dry in adits. The sandstones are compact and tightly cemented and form good storage grounds, as shown by reservoirs at Katoomba, Lithgow etc. Also, the top beds of the Hawkesbury Sandstone on the plateau consist of ferruginized quartz pebble conglomerate underlain by grit with numerous bands and concretions of iron oxide.

8, 16 CRAFT, F.A., 1931 - The physiography of the Shoalhaven River Valley: I. Tallong - Bungonia. Proc. Linn. Soc. N.S.W., 56(2), 99-132. The geology, physiography, land forms, soil, water supply, and history of the area are discussed. Substantial uplifts occurred at stages throughout the Tertiary, mainly the late Tertiary. The chronology is listed as:

(1) Early uplift of pre-Permian peneplain and overlying Permo-Triassic sediments to levels slightly above sea-level;
(2) Further 300 ft uplift;
(3) Extrusion of 'newer basalts';
(4) Great uplift (1 000 ft) in stages, considerable erosion;
(5) Erosion of modern gorges.

8, 16 CRAFT, F.A., 1931 - The physiography of the Shoalhaven River Valley. II. Nerrimunga Creek. Proc. Linn. Soc. N.S.W., 56,243-60. The features developed in the Tallong-Bungonia area are found to extend southward into the Nerrimunga Creek drainage area. The features diminish westwards, but the Shoalhaven Plain extends farther south. Old channels filled with alluvial material are incised 300-400 ft below its general level. Probably their age is late Tertiary, like the basalts, and a similar but perhaps more modern channel eroded to the same level is Nerrimunga Creek. The physiographical history of the area is also discussed.

8, 16 CRAFT, F.A., 1931 - The physiography of the Shoalhaven River Valley: III. Bulee Ridge. Proc. Linn. Soc. N.S W., 56(3), 261-65. The topography, physiography, soil, and water supply of the area are discussed briefly.

8, 16 CRAFT, F.A., 1931 - The physiography of the Shoalhaven River Valley: IV. Nerriga. Proc. Linn. Soc. N.S.W., 56(5), 412-30. The geology, topography, physiography, land forms, and physiographic history of the area are discussed. Late Tertiary uplift is thought to have been of the order of 1 400 feet.

8, 16 CRAFT, F.A., 1932 - The physiography of the Shoalhaven River Valley: V. The upper valley and the stream system. Proc. Linn. Soc. N.S.W., 57, 197-212. The upper valley of the Shoalhaven has not been trenched by modern canyons but the Shoalhaven plain extends southward between high ridges to split up into a number of parallel, mature valleys as the head of the river is approached. These are separated from one another by hills and ridges which rise to a common level surmounted by the residuals of Gourock Range.

3, 8, 16 CRAFT, F.A.. 1932 - The physiography of the Shoalhaven River Valley: VI. Conclusion. Proc. Linn. Soc. N.S.W., 57(3 & 4), 245-60. Evidence of a three-stage history is given. First, Kanimbla peneplanation; second, base level at top of Triassic sediments deposited in the Sydney Basin with mature valleys developing in the hinterland (uplifted Kanimbla surface) to the southwest; and third, series of regional uplifts (meridional trend) culminating in the Kosciusko uplift, bringing the modern rejuvenatio cycle into being. Basalts were extruded before and after the later uplift.

8, CRAFT, F.A., 1932 - Notes on erosional processes and stream gravels. Proc. Linn. Soc. N.S.W., 57(3 & 4), 280-90. The following topics are discussed in relation to features described in eastern N.S.W. - land forms in granite areas; differential erosion in horizontal rocks (e.g. Blue Mountains area - conclusion reached that the existing broad valleys were cut when their lowest points were not far above sea level); the material carried by certain highland streams (it is suggested that there are limiting conditions for the attainment of maximum pebble size in any stream); surface deposits and past climates in the Shoalhaven Valley.

8. 15 CRAFT, F.A., 1932 - Geographical studies in the Blue Mountain Tableland. Proc. Linn. Soc. N.S.W., 57, 40. There is slight mention of the Yerranderie silver field and the kerosene shale of the western Blue Mountains plateau. Other discussion is concerned with land occupation, railways, tourist resorts, Lithgow, the nature of the town, the valleys, communications, and future development.

8 CRAFT, F.A., 1933 - The coastal tablelands and streams of New South Wales. Proc. Linn. Soc. N.S.W., 58, 437. After an historical introduction, the author describes the topography, including interior and exterior forms, physiographical meaning of the basalts and relief shown by the latter. Classification and examples of the streams, followed by a comparison of the Grafton and Sydney basins in terms of topography and stream equivalents.

4 CRAIG, D.C., and LOUGHNAN, F.C., 1964 - Chemical and mineralogical transformations accompanying the weathering of basic volcanic rocks from N.S.W. Aust. J. Soil. Res., 2(2), 218-34.

9 CREER, K.M., 1965 - Palaeomagnetic data from the Gondwana Continents. In 'A symposium on continental drift'. Trans. Phil. Roy. Soc. Lond., A1088 (258), 27-40. In a table summarizing Australian palaeomagnetic data, figures are given for various igneous rocks in the Sydney Basin. Diagrams show the position of Australia relative to the palaeo-pole.

7, 13 CRESPIN, Irene, 1945 - Some Permian Foraminifera from eastern Australia. Proc. Roy. Soc. Qld, 56, 23-30. Specimens from the Kulnura bore, the Hunter River district and from Springsure in Qld are described.

7, 13 CRESPIN, Irene, 1945 - Permian Ostracoda from eastern Australia. Proc. Roy. Soc. Qld, 56, 31. The species discussed are from the Kulnura bore, the Hunter Valley and from Springsure in Qld.

7, 13 CRESPIN, Irene, 1947 - Foraminifera in the Permian rocks of Australia. Bur. Miner. Resour. Aust. Bull. 15 (Pal. Ser. 5). Deals with the Upper Marine series in the Hunter Valley and elsewhere; the Lower Marine Series in the Hunter Valley and elsewhere.

7, 13 CRESPIN, Irene, 1954 - Permian Foraminifera in Australia. Aust. N.Z. Ass. Adv. Sci., 1954, Canberra. From the Hunter River, three assemblages can be recognized. 1. Arenaceous forms (Hyperamminoides and Ammodiscus) from the Mulbring Siltstone. 2. Arenaceous and calcareous forms (Hyperamminoides, Digitina, Ammodiscus, Frondicularia, Nodosaria) from the Branxton Formation. 3. Calcareous forms (Calcitornella, Geinitzina, Nodosaria) from the Lower Marine Series.

7 CRESPIN, Irene, 1958 - Permian Foraminifera of Australia. Bur. Miner. Resour. Aust. Bull. 48. The N.S.W. species are listed on pp. 12-13.

7 CRESPIN, Irene, 1958 - Microfossils in Australian and New Guinea stratigraphy. J. Roy. Soc. N.S.W., 92, 133-47. Lists the groups of relevant microfossils and briefly describes their occurrence.

7 CRESPIN, Irene, 1960 - Catalogue of type and figured specimens in the Commonwealth Palaeontological Collection, Canberra. Bur. Miner. Resour. Aust. Rep. 54.

7 CRESPIN, Irene, and PARR, W.J., 1940 - Arenaceous Foraminifera from the Permian rocks of New South Wales. J. Proc. Roy. Soc. N.S.W., 74, 300.

7 CROCKFORD, Joan, M , 1940 - Permian Bryozoa of eastern Australia. Part I: A description of some previously named species of Fenestrellinidae. J. Roy. Soc. N.S.W., 74, 397. Gives distribution in Upper and Lower Marine Series and in Tasmania. Fenestrellinidae (= Fenestillindae) and Polyporidae.

7 CROCKFORD, Joan, M., 1940 - Permian Bryozoa of eastern Australia. Part II: New species from the Upper Marine series of New South Wales. J. Roy. Soc. N.S.W., 74, 502-19.

7 CROCKFORD, Joan, M , 1942 - Permian Bryozoa of eastern Australia. Part III Batostomellidae and Fenestrellinidae from Queensland, New South Wales and Tasmania. J. Roy. Soc. N.S.W., 1942, 76, 258.

7 CROCKFORD, Joan, M., 1945 - Stenoporids from the Permian of New South Wales and Tasmania. Proc. Linn. Soc. N.S.W., 70(1 & 2), 9-24. In eastern Australia 12 bryozoan genera are so far known and are extremely uniform throughout the Upper and Lower Marine series of N.S.W. The two previously recorded species of Stenopora are revised and new species described.

7, 13 CROCKFORD, Joan, M , 1947 - Bryozoa from the Lower Carboniferous of New South Wales and Queensland. Proc. Linn. Soc. N.S.W., 72(1 & 2), 1-48. Bryozoa from the Lower Carboniferous of Queensland and from the Lower and Upper Burindi Series and the Lower Kuttung Facies (Lower Carboniferous) of N.S.W. include representatives of several general common in Lower Carboniferous of Europe and North America but not previously known to occur in rocks of this age in eastern Australia.

7 CROCKFORD, Joan, M., 1948 - Bryozoa from the Upper Carboniferous of Queensland and New South Wales. Proc. Linn. Soc. N.S.W., 73(5 & 6), 419-29. Bryozoa from the Neerkol Series in Queensland and from a thin marine intercalation in the fresh water Upper Kuttung Series in New South Wales.

7 CROCKFORD, Joan, 1952 - The development of bryozoan fauna in the Upper Palaeozoic of Australia. Proc. Linn. Soc. N.S.W., 76, 105-22. Deals with the age of bryozoan faunas from the Burindi and Lower Kuttung Series with notes on distribution in the Permian of eastern Australia and stratigraphical use of the faunas.

7, 13 CROCKFORD, Joan, M. and BROWN, Ida, A., 1940 - A Permian blastoid from Belford, New South Wales. Proc. Linn. Soc. N.S.W., 65, 167-70. Notes on two specimens of radial plates of a blastoid collected in the Hunter River district in the Upper Marine series - a physical description, other occurrences and geological age.

1, 4, 15 CROOK, K.A.W., 1956 - The stratigraphy and petrology of the Narrabeen Group in the Grose River district. J. Roy. Soc. N.S.W., 80(2), 61-79. The Narrabeen Group is divided into: the Caley Formation (sandstone and shale), succeeded by the Grose Sandstone, succeeded by the Burralow Formation (sandstone, shale, and 'chocolate shale'). Petrographic descriptions indicate a source containing low-grade metamorphics and abundant vein quartz. The underlying Lighgow Coal Measures and the overlying Hawkesbury Sandstone are briefly described.

2, 9, 15 CROOK, K.A.W., 1957 - A polarity reversal in the Tertiary volcanics of the Kurrajong - Bilpin district, with petrological notes. J. Roy. Soc. N.S.W., 91, 57-65. The volcanics occur as dykes, flows, and necks of alkali olivine basalt containing titanomagnetite, but no ilmenite or ulvospinel. One 80-foot flow gives anomalies to +1 046 gammas. The Merroo Neck exhibits reversal of polarity, apparently due to reversal of the geomagnetic field, and gives anomalies to -2 219 gammas.

1, 3 CROOK, K A.W , 1957 - Cross-stratification and other sedimentary features of the Narrabeen Group. Proc. Linn. Soc. N.S.W., 82(2), 157-66. Inferred current directions suggest a northwesterly source for western units and northeast to east source for eastern units. Brief notes on petrography and sedimentation are included. An attempted reconstruction of the depositional setting indicates three probable sources: northwest, north, northeast.

0, 13 CROOK, K.A.W., 1961 - Stratigraphy of the Tamworth Group, of the Parry Group (U. Dev.-L. Carb.) and the post-Carboniferous stratigraphy of the Tamworth-Nundle district, N.S.W. J. Roy. Soc. N.S.W., 94, 173-213. These 3 papers deal with the geology of an area closely related to the Sydney Basin.

3, 13 CROOK, K.A.W., 1962 - Structural geology of part of the Tamworth Trough. Proc. Linn. Soc. N.S.W., 87(3), 397-409. Structural analysis of the area between Tamworth, Nundle, and Wallabadah suggests that two deformational phases affected the region. In the first, which began in the Artinskian, joints were formed early, and were rotated with bedding as plane cylindrical parallel folds formed with axes at 350°, regionally horizontal. A fracture cleavage in the axial plane developed in the mudstones of the sequence; it is more prominent towards the east. Thrust faults, often in fold hinges, and subparallel normal faults were formed in the closing stages of this phase.
In the second phase, which probably began in the late Permian. wrench faults accompanied by serpentinite along the Peel Fault System developed in the eastern margin. They strike 340° and dip steeply eastwards. Late normal faulting near Tamworth is also referred to this phase. The 2 phases together constitute the Hunter - Bowen Orogeny and were completed before the Moonbi Granite of Permo-Triassic age was emplaced.

1, 3, 13 CROOK, K.A.W., 1964 - Depositional environments and provenance of Devonian and Carboniferous sediments in the Tamworth Trough, N.S.W. J. Roy. Soc. N.S.W., 97(2), 41-53. Much of the Tamworth and Parry Groups accumulated probably in deep water from turbidity currents. Most of the sediment came from the southwest.

1, 15 CROOK, K.A.W., and McELROY, C.T., 1969 - Triassic System - Narrabeen Group - Blue Mountains and Western Margin (Grose Valley, Lower Blue Mountains and Katoomba Area). J. geol. Soc. Aust., 16(1).

1, 10, 13 CROUCH, A.B., 1962 - Variation in cover thickness above the Great Northern Seam in Portion 153, Parish Awaba, County Northumberland. Geol. Surv. N.S.W. Rep. 8. Portion 153 is in the northwest corner of the Awaba State Coal Mine Holding and represents the approximate northern limit of the workable Great Northern Seam coal in the holding. The drilling program in Portion 153, as well as providing data on seam thickness, quality, and thickness of cover, also provided information on the variation in the nature of the Teralba Conglomerate which overlies the Great Northern Seam.

10 CROUCH, A.B., and COLEMAN, M.B., 1963 - Report on roof-falls, Oakdale State coal-mine. Geol. Surv. N S.W. tech. Rep. 8, 59-62.

1, 14 CULEY, Alma, G., 1910 - Log of Windeyer's Hawkesbury Bore. Dep. Min. N.S.W. Ann. Rep. 1910, 69-72.

3 CULEY, Alma, G., 1932 - Ripplemarks in the Narrabeen Series along the coast of New South Wales. J. Roy. Soc. N.S.W., 66(2), 248-72. Ripple marks were measured north of Broken Bay, south of Barrenjoey, and near Bulgo to the south; ripples occur throughout the Narrabeen sequence but are most common near the top and north of Sydney in alternating sandstones and shales. They are of the symmetrical type, rarely asymmetrical, with some cross-ripples. Most wave-lengths are 1" - 3" with ripple indexes about 10 in sandstones and 17 for shales. Ripples are associated with sun-cracks, worm burrows, and plant remains (inc. Phyllotheca); directions are said to cluster around azimuths NW, N, NE, and E. Triassic environment and palaeogeography and discussed.

4 CULEY, Alma, G., 1932 - Notes on the mineralogy of the Narrabeen Series of New South Wales. J. Roy. Soc. N.S.W., 66(2), 344-77. The percentage of heavy minerals in Narrabeen sediments is variable and low. Zircon, rutile, tourmaline, and picotite are constant constituents; magnetite and ilmenite common. Zincous garnet, apatite, and monazite are present north of Sydney. Galena is present in Mt Victoria area and chalcopyrite and pyrites occur locally. Authigenic minerals listed include calcite and siderite. 'No definite conclusions as to the origin of the Narrabeen Beds have been made, although a mineralogic relation with the older underlying Kamilaroi System is suspected'.
Recrystallized quartz is recorded in an uppermost Narrabeen Sandstone at Bulli.

4, 13 CULEY, Alma, G., 1938 - The heavy mineral assemblages of the Upper Coal Measures and the Upper Marine Series of the Kamilaroi System, New South Wales. J. Roy. Soc. N S.W., 72, 75-105. About 80 specimens were examined from the Upper Coal Measures and the 'Upper Marine Series' from various localities fringing Narrabeen exposures. Heavy minerals include garnet, magnetite, picotite, pyrite, anatase, rutile, zircon, apatite, ilmenite, siderite, tourmaline, monazite, hematite, and some others. The significance and source of some of the constituent minerals are discussed. Heavy minerals of the 'Kamilaroi' sediments and the Triassic Narrabeen Beds are briefly compared.

2, 3, 15 CULEY, Alma, G., and JOPLIN, Germaine, A., 1936 - Evidence of magmatic stoping in a dyke at Hartley, N.S.W. J. Roy. Soc. N.S.W., 70, 327-31. Evidence comes from (i) jointing (ii) veins (iii) inclusions.

CUMBERLAND COUNTY COUNCIL, 1948 - The planning scheme for the county of Cumberland, New South Wales. Sydney Cumberland County Council.

2, 14 CURRAN, J.M , 1894 - On the structure and composition of a basalt from Bondi, New South Wales. J Roy. Soc. N.S.W., 28, 217-31. The decomposed Bondi basalt occurs as a north-trending dyke, with horizontal branching sheets in Hawkesbury Sandstone.

10, 16 CURRAN, J.M., 1896 - On the occurrence of precious stones in N.S.W J. Proc. Roy. Soc. N.S.W., 1896, 30, 214-85. Southey's diamond mine, 7 miles southeast from Mittagong, is in a drift surrounded by Hawkesbury Sandstone or sandstones of the Upper Coal Measures. A volcanic breccia is thought to be the origin.

0, 14, 15 CURRAN, J.M., 1898 - THE GEOLOGY OF SYDNEY AND THE BLUE MOUNTAINS. Sydney Angus and Robertson.

6 CURRAN, J.W., 1902 - Report on road metal for the City of Sydney. Syd. Tech. Coll.

7 CVANCARA, A.M., 1958 - Invertebrate fossils from the Lower Carboniferous of N.S.W. J. Paleont., 32, 846-88. The area studied is around Gloucester. The specimens, including 11 new species, come from the upper Lower Burindi and are probably of upper Tournaisian age.

1, 7 DAINTREE, R., 1864 - Age of the New South Wales coal beds. Geologist, 7, 72; Coll. Guardian, 7, 150-67.

1, 7 DAINTREE, R., 1864 - Position des Couches à Glossopteris au dessous de roches de la Periode Carbonifère. Bull. Soc. géol. Fr., 21, 33.

0 DANA, J.D., 1849 - In United States exploring expedition during the years 1838, 1840, 1841, under the command of Charles Wilkes, USN; 10: Geology, 681-713.

1, 10 DANKINS, W.B., 1892-93 - The coal fields of New South Wales. Trans. Manch. geol. Soc., 22, 160; and Aust. Min. Stand., 9, 246, 361.

8, 15 DARWIN, C.R., 1845 - Geological Observations.....during the voyage of H.M.S. 'Beagle'. 2nd Edition, 146-54. The author describes the Hawkesbury Sandstone very accurately. He considers the Lapstone Monocline and nearby features as original structures of formation, and the Blue Mountains valleys as due to sea erosion.

10, 13 DAVID, T.W.E., 1886 - Report on the iron ore and limestone near Upper Muswell Creek, Muswellbrook. Dep. Min. NSW. Ann. Rep. 1886, 146. There seem to be two distinct ironstone beds interstratified with lower Carboniferous rocks. The quality is rather poor. The limestone, known as the Yellow Rock, occurs in thin beds in Balmoral Parish. The rock is oolitic and contains 'Encrinites'

1, 10 DAVID, T.W.E., 1886 - Notes on sundry coal occurrences. Dep. Min. N.S.W. Ann. Rep. 1886, 147-53. Details of occurrences at Piercefield (near Muswellbrook), West Maitland, East Maitland, Stony Creek, Deep Creek (near Bishops Bridge), Gunnedah.

2 DAVID, T.W.E., 1886-1890 - Notes on some points of basalt eruptions in N.S.W. Trans. geol. Soc. A'Asia, 1, 24.

1, 4, 14 DAVID, T.W.E., 1886-1890 - Cupriferous shales in Permian (?) rocks near Sydney. Trans. geol. Soc. A'Asia, 1, 82.

1, 10, 13 DAVID, T.W.E., 1887 - Progress report for 1887 (The Coal Measures of the Maitland district). Dep. Min. N.S.W. Ann. Rep. 1887-88, 145-52. The geology of the Stony Creek, Greta and East Maitland seams is described and thickness and quality of coal discussed. Many sections are given.

1, 10, 14 DAVID, T.W.E., 1887 - Report on the diamond drill bore on the Holt-Sutherland Estate. Dep. Min. N.S.W. Ann. Rep. 1887, 153-54. The Holt-Sutherland bore reached a depth of 2 307 feet (diameter 3"). Discussion concerns coal which was penetrated by the bore. Results of analyses are included. Some economic results are discussed.

1, 4 DAVID, T.W.E., 1887 - Evidence of glacial action in the Carboniferous and Hawkesbury Series, New South Wales. Geol. Mag., 4, 135. A brief review is given of evidence at Branxton, Muswellbrook, and in the Hawkesbury Series.

1, 3, 10 DAVID, T.W.E., 1887 - A preliminary examination of the Coal Measures in the N.E. of the Hunter Valley. Dep. Min. N.S.W. Ann. Rep. 1887, 146. This gives (a) a generalized section of the East Maitland Series, the Upper Marine Series, and the Stony Creek Series, (b) some notes on structure, (c) some details of coal seams.

1, 10, 13 DAVID, T.W.E., 1888 - Report on the coalfield at Leconfield, near Branxton. Dep. Min. N.S.W. Ann. Rep. 1888-89, 165-6.

2 DAVID, T.W.E., 1888 - 1. On the occurrence of basalt glass (tachylite) in the Vegetable Creek district. 2. Note on the occurrence of dacite at Moss Vale. 3. On a pitchstone from Port Stephens, showing faint perlitic structure. 4. On the occurrence of chiastolite in a stone hatchet found at Strathbogie, near Vegetable Creek. Proc. Linn. Soc. N.S.W., 2, 1 078-85. 1. 'At Vegetable Creek basalt glass occurs as small ejected blocks, or lapilli....cemented....into a fine volcanic agglomerate.' Microscopic structure is discussed. 2. This rock may be described as a microcrystalline quartzose hornblende andesite. A microscopic description is given.

1, 10 DAVID, T.W.E., 1888 - Notes on sundry coal measure localities. Dep. Min. N.S.W. Ann. Rep. 1888, 165-75. Occurrences in the Hunter Valley and the Southwestern Coalfield are described, especially that at Hill top near Mittagong.

1, 10, 14 DAVID, T.W.E., 1888 - Appendix 2B: Progress report on the southern extension of part of the Great Northern Coal fields towards Hawkesbury River. Dep. Min. N.S.W. Ann. Rep. 1888, 166-7. The results of bores at Dora Creek, Wallarah Creek (8 miles southerly), and Wyong (2 miles southwest of the Wallarah bores) are interpreted in relation to the economics of the coal measures.

1, 10, 13 DAVID, T.W.E , 1888 - Progress report on the extension of the Greta Coal Measures from the Homeville Colliery near West Maitland to Deep Creek near Bishops Bridge, 8½ miles south-west of West Maitland. Dep. Min. N.S.W. Ann. Rep. 1888-89, 167-9. The Greta Coal measures are continuous from Homeville at least as far as Deep Creek and the four upper seams at Homeville unite in a southerly direction so as to form a single seam about 14 feet thick at Deep Creek. The economics of the seams are discussed.

1, 10, 16 DAVID, T.W.E., 1888 - Report on the coal measures near Hill top, between Mittagong and Picton, Southwestern Coalfield. Dep. Min. N.S.W. Ann. Rep. 1888, 169-73. The coal measures crop out at the base of Hawkesbury Series precipices. The outcrop of the principal seam can be traced at intervals from Bundanoon to Picton Lakes. Comparative sections show the variation in the thickness and character of the main seam between Mittagong and the neighbourhood of Hilltop. Economic aspects are discussed.

1, 2, 10, 13 DAVID, T.W.E., 1888 - Preliminary report on the Government diamond drill bore for coal, Hexham Island, near Newcastle. Dep. Min. N S.W. Ann. Rep. 1888, 173-4. The coal seam was struck at 512 feet. Much of the coal has been burnt by intrusive sheets of dolerite. Tomago seams underlie Hexham Island.

1, 2, 13 DAVID, T.W.E., 1888 - Report on the land between Seaham and Clarencetown on the Williams River. Dep. Min. N.S.W. Ann. Rep. 1888, 174. The formation consists of rocks of igneous origin such as quartz-porphyries and volcanic conglomerates and shales of sedimentary origin.

1, 4 DAVID, T.W.E., 1889 - Note on the origin of kerosene shale. Proc. Linn. Soc. N.S.W., 4(2), 483-500. Localities, occurrence, chemical composition, previous theories about origin such as drift timber theory, distillation theory, vegetable secretion theory, and the coorongite theory. He presents arguments against each and puts forward the theory that kerosene shale was formed from sporangia, spores, pollen, or seeds.

1, 2, 10, 13 DAVID, T.W.E., 1889 - Progress report No. 2 on the Port Stephens district with special reference to the property of the Port Stephens Coal Mining Co., and to suitable sites thereon for the employment of the Government diamond drill to bore for coal. Dep. Min. N.S.W. Ann. Rep. 1889, 223-5. The attitude of the coal seam is disccussed with reference to its economic exploitation. The occurrence of igneous rocks is noted.

10, 13 DAVID, T.W.E., 1889 - Progress report No. 3 - Port Stephens district. Dep. Min. N.S W. Ann. Rep. 1889, 225-6. Special reference is made to the probability of the occurrence of coal on portions of the Church and School lands held by H.H. Brown (MLA) and with special reference to suitable sites for boring for coal with the diamond drill.

1, 4, 13 DAVID, T W.E., 1889 - Preliminary report on the occurrence of salt at Aellalong, near Maitland. Dep. Min. N.S.W. Ann. Rep. 1889, 212. The salt is found about half way up the northern slope of Myall Range,

underneath the upper of two Triassic beds of sandstone, both of which contain abundant marine fossil shells belonging to the Upper Marine Series. The salt bed is described and some theories as to its origin suggested.

1, 4, 13 DAVID, T.W.E., 1889 - Second report on the occurrence of salt near Aellalong, with description of the landslip near Barraba, and note on the occurrence of salt near Scone. Dep. Min. N.S.W. Ann. Rep. 1889, 212, 213. The author refutes the explanation of landslip as due to the salt bed and suggests other reasons. The similarities of the salt near Scone with that at Aellalong are discussed and some corrections made to statements concerning the position of strata in a previous note on the salt at Aellalong.

1, 7, 13 DAVID, T.W.E., 1889-1890 - General report on the coal, iron and kerosene shale of the Port Stephens district and on the coal measures near Stroud. Dep. Min. N.S W. Ann. Rep. 1889-90, 218-21. Recent examination of the Stroud district shows that the formations belong to two distinct groups; the older characterized by the presence of Rhacopteris and Lepidodendron; and the newer by Gangamopteris and Glossopteris. The Rhacopteris beds contain several small seams of coal; the seams and their contents are discussed and sections measured by J. MacKenzie are included.

1, 10, 13 DAVID, T.W.E., 1889 - Geological survey of the Hunter River Coalfield. Occurrence of kerosene shale and probably of the Greta Coal Measures at Port Stephens, and the probable occurrence of the Greta Coal Measures and the kerosene shale near Morpeth. Dep. Min. N.S.W. Ann. Rep. 1889, 227-8.

1, 4, 14 DAVID, T.W.E., 1889 - Cupriferous tuffs of the Passage Beds between the Triassic Hawkesbury Series and the Permo-Carboniferous Coal Measures of N.S.W. Aust. Ass. Adv. Sci. Rep. 1, 275-90.

4, 10, 13 DAVID, T.W.E., 1890 - Report on the magnetic iron ore bed of the Ironstone Mountain, Port Stephens. Dep. Min. N.S.W. Ann. Rep. 1889, 217. The iron ore bed crops out in the Ironstone Mountain about 3 miles west of the Karua Wharf, on the Karua River. Analyses by T.C.H. Mingaye are appended.

1, 2 DAVID, T.W.E., 1890 - The coal measures of New South Wales and their associated eruptive rocks. J. Roy. Soc. N.S.W., 24, 257-70. The coal measures are divided into four groups - the Carboniferous Rhacopteris and Lepidodendron series, the Permo-Carboniferous Glossopteris series, the (?) Triassic Thinnfeldia and Taeniopteris series, and the Eocene to Pliocene brown coals or lignites. The eruptive rocks associated with the first two groups are discussed.

1, 13 DAVID, T.W.E., 1890 - Progress report No. 1 for Port Stephens district, as to suitable sites for employing the Government diamond drill to bore for coal on the property of the Newcastle and Stockton Land and Coal Company (Ltd), Port Stephens District. Dep. Min. N.S.W. Ann. Rep. 1889, 222.

1, 13 DAVID, T.W.E., 1890 - Preliminary report on the Ash Island bore. Dep. Min. N.S.W. Ann. Rep. 1890, 228-9. A section is measured and the results of analysis from a core through the Lower Rathluba Seam at Ash Island are given.

1, 10, 16 DAVID, T.W.E., 1890 - Report on coal near Lake Illawarra and on Coal Permits, in the parish of Wongawilli. Dep. Min. N.S.W. Ann. Rep. 1890, 255-9. Detailed geology and sections. The Bulli Seam seems to have thinned down so much as to be unworkable, and the Clyde Seam (Greta) coal-measures is too deep.

1, 14 DAVID, T.W.E., 1890 - Diamond drill bore, Euroka Creek, near Penrith. Dep. Min. N.S.W. Ann. Rep. 1890, 229-30. The depths at which various strata were struck at Woodford (about 2 000 feet a.s.l.) are related to the Penrith bore (35 feet a.s.l.) and the depth at which coal would be struck at Penrith is suggested, about 1 318 feet below the surface. The possible effect of volcanic activity in the district on the accuracy of the depth determination is discussed.

1, 7, 14 DAVID, T.W.E., 1890 - Stratigraphical note on the fish-bed at the Railway Ballast quarry, Gosford. Geol. Surv. N.S.W. paleont. Mem., 4, vii-ix. A section of the hill is given with detailed descriptions.

1 DAVID, T.W.E., 1890 - A correlation of the coal fields of New South Wales. Rep. Aust. N.Z. Ass. Adv. Sci., 1890, 2, 459-66.

7, 13 DAVID, T.W.E., 1890 - Note on the occurrence of Glossopteris in a remarkable state of preservation in the Greta Coal Measures at Richmond Vale near Maitland. Proc. Linn. Soc. N.S.W., 5(2), 424. Glossopteris leaves, only slightly altered are described from the clay shales of the Greta Coal Measures at Richmond Vale, 12 miles south of Maitland.

10 DAVID, T.W.E., 1890 - Note on Mr. J.C.H. Mingaye's analyses of New South Wales coals and cokes. Geol. Surv. N.S.W. Rec., 2, 117-8. Further comments on the ash content of N.S.W. coals and cokes with reference to the Western Coalfield, Tomago, and Greta Series which were not treated in Mingaye's report.

10, 15 DAVID, T.W.E., 1890 - Report on the occurrence of coal and kerosene shale at Megalong near Katoomba. Dep. Min. N.S.W. Ann. Rep. 1890, 220-4. The seam of kerosene shale on Norths and Morts' land at Katoomba

contains an average thickness of about 12½" fair shale. The seams of kerosene shale cropping out at the sides and south end of the Megalong Ridge were all of inferior quality. A detailed description and analysis is given.

1, 10, 13 DAVID, T.W E., 1890 - Progress report 2. Geological survey of the Maitland district. Report on the remarkable development of the Greta Coal Seams to the south of Maitland, as proved by recent prospecting. Dep. Min. N.S.W. Ann. Rep. 1890, 225-9. The Greta seams attain a remarkable thickness to the south of Maitland, where the thickest are of good quality. The upper seam varies in thickness from 14-32 feet and the lower varies from 2 feet to 11 feet. Analyses and sections of the seams from various series are given.

1, 10, 14 DAVID, T.W.E., 1890 - Report on the natural gas and depth of coal at Narrabeen, near Sydney. Dep. Min. N.S.W. Ann. Rep. 1890, 233-7. The coal seams probably lie from 2 100 to 2 300 feet below the surface at the Narrabeen bore site.

1, 10, 16 DAVID, T.W.E., 1890 - Report on coal near Lake Illawarra, and on Coal permits, in the parish of Wongawilli. Dep. Min. N.S.W. Ann. Rep. 1890, 255-9. The general geological features of the coal measures in the neighbourhood of Lake Illawarra, and especially the Bulli Coal Measures in the Parish of Wongawilli, are examined with the conclusion that the Clyde (Greta) Coal Measures probably underlie Lake Illawarra, but are too deep (3 000 feet +) to be workable.

1, 2, 10, 13 DAVID, T.W.E., 1890 - Report on diamond drill bore, Raymond Terrace. Dep. Min. N.S.W. Ann. Rep. 1890, 260. The presence of volcanic rock at depth means that the bore would have to drill to about 2 900 feet before it could be expected to reach the horizon of Garretts seam.

10, 13 DAVID, T.W.E., 1891 - Third report on the Ironstone Mountain, Port Stephens. Dep. Min. N.S.W. Ann. Rep. 1891, 240-4.

1, 14 DAVID, T.W.E., 1891 - Report on the Government diamond drill bore for coal on the Moorebank Estate, near Liverpool. Dep. Min. N.S.W. Ann. Rep. 1891, 244-5. The bore is compared with the Holt-Sutherland and Metropolitan bores. Analyses and economic aspects are briefly discussed.

10 DAVID, T.W.E., 1891 - Report re Wyee bore. Dep. Min. N.S.W. Ann. Rep. 1891, 245. This is a brief note on the depths at which the various coal seams might be met in the Wyee bore.

1, 10, 13 DAVID, T.W.E., 1891 - Report on the extended coal tunnel of the Newcastle and Stockton Land and Coal Company at the Seven Mile, Raymond Terrace. Dep. Min. N.S.W. Ann. Rep. 1891, 245. The tunnel is on Garretts Coal Seam. A section of the strata measured in the cross drive is given and the likelihood discounted of sufficiently developed coal seams occurring.

1, 13 DAVID, T.W.E., 1891 - Progress report No. 5, Port Stephens district. Dep. Min. N.S.W. Ann. Rep. 1891, 247. The possible outcrop of Garretts Seam on the property of the Port Stephens Coal Mining Company is noted, but the thickness of the overlying alluvial sediments and the possibility that the coal is burnt by a nearby volcanic outcrop make any proof too costly.

10, 13 DAVID, T.W.E., 1892 - On kerosene shale deposits, Doughboy Hollow. Dep. Min. N.S.W. Ann. Rep. 1892, 159-63. The deposit of kerosene shale is 3½ miles northeast of Doughboy Hollow Rail Station (224 miles north from Sydney).

1, 10, 14 DAVID, T.W.E., 1893 - Report on the Cremorne bore No. 2. Dep. Min. N.S.W. Ann. Rep. 1893, 69. The total thickness of the seam proved to be 10'3"; the coal appeared to be a good quality splint and bituminous coal.

14 DAVID, T.W.E., 1893 - On taking the temperature in No. 2 borehole, Cremorne. Dep. Min. N.S.W. Ann. Rep. 1893, 71-2. The rock temperature at a depth of 2 730 feet is about 97.5°F and increases at the rate of 1°F for about every 78 feet 10 inches.

4, 14 DAVID, T.W.E., 1893 - Note on the occurrence of barytes at Five-Dock, and also at the Pennant Hills Quarry near Parramatta, with a suggestion as to the possible origin of barytes in the Hawkesbury Sandstone. J. Roy. Soc. N.S.W., 27, 407-8. Barytes crystals occur in, or are associated with, quartzites near basaltic dykes at Five Dock, Pyrmont Sandstone Quarries and the Pennant Hills Quarry.

2 DAVID, T.W.E., 1893 - Volcanic action in eastern Australia and Tasmania. Rep. Aust. N.Z. Ass. Adv. Sci., 4, 64-7.

4, 14 DAVID, T.W.E., 1893 - Note on the occurrence of a calcareous sandstone allied to fontainebleau sandstone at Rock Lily, near Narrabeen. J. Roy. Soc. N.S.W., 27, 406-7. The rock at Rock Lily is composed of sandstone in which are large enclosing crystals of calcite; the rock is similar to those in the Tomago Series and the Narrabeen Series (as evidenced in cores from Holt-Sutherland bore).

2 DAVID, T.W.E., 1893 (1894) - Contribution to the study of volcanic action in eastern Australia. Rep. Aust. Ass. Adv. Sci., 1893 (1894), 5, 397-404.

0 DAVID, T.W.E., 1894 - Sketch of our present knowledge of the geological history of Australia, Tasmania, and New Zealand, from Archaean time down to the commencement of the Permo-Carboniferous period. J. Roy. Soc. N S.W., 2nd Ser., 8(4), 540-608. In discussion of the Carboniferous (possibly characterized by Lepidodendron australe) mention is made of rocks on Clyde Mountain, the Mt Lambie Series, rocks in the Stroud area, the Gympie Series, Star and Lower Bowen Formations. The Stroud rocks are said to be overlain by sediments containing Rhacopteris which are in turn overlain by the Permo-Carboniferous Lower Marine Series.

1, 7 DAVID, T.W.E., 1894 - Stratigraphical distribution of Glossopteris in Australia. Proc. Linn. Soc. N.S.W., 9(2), 252-4. 'In New South Wales Glossopteris occurs in profusion in the productive coal measures of Permo-Carboniferous age....and is.... wholly restricted to that horizon. Glossopteris ranges from near the top of the Lower Marine Series to the top of the Newcastle Coal Measures.'

18 DAVID, T.W.E., 1895 - Presidential address. Section C: Evidences of glacial action in Australia and Tasmania. Rep. Aust. N.Z. Ass. Adv. Sci. 6, 58.

0, 15 DAVID, T.W.E., 1896 - The structure and origin of the Blue Mountains. J. Roy. Soc. N.S.W., 30, 33, 1-69. The author describes the geology and geological history, identifying the Lapstone Monocline which evolved in the Tertiary and was accompanied by extensive volcanic eruptions. The valleys of the Blue Mountains were due to a subaerial erosion. There is a coloured geological map and a cross-section from Jenolan Caves to the continental shelf.

17, 18 DAVID, T.W.E., 1896 - Evidences of glacial action in Australia in Permo-Carboniferous time. Quart. J. geol. Soc. Lond., 52, 289-301. A historical review of recorded observations.

1, 13, 18 DAVID, T.W.E., 1899 - Discovery of glaciated boulders at the base of the Permo-Carboniferous System, Lochinvar, New South Wales. J. Roy. Soc. N.S.W. 33, 154-9. Describes sundry occurrences and gives a section showing the position of the glacial horizons at Branxton and Lochinvar.

1, 3, 15 DAVID, T.W.E., 1902 - An important geological fault at Kurrajong Heights, New South Wales. J. Roy. Soc. N.S.W., 36, 359-70. Gives detailed geology and measurements from Richmond to Mt Tomah, with a detailed cross-section.

7 DAVID, T.W.E., 1905 - Stratigraphical note on a monograph of the foraminifera of the Permo-Carboniferous limestones of New South Wales. Geol. Surv. N.S.W. Mem. (Paleont.), 14, 9-16.

0, 10, 13 DAVID, T.W.E., 1907 - Geology of the Hunter River Coal Measures of New South Wales, with maps, plates, and sections. Geol. Surv. N.S.W., Mem. 4 Govt Printer, 1907. This is the standard classic work on the Lower Hunter coal fields.

3 DAVID, T.W.E., 1911 - Notes on some of the chief tectonic lines in Australia. J. Roy. Soc. N.S W., 45, 4-60. In the central coalfield of N.S.W. there are two tectonic directions, one more or less parallel to the general axis of the trough, the other to the coastline.

0, 13 DAVID, T.W.E., 1914 - Geological notes on the Lower Hunter coal fields. In 'Excursions arranged for members of B.A.A.S., 1914 meeting.' Sydney Govt Printer, 1914.

8, 14 DAVID, T.W.E., 1920 - Note on tunnel, Long Nose Point. J. Roy. Soc. N.S.W. 54, xxix. The bed of the old Parramatta River is about 156 ft below present high water mark.

4, 18 DAVID, T.W.E., 1922 - Varve shales in Australia. Amer. J. Sci., III, 14(6), 115-6. A description of exhibited specimens from the Carboniferous of N.S.W.

0, 13 DAVID, T.W.E., 1923 - Notes on the geology of the Hunter Valley River district. Guide book to the excursion to the Hunter River. Proc. Pan-Pacif. Sci. Cong. II.

0 DAVID, T.W.E., 1932 - Explanatory notes to accompany a new geological map of the Commonwealth of Australia. Melbourne, C.S.I.R.O.

0 DAVID, T.W.E., ed. BROWNE, W.R., 1950 - GEOLOGY OF THE COMMONWEALTH OF AUSTRALIA. London, Arnold. A comprehensive account.

8, 13 DAVID, T.W.E., and ETHERIDGE, R. Jnr, 1890 - Raised beaches of the Hunter River Valley delta. Geol. Surv. N.S.W. Ann. Rep. 1890, 35-52. Emphasis is given to descriptions of raised beaches around Maitland in a general survey of observations on Quaternary movements of sea level around south eastern Australia.

8, 13 DAVID, T.W.E., and GUTHRIE, F.B., 1904 - Flood silt in the Hunter and Hawkesbury Rivers 1904. J. Roy. Soc. N.S.W., 38, 191-202.

8, 14 DAVID, T.W.E., and HALLIGAN, G.H., 1908 - Evidence of recent submergence of coast at Narrabeen. J. Roy. Soc. N.S.W., 42, 229-37. Submergence at Narrabeen probably exceeds 50 feet. A bore near the east end of Narrabeen Bridge, to a depth of 78 feet, revealed mangrove swamp fauna; all were Recent species. Fossil wood from the bore is also Recent. Fresh water was found at 14 feet below high water.

1, 10, 14 DAVID, T.W.E., and PTTMAN, E.F., 1893 - Notes on the Cremorne bore. J. Roy. Soc. N.S.W., 27, 443-65. The Cremorne bore sequence indicates the exact relation between the Newcastle and Illawarra Coalfields. The economic aspects of the coal found, are mentioned to some extent.

1, 10, 14 DAVID, T.W.E. and PITTMAN, E.F., 1896 - On the discovery of coal under Cremorne, Sydney Harbour. Geol. Surv. N.S.W. Rec., 4, 1.

1, 7 DAVID, T.W.E. and PITTMAN, E.F., 1898 - On the Palaeozoic radiolarian rocks of New South Wales. (Abstract). Geol. Mag., 1898, 574. Location and type of radiolarian rocks in New South Wales.

13, 18 DAVID, T.W.E. and PITTMAN, E.F., 1899 - On the alleged evidence of glacial action in the Permo-Carboniferous rocks of the Ashford Coalfield. Geol. Surv. N.S.W. Rec. 6, 77-81.

6 DAVID, T.W.E. and PITTMAN, E.F., 1902 - Report on sandstone for building purposes. Dep. Min. N.S.W. Ann. Rep. 1902, 122-3. The five samples reported on are from quarries at Pyrmont, Annandale, and Waverley, all in Sydney.

6 DAVID, T.W.E., and PITTMAN, E.F., 1906 - Sydney Harbour Colliery. Dep. Min. N.S.W. Ann. Rep. 1906, 164. The significance of a change in the roof from a hard fine-grained clay shale to a fine-grained clayey sandstone is discussed.

2, 4, 14 DAVID, T.W.E., SMEETH, W.F., and WATT, J.A., 1893 - Preliminary note on the occurrence of a chromite-bearing rock in the basalt at the Pennant Hills quarry near Parramatta. J. Roy. Soc. N.S.W., 27, 401-6. The

Pennant Hills Quarry is cut in an oval mass of basalt, in which are xenoliths. It is surrounded by the Lower Wianamatta Shale and may be an intrusion basalt. The xenoliths include a chromite-bearing igneous rock (composed of feldspar, diallage, and chromite) foreign to the district, and silicified Hawkesbury Sandstone fragments.

1, 10, 16 DAVID, T.W.E., and STONIER, G.A , 1890 - Report on coal measures of Shoalhaven district, and on a bore near Nowra. Dep. Min. N.S.W. Ann. Rep. 1890, 244-55. A detailed geological description. The Greta Coal Measures are shown as extending beneath Sydney and the Clyde River.

18 DAVID, T.W.E., and SUSSMILCH, C.A., 1931 - The Upper Palaeozoic glaciations of Australia. Bull. geol. Soc. Amer., 42, 205 (abstract) A summary of existing knowledge of the Carboniferous and Permo-Carboniferous glaciation of Australia.

1 DAVID, T.W.E., and SUSSMILCH, C.A., 1933 - Carboniferous and Permian formations in Australia. int. geol. Cong., Washington. 1933.

4 DAVID, T.W.E., TAYLOR, T.G., WOOLNOUGH, W.G., and FOXHALL, H.G., 1905 - Occurence of the pseudomorph glendonite in New South Wales. Geol. Surv. N.S.W. Rec. 8, 161-78.

7 DAVIS, C., 1942 - Hemiptera and Copeognatha from the Upper Permian of New South Wales. Proc. Linn. Soc. N.S.W., 67, 111. A prolific insect fauna from the Upper Permian tuffs at Warners Bay, Lake Macquarie N.S.W.

8 DAVIS, C., DAY, M.F., and WATERHOUSE, D.F., 1938 - Notes on the terrestrial ecology of the Five Islands. Proc. Linn. Soc. N.S.W., 63, 351-63.

10 DAWKINS, W.B., 1875 - The age of New South Wales coal beds. Trans. Manch. geol. Soc., 14, 28.

9, 16 DAY, A.A., 1969 - Geological interpretation of gravity anomalies in the southern Sydney Basin. Adv. Study Syd. Bas., 4th Symp., Newcastle, 62-4. The geographical extent of the primary grade zones suggests that they are of deep crustal or subcrustal origin. A trough-faulted block may exist near Wombarra. Many of the prominent surface structures and bodies of rock are not reflected in the regional gravity anomalies.

9, 15 DAY, A.A., 1969 - Earth tremors in the Orange - Bathurst region and their structural relationships. J. Roy. Soc. N S.W., 102.

7, 16 DEANE, H., 1905 - Notes on fossil leaves from the Tertiary deposits of Wingello and Bungonia. Geol. Surv. N.S.W. Rec. 7, 59-65.

9 de JERSEY, N.J., 1945 - Seismological evidence bearing on crustal thickness in the southwest Pacific. Pap. geol. Dep. Qld Univ., 13(2).

7 de JERSEY, N.J., 1959 - Macro and micro-floras of north-eastern New South Wales. J. Roy. Soc. N.S.W., 92(1), 83-9. Pteridophytespecies and a few poorly preserved spores are described and their age relationships discussed.

7 DELEPINE, G., 1941 - On upper Tournaisian goniatites from New South Wales. Ann. Mag. nat. Hist., 11, 7, 386-95.

7 DICKINS, J.M., 1964 - Appendix, in GEOLOGY OF THE MOUNT COOLON 1:250 000 SHEET AREA. Bur. Miner. Resour. Aust. Rep. 64.

7 DICKINS, J.M., 1966 - Appendix, in GEOLOGY OF THE SOUTHERN HALF OF THE BOWEN SHEET AREA. Bur. Miner. Resour. Aust. Rep. 100.

1, 7, 16 DICKINS, J.M., 1967 - Correlation of the Permian faunas of South Sydney Basin, N.S.W., Aust. N.Z. Ass. Adv. Sci., 39th Conference, Melbourne. The relative ages of the Shoalhaven Group and the formations of the Hunter River Valley are indicated. The correlations indicate a considerably wider range of age for the marine rocks of the southern part of the Sydney Basin than suggested by previous work.

1, 7, 13 DICKINS, J.M., 1968 - Correlation of the Permian of the Hunter Valley, New South Wales, and the Bowen Basin, Queensland. Bur. Miner. Resour. Aust. Bull. 80, 29-44.

1, 7, 16 DICKINS, J.M., GOSTIN, V.A., and RUNNEGAR, B., 1969 - Correlation and age of the Permian sequences in the southern part of the Sydney Basin, N.S.W. In CAMPBELL, K.S.W., ed. - STRATIGRAPHY AND PALAEONTOLOC Canberra, ANU Press, 211-25. The lower part of the Shoalhaven Group has been remapped, and its subdivisions correlated with the Hunter Valley and Bowen Basin sequences. The sequence ranges from Sakmarian to, probably, Kazanian.

2, 9, 15 DICKSON, G.O., 1963 - The palaeomagnetism of Peats Ridge Dolerite and Mt Tomah Basalt. J. Roy. Soc. N.S.W., 96, 129-32. Specimens from Peats Ridge and Mt Tomah yielded results comparable with those of Manwaring (q.v.). The unsuitability of the Mt Tomah Basalt for palaeomagnetic purposes is discussed briefly.

1, 16 DICKSON, T.W., 1969 - Stratigraphy of the Narrabeen Group in the Southern Coalfields, N.S.W. Adv. Study. Syd. Bas., 2nd Symp., Newcastle, 1967, 23-4. Recent drilling shows that a revision is necessary. Hanlons (1953) coastal subdivision is little altered, but important facies changes occur westward, and new units are required.

6, 10 DICKSON, T.W , and WEBER, C.R., 1966 - Investigation of roof falls, Oakdale State Mine. Geol. Surv. N.S.W. Rep. 44. The Oakdale State Coal Mine is subject to serious roof falls. The two latest falls are described and structural features throughout the mine are examined. The falls are shown to occur in directions closely parallel to several of the major lines of jointing within the roof.

4 DIESSEL, C.F.K., 1965 - On the petrography of some Australian tonsteins. Map. Richter-Festschrift, Clausthal-Zellerfeld. 149-66.

4 DIESSEL, C.F.K., 1965 - Correlation of macro and micro-petrography of some New South Wales coals. Proc. 8th Comm. Min. metall. Cong., 6(17), 669-77.

3, 16 DIESSEL, C.F.K., 1966 - Micro-cross-bedding in symmetrical ripple marks. Aust. J. Sci., 28(11), 438. The roof rocks of the Bulli Seam in the Woollongong district are of clastic, lacustrine, and fluvial origin. They display a large variety of primary directional features among which some sets of symmetrical ripple marks have a cross-bedded internal structure.

3 DIESSEL, C.F.K., 1966 - The determination of the direction of transport of fluviatile arenites by orientation analysis of the detrital mica. Sedimentology, 1966, 7, 167-77. A simple method of determining the strike and dip of the AB planes of mica flakes in etched slides of arenaceous sediments by means of a universal stage mounted on a stereomicroscope is described. The polar stereograms constructed from such measurements in fluviatile sandstones show monoclinic symmetry due to up-current imbrication which compares well with the orientation of plant fossils, current bedding structures, and the general current pattern. These features show angular discordance with the direction of sole marks. An example is given of how analyses of the orientation and imbrication of mica flakes can assist in the solution of sedimentary problems of coalfield geology. References are to N.S.W. coalfields at Appin and Bulli.

3, 18 DIESSEL, C.F.K., 1966 - Notes on the geometry of the Sydney Basin at the beginning of Triassic time. Adv. Study Syd. Bas., 1st Symp., Newcastle, 7-8. Palaeocurrents suggest that the Basin was open to the south in the early Triassic, and was separated from the Oxley Basin after the Lower

Triassic. As the uplift of the southern margin increased and the New England mountains were worn down so the upper Narrabeen and Hawkesbury were deposited by streams from the south instead of from the north.

18 DIESSEL, C.F.K., 1968 - An attempt to explain the termination of late-Permian coal formation in the Sydney Basin. Adv. Study Syd. Bas., 3rd Symp., Newcastle. During the Permian the basin was open to the southeast, allowing the dispersal of terrigenous clastics. Coal developed in times of restricted detrital supply. Upwarping of the southern margins eventually closed the basin and caused a reversal of paleocurrents in mid-Narrabeen time. Rapid accumulations of sediment then filled in the basin.

4, 10 DIESSEL, C.F.K., and CALLCOTT, T.G., 1965 - Petrographic features of New South Wales coking coals. B.H.P. tech. Bull. 8(5), 849.

18 DIESSEL, C.F.K., DRIVER, R.C., and MOELLE, K.H.R , 1966 - Some geological investigations into a fossil river system in the roof strata of the Bulli Seam, Southern Coalfield, N.S.W. Proc. Aust. Inst. Min. Metall., 221, 19-37. A fossil river system was recently mapped over parts of the Southern Coalfield. It occurs in the roof strata of the Bulli Seam. Fluvial sandstone was deposited in its course. The sandstone exhibits strong sedimentary vectorial properties and has a marked influence on strata control in colliery workings.

6, 16 DIESSEL, C.F.K., and MOELLE, K.H.R., 1965 - On the application of the analysis of the sedimentary and structural features of a coal seam and its surrounding strata to the operation of mining. 8th Comm. Min. metall., Cong., 6, 837-59. In the South Bulli Colliery careful measurements of palaeocurrents show clearly that the current was directed towards the southwest; this is also approximately the direction in which the strata between the roof of the seam and the base of the sandstone thin out. In the Appin Colliery the fluviatile nature of the deposits is clearly indicated: the flow direction here was northwest. There are indications that both streams were tributaries feeding into a much wider stream.

3, 16 DIESSEL, C.F.K., and MOELLE, K.H.R., 1967 - On the occurrence and origin of stone rolls in the Bulli Seam of the Southern Coalfield in N.S.W. Adv. Study Syd. Bas., 2nd Symp., Newcastle, 18-19. Stone rolls are defined. The authors favour the sedimentary origin of these structures, and give 10 reasons. The component minerals are described.

5 DIXON, W.A., 1878 - The deep well waters of Sydney. J Roy. Soc. N S.W., 30, 133-41.

4 DIXON, W A., 1881 - On the inorganic constituents of the coals of New South Wales. J. Roy. Soc. N.S.W., 14, 163-79. Many analyses of coals and torbanites are given, with some comments. (See also Liversidge, 1881).

4, 10, 14 DONEGAN, H A.J., and BRIGDEN, A.C., 1957 - Natural gas at Camden, Dural and Narellan. Dep. Min. N.S W. tech. Rep. 5, 270-1. Analyses of gas from Dural Nos 1 and 2, Camden Nos 1 and 2, Glenlee bore (Narellan), and Cole River (Windsor River).

6 DONEGAN, H.A.J., BRIGDEN, A.C., and THOMAS, J., 1960 - Instantaneous outbursts of coal and gas. Dep. Min. N.S.W. tech. Rep. 1960, 8, 177.

18 DORMAN, F.H., 1968 - Some Australian oxygen isotope temperatures and a theory for a 30 million year world temperature cycle. J. Geol., 76(3), 297-313.

DOYLE, H.A., 1957 - Seismic recordings of atomic explosions in Australia. Nature, 180, 132-4.

9 DOYLE, H.A., 1969 - Crustal structure and seismicity in the Sydney Basin area. Adv. Study Syd. Bas., 4th Symp., Newcastle. Intermediate velocity material appears to make up much of the crust beneath the basin. All earthquake foci are in the upper crust, with minor seismicity near the borders of the basin and in the Robertson-Bowral area.

3, 9 DOYLE, H.A., CLEARLY, J.R., and GRAY, N.M., 1968 - The seismicity of the Sydney Basin. J. geol. Soc. Aust., 15(2), 175-81. Minor earthquakes have been felt in the Sydney Basin since the foundation of the Colony in 1788, but a systematic appraisal of the area was not possible until a network of seismograph stations was established in 1958/59. 181 tremors have been located in and around the basin between 1959 and 1967, including the Robertson-Bowral earthquake and 33 aftershocks. Many epicentres lie near the western boundary of the basin, and some others appear to be associated with structures at the western edge of the inner Cumberland Basin. The epicentres of the Robertson-Bowral sequence suggest a fault system trending to the northwest in that area. A number of events were located near the edge of the continental shelf, and these may delineate the eastern edge of the Sydney Basin.

9 DOYLE, H.A., and EVERINGHAM, I.B., 1964 - Seismic velocities and coastal structure in southern Australia. J. geol. Soc. Aust., 11, 141-50.

9 DOYLE, H.A., EVERINGHAM, I.B., HOGAN, T.K., 1959 - Seismic recordings of large explosions in south eastern Australia. Aust. J. Phys., 1959, 12, 222-30. The Mohorovicic discontinuity is estimated to be at a depth of 37 km.

9 DOYLE, H.A., and UNDERWOOD, R., 1965 - Seismological stations in Australia. Aust. J. Sci., 28, 40-3.

9 DOYLE, H.A. UNDERWOOD, R., and POLAK, E.J., 1966 - Seismic velocities from explosions off the central coast of New South Wales. J. geol. Soc. Aust., 13(2), 355-72. Travel times from explosions fired on the continental shelf off the central coast of N.S.W. were observed at permanent stations and spreads of seismic exploration instruments and combined with existing results to give a seismic crustal profile across part of southeastern Australia.

9 DOYLE, H.A., and WEBB, J.P., 1963 - Travel times to Australian stations from Pacific nuclear explosions in 1958. J. geophys. Res., 68, 1 115-20, 5 110.

1, 18 DUFF, P. McL. D., 1967 - Cyclic sedimentation in the Permian coal measures of New South Wales. J. geol. Soc. Aust., 14(2), 293-307. Statistical analysis of borehole sections through the Illawarra and Newcastle Coal Measures of the Sydney Basin shows that cyclic sedimentation is present. It is suggested that in the Southern Coalfield cyclicity is due to sedimentational processes inherent in the deltaic and alluvial conditions envisaged during Permian times. Periodic influxes of glacial meltwaters, although not essential, are not ruled out. In the Newcastle Coalfield however, the composite sequence does not match easily the ideal cycles expected in deltaic and/or alluvial regions. Contemporary vulcanism and tectonism complicated matters and lack of sedimentological details makes it impossible at present to give any preference to any one mechanism of cycle formation.

1, 8, 15 DULHUNTY, J.A., 1938 - Stratigraphy and physiography of the Goulburn River district of New South Wales. J. Roy. Soc. N.S.W., 71, 297-317. The 'Kamilaroi', Triassic and Jurassic sediments are dealt with in this border area and also Tertiary igneous rocks.

1, 8, 15 DULHUNTY, J.A., 1938 - Notes on the stratigraphy and physiography of the Talbragar 'Fish Bed' area. J. Roy. Soc. N.S.W., 71, 350-6. The sequence is: granite, Upper Marine, Upper Coal, Triassic Sandstone, Comiala Shales, Jurassic Sandstone, fish beds, Tertiary basalt. The fish occur in chert or cherty shale which is crowded with plant fossils. Dulhunty

suggests that the chert outcrop is a section of thin lake-bed deposit on the side and bottom of a basin-shaped erosion hollow in the Jurassic sandstone.

10 DULHUNTY, J A., 1938 - The torbanites of New South Wales: I. The essential constituents and their relations to the physical properties. J. Proc. Roy. Soc. N.S.W., 72, 179-98. More data are presented than the usual distillation tests and proximate analyses of oil shales; the Upper Coal Measures occurrences in the Kamilaroi Basin are studied. Individual constituents are listed, comparisons of torbanoids with canneloids are made, and physical and structural information is given from petrological and other studies. Many authors believe torbanites are formed by algae, possibly in a 'coal measure' environment.

1, 15 DULHUNTY, J.A., 1939 - The Mesozoic stratigraphy of the Merriwa-Murrurundi district and south eastern Liverpool Plains. J. Proc. Roy. Soc. N.S.W., 1939, 73, 29-40. Jurassic plant fossils at the base of the Comiala Beds establish their age: the horizon at the base of this series is to be taken as the boundary between Triassic and Jurassic. The sequence is: 'Kamilaroi', Triassic sandstones; Jurassic, consisting of Pottinger Beds(lower Comiala), Garrawilla Series (contemporary lava flows), Gowen Beds (upper Comiala), Pilliga Beds (Munmurra Sandstone); Tertiary olivine basalt.

1, 15 DULHUNTY, J.A., 1939 - The Mesozoic stratigraphy of the Gulgong-Coolah district. J. Proc. Roy. Soc. N.S.W., 1939, 73(3), 150-60. The sequence of this area, contiguous with the Sydney Basin, is: Older Palaeozoic slate, schist and granite: 'Kamilaroi' Coal Measures; Triassic sandstones and grits; Jurassic Pottinger and Gowen Beds with Garrawilla lava flow between, and Pilliga Beds; Tertiary olivine basalt. Features of shoreline deposition are evident and in places the old shoreline can be traced. Some of the Triassic beds contain redistributed fragments of Kamilaroi sediments.

0, 15 DULHUNTY, J.A., 1940 - Structural geology of the Mudgee-Gunnedah region. J. Proc. Roy. Soc. N.S.W., 1940, 74, 88-98. Describes the stratigraphy of the Oxley Basin which was in existence during the deposition of the strata and long before the outpouring of the basalt. Shows thick Tertiary olivine basalt overlying Jurassic sandstone and shale, overlying Triassic sandstone, overlying Kamilaroi Coal Measures, overlying Palaeozoic metamorphics and granite.

10 DULHUNTY, J.A., 1941 - Oil and torbanite. Aust. J. Sci., 4, 47-9. A general discussion of the formation of torbanite, with a brief note on its refining.

4 DULHUNTY, J.A., 1941 - Notes on the measurement of some physical and optical properties of the New South Wales torbanites. Proc. Linn. Soc. N.S.W., 66(3 & 4), 169-77. 'The present paper is confined mainly to descriptions of methods and principles involved in the investigations of some of the more important physical and optical properties which promise to be of value in different branches of the study of torbanite.'

1, 15 DULHUNTY, J.A., 1941 - Notes on the Kamilaroi stratigraphy in the Western Coalfield of New South Wales. Proc. Linn. Soc. N.S.W., 66(3 & 4), 257-67. The principal objects of this study were to determine stratigraphic boundaries of the Upper Coal Measures, the relations between this unit and the Marangaroo Conglomerate Beds, and the continuity of coal seams throughout the Kamilaroi Basin.

10 DULHUNTY, J.A., 1941 - The physical effects of heat on the torbanites of New South Wales. Proc. Linn. Soc. N.S.W., 66(5 & 6), 335-48. All physical properties undergo change. Some of the changes provide data which may be used in studying different types and grades of torbanite and applied to problems of commercial treatment. Samples from Baerami, Barigan, Glen Davis and Joadja have been examined. Properties investigated included colour, streak, lustre, texture, flexibility, optical properties, volume, deformation, evolution of volatile hydrocarbons, and expansion/volume relationship.

1, 10, 15 DULHUNTY, J.A., 1942 - The stratigraphical arrangement and occurrence of torbanite deposits in the Upper Coal Measures of New South Wales. Proc. Linn. Soc. N.S.W., 67, 123-41. Four major coal-bearing horizons can be identified at most places along the western margin of the Kamilaroi Basin. These consist of the Katoomba Seam at the top of the Measures, the Dirty Seam 60-100 feet below the top, the Irondale Seam 80-120 feet above the base, and the Lithgow Seam, between the upper and lower members of the Marangaroo Conglomerate near the base of the Measures. 30 deposits of torbanite are known to occur in the Upper Coal Measures outcropping along the western margin of the Kamilaroi Basin. Noted are the mode of occurrence, the association of torbanite with bituminous and cannel coals, relations between torbanite-bearing horizons and coal measure stratigraphy, palaeogeographic distribution, and stratigraphic horizons.

10 DULHUNTY, J.A., 1943 - Classification of torbanites and relations to associated carbonaceous sediments in New South Wales. Proc. Linn. Soc. N.S.W., 68, 187-205. A classification is given providing for 12 types based on genetical and constitutional features, and with characteristic properties.

10 DULHUNTY, J A., 1944 - Origin of New South Wales torbanites. Proc. Linn. Soc. N.S.W., 69, 26-48. This deals with previous work, morphology of living Botryococcus braunii structures in torbanite and their relations with corrongite, environment of deposition, and physical and chemical changes.

7 DULHUNTY, J.A., 1945 - Principal microspore-types in the Permian coals of New South Wales. Proc. Linn. Soc. N.S.W., 71(3 & 4), 147-57. A survey of general types under a classification designed to group closely related microspores.

7 DULHUNTY, J.A., 1946 - Distribution of microspore types in New South Eales Permian coalfields. Proc. Linn. Soc. N.S.W., 71(5 & 6), 239-51. 47 representative seam samples from all measures and fields in the main Permian basin were examined. Microspores were found abundantly in all coals except those from the Southern Coalfield. Most abundant spores were all simple forms.

11, 15 DULHUNTY, J.A., 1950 - Nature and occurrence of peat at Hazelbrook, N.S.W. J. Roy. Soc. N.S.W., 83, 228. At this locality in the Blue Mountains peat appears to be embedded in Hawkesbury Sandstone. It is probably an accumulation of roots which did not penetrate a harder sandstone layer but spread out to form a root-mat. There are analyses and comments on coal formation.

10 DULHUNTY, J.A., 1956 - Some aspects of rank variation and utilisation of coal. Proc. Aust. Inst. Min. Metall., 176, 59. Deals with type and rank (physical and chemical) of coal, with a few references to N.S.W. examples.

15, 18 DULHUNTY, J.A., 1964 - Our Permian heritage in central eastern New South Wales. The Clarke Memorial Lecture for 1961. J. Roy. Soc. N.S.W , 97, 145-55. Permian and Mesozoic geology and geography of the western fringe of the Sydney Basin are reconstructed. The present plateau surface is virtually the stripped unconformity between the older Palaeozoics and the Permian. Maps and many cross-sections are given.

2, 15 DULHUNTY, J.A., 1965 - The Mesozoic age of the Garrawilla Lavas in the Coonabarabran - Gunnedah district. J. Roy. Soc. N.S.W., 98(2), 105-9 The Garrawilla Lavas occur as interbedded flows between Triassic and Jurassic sediments (as concluded by Kenny, 1928) etc. and are not wholly Tertiary lavas, although Tertiary extrusions do exist in the area.

10, 17 DULHUNTY, J.A., 1966 - Power - from muscles to atoms. In 'A century of scientific progress', Roy. Soc. N.S.W. Centenary Vol., 101-30. The author outlines the historical development of the coal industry, with notes on oil in N.S.W.

2, 15 DULHUNTY, J.A., 1967 - Mesozoic alkaline volcanism and Garrawilla Lavas near Mullaby, New South Wales. J. geol. Soc. Aust., 14(1), 133-8. The trachyte and trachy-basalt flows, extruded from vents now occupied by intrusive alkaline rocks, and hitherto thought to be Tertiary, are interbedded and continuous with the Garrawilla Lavas and form part of the Garrawilla vulcanism of late Triassic or early Jurassic age.

1, 10, 15 DULHUNTY, J.A., 1969 - Illawarra Coal Measures. D-Upper Goulburn Valley. J. geol. Soc. Aust., 16(1), 387-8.

3, 10 DULHUNTY, J.A., HINDER, N., and PENROSE, R., 1950 - Rank variations in the Central Eastern Coalfields of N.S.W. J. Roy. Soc. N.S.W., 84(3), 99. The chemical and physical rank of Sydney Basin coals were determined, using vitrains. Graphs, isocarb and isomoist charts are presented. Rank is highest in the South Coast Coalfield, decreases rapidly toward the Southwestern Coalfield, and less rapidly towards the Northern. The centre of high rank in the south is near the southern margin of the field and does not coincide with the general centre of sedimentation or the structural centre of the basin. The large number of sills and dykes of post-Triassic age are held responsible for the regional metamorphic conditions.

12 DULHUNTY, J.A., and McDOUGALL, I., 1965 - Potassium-Argon dating of basalts in the Coonabarabran - Gunnedah district, N.S.W. Aust. J Sci., 28(10), 393. Four dates confirm the existence of Tertiary and Mesozoic basalts in this district.

1, 15 DULHUNTY, J.A., and McELROY, C.T., 1969 - Triassic System - Narrabeen Group - Northwest margin and Goulburn Valley. J. geol. Soc. Aust., 16(1), 400-1. Beds of cliff-forming conglomerates and sandstones extend under the Jurassic beds. The Hawkesbury Sandstone did not reach as far as the Goulburn River.

1, 15 DULHUNTY, J.A., and PACKHAM, G.H., 1962 - Notes on Permian sediments in the Mudgee district, N.S.W. J. Roy. Soc. N.S.W., 95(5), 161-6. Detailed investigations have revealed additional isolated occurrences of Permian sediments in the Mudgee district, and studies of their nature and mode of occurrence have helped to solve problems of Permian palaeogeography, as outlined in the paper.

7 DUN, W.S., 1896 - Additions to the Permo-Carboniferous coal measure flora of New South Wales. Geol. Surv. N.S.W. Rec. 5, 64-5. Two new species are added to the genus Glossopteris.

7 DUN, W.S., 1898 - Notes on the Australian Taeniopteridae. Aust. N.Z. Ass. Adv. Sci. Rep. 7, 384-400.

7 DUN, W.S., 1899 - On the occurrences of a Cyclopteroid fern, closely allied to the European Cardiopteris polymorpha, Geoppert, in the Carboniferous of New South Wales. Geol. Surv. N.S.W. Rec. 6, 107-10. The Carboniferous genus Cardiopteris, in which several species originally referred to Brongniart's Cyclopteris are now included, is described for the first time in Australia. The specimens described in this note were collected from the Rhacopteris beds of Paterson.

7 DUN, W.S., 1901 - Additions to the permo-Carboniferous coal measure flora of New South Wales, No. 2. Geol. Surv. N.S.W. Rec. 6, 46. This contains a review of the flora of the Greta Coal Measures and other rocks of the Sydney Basin.

7 DUN, W.S., 1902 - Notes on some large Chonetine shells from the Carboniferous of New South Wales. Geol. Surv. N.S.W. Rec. 8(2), 69-81. A new species of Chonetes is described from Carboniferous rocks in the Paterson-Stroud area; the specific name aspinosa is applied.

7, 13 DUN, W.S., 1902 - Notes on some Carboniferous brachiopods from Clarence Town. Geol. Surv. N.S.W. Rec. 7(2), 72-88. Species of 13 genera Carboniferous brachiopods are described from the Clarence Town - Glen William ('Glen William Series') area.

7 DUN, W.S., 1902 - Description of a new species of Productus from the Carboniferous System of New South Wales. Geol. Soc. N.S.W. Rec. 7(2), 91-3. Productus barrintonensis n. sp. is described from Carboniferous rocks at Barrington.

7 DUN, W.S., 1904 - Notes on some new species of Palaeozoic Brachiopoda from New South Wales. Geol. Surv. N.S.W. Rec. 7, 318-24.

7 DUN, W.S., 1905 - The identity of Rhacopteris inaequilatera, Feistmantel (non Goeppert) and Otopteris ovata McCoy, with remarks on some other plant remains from the Carboniferous of New South Wales. Geol. Surv. N.S.W. Rec. 8, 157-60.

7 DUN, W.S., 1907 - Notes on the Palaeozoic Brachiopoda and Pelecypoda from New South Wales. Geol. Surv. N.S.W. Rec. 8, 265-9.

7 DUN, W.S., 1911 - Notes on some fossil plants from the roof of the coal seam in the Sydney Harbour Colliery. J. Proc. Roy. Soc. N.S.W., 44, 615-9 The author mentions that the last appearance of the Glossopteris

flora is near the coal measure/Narrabeen stage boundary. There is no break in sedimentation at this level in the Sydney Harbour Colliery workings. Here Schizoneura gondwanensis (australis), along with Glossopteris sp., are common in the roof shales of the (top) coal seam, as at Bulli. In addition Cladophlebis cf. Roylei and Rhipodopsis ginkgoides have recently been recovered.

7, 14 DUN, W.S., 1911 - Note on the occurrence of Taeniopteris in the roof of the coal seam in the Sydney Harbour Colliery. J. Roy. Soc. N.S.W., 45, 554. This specimen from the shales overlying the coal seam in the Sydney Harbour Colliery is referred to T. cf. McClellandi, which occurs abundantly in the Rajmahal Series of India (Lower Mesozoic).

7, 14 DUN, W.S., 1912 - Note on the occurrence of the genus Spirangium in the Hawkesbury Series in New South Wales. J. Proc. Roy. Soc. N.S.W., 46, 205. The fossil comes from the brickpits at Brookvale, near Manly. Its affinities are unknown: it may be a fructification, a flotation organ, or of animal origin such as an egg-case.

7 DUN, W.S., 1919 - Presidential address. J. Roy. Soc. N.S W., 53, 1. The author believes that in eastern Australia there is a direct sequence of sedimentation from Permo-Carboniferous to Cretaceous time, resulting in mingling of faunas and floras and the consequent confusing of stratigraphers.

7 DUN, W S., 1895-1916 - Annual report of the Assistant Palaeontologist. Dep. Min. N.S W. Ann. Rep. 1895-1916. Lists of fossils registered during each year.

1, 7, 13 DUN, W.S., 1926 - Brief summary statement concerning the fossiliferous horizons in the Upper and Lower Marine sediments of the Hunter Valley. Dep. Min. N.S.W. Ann. Rep. 1925, 104. The entire vertical section of the Lower and Upper Marine Series is fossiliferous. The horizons are noted.

7 DUN, W.S., 1930 - Palaeontological notes. In BROWN, I.A., 1930 - Dun describes and dates as Upper Devonian, Spirifer disjuncta and Rhynchonella plenradon and records the first Australian occurrence of the pelecypod Phthonia sp., but does not date it.

7 DUNSTAN, B , 1893 - On the occurrence of Triassic plant remains in a shale bed near Manly. J. Roy. Soc. N.S.W., 27, 378-80. The Triassic plant Oleandridium sp. nov. is recorded for the first time in the Sydney area from a 50-foot shale and shaly-sandstone unit dipping 4° southwest

and interbedded with sandstone at Freshwater Head north of Manly. The lagoon north of Freshwater is thought to have formed by marine and subaerial erosion of this shale unit.

2 EDWARDS, A.B., 1949 - Crinanite-Picrite intrusions in Mt Nebo district, N.S.W. Sci. ind. Res. Org. Melb., mineragr. Inv. Circ., 413.

4, 10, 16 EDWARDS, A.B., 1953 - The mineral composition of the Yerranderie Silver Field ores. Proc. Aust. Inst. Min. Metall., 170, 72-101.

2, 4, 16 EDWARDS, A B., 1953 - Crinanite-picrite intrusions in the Nebo district of N.S.W. Proc. R. Soc. Vict., 65, 9-29. Gives detailed mineralogy of sills near Wollongong, in the Narrabeen and coal measure rocks.

4 EDWARDS, A.B., and LANGHAM, 1947 - Clarain and durain of Greta Coal. Proc. Aust. Inst. Min. Metall., 145, 39. A chemical study of the petrographic components of Greta coal has revealed an anomaly in the durain composition.

1, 10 EDWARDS, D.C., 1969 - Some aspects of the Permo-Triassic sediments of the Sydney Basin. Adv. Study Syd. Bas., 4th Symp., Newcastle. Most major onshore structures have been defined and drilled for petroleum virtually without success. Attention is now turning to the high-risk stratigraphic pinchouts, such as the shoreline sands trending across the noses of major structures.

17 ELLIS, M.H., 1969 - A SAGA OF COAL. Sydney, Angus and Robertson, 289. The Newcastle-Wallsend Coal Company's Centenary Volume; includes a great range of historical information and a bibliography with a historical bias.

9, 14 EMERSON, D.W., and PHIPPS, C.V.G., 1968 - Seismic profiling studies in the lower section of Port Jackson. Aust. J. Sci., 31(5).

0, 13 ENGEL, B.A., 1962 - Geology of the Bulahdelah - Port Stephens district, N.S.W. J. Proc. Roy. Soc. N.S.W., 95(6), 197-215. The Wootten Beds are overlain conformably by the Carboniferous Conger Formation, Nerong Volcanics, Crawford Formation, and Alum Mountain Volcanics and the Permian Markwell Coal Measures and Bulahdelah Formation. The Carboniferous sediments are mostly lithic arenites with minor conglomerate and mudstones. Interbedded volcanics range from rhyolite to basalt. Mapping was based on presence of faunal zones in the Wootten Beds and Crawford Formation.

1 ENGEL, B.A., 1965 - Carboniferous studies in New South Wales, Australia. Min. geol. metall. Inst. India, Dr D.N. Wadia Commem. Vol. It is proposed that the terms Burindi, Kuttung, and Myall be used in a broadly defined facies sense until such time as they can be replaced by formally defined nomenclature. A review of the principal outcrops, in terms of this facies concept, follows. Faunal horizons are listed by their most important elements and the sequence and age distribution of the principal faunal elements in each facies are given.

0 ENGEL, B.A., 1966 - Newcastle N.S.W. - 1:250,000 geological series. Geol. Surv. N.S.W. explan. Notes, SI/56-2.

4, 15 ENGELHARDT, B.G., 1891 - Notes on the occurrence of stilbite and eruptive rocks of Jamberoo, New South Wales. Proc. Linn. Soc. N.S.W., 6, 5-7.

8, 13 ENWRIGHT, J.W., 1936 - Unnoticed aspects of physiography of the Hunter Valley. Aust. Geogr., 3, 24.

7, 14 ETHERIDGE, R., Jnr, 1886 - Remark on a univalve shell from the Hawkesbury Sandstone. Dep. Min. N.S.W. Ann. Rep. 1886, 174-6. Tremanotus maideni sp. nov. comes from New Government Docks, Biloela, Sydney, 25 feet from the surface in Hawkesbury Sandstone. 'We have here a most interesting reappearance of a genus supposed to have closed its existence during the Upper Silurian.'

7 ETHERIDGE, R., Jnr, 1887 - Miscellaneous contributions to the Palaeontology of Australasia, No. 3. Report on supposed corals forwarded by T.W.E. David from the Upper Marine Series (Permo-Carb.) of Mt Vincent, near Minmi, County Northumberland, New South Wales. Dep. Min. N.S.W. Ann. Rep. 1887, 166. Description of inorganic structure which closely resembles a massive compound rugose coral, resembling the genus Lithostrotion or one of its allies.

7 ETHERIDGE, R., Jnr, 1887 - Notes on a collection of fossils from the Palaeozoic rocks of New South Wales, Part I. J Roy. Soc. N.S.W. Palaeont., 1.

7 ETHERIDGE, R., Jnr, 1888 - A new species of bivalve from the Lower Marine Series N.S.W. Dep. Min. N.S.W. Ann. Rep. 1887, 168. Nuculana water-housei sp. nov. comes from Farley near West Maitland.

7 ETHERIDGE, R., Jnr, 1888 - The invertebrate fauna of the Hawkesbury-Wianamatta series of New South Wales. Geol. Surv. N.S.W. palaeont. Mem., 1, 1-21. The remains of Invertebrata described are from the series of beds above the coal measures in N.S.W. Proceeding from the top downwards the beds are:

1. Wianamatta Shales, about 700 feet thick (Clarke).
2. Hawkesbury Sandstone, about 1 000 feet thick (Wilkiman).
3. Narrabeen Shales, about 650 feet thick (David).
4. Estheria Shales, about 640 feet thick (David). Brief geological notes on the Bowral localities are given.

7 ETHERIDGE, R., Jnr, 1889 - Remarks on a fern (Cycadopteris scolopendrina, Ratte) from the Wianamatta Shales, near Sydney. Dep. Min. N.S.W. Rec. 1(2), 145-6. This is a note on the choice of genus Cycadopteris Zingo rather than Homatopteris Schimper.

7 ETHERIDGE, R., Jnr, 1889 - Miscellaneous contributions to the Palaeontology of Australia, No. 13. Report on Palaeozoic fossils from near Mudgee. Dep. Min. N.S.W. Ann. Rep. 1889, 238. The fossils, entirely the remains of Brachiopoda, are contained in a calcareous, feldspathic, blue grey rock, simulating the characters of a limestone. The commonest fossil is Rhynchonella.

7 ETHERIDGE, R., Jnr, 1889 - On the further structure of Conularia inornata, Dana, and Hyolithes lanceolatus, Morris, SP (= Theca lanceolata, Morris). Proc. Linn. Soc. N.S.W., 4(2), 751-6. Cornularia inornata was found at the East Maitland Coal Co's shaft near Farley, in the Upper Marine Series, and Hyolithes lanceolatus at the Maitland Coal Co. shaft between West Maitland and Farley railway stations, and also at Silkstone near Tumbleby.

ETHERIDGE, R., Jnr, 1890 - General notes made during a visit to Mt Sassafras, Shoalhaven district, by Messrs R. Etheridge, Jnr, and J.A. Thorpe. Rec. Aust. Mus., 1, 17-26. An account of the geology, ethnology, zoology, and botany encountered between Tarago, Mayfield (on Boro Creek), and Mt Sassafras.

7 ETHERIDGE, R., Jnr, 1890 - A large Equisetum from the Hawkesbury Sandstone. Proc. Linn. Soc. N.S.W., 2nd ser., 5, 445-8.

7 ETHERIDGE, R., Jnr, 1890 - Miscellaneous contributions to the palaeontology of Australia, No. 16. Carboniferous Series of the Port Stephens district. Dep. Min. N S.W. Ann. Rep. 1889, 239. Recent discoveries of fossils near West Maitland and Larpent Creek, Karua River, suggest that the Carboniferous invertebrate life first appeared in a much lower stratum than previously thought.

7 ETHERIDGE, R., Jnr, 1890 - Miscellaneous contributions to the Palaeontology of Australia, No. 17. Additional Carboniferous Mollusca in the lower Carboniferous series of the Port Stephens district. Dep. Min. N.S.W. Ann. Rep. 1889, 240. Discovery of marine fossils at Torrybuan suggests a strong relation (palaeontologically) between the Lower Carboniferous and the European Carboniferous limestone generally.

7 ETHERIDGE, R., Jnr, 1890 - Descriptions of two undescribed univalves from the Carboniferous rocks of New South Wales. Geol. Surv. N S.W Rec. 2, 81-3. The organic remains indicate a well-marked horizon in the so-called Lower Carboniferous rocks and are located at Torrybuan near Paterson. The species are Gosseletia australis and Baylea koninchii.

7 ETHERIDGE, R., Jnr, 1891 - On the occurrence of microscopic fungi allied to the genus Palaeachyla, Duncan, in the Permo-Carboniferous of New South Wales and Queensland. Geol. Surv. N.S.W. Rec. 2, 95-9. Study of the microsvopic structure of Monticuliporoid corals from the Permo-Carboniferous of New South Wales and Queensland brought to attention some spicular-looking hollow tubes within the corallites of Stenopora crinita and meandering perforating tubes in the corallum of another Monticuliporoid, in both cases clearly no part of the respective organisms themselves. The fossils are described in relation to their structural similarity to Palaeachypa perforans.

7, 16 ETHERIDGE, R., Jnr, 1891 - Plant remains from the Bulli Coal Measures. Dep. Min. N S.W. Ann. Rep. 1891, 269. The plants in the shale roof indicate the presence of the Lower Clarence Series (below the Hawkesbury Sandstone).

7 ETHERIDGE, R., Jnr, 1891 - A monograph of the Carboniferous and Permo-Carboniferous Invertebrata of New South Wales. Part I: Coelenterata. Geol. Surv. N.S.W., Palaeont. Mem., 5, 1-64. The fossils described are those from the marine beds of the Carboniferous and Permo-Carboniferous rocks of New South Wales, the former found lying below and separated by and unconformity from the latter which are intercalated with the coal measures.

7 ETHERIDGE, R., Jnr, 1892 - A Monograph of the Carboniferous and Permo-Carboniferous Invertebrata of New South Wales. Part II: Echinodermata, Annelida, and Crustacea. Geol. Surv. N.S.W., Palaeont. Mem., 5, 67-132. The Crinoidea are known to occur in the Carboniferous and the Upper Marine Series of the Permo-Carboniferous; the Asteroidea in both Lower and Upper Marine Series; but Echinoidea only in the Upper Marine Series. Two orders of Crustacea are known in the Carboniferous or Permo-Carboniferous.

7 ETHERIDGE, R., Jnr, 1892 - On Leaia mitchelli: Etheridge fil., from the Upper Coal Measures of the Newcastle district. Proc. Linn. Soc. N.S.W , 7, 307-10. Leaia species extend from the Old Red Sandstone to the Permian in geological time, with which the new form, found at Charlestown near Newcastle, will be compared.

7 ETHERIDGE, R., Jnr, 1892 - The Pentameridae of New South Wales. Geol. Surv. N.S.W. Rec. 3(2), 57.

7 ETHERIDGE, R., Jnr, 1893 - Annual report of the Palaeontologist for 1893. Dep. Min. N.S.W. Ann. Rep. 1893, 128. List of fossils registered during 1893.

7 ETHERIDGE, R., Jnr, 1894 - On the mode of attachment of the leaves or fronds to the caudex of Glossopteris; with remarks on the relation of the ferns to its allies. With a note on its stratigraphical distribution in Australia by T.W.E. David. Proc. Linn. Soc. N.S.W., 9(2), 228-58.

0 ETHERIDGE, R., Jnr, 1894 - Geological and ethnological observations made in the valley of the Wollondilly River and at its junction with the Nattai River, Counties Camden and Westmoreland. Rec. Aust. Mus., 2, 46-9.

7 ETHERIDGE, R., Jnr, 1894 - On the occurrence of a plant allied to Schizoneura, in the Hawkesbury Sandstone. Geol. Surv. N.S.W. Rec. 3, 74-7.

7 ETHERIDGE, R., Jnr, 1894 - Palaeontologia Novae Cambriae Meridionalis - Descriptions of New South Wales fossils, No. 1. Geol. Surv. N.S.W. Rec. 4, 32-8.

7 ETHERIDGE, R., Jnr, 1894 - Fossils from Capertee Valley, Devonian and Permo-Carboniferous. Geol. Surv. N.S.W. Rec. 4, 48.

7 ETHERIDGE, R., Jnr, 1894 - On the occurrence of an Oleandridium in the Hawkesbury Sandstone series. Geol. Surv. N.S.W. Rec. 4, 49-51.

7 ETHERIDGE, R., Jnr, 1895 - On the occurrence of a plant in the Newcastle or Upper Coal Measures possessing characters both of the genera Phyllotheca Brong., and Cingularis Weiss. Geol. Surv. N S.W. Rec. 4, 148-53.

7 ETHERIDGE, R., Jnr, 1896 - On the occurrence of a Pteronita (P. pittmani) in the Spirifer sandstone of Warrawang of Mt Lambie, near Rydal. Geol. Surv. N.S.W. Rec. 4, 28.

7 ETHERIDGE, R., Jnr, 1896 - The generic relations of Spirifera exsuperans de Konick. Geol. Surv. N.S.W. Rec. 5, 44. The results of investigation of the structure of Spirifera exsuperans seems to show that it agrees with Syringothyris in most of its characters departing from that type only in the more trivial.

7 ETHERIDGE, R., Jnr, 1896 - Palaeontologia Novae Cambriae Meridionalis · occasional descriptions of New South Wales fossils, No. 2. Geol. Surv. N.S.W. Rec. 5, 14-8.

7 ETHERIDGE, R., Jnr, 1898 - Palaeontologia Novae Cambriae Meridionalis - occasional descriptions of New South Wales fossils, No. 3. Geol. Surv. N S.W. Rec. 5, 175-9.

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7 ETHERIDGE, R., Jnr, 1902 - Additions to the Middle Devonian and Carboniferous corals in the Australian Museum. Rec. Aust. Mus., 4(7), 253-62.

7 ETHERIDGE, R., Jnr, 1903 - Further observations on the caudex of Glossopteris. Rec. Aust. Mus., V, 1, 46-9.

7 ETHERIDGE, R., Jnr, 1904 - Sub-reniform -ovate leaves of Glossopteris, with further remarks on the attachment of its leaves. Geol. Surv. N.S.W. Rec. 7(4), 315-8. A well-marked horizon in the Upper Coal Measures of Mt Kembla, Illawarra district, is distinguished only by the presence of large ovate leaves of Glossopteris which probably have not yet been figured from any portion of the Australian Permo-Carboniferous coal measures. These fronds are called G. nephroeidticus n. sp.

7 ETHERIDGE, R , Jnr, 1905 - The fructification of Schizoneura australis Eth. fil. Geol. Surv. N.S.W. Rec. 7, 234-5.

7 ETHERIDGE, R., Jnr, 1905 - Palaeontologia Novae Cambriae Meridionalis - occasional descriptions of New South Wales fossils. Geol. Surv. N.S.W. Rec. 7, 66-9.

7 ETHERIDGE, R., Jnr, 1905 - Palaeontologia Novae Cambriae Meridionalis - occasional descriptions of New South Wales fossils - No. 7. Rec. Aust. Mus., 12(9), 183. This contains notes on several Permo-Carboniferous Mollusca from the Upper and Lower Marine Series, N.S.W.

7, 18, 14 ETHERIDGE, R., Jnr, DAVID, T.W.E., and GRIMSHAW, J.W., 1896 - On the occurrence of a submerged forest with the remains of the Dugong, at Shea's Creek near Sydney. J. Proc. Roy. Soc. N.S.W., 30, 158-85. There is a lengthy description, culminating in the opinion that Neolithic man inhabited Botany Bay when the sea-level was many feet different from its present level.

7 ETHERIDGE, R., Jnr, and DUN, W.S., 1906 - Monograph of the Carboniferous and Permo-Carboniferous Invertebrata of New South Wales. Vol. II. Pelecypoda 1. The Palaeopectens. Geol. Surv. N.S.W. palaeont. Mem., 5, 3-39. The Aviculopectinidae of the Carboniferous of N.S.W. are small and are closely allied to the European and American forms. They have been found in only a few localities.

ETHERIDGE, R., Jnr, and DUN, W.S., 1909 - Notes on the Permo-Carboniferous Producti of eastern Australia, with Synonymy. Geol. Surv. N.S.W. Rec. 8, 293-303.

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ETHERIDGE, R., Jnr, and JACK, R.L., 1881 - Catalogue of works, papers etc. on geology, palaeontology etc. of the Australian Continent and Tasmania. London, Edward Stanford.

7 ETHERIDGE, R., Jnr, and OLLIFF, A.S., 1890 - The Mesozoic and Tertiary insects of New South Wales. Geol. Surv. N.S.W. palaeont. Mem., 7.

7 EVANS, J.W., 1943 - Upper Permian Homoptera from New South Wales. Rec. Aust. Mus., 21, 180.

7 EVANS, J.W., 1943 - Two interesting Upper Permian Homoptera from New South Wales. Trans. Roy. Soc. S. Aust., 67(1), 7-9.

7 EVANS, J.W., 1947 - A new fossil homopteran from Kimbles Hill, Belmont, Upper Permian. Rec. Aust. Mus., 21, 431.

7 EVANS, J W., 1950 - A re-examination of an Upper Permian insect, Paraknightia magnifica Ev. Rec. Aust. Mus., 22(3), 246-50. An insect described from the Upper Permian of Lake Macquarie, N.S.W., as a homopteran belonging to the family Ipsviciidae, and named Paraknightia magnifica Ev., is in reality a representative of the Sub-Order Heteroptera (Evans, 1943).

7 EVANS, J.W., 1956 - Palaeozoic and Mesozic Homoptera. Aust. J. Zool., 4, 165.

7 EVANS, J.W., 1958 - New Upper Permian Homoptera from the Belmont Beds. Rec. Aust. Mus., 24(9). Five wings of Upper Permian Homoptera are described and figured. Four are of Archescytinids and the fifth is of a Cercopoid.

7, 10 EVANS, P.R., 1964 - Some limitations to the application of palynology to oil exploration in Australia. APEA J., 1964, 64-6.

7 EVANS, P.R., 1966 - Mesozoic Stratigraphic palynology in Australia. Aust. Oil Gas J., 12(6), 58-63. Palynological subdivisions, eight Triassic, five or six Jurassic, and eleven Cretaceous, are outlined.

3, 9 EVERNDEN, J.F., and RICHARDS, J.R., 1962 - Potassium-argon ages in eastern Australia. J. geol. Soc. Aust., 9(1), 1-50. It appears that the batholiths of the Tasman Geosyncline represent continuous tectonic activity from the Middle Silurian through to Middle Devonian with a gradual movement eastwards of the axis of the intrusion. Carboniferous intrusions are transgressive but appear, still farther east. Permian intrusives occur farther east and north. Ages of some intrusive rocks in the Sydney Basin are also given.

EXOIL (N.S.W) PTY LTD, 1965 - Summary of data and results, Kurrajong Heights No. 1 well. In 'Summary of data and results: Drilling operations in the Sydney Basin, New South Wales, 1958-1962 of Australian Oil and Gas Corporation Ltd, Farmout Drillers N.L. and Exoil (N.S.W.) Pty Ltd.' Bur. Miner. Resour. Aust. Petrol. Search Subs. Acts Publ. 12.

3, 13 FAIRBRIDGE, R.W., 1947 - Possible causes of intraformational disturbances in the Carboniferous varve rocks of Australia. J. Roy. Soc. N.S.W., 81, 99-120. An elaborate discussion, with special reference to the Seaham occurrences in the Hunter Valley. The bulk of intraformational folded beds in the Carboniferous of Australia can be recognized as due to gravitational slumping and relatively few suggest direct ice impact. The slumping is very probably due to periodic release of water from impounded glacial lakes, its overloading, and other well-recognized causes.

0 FAIRBRIDGE, R.W., 1953 - AUSTRALIAN STRATIGRAPHY Perth, Univ. W. Aust. Press. Carboniferous in N.S.W. p. V1/2 to V1/11, and at intervals to V1/19. Permian in N.S.W. p. V11/42 to V11/56 and at intervals to V11/71. Triassic in N.S.W. p. V11/8 to V111/15b, and V111. The book is designed for a university science course. There is a good bibliography to each chapter.

FARMOUT DRILLERS N.L., 1965 - Summary of data and results, Stockyard Mountain No. 1 well. In 'Summary of data and results: Drilling operations in the Sydney Basin, New South Wales, 1958-1962 of Australian Oil and Gas Corporation Ltd, Farmout Drillers N.L. and Exoil (N.S.W.) Pty Ltd.' Bur. Miner. Resour. Aust. Petrol. Search Subs. Acts Publ. 12.

7 FEISTMANTEL, O., 1880 - Notes on the fossil flora of eastern Australia and Tasmania. J. Roy. Soc. N.S.W.. 14, 103-18. Lists of, and some comments on, the known flora of the Palaeozoic and Mesozoic in N.S.W.

1, 7 FEISTMANTEL, O., 1890 - Coal and plant bearing beds of Palaeozoic and Mesozoic age in eastern Australia and Tasmania; with special reference to the fossil flora. Geol. Surv. N.S.W., palaeont. Mem., 3. A description of the species is preceded by a literary and stratigraphical review and a note on the palaeontological relations of the coal and plant-bearing beds.

10 FERGUSON, J.A.. and HOSKING, J.S., 1953 - Industrial clays of the Sydney area, New South Wales. I. Geology and mineralogy. Aust. J. appl. Sci.. 6(3). 380.

2, 14 FLACK, D.S.. 1962 - Report of examination of igneous intrusions in the Liverpool-Campbelltown district. Geol. Surv. N.S.W. Rep. 12, 7-12. Appended is a petrological report on specimens from the Camden area by D.R. Pinkstone.

1, 18 FLEMING, C.A., 1957 - Recent developments in the correlation of New Zealand Palaeozoic and Mesozoic sediments. Proc. 9th Pac. Sci. Cong., 255-8.

7, 18 FLEMING, C.A., 1962 - New Zealand Biogeography - a Palaeontologist's approach. Tuatara, 10, 53-108.

7 FLETCHER, H.O., 1929 - Contributions on the Permo-Carboniferous Aviculopectinidae of New South Wales. Rec. Aust. Mus., 17, 1-34.

7 FLETCHER, H.O., 1929 - A revision of the genus Astartila. Rec. Aust. Mus., 17, 53-75.

7 FLETCHER, H.O., 1932 - A revision of the genus Myonia with notes on allied genera from the Permo-Carboniferous of New South Wales. Rec. Aust. Mus., 18, 389-409.

7 FLETCHER, H.O., 1938 - A revision of the Australian Conulariae. Rec. Aust. Mus., 20(3), 235-55.

7 FLETCHER, H.O., 1943 - The genus Conocardium from Australian Palaeozoic rocks. Rec. Aust. Mus., 21, 231-44.

1, 17, 13 FLETCHER, H.O., 1945 - Palaeontological evidence of the Hunter Valley in regard to the boundary between the Permian and Carboniferous Systems. Aust. N.Z. Ass. Adv. Sci., 24, 91.

7 FLETCHER, H.O., 1945 - A new genus Glyptoleda and a revision of the genus Nuculana from the Permian of Australia. Rec. Aust. Mus., 21, 293-312.

1, 7 FLETCHER, H.O., 1946 - Report of the committee on correlation of late Palaeozoic rocks in Australia - an extension of the geological range of Eurydesma cordatum Morris, and Eurydesma cordatum var. sacculum Dana. Aust. N.Z. Ass. Adv. Sci., 25, 353.

7 FLETCHER, H.O., 1958 - The Permian gastropods of N.S.W. Rec. Aust. Mus., 24(10), 115-64. The Permian gastropod fauna of N.S.W. is revised and 7 new genera and 16 new species are described and figured. Permian rocks in New South Wales are correlated, so far as is possible, from a study of the gastropod fauna.

10 FORSTER, T.E., 1888 - Coal nodules from the Borehole Seam at Newcastle, New South Wales. Trans. N. Eng. Inst. Min. mech. Engng, 1888, 37, 145-9.

0, 13 FOSKETT, W.E., 1952 - Geology of the Ravensworth - Liddell area. N.S.W. Joint Coal Board.

0, 13 FOSKETT, W.E., 1953 - Geology of the Ravensworth - Liddell area with particular reference to the commercial coal seams present. Aust. Inst. Min. Metall., 170, 133-51. The Ravensworth - Liddell area is part of the Muswellbrook - Singleton coal district of the Northern Coalfield. Discusses the geology of the area with details of each seam.

10 FOWLER, R.T., 1967 - Coal research at the University of New South Wales. Aust. Min., 59(7), 23-7.

2, 4, 16 FOWHALL, H.G., 1904 - The occurrence of isolated augite crystals at the top of the Permo-Carboniferous Upper Marine Mudstones at Gerringong, New South Wales. J. Roy. Soc. N.S.W., 38, 404. Perfect crystals occur in great numbers in a matrix of tuffaceous mudstone.

4, 11 FRANKEL, J.J., 1966 - Some mineralogical observations on Australian lateritic rocks. Aust. J. Sci., 29(4), 115-7. Maghemite (gamma-Fe_2O_3) is noted in various pisolitic (and one non-pisolitic) laterites from Australia (e.g. from laterite on Hawkesbury Sandstone, near French's Forest, Sydney) and India.

10, 14 GABRIEL, G.E., 1955 - Natural gas (methane). Dep. Min. N.S.W Ann. Rep. 1949, 56. 413, 286 cu. ft of gas, averaging 95% methane, was sold in 1949 from the Balmain Colliery, but sales ceased in December of that year. In 1944 more than 11½ million cu. ft of gas were sold.

1, 15 GALLOWAY, M C., 1967 - The stratigraphy of the Putty-Upper Colo area, Sydney Basin, N.S.W. J. Roy. Soc. N.S.W., 101, 23-36. Rocks of the Narrabeen Group, the Hawkesbury Sandstone and the Wianamatta Group are described. The area is mid-way between Crook's (1956) Grose River section and Raggatt's (1938) coastal section - some differences are noted.

18 GALLOWAY, R.W., 1961 - Some aspects of the Pleistocene history of south-eastern Australia. Inst. Aust. Geog., Brisbane.

8, 13 GALLOWAY, R.W., 1963 - Geomorphology of the Hunter Valley: in General report on the lands of the Hunter Valley. Sci. ind. Res. Org. Melb., Land Res. Ser., 8, 90-101.

2, 13 GALLOWAY, R.W., 1967 - Pre-basalt, sub-basalt and post-basalt surface of the Hunter Valley N.S.W. In JENNINGS, J.N., and MABBUTT, J.A., eds. 'LANDFORM STUDIES IN AUSTRALIA AND NEW GUINEA'. Canberra, ANU Press.

4, 10, 11 GARDNER, D.E., 1955 - Beach sand and heavy mineral deposits of eastern Australia. Bur. Miner. Resour. Aust. Bull. 28, 31-2. The author deals with the heavy minerals from the Permian and Triassic of the Coal Basin and mentions the minerals from the beach sands south of Swansea.

1, 10 GEOLOGICAL SURVEY OF N.S.W., 1925 - The coal resources of New South Wales. Geol. Surv. N.S.W. Bull. 6. Part I outlines the general geology of all known coal-bearing rocks, especially the Permian, and gives estimates

of reserves. Part II considers the nature of coal, coke, by-products and gives tables of analyses.

10 GEOLOGICAL SURVEY OF N.S.W., 1928 - The mineral industry of New South Wales. Dep. Min. N.S.W.

8, 14 GEYL, W.F., 1968 - Evidence of Quaternary tidal action in Swamp Creek Valley, near Kurri Kurri, N.S.W. Adv. Study Syd. Bas., 3rd Symp., Newcastle, 40. Geomorphological and sedimentological evidence is given to show that, when sea-level was 15 to 20 metres higher than now, tidal action shaped channels, now valley meanders, and deposited sediments in Swamp Creek Valley.

11, 14 GIBBONS, G.S., 1967 - Shell content in quartzose beach and dune sands, Dee Why, N.S W. J. sediment Petrol., 37(3), 869-78.

4 GIBBONS, G.S , and GORDON, J.L., 1969 - Origin and significance of glendonites. Adv. Study Syd. Bas., 4th Symp., Newcastle. Earlier suggestions that glauberite indicated low-temperature conditions are ill-founded: it is a warm-temperature precipitate. It is suggested that mirabilite ($NaSO_4 . 10H_2O$) is the first stage as this is deposited from freezing seawater. It then reacts with $CaSO_4$ (from earlier warm cycles) or with Ca^{++} ions from shells to form glauberite.

4, 10, 16 GIBBONS, G.S., and Le MESSURIER, P., 1966 - Report on the Yalwal Goldfield. Geol. Surv. N.S.W. Rep. 46. Nature of the deposits, mining history, and geology of the field. Petrological determinations by D.R. Pinkstone in an appendix.

18 GILL, E.D., 1952 - Palaeogeography of the Australia - New Zealand region in lower Devonian time. Trans Roy. Soc. N.Z., 80, 171-85.

3, 8 GILL, E.D., 1961 - Changes in the level of the sea relative to the land in Australia during the Quaternary Era. Z. Geomorph., Suppl., 3, 73-9.

8 GILL, E.D., 1964 - Quaternary shorelines in Australia. Aust. J. Sci., 26, 388-91. Delineation and dating ofQuaternary shorelines. A review of areas studied in N.S.W. is given.

3, 8 GILL, E.D., 1967 - Further Australasian research in Quaternary shorelines. Aust. J. Sci., 30, 15-8.

8, 12, 14 GIPPS, F.B., 1887 - Port Jackson silt beds. J. Roy. Soc. N.S.W., 21, 173-80. Samples are described from a series of borings across Sydney Harbour, and comments on the effects of tides, currents, and deposition. The subsidence of the Hawkesbury Sandstone is considered to have caused the deep chasms and precipitous gorges of the Blue Mountains; the Port Jackson and Parramatta valleys originated in the Triassic.

12 GLAESSNER, M.F., 1952 - The geology of the Tasman Sea. Aust. J. Sci., 14(4), 111-4. General notes on geosynclines with an account of the life and extent of the Tasman Geosyncline.

7 GLENISTER, B.F., 1954 - Cephalopoda from the Permian System of Australia. Aust. N.Z. Ass. Adv. Sci., Canberra, 1954. The affinities of a new species of Pseudogastrioceras from the Farley Formation of N.S.W. are with Artinskian forms.

7 GLENISTER, B.F., and FURNISH, W.M., 1961 - The Permian ammonoids of Australia. J. Paleont., 35, 673-736.

1, 15 GOLDBERY, R., 1969 - A review of some recent studies in the Sydney Basin - the stratigraphy of the north-western margin. Geol. Soc. Aust., spec. Publ. 2, 9-10. The Shoalhaven Group consists of the basal Megalong Conglomerate and the Berry Formation. Above these the Illawarra Group consists of the Nile Subgroup (Mt Marsden Claystone, Coorongooba Creek Sandstone, Gundangeroo Formation), and the Charbon Subgroup (Marrangaroo Conglomerate).

1, 15 GOLDBERY, R., 1969 - Permian shelf sedimentation, north-western and western Sydney Basin. Adv. Study. Syd. Bas., 4th Symp., Newcastle. Particular attention is given to the Berry Formation in the Shoalhaven Group and the Nile Subgroup in the Illawarra Coal Measures of the western regions. Evaporite sequences exist in the Berry Formation.

2, 14 GOLDBERY, R., and FISHBURN, D., 1964 - An analysis of the volcanic relationships at Bondi. J. Min. geol. Soc. N.S.W. Univ., 2, 37-43. The islands in Meriveri Bay are volcanic necks. The columnar sandstone is not due to the instrusive dyke but to the volcanic neck of the base of the cliff.

4, 14 GOLDING, H.G., 1955 - Concretions and associated minerals in Triassic beds near Gosford. Aust. J. Sci., 17(4), 134-6. Triassic sandy shales near Gosford contain zoned concretions. Tabular barytes, a kaolinitic mineral, and millerite are associated. Crystalline discoidal aggregates of barytes occur along adjacent bedding surfaces.

4, 6, 14 GOLDING, H.G., 1959 - Variation in physical constitution of quarried sandstone from Gosford and Sydney N.S.W. J. Roy. Soc. N.S.W., 93, 47-60. Variation in petrographic, water absorption, density, and porosity attributes of quarried sandstone from Gosford and Sydney is traced to genetic factors, especially variation in the ratio quartz sand: argillaceous material in the original sediment and the consequent variation in the roles of quartz welding and clay compaction. Quartz welding is due to concurrent stylolitization and silica cementation of quartz; clay compaction includes that induced by load stress and that accompanying illite authigenesis. These, with carbonate deposition, contributed to porosity reductions, but solution of carbonate was also operative. Some relations between petrographic and other attributes are indicated and the diagenetic evolution of the sandstones is outlined.

2, 3, 15 GOLDING, H.G., and CONNOLLY, J.R., 1960 - Stylolitic lava from Goobang Creek N.S.W. Aust. J. Sci., 23(4), 129-30.

1, 15 GOODWIN, R.H., 1970 - Triassic stratigraphy-Blue Mountains, New South Wales. J. Proc. Roy. Soc. N.S.W., 102, 137-48. Describes 5 members of the Caley Formation and 3 of the Grose Sandstone, and the Burralow Formation. Mentions and names the 'Katoomba Claystone', a hitherto unrecognized marker in the Burra-Moko Head Sandstone Member of the Caley Formation. The Burralow Formation thins and becomes sandier westwards until it is indistinguishable from the Grose Sandstone.

1, 18 GOSTIN, V.A., 1967 - Ice-rafting and paralic environment in the Permian of south Sydney Basin. Aust. N.Z. Ass. Adv. Sci., 39th Congr., Melbourne. The Permian stratigraphy of the Shoalhaven Group is discussed with reference to environmental conditions during formation.

4, 16 GOSTIN, V.A., 1967 - Sedimentology of the Permian Conjola Formation in the southern Sydney Basin, N.S.W. Adv. Study Syd. Bas., 2nd Symp., Newcastle, 32-3. Both the basement and formational dips are gently to the eastern quadrant. Lithology, structures, and associations show that the sediments were deposited in shallow marine, bay, and lagoonal environments: cobbles derived from the Ordovician bedrock and from distant Devonian localities. Glacial conditions prevailed.

8, 15 GRADY, A., and HOGBIN, H., 1926 - Mountain Lagoon and Kurrajong Fault. J. Roy. Soc. N.S.W., 60, 119. The lagoon occupies a shallow depression within a narrow rim, outside which are streams which beseige it on all sides. It has been formed by the dislocation of drainage following earth movements associated with the Kurrajong Fault.

1, 16 GRAY, N.M , 1968 - Some thoughts on the Lower Permian rocks in the lower Shoalhaven River system. Adv. Study. Syd. Bas., 3rd Symp., Newcastle, 42. 'Lower Coal Measures' consisting of a lower conglomerate and upper finer sediments with coal overlie Devonian and are overlain by Conjola Formation. Some conglomerates previously mapped as Conjola may really belong to the Lower Coal Measures, a term not to be confused with either Greta or Clyde River Coal Measures.

9, 15 GRAY, N.M., 1969 - Seismic observations on the western margin of the Sydney Basin. Adv. Study Syd. Bas., 4th Symp., Newcastle. The effect of the Warragamba Dam is logged by a network of recorders. An apparent increase is seismicity is due not to the dam but to better instruments. There has been one major earthquake at Robertson and a few small tremors between Moss Vale and Kiama. The periphery of the basin has been active and also the areas near features such as the Lapstone Monocline.

6, 10 GRAY, N.M., 1971 - Accelerated weathering of sediments. Adv. Study Syd. Bas., 6th Symp., Newcastle, 19. Specimens from the Broughton Tuff, Berry Formation, and Hawkesbury and Nowra Sandstones were tested. The sulphate soundness test was of little use in determining weathering susceptibilities. Six stages of weathering were defined.

1, 7, 14 GREBE, Hilde, 1970 - Permian plant microfossils from the Newcastle Coal Measures/Narrabeen Group boundary. Lake Munmorah, New South Wales. Geol. Serv. N.S.W. Rec. 12(2), 125-36. Tables of spores are given. The Wallarah Seam and the Vales Point Coal Member contain a P4 (Evans) assemblage, indicating that the base of the Munmorah Conglomerate is of Permian age. The change to a Tr 1a assemblage above the Vales Point Coal Member is ascribed to a change in environment.

9 GREEN, R., 1961 - Palaeomagnetism of some Devonian rock formations in Australia. Tellus, 13, 119-24.

10 GREIG, W.A., 1928 - 1932 - Chemical analyses. Dep. Min. N.S.W. Ann. Rep. 1928-1932. Analysis of coals, shales, oil-shales, gas, etc., are given.

5, 13 GRIFFIN, R.J., 1959 - Gronundwater resources of the Port Stephens area. Dep. Min. N.S.W. tech. Rep. 7, 67. Groundwater may be found in large quantities. Alluvials (max. depth 268') fill in a huge basin which connects Port Stephens to the Hunter Valley and include the Tomago Sandbeds.

5 GRIFFIN, R.J., 1962 - Botany Basin. Dep. Min. N.S.W. Bull. 18. This is a geohydrological documentation of the Botany Basin, an area of Quaternary sedimentation in a basin in Triassic rocks. Records of hundreds of bores

and all other available information have given data for the drawing of contour plans of the natural surface, the floor of the Bay, the basement of the basin, the salinities of the waters and the rainfall.

5, 16 GRIFFIN, R.J., 1962 - Groundwater survey of the lower Shoalhaven River flats. Geol. Surv. N.S.W. Rep. 13, 1-3. The results of six test bores are listed.

5, 13 GRIFFIN, R.J., 1963 - The groundwater resources of the Woollombi Brook catchment area. Dep. Min. N.S.W. tech. Rep. 1960, 8, 109-39. This is the first of a series of reports on the groundwater resources of the Hunter Valley and provides a geohydrological documentation of the Woollombi Brook.

5 GRIFFIN, R.J., 1963 - The underground water resources of New South Wales. Geol. Surv. N.S.W. Rep. 16. The Permian Coal seams are brittle and become highly fractured and are thus good reservoirs. The other formations yield water only in small quantities and of poor quality. Marine beds usually yield only small quantities of saline water.
Of the Triassic sequence, the Narrabeen Sandstone yields only small supplies, the Hawkesbury Sandstone is generally impervious, and the Wianamatta Shale relatively impervious - what water it yields is usually saline.
The Sydney Basin contains smaller basins (Cumberland, Botany, Fairfield, Penrith). Many of the sediments, although sandstones, are impervious. There is an ideal basin structure, but small pervious sections are discontinuous, and there is little extensive transfer of potential from high to low ground. There have been small artesian flows from Hawkesbury Sandstone at Gladesville and Redfern. There were only small quantities from Balmain colliery shaft to 3 000 feet. There is an apparent increase of permeable horizon south of Georges River to Mittagong - Bowral area. On the Blue Mountains between Lawson and Blackheath the uppermost sandstones are very porous, friable and yield small supplies to bores. Porous beds rest on an impervious sandstone which outcrops in solid cliffs and many springs occur at the junctions of the two facies.

5, 14 GRIFFIN, R.J., 1964 - Kogarah Golf Club irrigation water supply. Geol. Surv. N.S.W. Rep. 22, 7-9. A geohydrological investigation, supported by test drilling with a Gemco Auger, has shown that there is little chance of obtaining irrigation supplies of underground water at Kogarah Golf Club.

5, 14 GRIFFIN, R.J., 1964 - Flooding at the Australian Golf Club. Geol. Surv. N.S.W. Rep. 22, 5-6. Heavy rains in 1963 caused the water table at the Australian Golf Club to rise above the surface and flooded a large area of the course.

5, 14 GRIFFIN, R.J., 1964 - Underground water, Wyong Shire. Geol. Surv. N.S.W Rep. 21, 7-10. A geohydrological investigation of the eastern section the Wallarah Seam and the base of the alluvium. This thickness should be sufficient to allow the extraction of coal under Munmorah and Tuggerah Lakes.

10 GRIFFIN, R.J., and WYNN, D W , 1962 - Iron. Geol. Surv. N.S.W. Rep. 21. Data are given for the following districts:
Goulburn District 17-9; Mudgee District 23-6; Raymond Terrace - Williamstown 31; Rylestone and Cudgegong 31; Williams River - Karuah River 37.

10, 11 HAILS, J.R., 1964 - A reappraisal of the nature and occurrence of heavy mineral deposits along parts of the east Australian coast. Aust. J. Sci., 27, 22-3. Describes the possible sequence of events in the formation of heavy mineral beach and dune sands.

3, 8 HAILS, J.R , 1965 - A critical review of sea-level changes in eastern Australia since the last glacial. Aust. geogr. Stud., 3, 63-78.

1, 8 HAILS, J.R., 1967 - Significance of statistical parameters for distinguishing sedimentary environments in New South Wales, Australia. J. sediment. Petrol., 37(4), 1 059-69. A sedimentological and geomorphological study of Quaternary sediments on a high wave energy barrier coast in N.S.W. shows that if sediments are polygenetic in origin, skewness is the only parameter that can distinguish beach, barrier, and dune sands. Sediments derived from adjacent bedrock areas and deposited within bayments are not so well sorted but skewness still distinguishes between the various sedimentary environments.

8 HAILS, J.R., and LANGFORD-SMITH, T., 1965 - Australian research in Quaternary shorelines. Aust. J. Sci., 28(11), 408.

8, 14 HALL, L.D., 1926 - The physiography and geography of the Hawkesbury River between Windsor and Wiseman's Ferry. Proc. Linn. Soc. N.S.W., 51, 555-93. A detailed description of the main river and the lower portions of its tributaries. Geological and ecological factors and their relation to physiography are discussed, more especially with regard to their effect on man and his means of livelihood.

8, 14 HALL, L.D., 1927 - The physiographic and climatic factors controlling the flooding of the Hawkesbury River at Windsor. Proc. Linn. Soc. N.S.W. 52, 133. The effect of the Nepean dams on the floods (1925) has been investigated in an effort to find a definite relationship between flood waters, water conservations, and climatic conditions over the catchment area of the river.

1, 10, 15 HALL, L.R., 1952 - Coal resources of Carlos Gap and Brogan's Creek (Vulcan) areas, Western Coalfield. Dep. Min. N.S.W Ann. Rep. 105-10. There are many coal sections and assays. The geology is similar to that described by Rayner in the Ben Bullen - Blackmans Flat areas. A prominent basal Marangaroo Conglomerate below the Lithgow Seam, the equivalent of the 'Vertebraria Sandstone' above the Irondale and the cherts above the Dirty Seam are key horizons.

6 HALL, L.R., 1956 - Tillegra Dam site. Dep. Min. N.S.W Ann. Rep. 1952, 151. The site is on the Williams River 2 miles above its junction with the Chichester River, and 10 miles by road from Dungog. The predominant rocks are Lower Burindi tuffs, tuffaceous shales, and mudstones with some conglomerates. The tuffs are better developed than the others. Folds and faults in the area are discussed and the dam site geology described.

5, 13 HALL, L.R., 1958 - Amplification of the Hunter District Water Boards Water Supply. The Williams River - Grahamstown Diversion. Dep. Min. N.S.W. tech. Rep. 1955, 3, 17.

7, 16 HALL, T.S., 1909 - Notes on a collection of graptolites from Tallong, New South Wales. Geol. Surv. N.S.W. Rec. 8, 339.

7, 16 HALL, T.S., 1920 - On a further collection of graptolites from Tallong, New South Wales. Geol. Surv. N.S.W. Rec. 9, 63-6. Description of a collection of graptolites found at Tallong on the upper Shoalhaven River.

10 HALL, T.Y., 1858 - Comparative productiveness of the French, English, Belgian, American, Prussian, Spanish, Saxonian and Australian Coalfields in the years 1855-1856. Trans. N. Eng. Inst. Min. Engrs, 1, 67.

8 HALLIGAN, G.H., 1907 - Sand movement on the New South Wales coast. Proc. Linn. Soc. N.S.W., 31(4), 619-40. A geomorphological account.

8, 14 HALLIGAN, G.H., 1913 - The physiography of Botany Bay. J. Proc. Roy. Soc. N.S.W., 47, 120-9.

4, 13 HAMILTON, J.D., 1966 - Petrography of some Permian sediments from the Lower Hunter Valley of N.S.W. J. Roy. Soc. N S.W., 98, 221-37. Although largely restricted to a consideration of the Tomago and Newcastle Coal Measures, this study shows the broad compositional uniformity of the Permian sediments of the region. There were two major sources for the epiclastic rocks, one volcanic and unmetamorphosed, the other deformed granitic and metamorphic. The Tomago and Newcastle Coal Measures are dominated by the former, and the Dalwood and Maitland Groups derive

equally from both. Volcanic ash abundant in the Newcastle sequence is largely altered to montmorilonite-kaolinite clays. The Waratah Sandstone is markedly different from the fluvial sands of the Tomago and Newcastle Coal Measures.

4, 13 HAMILTON, J.D., 1968 - Trimorphic clay minerals from the lower Hunter Permian succession of New South Wales. J. geol. Soc. Aust., 15(1), 9-24, pl. 1. Trimorphic clay minerals from the Permian sediments of the lower Hunter Valley fall into two categories, mixed layer mica-montmorillonites and montmorillonite. A detailed chemical analysis follows.

4 HAMILTON, L., 1967 - The effects of basic magma on its intrusion into coal. Aust. N.Z Ass. Adv. Sci., 1967, Section C, Abstract F2. The author described 'white trap', which is common in the Wollongong area but rare in the Newcastle area.

1, 2, 14 HAMILTON, L.H., HELBY, R., and TAYLOR, G.H., 1969 - The occurrence and significance of Triassic coal in the volcanic necks near Sydney. J. Proc. Roy. Soc. N.S.W., 102, 169-71.

1, 10, 13 HAMMOND, P.T., 1891 - Report on Cessnock diamond drill bore. Dep. Min. N.S.W., Ann. Rep. 1891, 262-4. Analysis of two coal seams in the Cessnock district.

1, 10, 13 HAMMOND, P.T., 1891 - Notes on diamond drill for the Greta Seams at Belford. Dep. Min. N.S.W Ann. Rep. 1891, 264-7. The depths of the Muree beds and Greta coal seams in the Belford district are discussed. Note is made of anticlinal structures near Belford.

10, 11 HANLON, F.N , 1944 - The bauxites of New South Wales. J. Roy. Soc. N.S.W., 78, 94-112. Bauxite localities are a 1. Tingha - Inverell - Emmavale in New England; 2. Bundanoon - Wingello; Bungonia - Windellama Crookwell, all near the southern part of the Sydney Basin; 3. Trundle in the western plains. The bauxites were formed by the weathering of Oligocene basalts (except at Trundle) during the Miocene, and are true residual deposit Alakalis and alkaline earths were removed, with almost complete desilicatio but mostly no removal of Fe. The climate was probably warm and the rainfall moderate.

1, 10, 15 HANLON, F.N., 1945 - Preliminary reconnaissance survey of the North Western Coalfield. Geol. Surv. N.S.W. geol. Rep. 1939-45, 92-6.

1, 10, 15 HANLON, F.N., 1947 - Geological survey of the North Western Coalfield. Progress report. Dep. Min. N.S.W. Ann. Rep. 1947, 76-82. There are two geological maps and detailed geology of the area from Castle Mount Dome to Sandy Creek Syncline. Strata range in age from Upper Carboniferous through Permian, Triassic, Jurassic, to Tertiary.

0, 15 HANLON, F.N., 1947 - Geology of the North-Western Coalfield. Part I: Willow Tree district. Part II: Willow Tree - Temi district. Part III: Geology of Murrurundi - Temi district. J. Roy. Soc. N.S.W., 1947, 81, 280-97.

2, 9, 14 HANLON, F.N., 1947 - A magnetic survey in the vicinity of the volcanic neck at Dundas Valley, New South Wales. J. Roy. Soc. N.S.W , 81, 69. The neck, 3 miles northeast of Parramatta, consists of breccia and basalt intrusive into the Wianamatta Shale. The survey reveals 3 nearby areas intruded by igneous rocks, probably basaltic dykes.

0, 15 HANLON, F.N., 1948 - Geology of the North-western Coalfield, N.S.W Part IV: Geology of the Cunnedah-Curlewis district. J. Roy. Soc. N.S.W., 82(3), 241-50. The Permian sequence comprises Lower Marine lavas and subordinate fresh water sediments, Greta Coal Measures (?), Upper Marine Series, and Upper Coal Measures. It is overlain conformably by Triassic conglomerates and sandstones. Sills, dykes, and flows of Tertiary dolerite form extensive outcrops and there are also extensive alluvial areas. The general dip is southwesterly and on it minor folding of Permian and Triassic beds has been superimposed.

0, 15 HANLON, F.N., 1948 - Geology of the North-western Coalfield, N.S.W. Part V: Geology of the Breeza district. J. Roy. Soc. N.S.W , 82(3), 251-4. Only the upper part of the Permian sequence, comprising the Upper Marine Series and Upper Coal Measures, crops out in the area. It is overlain by Triassic conglomerates and sandstones. The beds have been intruded by Tertiary dolerites and there are also extensive areas of alluvium. There is a general dip to the southwest except in the Watermark area where there is a dome which was formed partly in pre-Triassic and partly in post-Triassic time.

0, 15 HANLON, F.N., 1948 - Geology of the North-western Coalfield, N.S.W. Part VI: Geology of south-western part of County Nandewar. J. Roy. Soc. N.S.W., 82(3), 255-61. The area comprises a synclinal zone of Lower Coal Measures bounded on the west by Lower Marine lavas, which form a Carboniferous structural high, and on the other side by upper Kuttung rocks, which have been overthrust from the east. The Lower Marine lavas and in part the Lower Coal measures have been intruded by Tertiary alkaline rocks.

0, 15 HANLON, F.N., 1948 - Geology of the North-western Coalfield, N.S.W. Part VII: Geology of the Boggabri district. J. Roy. Soc. N.S.W., 82(4), 297-301. The Permian sediments comprise only the Upper Coal Measures, which have been deposited on the eroded surface of the Boggabri Volcanics (Lower Marine). The coal measures are overlain conformably by Triassic beds, and Jurassic sandstones may possible occur. The sediments have been intruded by Tertiary dolerite sills and there are also extensive alluvial areas. The structural geology is simple.

0, 15 HANLON, F.N , 1948 - Geology of the North-western Coalfield, N.S W. Part VIII: Geology of the Narrabri district. J. Roy. Soc. N.S.W., 82(4), 302-8. The Permian outcrops comprise only the Lower Coal Measures and Upper Marine Series. The Upper Coal Measures are overlapped by the Triassic. Carboniferous beds have been thrust against the eastern boundary of the Permian. Tertiary alkaline rocks were intruded and extruded through the area.

1, 10, 16 HANLON, F.N., 1949 - Correlation of coal seam worked at Tongarra, Avondale and Huntley collieries. Dep. Min. N.S.W. Ann. Rep. 1949, 66. The three collieries work the one coal seam, which, it is suggested, could be designated as the Tongarra Seam.

1, 10, 16 HANLON, F.N., 1950 - Development of coal seams between the Southern and South-western Coalfields. Dep. Min. N.S.W. Ann. Rep. 1950, 71-3. There is an isopach map for the Bulli Seam, the only one which it would pay to prospect within the area between the South Coast and the Burragorang Valley.

0 HANLON, F.N., 1953 - The geology of the New South Wales coalfields. 5th Emp. Min. metall. Cong., 6, 1(2, 1-53).

0, 16 HANLON, F N., 1953 - Southern Coalfield. Geology of the Stanwell Park-Coledale area. Dep. Min. N.S.W. tech. Rep. 1, 20-35. The author discusses the stratigraphy and structure of two sheets of a geological map (10 chains to 1 inch) of the Southern Coalfield; he introduces new terminology for the Narrabeen Group in the area.

1 HANLON, F.N., 1954 - Correlation and subdivision of Australian Permian nomenclature and correlation of the main coal province, New South Wales. Aust. N.Z. Ass. Adv. Sci., 1954, (MSS) 'The nomenclature which has been adopted divides the system into series and stages and implies an ability to differentiate the various units on the basis of the time of their depositions which is not justified. ...a move should be made to adopt rock names, applied in accordance with the Australian Code of Stratigraphical Nomenclature, for the sub-division.' Discussion of the problems of revision follows.

10, 13 HANLON, F.N., 1954 - Limestone, Gloucester district. Dep. Min. N.S.W. Ann. Rep. 1950, 89.

0, 16 HANLON, F.N., 1956 - Geology of the Southern Coalfield Illawarra district. Dep. Min. N.S.W. Ann. Rep. 1952, 95-104. The author describes 1. The Gerringong Volcanics (Westley Park Tuff, Blowhole Latite, Rifle Range Tuff, Kiama Tuff, Bumbo Latite, Jamberoo Tuff, Saddleback Latie, Camberwarra Latitie, Broughton Tuff, Tappitallae Mountain Tuff, Berkley Latite, Minnemurra Latite). 2. Illawarra Coal Measures (Woonona Seam, Tongarra Seam, American Creek Seam, Wongawilli Seam, Balgownie Seam, Bulli Seam). 3. Triassic (Coal Cliff Greywacke, Wombarra Shale, Scarborough Greywacke, Stanwell Park Claystone, Bulgo Greywacke, Bald Hill Claystone, Gosford Formation, Hawkesbury Sandstone, Undola Sandstone Member, Wianamatta Group). 4. Tertiary. Also structural geology, physiography and landslides.

6 HANLON, F.N., 1958 - Presidential address - Geology and transport, with special reference to landslides on the south coast of N.S.W. J. Roy. Soc. N.S.W., 1958, 92, 2-15. Engineering properties of many rock members in the Sydney Basin are described.

1, 14 HANLON, F.N., JOPLIN, Germaine, A., and NOAKES, L.C., 1952 - Review of stratigraphical nomenclature. Part I: Mesozoic of the Cumberland Basin. Aust. J. Sci., 14(6), 179-82. The original definitions and terminology of the three main Mesozoic stratigraphical units of the Cumberland Basin are reviewed and names formally proposed in accordance with the Australian Code of Stratigraphic Nomenclature. The units are the Wianamatta Group, Hawkesbury Sandstone, and Narrabeen Group. A useful list of references is given.

1, 16 HANLON, F.N., JOPLIN, Germaine, A., and NOAKES, L.C., 1953 - Review of stratigraphical nomenclature. Part 2. Permian units in the Illawarra district. Aust. J. Sci., 15(5), 160-4. The original definitions and terminology of units within two of the three main stratigraphical subdivisions of the Permian succession in the Illawarra district are reviewed and renamed (including the two main subdivisions themselves) in accordance with the Australian Code of Stratigraphic Nomenclature. From the bottom the three subdivisions are, the Clyde Coal Measures (no outcrops in the Illawarra area), the Upper Marine Series (renamed the Shoalhaven Group and Gerringong Volcanics) and the Upper Coal Measures (renamed the Illawarra Coal Measures).

1, 16 HANLON, F N., JOPLIN, Germaine, A , and NOAKES, L.C., 1953 - Review of stratigraphical nomenclature. Part 3: Post-Palaeozoic units in the Illawarra district of New South Wales. Aust. J. Sci., 16(1), 14-6.

Many of the Triassic (?), Tertiary, and post Tertiary(?) units (mainly igneous) in the Illawarra district have been formally named and these are revised to conform with Australian Code of Stratigraphic Nomenclature. Where possible old names have been retained or only slightly modified.

0, 16 HANLON, F.N., and NOAKES, L.C., 1954 - Excursion notes No. 1 Sydney-Canberra. Aust. N.Z. Ass. Adv. Sci., Some general notes on the geological succession and physiography of the Illawarra-south coast district.

1, 14 HANLON, F.N., OSBORNE, G.D., and RAGGATT, H.G., 1954 - Narrabeen Group: Its subdivisions and correlations between the south coast and Narrabeen-Wyong districts. J. Roy. Soc. N.S.W., 87(3), 106-20. The Narrabeen Group is subdivided into the Gosford Formation and the Clifton Subgroup. On the South Coast the latter comprises the Bald Hill Claystone, Bulgo Greywacke, Stanwell Park Claystone, Scarborough Greywacke, Wombarra Shale, and Coalcliffe Greywacke. In the Narrabeen-Wyong district is comprises the Collaroy Claystone, Tuggerah Formation, and Munmorah Conglomerate. The group thins generally from north to south. The tops of the Bald Hill and Collaroy Claystones are probably equivalent horizons and the bases of the Stanwell Park Claystone and Tuggerah Formation may be equivalent.

4, 9 HARDING, R.R., 1969 - Catalogue of age determinations on Australian rocks, 1962-1965. Bur. Miner. Resour. Aust. Rep. 117.

1, 10, 16 HARGREAVES, A.J., 1963 - Some variations in the Bulli Seam. Proc. Aust. Inst. Min. Metall., 208, 251-83. The Bulli Seam, contains medium to low volatile bituminous coal generally of coking quality. It is worked over an area of 300 square miles. Variations include: depth of cover; thickness of seam; rank; gas content and composition; and strength of coal.

1, 10, 16 HARGREAVES, A.J., 1964 - Some variations in the Bulli Seam. Proc. Aust. Inst. Min. Metall., 209, 181-3. Brief discussions and contributions from R.H. Jones and A.J. Hargreaves (see Hargreaves, A.J , 1963).

HARGREAVES, A.J., 1965 - Instantaneous outbursts of coal and gas in Australia. 8th Comm. Min. metall. Cong., 6, 871-86. Some technical information is given on the Southern Coalfield.

0, 16 HARPER, L.F., 1905 - Geology of the Gerringong district. Geol. Surv. N.S.W. Rec. 8(2), 94.

1, 10, 16 HARPER, L.F., 1905 - Report on coal at Tongarra, near Albion Park, Parish of Jamberoo, County of Camden. Dep. Min. N.S.W. Ann. Rep. 1905, 152-6. There are 4 coal seams in the Upper (Newcastle-Bulli) Coal Measures which are overlain by Narrabeen and Hawkesbury Stages and underlain by the Upper Marine beds. The Minumurra 'lava flow', with Glossopteris below it occurs in the Coal Measures and there are at least 12 basaltic dykes.

1, 10, 16 HARPER, L.F., 1906 - Report on the Southern Coalfield and the Joadja district. Dep. Min. N.S.W. Ann. Rep. 1906, 170-1. Mentions igneous rocks in the Southern Coalfield including the Bumbo lava-flow and the Cambewarra Trachyte, and describes the kerosene shale 3 miles south-southeast of Joadja Creek village.

2, 10, 11, 16 HARPER, L.F., 1906 - China clay, Ulladulla. Dep. Min. N.S.W. Ann. Rep. 1906, 170. The clay results from the weathering and bleaching of a volcanic dyke which intrudes the Upper Marine beds. The extent and possible economic value of the deposit are mentioned.

1, 10, 16 HARPER, L.F., 1907 - Report on Tongarra coal prospecting operations. Dep. Min. N.S.W. Ann. Rep. 1907, 171. An accompanying sketch plan and sections show the geological formations. The occurrncence of a volcanic dyke across the tunnel path is discussed.

1, 10, 16 HARPER, L.F., 1907 - Report on the prospects of obtaining marketable coal at Wongawilli, West Dapto. Dep. Min. N.S.W. Ann. Rep. 1907, 171-2. Sections illustrate the variation in number and thickness of coal bands found in the prospecting tunnel.

8, 15 HARPER, L.F., 1909 - Notes on the physiography and geology of the north eastern watershed of the Macquarie River. Geol. Surv. N.S.W. Rec. 8, 321.

1, 16 HARPER, L.F., 1910 - Progress report upon the area of Southern Coalfield geologically surveyed during 1910. Dep. Min. N.S.W. Ann. Rep. 1910, 179. Deals with the geology of the parishes of Wollongong and Kembla.

1, 16 HARPER, L.F., 1911 - Progress report on the geological survey of the Southern Coalfield, and on the prospects of obtaining marketable coal in the Robertson district. Dep. Min. N.S.W. Ann. Rep. 1911, 181-7. This gives sections west from Wonona, with monchiquites, sections in the Termeil district with dolerites and monzonite and sections in the Robertson district with dolerite. No. 1 seam in Bulli district has in places been completely replaced by a sill. The coal measures thin out to the west and south from the Illawarra Coast Range. There is a cross-section from

the Coast through Kangaroo Valley to Borangary Creek. There is also a brief note on a coal-bearing area 1½ miles southwest of Mt Kembla, and another on the improbability of there being workable coal beneath Jervis Bay.

1, 10, 16 HARPER, L.F., 1911 - Report on coal-bearing area held by the Kembla Harbour Colliery Syndicate, 1½ miles south west from Mt Kembla. Dep. Min. N.S.W. Ann. Rep. 1911, 185-6. The Newcastle-Bulli Coal Measures are about 700 feet thick. Of seven seams the three upper ones are worth prospecting. The possibility of working the coal is discussed.

10, 16 HARPER, L.F , 1911 - Summary of evidence given before the Parliamentary Standing Committee on Public Works - Proposed Railway from Bomaderry to Jervis Bay - Re coal. Dep. Min. N S.W. Ann. Rep. 1911. 186-7. No coal suitable for export purposes occurs south of Mt Kembla.

10, 15 HARPER, L.F., 1912 - Ironstone and limestone deposits in the Mudgee district. Dep. Min. N.S.W. Ann. Rep. 1912, 181. Comments on the economic value of the Eurundury and Dungaree deposits.

1, 2, 10, 16 HARPER, L.F., 1912 - Progress report on the geological survey of the eastern portion of County St Vincent with special reference to its prospects as a coalfield. Dep. Min. N.S.W. Ann. Rep. 1912, 181-6. General geology including pre-Permo-Carboniferous and igneous rocks. The coal prospects of the Lower Coal Measures south of the Shoalhaven River are not good.

10, 16 HARPER, L.F., 1914 - Report on coal seams within the Warragamba Watershed. Dep. Min. N.S.W. Ann. Rep. 1914, 207-8. The deposit of coal consists of at least two of the seams occurring in the Upper Coal Measures, which crop out. An account of coal discoveries in the area is given.

1, 10, 14 HARPER, L.F., 1914 - The identity of the Sydney Harbour Collieries coal seam. J. Roy. Soc. N.S.W., 48, xxix.

2, 6, 13 HARPER, L.F., 1915 - Report on a metal quarry Martin's Creek. Dep. Min. N.S.W. Ann. Rep. 1915, 187. The rock being quarried is a quartz felsite or a porphyry which occurs as a contemporaneous lava flow of Carboniferous age.

2, 16 HARPER, L.F., 1915 - The age of the Southern Coalfield Tableland basalts. J. Roy. Soc. N.S.W., 1915, 49, 244-8. Palaeontological, tectonic, and physiographic evidence points to these basalts being of Pleistocene age rather than of Tertiary.

0, 16 HARPER, L.F., 1915 - Geology and mineral resources of the Southern Coalfield. Part I: The south coastal portion. Geol. Surv. N.S.W. Mem., 7. A detailed account of the historical, industrial, tectonic, physiographic, and geological aspects of the Southern Coalfield region.

10 HARPER, L.F., 1916 - The coke industry in New South Wales. Miner. Resour. N.S.W., 23, 1.

8 HARPER, L.F., 1917 - Evidence of uplift on the coast of New South Wales, Australia. Amer. J. Sci., 44 (4th Ser.), 48-52. Some features of the Illawarra coast are described and evidence found to indicate a 'comparatively recent' uplift of 26 feet.

10, 13 HARPER, L.F., 1917 - Iron ore deposits near Hexham. Dep. Min. N.S.W. Ann. Rep. 1917, 166. The occurrences are a series of bog iron ore deposits up to 500 square yards in area and 3 feet in thickness. The quality and method of mining the ironstone are discussed and the possible derivation of grains of magnetite mentioned.

6, 14 HARPER, L.F., 1917 - Second report on proposed dam site on Nepean River. Dep. Min. N.S.W. Ann. Rep. 1917, 167.

16 HARPER, L.F., 1917 - Report on the Avon River country. Dep. Min. N.S.W. Ann. Rep. 1917, 167.

6, 16 HARPER, L.F., 1919 - Report on dam sites, Warragamba River. Dep. Min. N.S.W. Ann. Rep. 1919, 165-7. A review of the geological structure and nature of the beds in the neighbourhood of 4 dam sites, with comments on the Hawkesbury Sandstone from a hydrographic point of view, and on preliminary investigation work.

10, 16 HARPER, L.F., 1919 - Report on coal, Black Bob's Creek, Moss Vale. Dep. Min. N.S.W. Ann. Rep. 1919, 168-9. A section from a short tunnel and analysis of a sample indicates that further prospecting would be desirable.

1, 10, 16 HARPER, L.F., 1920 - Report on coal measures of the Burragorang Valley. Dep. Min. N.S.W. Ann. Rep. 1920, 105. The top seam in this locality is thought to be identical with No. 3, the Dirty or thick seam of the Southern Coalfield. Analyses of samples are tabled.

2, 16 HARPER, L.F., 1920 - Report on the volcanic intrusion near Exeter. Dep. Min. N.S.W. Ann. Rep. 1920, 107-9. The geological formations in the vicinity consist of Wianamatta Shales and basaltic rocks, the latter predominating. With the use of sections the nature of the basalt rocks is discussed.

10. 11, 16 HARPER, L.F., 1921 - Aluminous iron ores, Wingello. Dep. Min. N.S.W. Ann. Rep. 1921, 58. The report follows one in 1899 by Jaquet in which deposits of pisolitic ironstone containing free alumina are reported Analyses indicate an average free alumina content of 35.42%. The economic value of the deposit is discussed.

6. 16 HARPER, L.F., 1921 - Depth of coal seams below Cordeaux Dam. Dep. Min. N.S.W. Ann. Rep. 1921, 61-2. Water was struck between sandstone and underlying shale at 21 feet. The position of this shale bed relative to the dam foundations is discussed.

10. 16 HARPER, L.F . 1922 - Suggested main Southern and South coast Railway connection - Moss Vale - Port Kembla route. Dep. Min. N.S.W. Ann. Rep. 1922, 88. A brief account is given of the supplies of coal, iron ore, and limestone.

1. 10, 16 HARPER, L.F., 1922 - Report on Cordeaux bore. Dep. Min. N.S.W. Ann. Rep. 1922, 91-2. The bore was put down by the Illawarra Coke Company, on the bank of the Upper Cordeaux River. A section of the bore was obtained and analyses of coal from two seams made.

0. 16 HARPER, L.F., 1923 - Geology of the Illawarra district. Proc. Pan-Pacif. Cong. II. Guide book to the excursion to the Illawarra district, 17-23. The sequence of Upper Marine Series, Upper (Newcastle-Bulli) Coal Measures, and Narrabeen, Hawkesbury, and Wianamatta Series is described, together with intrusives and structure.

5, 15 HARPER, L.F , - Lithgow water supply. Dep. Min. N.S.W Ann. Rep. 1923, 86-7. The sites examined are near the headwaters of Marangaroo Creek or Middle River. The geological formations within the catchment area consist of Hawkesbury Sandstone Stage beds resting upon Narrabeen Stage beds. The suitability of the site is discussed.

4, 10. 13 HARPER, L.F., 1923 - Bullah Delah Alunite. Dep. Min. N.S.W. Ann. Rep. 1923, 84-5. The association of alunite with the fault zones in the quarries supports the suggestion that the Bullah Delah Mountain is a fault block and that faulting was followed by the permeation of hydrothermal solutions and vapours resulting in the formation of the alunite.

10 HARPER, L.F., 1923 - Iron. Geol. Surv. N S.W Bull. 4. '.....this bulletin is largely a summary giving the information available up to date.'

10 HARPER, L.F., 1924 - Site for bore for coal, Bong Bong. Dep. Min. N.S.W. Ann. Rep. 1924, 86-7. The depth at which coal would be struck, and the quality of the seams, are discussed and show that the deposit would not be a commercial proposition.

10 HARPER, L.F., 1924 - Silica. Geol. Surv. N.S.W. Bull. 10, 10-9. This includes an account of deposits at Marangaroo and Milton-Ulladulla.

10 HARPER, L.F., 1924 - Aluminium - alunite and bauxite. Geol. Surv. N.S.W. Bull. 8. This records alunite at Bulladelah, 6-8, and bauxite at Wingello, 14-21.

10, 14 HARPER, L.F., 1924 - The coal resources of the Douglas Park area and tabulated list of coal bores, Counties of Cumberland and Camden. Miner. Resour. N.S.W., 32.

10 HARPER, L.F., 1924 - Coke. Geol. Surv. N.S.W. Bull. 12, 29. Includes a note on by-products, by H.P. White.

1, 10, 14 HARPER, L.F., 1925 - Examination of the Thirlmere bore. Dep. Min. N.S.W. Ann. Rep. 1925, 104-5. The log of the bore indicates the seams penetrated as being the Bulli or No. 1, and the No. 2, or Four Foot, seams of the Southern Coalfield.

1, 10, 13 HARPER, L.F., 1925 - Coal near Werris Creek. Dep. Min. N.S.W. Ann. Rep. 1925, 105. The results of 4 bores are presented. An analysis of a sample is tabled and indicates that no true coke formed.

6, 13 HARPER, L.F., 1925 - Proposed water supply for Werris Creek. Dep. Min. N.S.W Ann. Rep. 1925, 106. Geological evidence points to the occurrence of a series of lava flows separated in places by beds of decomposed material. Some of the flows are vesicular, others exhibit a marked shaly structure. Both would be favourable for the percolation of underground water. Sites likely to be most successful are discussed.

1, 15 HARPER, L.F., 1925 - Gunnedah coalfield. Dep. Min. N.S.W. Ann. Rep. 1925, 109-10. Reconnaissance notes on the geology of the Gunnedah coalfield are presented as a preliminary investigation.

10, 16 HARPER, L.F., 1925 - North Bulli Colliery. Dep. Min. N.S.W. Ann. Rep. 1925, 108. The following aspects of the colliery are discussed: the possible thickening or thinning of the Bulli seam; possible conditions as regards the 180 feet downthrow fault in a westerly extension, and the prospects of obtaining a workable coal seam on a lower horizon.

6, 16 HARPER, L F., 1925 - Proposed Hydro-Electric Scheme, Shoalhaven River. Dep. Min. N.S.W. Ann. Rep. 1925, 110-2. The geological structure of a region 5 miles southwest of Nerriga is discussed in the light of its suitability as a dam site.

10 HARPER, L.F , 1927 - The coke industry of New South Wales. Dep. Min. N.S.W. Ann. Rep. 1927, 101-5. Australian coke requirements are ascertained and the possibility of manufacturing a suitable coke in New South Wales investigated. Ash content proves to be a large problem.

5, 13 HARPER, L.F., 1927 - Flow water (underground), Stockton. Dep. Min. N.S.W. Ann. Rep. 1927, 106. Underground water occurs in sand accumulations at Stockton.

1, 15 HARPER, L.F., 1927 - Bore site near Boggabri. Dep. Min. N.S.W. Ann. Rep. 1927, 107. The site is about 23 road miles southwest of Boggabri in beds referable to the Upper Coal Measures. At 400 feet the bore passed into carbonaceous shales and thin coals which continued to 450 feet when grey clay shales were reached. The bore reached at least 540 feet. A little paraffin type oil was noted in the interval 400-450 feet.

10. 16 HARPER, L.F., 1927 - Discovery of lode-tin: 13 miles north from Milton. Dep. Min. N.S.W. Ann. Rep. 1927, 108-9. In the gullies the dominant Upper Marine sandstone and grit have been stripped off vertical slate of (?)Siluro-Ordovician age. Widespread granite intrusions have caused intense alteration and the limestone is associated with this.

10 HARPER. L.F., 1928 - Alunite and bauxite. Miner. Industr. N.S.W., 186.

10, 16 HARPER. L.F., 1930 - The Yerranderie silver field. Miner. Resour. N.S.W., 35.

5, 13 HARRISON. E.J., 1947 - Upper Hunter groundwater investigations. Abridged report. Dep. Min. N.S.W. Ann. Rep. 88-94. A comprehensive hydrological account, related in part to the geology of the area.

6, 13 HARRISON. E.J., and ADAMSON, C.L., 1952 - Pneumatic stowage investigations in the Cessnock area. Dep. Min. N S.W. Ann. Rep. 1952, 122-30. An engineering geological appraisal of sundry surface deposits and outcrops, especially the Upper Coal Measures and the Greta beds. There are some small sections and cross-sections.

0 HARRISON, T., 1867 - Notes on a geological trip over the Coal Basin of New South Wales. Trans. Roy. Soc. Vic., 8, 1. A discursive account, touching on theories of gold formation and rebutting Mr Darwins explanation of the Blue Mountains gorges in favour of 'fluvial if not atmospheric action'.

2, 9, 12 HARTMAN, R.R., 1966 - Magnetic evidence for a volcanic zone near the edge of the N.S.W continental shelf, off Sydney. 8th Comm. Min. metall. Congr., 5, 95-7.

8, 11, 14 HAWKINS, C.A., and WALKER, P.H., 1960 - An occurrence of buried soils at Prospect, New South Wales. J. Roy. Soc. N.S.W., 94, 115-20. Each of the four upper layers, formed on dolerite detritus, represents a phase of landscape instability and erosion when fresh parent materials were laid down followed by a phase of landscape stability when soil formation took place. The fifth (deepest) soil was formed on Wianamatta Shale and was truncated at the onset of the unstable phase which gave rise to layer four. Thus if the Prospect dolerite (essexite) were intruded in the Pliocene, there have been at least five erosional periods since then.

HAWKINS L.V., HENNION, J F., NAFE, J.E., and DOYLE, H.A., 1965 - Marine seismic refraction studies on the continental margin to the south of Australia. Deep Sea Res., 12, 479-95.

0 HECTOR J., 1880 - On the geological formations of New Zealand, compared with those of Australia. J. Roy. Soc. N.S.W., 13, 65-80.

12 HEDLEY, C., 1910 - Presidential address: The submarine slope of New South Wales. Proc. Linn. Soc. N.S.W., 35, 9. Deals with: 1. The Notonectian current which flows past Sydney. 2. The continental shelf - evidence of submergence etc; the continental base. Considers that the evidence indicates 'a gigantic buckle which is bending down the whole eastern coast of Australia'.

8 HEDLEY, C., 1911 - Presidential address: A study of marginal drainage. Proc. Linn. Soc. N.S.W., 36, 13-38. This deals with the river systems of the whole of the east coast of Australia, but includes discussion on the Shoalhaven and Hawkesbury systems and the old Shoalhaven system.

3, 14 HEDLEY, C., 1914 - The Bondi anticline. Proc. Linn. Soc. N.S W., 39(2), 316-21. From coal-borings (Carne, 1908) west of Sydney, the structural attitude of the coal measures appears synclinal, rising west to the Blue Mountains and east to the coast. The hypothesis of an anticline (Bondi Anticline) existing at one time east of the coast is proposed, with the structures being produced by compression, during and after Hawkesbury deposition.

8 HEDLEY, C., 1924 - Differential elevation near Sydney. J. Roy. Soc. N.S.W., 58, 61-6. Terraces (wave-cut platforms) around Port Jackson headlands are correlated morphologically. They are at different levels (correlated

sets), suggesting that land movements, not sea level changes, were causal. It is suggested that they represent the last folding movements in the Sydney area.

7 HELBY, R., 1966 - Triassic plant microfossils from a shale within the Wollar Sandstone, New South Wales. J. Roy. Soc. N.S.W., 100, 61-73. Fifteen species of microspores and pollen from a sample taken within the Wollar Sandstone are described, 7 as new species. A new species of megaspore is also described. The sample is of upper Scythian or Lower Anisian age: the microflora.... is equivalent to those in the uppermost Narrabeen Group or lower Hawkesbury Sandstone.

1, 7 HELBY, R., 1967 - Aspects of stratigraphic palynology in the 'Triassic' of the Sydney Basin. Adv. Study Syd. Bas., 2nd Symp., Newcastle, 17-8. There are 3 major microfloras No. 1 includes the Coalcliff Sandstone, Wombarra Shale, Lower Caley Formation, and Lower Munmorah Conglomerate No. 2 includes the Upper Scarborough Sandstone, Stanwell Park Claystone, Bulgo Sandstone, Grose Sandstone, upper Munmorah Conglomerate and probably most of the Tuggerah Sandstone. No. 3 extends through the rest of the Narrabeen Group, the Hawkesbury Sandstone and the Wianamatta Group. Microfloras 1a and 1b and possibly 2a would appear to be Permian: microflora No. 3 may extend from lower Anisian equivalent.

1, 7, 9 HELBY, R.J., 1969 - The Carboniferous - Permian boundary in eastern Australia: an interpretation on the basis of palynological information. Geol. Soc. Aust. spec. Publ. No. 2, 1969, 69-72. The major floral boundary is represented by the sudden decline of the Grandispora microflora and its replacement by the Potonieisporites microflora. This fits into a worldwide pattern whereby a major change occurs at an horizon extremely close to the top of the Carboniferous as defined in Western Europe (which is older than the bottom of the Permian as defined in Russia). This horizon approximates the base of the Kiaman Magnetic Interval.

1, 7, 13 HELBY, R.J., 1969 - Preliminary palynological study of Kuttung sediments in central eastern New South Wales. Geol. Surv. N S.W. Rec. 11(1), 5-14. The Grandispora microflora extends from the Wallaringa Formation to the top of the Italia Road Formation. The Potonieisporites microflora appears to be associated with the development of fluvioglacial sediments, apparently occupying most of the Seaham Formation. The top of the Carboniferous in eastern Australia is at the base of the Potonieisporites microflora.

1, 15 HELBY, R.J., 1969 - Triassic System - Narrabeen Group - Southwestern coalfield. J. geol. Soc. Aust., 16(1), 395-6. The Caley Formation, the Grose Sandstone, and the Burralow Formation are described.

1, 7 HELBY, R.J., 1969 - Triassic System - Narrabeen Group: stratigraphic palynology. J. geol. Soc. Aust., 16(1), 404-5. Three microfloral assemblages are described and the formations in which they occur are indicated. The lowest microflora should be considered Permian in age.

HELBY, R.J., 1969 - Triassic System - Plant microfossils in the Hawkesbury Sandstone. J. geol. Soc. Aust., 16(1), 417.

HELBY, R.J., 1969 - The Triassic System - Plant microfossils from the Wianamatta Group. J. geol. Soc. Aust., 16(1), 423. The chief forms are listed. Certain acritarchs suggest a brackish or marine environment of deposition.

7 HELBY, R.J , 1971 - Review of the late Permian and Triassic palynology of New South wales. Aust. Ass. Adv. Sci., Brisbane, Sec. 3, 11. Divides the Falcisporite microflora into five assemblages extending through the Triassic, and places the Permo-Triassic boundary between the Protohaploxipinus and Dulhuntyispora zones.

7 HELBY, R., and MARTIN, A.R.H., 1965 - Cylostrobus Gen. Nov., cones of Lycopsidean plants from the Narrabeen Group (Triassic) of New South Wales. Aust. J. Bot., 13, 389-404. Lycopsidean cones are described from the Collaroy Claystone in the Narrabeen Group (L. Triassic) of N.S.W. Various megascopic remains of lycopsidean plants from the Narrabeen Group are listed. It is suggested that lycopsida of at least subarborescent dimensions were of worldwide distribution and may have been produced by more than one kind of plant.

9, 16 HENDERSON, R.J., 1967 - Surface and underground magnetic investigations in the Southern Coalfield of New South Wales. Proc. Aust. Inst. Min. Metall., 224, 27-36. Magnetic anomalies in the Southern coalfield have been subdivided into two characteristic types. Each type is attributed to a single cause, one being basement structure, and the other near-surface igneous intrusions.

5, 10 HENDERSON, W.B., 1883 - Superintendent of Drills report. Dep. Min. N.S.W. Ann. Rep. 1883, 167-218. Discoveries of coal have been made in 5 bores, artesian water in 2, and water rising to within 8 feet of the surface in two of the coal discoveries. The most important are near Lake Macquarie and Gosford, and at Coalcliff. A review of other bores follows and in the appendices tables and sections are given relating to drilling depth and strata thickness.

1, 5 HENDERSON, W.B., 1884 - Superintendent of Drills report. Dep. Min. N.S.W. Ann. Rep. 1884, 166-237. Discoveries and results of the diamond drill programme are discussed and in the appendices, sections are given showing the nature of and thickness of strata. The following are particularly relevant. Appendix B - Mittagong, Branxton, Maitland, Penrith, Lake Macquarie, Cockle Creek, Dempsey Island, Lidsdale, Hamilton, City Railway Extension. Appendix C - Longitudinal section of coal measures between Wollongong and Newcastle showing strata. Appendix H - Burwood. Appendix I - Hydrographic Map of N.S.W. Appendix K - Hydrographic Map with Longitudinal Sections.

7 HENNELLY, J.P.F., 1958 - Spores and pollens from a Permian-Triassic transition, New South Wales, Proc. Linn. Soc. N.S W., 83(3), 363-9. Microspores and megaspores from a Permian-Triassic transition zone 2" to 15" above the Bulli Seam, in Appin bore No. 4 are described.

1, 7, 16 HENNELLY, J.P.F., 1958 - A palynological investigation of the transition zone above the Bulli Seam at Appin No. 4 bore. (A.I.S.S. Pty Ltd). Sci. ind. Res. Org., Melb., Coal Res. Sect., M. 143.

1 HERBERT, C., 1970 - Synthesis of Narrabeen Group nomenclature, Geol. Surv. N.S.W. Quart. notes, Oct. 1970.

1, 14, 18 HERBERT, C., 1970 - The sedimentology and palaeoenvironment of the Triassic Wianamatta Group sandstones, Sydney Basin. Geol. Surv. N.S.W. Rec. 12(1), 29-44. The Wianamatta Group comprises thin lithic sandstone interbedded with grey silty shale. Variations in sedimentary structures and lithology lead to a threefold division within each sandstone. These are (a) a fluvial facies (b) an estuarine or tidal channel facies, and (c) a marine calcareous facies. Lithofacies and isopach maps, and abundant sedimentary structures of a fluvial character, suggest that the sandstones were fluviodeltaic sandbodies of birds-foot type deposited in a silty shale belonging to swamp, lacustrine, marsh, and marine environments (beach-rock). Because of the great quantity of volcanic detritus, it is suggested that the deposition of each sandstone was initiated and sustained by contemporaneous vulcanicity which supplied clastic material to south-easterly flowing streams. The Mittagong Formation is shown as, about 30 feet thick; the Ashfield Shale as about 70 feet; the Bringelly Shale as 450 feet, and as containing about 4 sandstones equally spaced. The Potts Hill Sandstone and above remain as in Tovering (1954). The Minchenbury Sandstone is dropped as 'incertae sodis'.

12 HESS, H.H., and MAXWELL, J.C., 1949 - Major structural features of the southwest Pacific: a preliminary interpretation of H.O. 5484 Bathymetric Chart, New Guinea to New Zealand. Proc. 7th Sci. Cong., 2, 1-18.

8 HEWITT, B.R., 1954 - Coastal sand drift investigations in New South Wales. J. Soil Conserv. Serv. N.S.W., 10(1), 45-56; 10(2), 90-6.

8 HICKIN, E.J., 1967 - Channel morphology, bankfull stage, and bankfull discharge of streams near Sydney. Aust. J. Sci., 30(7), 274-5. Climatic, eustatic, and tectonic events have caused the streams of the New South Wales coastal uplands to be deeply incised. In addition a late renewal of downcutting appears to have lowered the existing channels in relation to the alluvial flats, which appear to be ordinary flood plains. The apparent banktop at many sites does not correspond to natural bankfull stage and a statistical definition of natural bankfull discharge is preferable to a morphological definition. Measurements were made on the Colo River and analysis was extended to 12 additional streams in the Sydney area.

7 HILL, Dorothy, 1934 - Lower Carboniferous corals of Australia. Proc. Roy. Soc. Qld, 45, 63-115.

7 HILL, Dorothy, 1937 - Type specimens of Palaeozoic corals from New South Wales in W.B. Clarke's First Collection and in the Strzelecki Collection. Geol. Mag., 74, 145.

7 HILL, Dorothy, 1948 - The distribution and sequence of Carboniferous coral faunas. Geol. Mag., 85, 121-48.

1, 7 HILL, Dorothy, 1955 - Contributions to the correlation and fauna of the Permian in Australia and New Zealand. J geol. Soc. Aust., 2, 83-107. A review of a symposium held at Canberra in 1954.

1, 7 HILL, Dorothy, 1957 - The sequence and distribution of upper Palaeozoic coral faunas. Aust. J. Sci., 19, 3a; Dep. Geol. Univ. Qld Publ. 60.

10, 18 HODD, B.F., 1968 - Palaeolatitude in relation to petroleum genesis. J. Inst. Petrol., 54(533), 133-6.

4 HOEHNE, K., 1957 - Tonsteine in Kohlenflozen der oststaaten von Nordamerika und Ostaustralien. Chemie der Erde, 2, 111-29.

17 HUNTER, J., 1793 - An historical journal of the transactions at Port Jackson and Norfolk Island, with the discoveries which have been made in New South Wales and in the Southern Ocean, since the publication of Phillips Voyage. London, 1793.

9 IRVING, E., 1957 - Directions of magnetisation in the Carboniferous glacial varves of Australia. Nature, 180, 280-1.

9, 18 IRVING, E., 1962 - Palaeomagnetic results from the Sydney Basin and surrounding regions. Aust. N.Z. Ass. Adv. Sci., 36th Congr. Sydney. Rock units studied range in age from Carboniferous (Lower Kuttung lavas) to Cretaceous intrusives and the results provide information on the variation of the earth's field in the Sydney region.

9 IRVING, E., 1963 - Palaeomagnetism of some Carboniferous rocks from New South Wales and its relation to geological events. J. geophys. Res., 71, 6 025-51.

9, 18 IRVING, E., 1963 - Palaeomagnetism of the Narrabeen chocolate shales and the Tasmanian dolerite. J. geophys. Res., 68(8), 2 283-7. The stable component of the natural remnant magnetization of the chocolate shales of the Narrabeen Series (Lower Triassic) and the Tasmanian dolerite intrusives (Jurassic) have similar almost vertical directions.

9, 18 IRVING, E., 1966 - Palaeomagnetism of some Carboniferous rocks from New South Wales and its relation to geological events. J. geophys. Res., 71(24), 6 025-51. Earlier reports have indicated that the geomagnetic field in Australia had low or moderate inclination in Upper Silurian and Devonian time and high inclination from Permian to mid-Cretaceous. Results reported in this paper show that moderate inclination persists to near the end of the Lower Carboniferous and that steep inclination extends well into the upper Carboniferous, so that most of the direction change (aside from reversals and secular variation) occurring between the upper Silurian and mid Cretaceous was concentrated in a comparatively short time in the Carboniferous.

9 IRVING, E., and GREEN, R., 1958 - Polar movement relative to Australia. Geophys. J., 1, 64-72.

9, 18 IRVING, E., and PARRY, L.G., 1963 - The magnetism of some Permian rocks from New South Wales. Geophys. J., 7(4), 395-411. A high latitude for Australia in Permian times is indicated. This agrees with the evidence of glacial beds. The positive polarity is the same as that found in most Permian and upper most Carboniferous beds of the world: the name Kiaman is proposed for this period of time. The boundaries of the Kiaman Magnetic Interval do not coincide with geological time divisions.

9, 18 IRVING, E., ROBERTSON, W.A., and STOTT, P.M., 1963 - The palaeomagnetism of some Mesozoic rocks from eastern Australia. J. geophys. Res., 68(8), 2 281-2. Preliminary remarks concerning four accompanying papers, two of which refer to rocks within the Sydney Basin. Methods of sampling, experimental analysis, and statistical analysis are described.

9, 18 IRVING, E., ROBERTSON, W.A., and STOTT, P.M., 1963 - The significance of the palaeomagnetic results from Mesozoic rocks of eastern Australia. J. geophys. Res., 68(8), 2 313-7. The mean directions of the stable magnetization in nine rock units (4 in the Sydney Basin), which range in age from Lower Triassic to late Lower Cretaceous, have steep inclination indicating high latitude for Australia during the Mesozoic. As a group they differ by 40-80° of arc from equivalent determinations from Mesozoic rocks of North America and Europe, indicating either nondipolar Mesozoic conditions movement relative to northern continents of 3 000-5 000 km during the past 100 m.y.

9 JAEGER, J.C., and BROWNE, W.R., 1958 - Earth tremors in Australia and their geological importance. Aust. J. Sci., 20, 225-8.

10, 15 JAQUET, J.B., 1895 - Report on auriferous drifts on the Talbragar River. Dep. Min. N.S.W. Ann. Rep. 1895, 177-8. The drifts are probably of Tertiary age. They are superimposed upon the Hawkesbury Sandstone and Coal Measures and have for the most part been covered by a flow of basalt. The drifts are not thought to be profitable on a large scale.

10, 13 JAQUET, J.B., 1896-97 - Report on the Ironstone Bed at Seaham, County of Gloucester. Dep. Min. N.S.W Ann. Rep. 1896, 135-6 and 1897, 176. The ironstone is essentially magnetite interstratified with arkose sandstone and conglomerate of Carboniferous age. Analyses and sketch plans and sections are given.

0, 10, 13 JAQUET, J.B., 1898 - Ironstone deposits near Clarence Town, Williams River district. Dep. Min. N.S.W. Ann. Rep. 1898, 167-9, 169-70. The occurrence of the ironstone is discussed. Also briefly mentioned are the general geology of the area, the Glen William Beds, palaeontology and the Rhacopteris Beds, and the occurrence of igneous rocks. The extent of the iron ore deposits is discussed and quantity of ore estimated. Two appendices give a list of fossils collected and show the dimensions, value from a smelting point of view, and quantity of ore in each deposit.

10, 16 JAQUET, J.B., 1899 - Discovery of bauxite at Wingello. Dep. Min. N.S.W. Ann. Rep. 1889, 187-8. This is a preliminary note on the deposits which could be of economic value. Analyses are given and compared with overseas results.

10 JAQUET, J.B., 1899 - Report on ironstone in Parish Falnash, County Cook. Dep. Min. N.S.W. Ann. Rep. 1899, 190. Iron ore occurs in two deposits, one in a mass of garnet rock and the other in Devonian slates.

10, 16 JAQUET, J.B., 1899 - Report on boring, Fitzroy Iron deposit. Dep. Min. N.S.W. Ann. Rep. 1899, 191. One borehole passed through brown iron ore into Hawkesbury Sandstone at 14½ ft.

10, 16 JAQUET, J.B., 1899 - Report on boring, Mittagong. Dep. Min. N.S.W. Ann. Rep. 1899, 192. No. 3 bore passed through 6 ft of compact brown iron ore and into loose sand.

10 JAQUET, J.B., 1901 - The iron ore deposits of New South Wales. Geol. Surv. N.S.W. geol. Rep. 2. This gives notes on the Mittagong iron works, with chapters on the chalybiate spring deposits of Mittagong, Moss Vale, Picton and Illawarra districts and the clayband ores of the Upper Coal Measures.

2, 10, 16 JAQUET, J.B., 1905 - Notes upon the occurrence of gold in volcanic glass at Grassy Gully, Yalwal district, N.S.W. Geol. Surv. N S.W. Rec. 7, 17.

0, 16 JAQUET, J.B., CARD, G.W., and HARPER, L.F., 1905 - The geology of the Kiama-Jamberoo district. Geol. Surv. N.S.W. Rec. 8, 1.

0 JAQUET, J.B., HARPER, L.F., and CARD, G.W., 1905 - The geology of the Permo-Carboniferous rocks in the south-eastern portion of New South Wales. Geol. Surv. N.S.W. Rec. 8, 67-94.

0, 16 JENSEN, H.I., 1908 - Some geological notes on the country behind Jervis Bay. J. Roy. Soc. N.S.W., 42, 299-310. The Sassafras Tableland is a horst trending north, formed in Tertiary time. Tertiary and Carboniferous faulting occurred and both sets of faults strike north. The Upper Marine beds at Sassafras are probably glacial, but no definite striations were found in the numerous boulders in basal conglomerate and sandstone.

8, 11, 14 HENSEN, H.I., 1911 - The river gravels between Penrith and Windsor. J. Roy. Soc. N.S.W., 45, 249-57. A geomorphological account of the Nepean and Warragamba rivers.

4, 14 JEVONS, H.S., JENSEN, H.I , TAYLOR, T.G., and SUSSMILCH, C.A., 1911 - The geology and petrography of the Prospect intrusion. J. Roy. Soc. N.S.W., 45, 445-553. An extensive and detailed account.

4, 14 JEVONS, H.S., JENSEN, H.I., and SUSSMILCH, C.A., 1912 - The differentiation phenomena of the Prospect intrusion. J. Roy. Soc. N.S.W., 46, 111-38. Part I (by Jevons) is a philosophical account of the differentiation hypotheses. Part II (by Jensen & Sussmilch) gives an explanation

of the banding of the Prospect intrusion, the segregation veins, and the subalkaline nature of the whole intrusion according to the differentiation hypotheses.

2, 13 JOHNSON, K.R , 1969 - Modification to the stratigraphy of the Moon Island Beach Subgroup. Aust. J.Sci., 32(6), 254-5. The Moon Island Beach Subgroup forms the upper part of the Newcastle Coal Measures. It consists of massive conglomerate and sandstone, bituminous coal, and claystone. These are conformably overlain by conglomerate and sandstone of the Narrabeen Group (Munmorah Conglomerate). It contains (from bottom to top) the South Fassifern Coal (3-7 m), Doyalson Formation (0.5 to 60 m), Chain Valley Coal (0.5 to 1.5 m), Eleebara Formation (10-20 m), Great Northern Coal (0.5 to 5.0 m), Catherine Hill Bay Formation (20-50 m) and Wallarah Coal (1-8 m). The base of the Munmorah Conglomerate although defined as at the top of the Wallarah Coal would be better located at the top of the Vales Point Coal Member, which would then, together with the underlying Karignan Conglomerate Member, revert to the Permian Newcastle Coal Measures.

10, 13 JOHNSON, M., 1967 - On the development and properties of coking coal seams in the Newcastle Coalfield. Adv. Study Syd. Bas., 2nd Symp., Newcastle, 12. The most important seams for metallurgical coke are in the Lambton Subgroup, near the base of the Coal Measures. Some regular patterns are discernible in the depositional behaviour of each seam.

10, 16 JOHNSON, R.D., and COOK, A.C., 1969 - The analysis of thickness and quality variations and the possible relation of these variations to seam structure, using data from the Bulli Seam (Kemira and Corrimal Collieries), Southern Coalfield. Adv. Study Syd. Bas., 4th Symp., Newcastle, 66. Mathematical analyses suggest a number of significant relationships.

6, 14 JOHNSON, W , 1954 - Geological and geophysical investigation of dam and tunnel sites. Physical properties of Triassic rocks in relation to naturally and artificially imposed stresses at Warragamba Dam. Aust. N.Z. Ass. Adv. Sci., 1954. The author discusses compressive strength, stresses, strain, and Young's modulus of the rocks at site.

0, 14 JOHNSON, W., 1960 - Geological investigations at Warragamba Dam to the end of 1955. J. Inst. Engrs Aust., 32(4-5), 85. The geological exploration methods used, together with the regional geology of the district, are outlined. The paper then deals with the geology of the particular site (3B) of the dam; the nature and chemical and physical

properties of the rocks are described in detail. Engineering problems are discussed and post-excavation rock movements are mentioned. The paper concludes with some speculation on the risk of leakage from the storage basin and of seismic activity.

10, 13 JOHNSTONE, J., 1954 - Planning and development of Newstan Colliery, Newcastle, New South Wales. Proc. Aust. Inst. Min. Metall., 173, 75-98. A brief geological survey of the mine holding in relation to quantity and quality, amongst other items on mechanical and organizational matters.

1 JOINT COAL BOARD 1951 - Mount Murray No. 1 P.O. 669/51.

1, 16 JOINT COAL BOARD, 1960 - Tylers Bargo No. 1 P.O. 60/61.

1, 16 JOINT COAL BOARD, 1960 - Colo Vale 2A Bore P.O. 60/65.

1, 13 JOINT COAL BOARD 1962 - Camberwell DDH P.O. 62/186.

1, 14 JOINT COAL BOARD, 1963 - Stanwell Park No. 1 P.O 63/188.

1, 14 JOINT COAL BOARD, 1964 - National Park (State Colliery) DDH2 P.O. 64/27.

1, 16 JOINT COAL BOARD, 1964 - Mt Kembla DDH bore P.O. 64/31.

1, 16 JOINT COAL BOARD, 1966 - Yerrinbool No. 1 P.O. 66/172.

10, 15 JONES L.J., 1914 - Report on limestone and dolomite at Havilah and Ben Bullen. Dep. Min. N.S.W. Ann. Rep. 1914, 209-11. The Havilah limestone occurs with highly altered siliceous and tuffaceous rocks. The dolomite occurs as well-defined bands or beds, probably lenticular, intercalated with limestone. Analyses are tabled. The Ben Bullen limestone is associated with quartzite and is extensively intruded by diorite. Analyses are tabled.

10, 15 JONES, L.J., 1917 - Supposed occurrence of oil at Katoomba. Dep. Min. N.S.W. Ann. Rep. 1917, 172.

10, 15 JONES, L.J., 1918 - Report on coal measures at Elong, on the Talbragar Railway Line. Dep. Min. N.S.W. Ann. Rep. 1918, 164. Section of the working face in a new shaft is given with analysis of a sample and a note on the economic aspects of the seams.

10, 15 JONES, L.J., 1919 - Report on the Carlus Gap Coal Mine. Dep. Min. N.S.W. Ann. Rep. 1919, 175. Two seams are being worked, the Lithgow or Bottom Seam, and the Top Seam, 66 feet above. Sections and analyses from each are tabled.

5, 11, 13 JONES, L.J., 1919 - Additional water supply from river gravels between Muswellbrook, Denman, and Jerrys Plains. Dep. Min. N.S.W. Ann. Rep. 1919, 175-6. Gravel may occur below the present river bed from which a supplementary supply of water could be obtained. Sites suggested are Winders Hill, Hudsons ford, Denman weir, and the alluvial flats between Muswellbrook and Singleton.

6, 16 JONES, L.J., 1921 - Proposed line of railway from Picton Lakes to Yerranderie. Dep. Min. N.S.W. Ann. Rep. 1921, 70-3. The case for the construction of a railway is presented in terms of present and future development and output of the mines at Yerranderie.

10, 14 JONES, L.J., 1921 - Road metal deposit at Tyrone (Erskine Park) near Mount Druitt. Dep. Min. N.S.W. Ann. Rep. 1921, 74. The rock is a volcanic breccia in a volcanic neck. Its suitability as a high-grade road metal is discussed.

10 JONES, L.J., 1921 - Notes on petroleum and natural gas and the possibilities of their occurrence in New South Wales. Miner. Resour. N.S.W., 31, 4.

10, 15 JONES, L.J., 1924 - Mt Werong silver-lead field. Dep. Min. N.S.W. Ann. Rep. 1924, 90-1. The crest of the range in the locality is occupied by Devonian sediments which have been intruded by an extensive granite mass. Occasional outliers of Upper Marine Sandstone rest unconformably upon Devonian rocks to the southeast. The orebodies are confined to the igneous rocks.

10, 16 JONES, L.J., 1924 - Report on coal seam in the Moss Vale-Exeter-Berrima district. Dep. Min. N.S.W. Ann. Rep. 1924, 95-8. The country forms an elevated plateau composed of Triassic sediments capped in places by Tertiary basalt. Sections of the coal seams opened up in the area and analyses of the coal are given.

10 JONES, L.J., 1925 - Limestone, dolomite, limex and hydraulic cement. Geol. Surv. N.S.W. Bull. 9, 1.

0, 10, 15 JONES, L.J., 1925 - A brief report on the geology, with particular reference to the coal and kerosene shale deposits of the Barrigan-Wollar-Ulan district. Dep. Min. N.S.W. Ann. Rep. 1925, 129-32. Limited areas

in which the Lithgow coal seam has commercial potential occur between Lue and Ulan, on the western margin of the coal measures. These areas are discussed in detail with regard to the coal and oil shale deposits. Map, cross-sections and logs are given.

1, 10, 13 JONES, L.E.J., 1925 - Progress report - Ellalong - Mulbring coal survey. Dep. Min. N.S.W. Ann. Rep. 1925, 133-5.

10, 13 JONES, L.J., 1927 - Newcastle Coalfield: Progress report. Dep. Min. N S.W. Ann. Rep. 1927, 116-9. Details of the Upper Marine Series with a section and several cross-sections and also a section of the Triassic.

1, 10, 13 JONES, L.J., 1928 - Progress report Northern Coalfield - Newcastle district. Dep. Min. N.S.W. Ann. Rep. 1928, 115-7. The area covers northern Lake Macquarie. There is a structural contour map of the Borehole Seam and 2 cross-sections. Several 'persistent horizons' are mentioned, especially for Waratah Sandstone and the Redhead Conglomerate.

10, 13 JONES, L.J., 1929 - Progress report (with section) Northern Coalfield, Newcastle coal district. Dep. Min. N.S.W. Ann. Rep. 1929, 87-90.

10, 13 JONES, L.J., 1931 - Progress report, Newcastle Coalfield. Dep. Min. N.S.W. Ann. Rep. 1931, 78.

10, 13 JONES, L.J., 1939 - The coal resources of the southern portion of the Maitland-Cessnock-Greta coal field. Geol. Surv. N.S.W. Min. Resour., 37, 135-6.

10, 16 JONES, L.J., 1939 - 'Blue metal' quarry site, Moss Vale district. Geol. Surv. N.S.W. geol. Rep. 1939-45, 117-8. Tertiary basalts are widespread between Mittagong and Bundanoon but most of the individual deposits are too small to meet requirements of the Railways Department. Of the remaining deposits of igneous rocks two occurrences are, on account of their accessibility and tonnage available, outstanding, viz., Gingenbullen near Moss Vale and the Gib at Bowral.

9 JONES, O.A., 1953 - The new University of Queensland seismological station. Bull. seism. Soc. Amer., 43, 247.

2, 4, 15 JOPLIN, Germaine A., 1931-33-35 - Petrology of the Hartley district. Proc. Linn. Soc. N.S.W., 56, 16-59; 58, 125-58; 60, 16-50. Part I deals with plutonic and associated rocks. Part II deals with metamorphosed gabbros and associated hybrid and contaminated rocks. Part III deals with contact metamorphism of the Upper Devonian (Lambian) Series. The plutonic

rocks intrude Upper Devonian sediments and are overlain by Upper Marine Permian beds. The intrusion is part of a composite bathylith; twelve consanguineous types exist.

2, 4, 15 JOPLIN, Germaine, A., 1935 - The exogenous contact zone at Ben Bullen, New South Wales. Geol. Mag., 72, 375.

2, 4, 15 JOPLIN, Germaine, A., 1935 - Diorite-limestone reaction at Ben Bullen, New South Wales, a study in contamination. Geol. Mag., 72, 97.

2, 4, 15 JOPLIN, Germaine, A., 1935 - The endogenous contact zone of magnesian limestones at Ben Bullen. J. Roy. Soc. N.S.W., 69, 135. A detailed account of rock-type variations produced by the invasion of limestone of variable magnesia content by a quartz-mica-diorite magma.

2, 4, 15 JOPLIN, Germaine, A , 1936 - The Ben Bullen plutonic complex. J. Roy. Soc. N.S.W., 70, 69-94. The complex consists of two consanguineous intrusions, the earlier of which differentiated in situ. The later intrusion has reacted with the solid rocks of the first to form a series of cognate hybrids.

4, 15 JOPLIN, Germaine, A., 1944 - Petrology of the Hartley district. Proc. Linn. Soc. N.S.W., 69, 129-38.

10 JOPLIN, Germaine, A., 1959 - Clay. Bur. Miner. Resour. Aust. Summ. Rep. 28.

0, 2 JOPLIN, Germaine, A., 1962 - An apparent magmatic cycle in the Tasman Geosyncline. J. geol. Soc. Aust., 9, 51-69.

4 JOPLIN, Germaine, A., 1963 - Chemical analyses of Australian rocks. Part I. Igneous and metamorphic. Bur. Miner. Resour. Aust. Bull. 65.

4 JOPLIN, Germaine, A., 1964 - A PETROGRAPHY OF AUSTRALIAN IGNEOUS ROCKS. Sydney, Angus & Robertson.

4 JOPLIN, Germaine, A., 1965 - Chemical analyses of Australia rocks. Part II. Sedimentary rocks. Bur. Miner. Resour. Aust. Bull. 78.

2 JOPLIN, Germaine, A., 1968 - The shoshonite association: A review. J. geol. Soc. Aust., 15(2), 275-94. A detailed treatment of shoshonitic rocks from various parts of the world, with a slight reference to N.S.W. Occurrences and possible relationship between tectonic environment and rock association is suggested. Shoshonitic lavas are thought to be related to faulting and tilting.

4 JOPLIN, Germaine, A., 1968 - A PETROGRAPHY OF AUSTRALIAN METAMORPHIC ROCKS. Sydney, Angus & Robertson, 262.

0, 16 JOPLIN, Germaine, A., HANLON, F.N , and NOAKES, L.C., 1952 - Wollongong, N.S.W., 4 mile geological series. Bur. Miner. Resour. Aust. explan. Notes SI/56-9. Superseded by 2nd edition of map and notes, 1966.

8, 12 JOSE, A.W., GRIFFITH-TAYLOR, T , and WOOLNOUGH, W.G.K., 1912 - New South Wales, historical, physiographical and economic. Melbourne, Whitcombe & Toombs Ltd. This contains the first record of the concept of Tasmantis.

1 JUKES, J.B., 1849 - Notes on the Palaeozoic formations of New South Wales and Van Dieman's Land. Tasm. J. nat. Sci., 3, 376.

8, 14 JUTSON, J.T., 1939 - Shore platforms near Sydney, New South Wales. J. Geomorph., 2, 237-50.

12 KAMERLING, P., 1966 - Sydney Basin - Offshore. APEA J., 76-80. Indicates the offshore extension of the Upper Coal Measures near Newcastle and the existence of Tertiary unconsolidated sediments, and concludes that the Sydney Basin has limited offshore extension. Also mentions an area of strong positive magnetic anomalies over the suspected site of 'Mt Woolnough', and considers the Gerringong Volcanics were derived from an offshore Permian volcanic centre.

2, 9, 14 KAZMI, S.A.A., 1961 - A study of the variation with depth of the magnetic properties in a dolerite drill core from Prospect, New South Wales. J. Roy. Soc. N.S.W., 94, 233. It is suggested that the rock has undergone a partial change in magnetization since magnetization was first acquired.

10, 13 KEENE, W., 1854 - On the Newcastle coal field. Cat. nat. industr. Prod. N.S.W., 1854, 57.

10 KEENE, W., 1854 - Notes on the coal, iron and copper of New South Wales. Cat. nat. Industr. Prod. exhibited in the Aust. Museum Paris Exhib. Comm. 57-60, Sydney, N.S.W.

10, 13 KEENE, W., 1855 - On the Newcastle coalfield. Brit. Cat. Exposition Universelle Paris, 1855, 1 109-10, London.

10 KEENE, W., 1862 - The coal fields of New South Wales. London Internat. Exhib. 1862. Cat. nat. industr. Prod. N.S.W., 48-50.

10 KEENE, W., 1862 - Coal and collieries in New South Wales. The Examiner of Coalfields to the Honourable the Commissioners of N.S.W. for the Internat. Exhib. of 1862, 4.

10 KEENE, W., 1863 - Our coalfields. Waughs Aust. Almanac 1863.

7, 10 KEENE, W., 1864 - On the coal measures of New South Wales with Spirifer, Glossopteris and Lepidodendron. Quart. J. geol. Soc., 21, 137, Phil. Mag., 29(4), 239, Brit. Assoc. Rep. 1864, 2, 58 and Geol. Mag., 1, 233. A brief summary of the author's discoveries and observations concerning the fauna of the coal measures and shales of the Sydney Basin.

10, 15 KEENE, W., 1866 - On the brown cannel or petroleum coal seams, Colley Creek, N.S.W. Proc. geol. Soc. London, and Geol. Mag., 3, 224.

10 KEENE, W., 1867 - On the New South Wales coalfields. Cat. nat. industr. Prod. N.S.W , Paris Exposition Universelle, 81-9, 1867.

10 KEENE, W., 1871 - NEW SOUTH WALES COALFIELDS. Sydney, 1871.

1, 4, 10 KEMEZYS, K.J., 1971 - Mid-Cretaceous mineralization in south-eastern Australia. Search, 2(6), 202. Mentions granitic intrusions at Port Cygnet, Mt Dromedary, Camden Haven and Macksville. These are thought to have a relationship with the end of the Otway Grange and Strazelecki Group in the Otway Basin and of marine Cretaceous sedimentation in the Murray and Great Artesian Basins.

10 KENNY, E.J., 1922 - Tin. Geol. Surv. N.S.W. Bull. 1, 1.

10, 16 KENNY, E.J , 1923 - Silver, lead, zinc. Geol. Surv. N.S.W. Bull. 2, 29-30.

10, 16 KENNY, E.J., 1923 - Travertine on the Little River, near Thirlmere. Dep. Min. N.S.W. Ann. Rep. 1923, 93. The travertine appears to be confined to part of the bed of tuffaceous sandstone in which the content of calcareous or lime-bearing material is relatively high. Analysis indicates that the travertine is partly dolomitic. The deposits are not of commercial value.

10, 16 KENNY, E.J , 1924 - Gold. Geol. Surv. N S.W. Bull. 7, 52-3. Notes on Yalwal goldfield.

2, 14 KENNY, E J., 1929 - The Lugarno volcanic neck. Dep. Min. N.S.W. Ann. Rep. 1929, 91. This hitherto unrecorded neck is north of Georges River and occupies a conspicuous depression in the Hawkesbury Sandstone.

10, 13 KENNY, E.J., 1937 - Ironstone deposits in the Raymond Terrace - Williamstown area - Newcastle district. Dep. Min. N.S.W. Ann. Rep. 1937, 107. The bulk of the deposits would be more aptly termed 'ferruginous sand' and are from a few inches to 3 feet thick. They occur in sand at a higher level than the present flood plain of the Hunter River, over an area corresponding to the concealed Tomago Coal Measures.

10, 15 KENNY, E.J., 1938 - The Baerami - Widden Brook oil shale deposits. Dep. Min. N.S.W. Ann. Rep. 100-2. A detailed description, with sections and analyses. The Baerami-Widden Seam is a composite unit of oil shale and cannel coal. The oil shale proper is of good quality and the reserves are probably good.

6, 13 KENNY, E.J., 1940 - The Brushy Ridge and Glenbawn Dam sites. Geol. Surv. N.S.W. geol. Rep. 1939-45, 119. At Brushy Ridge, on Pages River 9 miles east of Scone, and Glenbawn, on the Hunter River, 8 miles north of Aberdeen, Carboniferous beds form an anticline, faulted and intruded by dykes. Both sites are considered suitable for earth dams.

10, 15 KENNY, E.J., 1941 - Oil shale at Joadja and Reedy Creek. Geol. Surv. N.S.W. geol. Rep. 1939-45, 104-5. An account of measurements and samples from certain exposures of oil shales at Joadja and Reedy Creek. Reserves are small and mining coasts would be high.

10, 15 KENNY, E.J., 1941 - Marangaroo oil shale and Marangaroo oil-shale supplementary report. Geol. Surv. N S.W. geol. Rep. 1939-45, 105-6. The oil shale seam varies considerably in thickness and quality from place to place and 'it cannot be anticipated that the weighted average yield would be greater than 50 to 60 gallons of crude oil per ton'. A variety rich in megaspores is described.

10, 15 KENNY, E.J., 1941-2 - Barrigan oil shale. Geol. Surv. N.S.W. geol. Rep. 1939-45, 106-7. Measurements and analyses of workings at Peteas Creek and Manigs Tunnel. Structural disturbances are due to the proximity of large laccolitic intrusions. Sections and analysis are given: the oil-yield is well over 100 gallons per ton.

10, 15 KENNY, E.J., 1942 - Airly coal. Geol. Surv. N.S.W. geol. Rep. 1939-45, 87. A section at the face of an adit of a coal prospect on Airly Mountain, and the results of analysis. A large and valuable reserve of coal occurs in the Lithgow Seam under Airly Mountain.

10, 15 KENNY, E.J , 1942 - Crown Ridge oil shale. Geol. Surv. N.S.W. geol. Rep. 1939-45, 107. Measurements and analyses of the workings at Crown Ridge oil shale deposit near Capertee. The area of shale available here is probably not more than 40 acres.

10, 15 KENNY, E.J., 1942 - Wondo or Cottage Rock oil shale. Geol. Surv. N.S.W. geol. Rep. 1939-45, 108. Measurements and analyses of the workings at the Wondo oil shale deposit, about 8 miles northwest of Glen Davis. The oil shale is of high quality but far too thin for exploitation.

10, 15 KENNY, E.J., 1942 - Airly oil shale. Geol. Surv. N.S.W. geol. Rep. 1934-45, 108-9. Further measurements and analyses of the deposits at Airly Mountain. Economic working is unlikely. The northernmost part was formerly the New Hartley Mine.

10, 15 KENNY, E.J., 1943 - Coal near Running Stream, Glen Davis. Geol. Surv. N.S.W. geol. Rep. 1939-45, 87. Analysis from an exposure of the No. 1 (Top) seam at a locality 1/4 mile east of Running Stream on the north side of the Capertee Valley.

10, 16 KENNY, E.J., 1943 - America Creek, Mt Kembla oil shale. Geol. Surv. N.S.W. geol Rep. 1939-45, 116. An examination of the oil shale seam at America Creek about 8 miles from Wollongong, to determine if the deposits were worth re-opening, operations having last been conducted in 1880. The oil shale is of fair quality and unlike the normal torbanite. It was called 'Wollongongite' in the early days. No recommendation is made.

6, 15 KENNY, E.J., 1943 - Nepean Dam spillway. Geol. Surv. N.S.W. geol. Rep. 1934-45, 122. A geological examination of the features in relation to the proposed relocation of the spillway.

7 KIDSTONE, R., 1889 - Note on two specimens of Lepidodendron from the Lower Carboniferous(?) of Goonoo Goonoo, N.S.W. Dep. Min. N.S.W. Rec. 1(2), 114-6.

10 KIRSCH, H J., 1966 - Zeolite facies and regional rank of bituminous coals. Geol. Mag., 103(5), 414-22.

3, 14 KNIBBS, G.H., GRIMSHAW, J.W., and CURRAN, J.M., 1898 - Note on the occurrence of fulgarites in the sandhills at Bondi and Kensington in New South Wales, with a bibliography of fulgarites. Aust. Ass. Adv. Sci. Rep. 7, 377-83.

7, 13 KNIGHT, O. Le M., 1950 - Fossil insect beds of Belmont, N.S.W. Rec. Aust. Mus.,22(3), 251-3. The bed described lies 70 feet below the base of the Fassifern Coal Seam. Insect remains are associated with ostracods and plants.

7 KONINCK, L.G., de, 1876-77 - Recherches sur les fossills paleoziques de la Nouvelle-Galles du Sud. Mem. Soc. Roy. sci. Liege, ser. 2, 2.

7 KONINCK, L.G., de, 1898 - Palaeozoic fossils of New South Wales. Geol. Surv. N.S.W. palaeont. Mem., 6, 61, 81, 114, 155, 177, 181-94, 203-5, 208-10, 213-23, 228-32, 240, 255, 260, 270.

10 KRAEMER, A.J., and THORNE, H.M., 1951 - Oil shale operations in New South Wales, Australia. U.S. Bur. Min., Rep. Inv. 4 796. A detailed account concerning history, localities, methods of treatment, and statistics.

11, 13 KRIEK, P.N., 1963 - Report on a silt tracing test in Newcastle Harbour, Dec. 1960. Hunter Vall. Res. Fdn Monogr., 18. Analysis of data collected during the first large-scale silt-tracing experiment, using radio isotopes in Newcastle Harbour, in Dec. 1960.

11, 13 KRIEK, P.N , 1966 - Report on silt tracing tests in Newcastle Harbour August and September 1964. Hunter Vall. Rex. Fdn Monogr., 23. Aims, techniques, execution, and analysis of a series of five tracing experiments carried out in a vital and heavily silted part of the port of Newcastle.

2 LANGFORD-SMITH, T., and LAMBETH, A.J., 1938 - The volcanic neck at Thornleigh, New South Wales. J. Syd. Univ. Stud. geol. Soc., 1938, 1(1). The neck is situated within Hawkesbury Sandstone outcrop at Noakes Valley, Thornleigh, and lies southwest of Old-Man Valley volcanic neck mapped by Benson (Proc. Roy. Soc. N.S.W., 1910, 495). The two necks are closely related, being separated by about 200 yards of surface outcrop of sandstone. A description and map of the neck is given. The existence of Upper Marine fossils in blocks of the volcanic breccia is recorded.

8 LANGFORD-SMITH, T., and THOM, B.G., 1969 - New South Wales coastal morphology. J. geol. Soc. Aust., 16(1), 572-80.

1, 16 LASERON, F., 1908 - The sedimentary rocks of the lower Shoalhaven River. J. Roy. Soc. N.S.W., 42, 316-35. The conglomerate of the Conjola Formation 3 miles west of Yalwal Creek contains uniform quartz pebbles. 1 inch to 6 inches in diameter, similar to the underlying Devonian quartzite and nothing else, although granite etc. crop out nearby. Therefore it is

unlikely that here the Conjola Beds are of glacial origin. A freshwater sequence with Glossopteris, 30 feet thick, rests on Devonian at Yalwal Creek.

7, 16 LASERON, C.F., 1910 - Palaeontology of the Lower Shoalhaven River. J. Roy. Soc. N.S.W., 44, 190-225. Faunas recovered from the 'Upper Marine Series' of the lower Shoalhaven district are described (Gerringong Series, Nowra Grits, Wandrawandian Series, Conjola Beds). The faunas include plants, polyzoa, polypora, echinoderms, corals, brachiopods, pelecypods, gastropods and (?)pteropods.

7 LASERON, C.F., 1911 - Note on a new type of aperture in Conularia. J. Roy. Soc. N.S.W., 45, 247-9. Describes Conularia cf. laevigata from the Lower Marine of Cessnock and lists the Permo-Carboniferous species of Conularia in Australia.

7, 13 LASERON, C.F , 1916 - Fossils from Lower Marines, Farley and Allandale. J Roy. Soc. N.S.W., 50, xxvi.

7, 13 LASERON, C.F., 1918 - Notes on some Permo-Carboniferous Fenestellidae with descriptions of new species. J. Roy. Soc. N.S.W., 52, 181. The material described comes from Branxton and Allandale.

0 LASERON, C F., 1953 - THE FACE OF AUSTRALIA. Sydney, Angus & Robertson.

1, 4, 14 LASSACK, E.V., and GOLDING, H.G., 1966 - Phosphatic bands in Narrabeen sediments. Aust. J Sci., 29(7), 223-4. Phosphatic pebbles from the Bulgo Sandstone at Thelma Head, about 25 miles south of Sydney, and phosphatic nodules at the base of the Gosford Sandstone near Mona Vale, 12 miles north of Sydney, have been collected and analysed.

10, 16 LAWRENCE, L.J., WARNE, S., ST J., and BOOKER, M., 1960 - Millerite in the Bulli coal seam. Aust. J. Sci., 23, 87-8. Millerite (NiS) occurs in the top part of the Bulli Seam in the Coalcliff Colliery, south coast of N.S.W.

10, 12 LAYTON, W., 1966 - Prospects of offshore mineral deposits on the eastern seaboard of Australia. Min. Mag., 115(5), 344-51. There are two probable environments for offshore minerals - submerged dune systems and submarine channels. The mineral deposits appear to consist of 2 different assemblages from 2 different sources.

10, 13 LEICHARDT, L., 1849 - Ueber die Kohlenlager von Newcastle in New Holland. Z. dtsch. geol. Ges. I, 44-52.

2, 3 LEITCH, E.C., 1969 - Igneous activity and diastrophism in the Permian of N.S.W. Geol. Soc. Aust. spec. Publ. 2, 21-37. Two distinct geological settings, now separated by the Peel Faults, existed in N.S.W. during the Permian. That in the northeast, the site of rapid orogenic evolution, contains a variety of chiefly acid volcanics, mostly of early Permian age. In the south, where movements were often negligible, three distinct volcanic associations may be recognized: (i) Lower Permian basalt-rhyolites, (ii) Middle Permian latite group, and (iii) Upper Permian association of acid tuffs. Large intrusions were almost totally confined to the northeast, where there are two types of calc-alkaline plutons. Low-grade regional metamorphism of Permian age was widespread in New England, with two amphibolite regions intruded by plutons. Ultramafics are related to major faults active in Permian times. Small monzonite intrusions were emplaced south of Sydney during the Permian. Important diastrophic movements occurred about 250 m.y. ago and may have been more or less synchronous over a wide area.

7 LINDSAY, J.F., 1967 - A blastoid from the Lower Permian of the Manning-MacLeay Basin, N.S.W. Aust. J.Sci., 29(7), 223.

4 LIVERSIDGE, A., 1876 - The minerals of New South Wales. Trans. Roy. Soc. N.S.W. 9, 153, 181.

10 LIVERSIDGE, A., 1880 - Upon the composition of New South Wales coals. J. Roy. Soc. N.S.W , 14, 181-203. This gives analyses of many coals with comments.

10 LIVERSIDGE, A., 1888 - Coal. Min. N.S.W., 121-44.

10, 14 LIVERSIDGE, A., 1894 - Preliminary note on the occurrence of gold in the Hawkesbury rocks about Sydney. J. Roy. Soc. N.S.W., 28, 185-8. Since gold is found in coal measures in N.S.W. and gold flecks have been found in quartz pebbles in sandstones around Sydney (Clarke, 1860, 1865), the author carried out assays on sandstones from the Pyrmont quarries but obtained very low values. Wianamatta Shales were also tested, the red shales giving slightly higher assays than the pale shales, but all were very low.

1, 10, 13 LLOYD, A.C., 1939 - Tomago Coal Measures. Progress report. Dep. Min. N.S.W. Ann. Rep. 1938, 114-5. The author extends and brings up to date David's work in Memoir 4 of the N.S.W. Dep. Mines of 1887. The old idea was that productive coal seams at East Maitland extended many miles underground but in fact they thin out rapidly. The assumption that a series of freshwater beds, called the Dempsey Beds, separated the

Newcastle from the Tomago Coal Measures is no longer tenable. The Tomago Measures contain the following seams in descending order: Upper and Lower Sandgate (formerly regarded as the lowest in the Newcastle Measures), Donaldson's Big Ben or Tomago Thick, Tomago Thin (these three are the 4-mile Creek Series), Rathluba, and Morpeth.

6 LLOYD, A.C., 1940 - Proposed earth dam at Tumbledown Creek. Geol. Surv. N.S.W. geol. Rep. 1939-45, 120. A preliminary geological examination of the dam site.

6 LLOYD, A.C., 1940 - Proposed earth dam at Chambero Creek. Geol. Surv. N.S.W. geol. Rep. 1939-45, 122. A geological examination of the dam site. The beds belong to the 'Glacial stage' of the Upper Carboniferous.

1, 10 LLOYD, A.C., 1944 - Belford Dome bores. Geol. Surv. N.S.W. geol. Rep. 1939-45, 132. Particulars of two diamond drill bores put down during 1927-28 by Belford Dome Ltd while prospecting for oil.

1, 10, 13 LLOYD, A.C., 1950 - Tomago Coal Seams. Progress report. Geol. Surv. N.S.W. geol. Rep. 1939-45, 97-9. Sections and results of analysis from-Kent, Bloomfield, Rathluba, and Tipton Collieries.

10 LLOYD, J.C., 1950 - Tomago Coal Seam 1945. Geol. Surv. N.S.W. geol. Rep. 1950, 97-9.

10, 13 LLOYD, J.C., 1951 - Tomago Coal Measures, Ovingham area. Proposed boring campaign. Dep. Min. N.S.W. Ann. Rep. 1951, 91-2.

10, 13 LLOYD, J.C., 1953 - East Maitland coal district Bloomfield Buchanan-Maitland and Dagworth-Greta area. Dep. Min. N.S.W. tech. Rep. 1, 35-7.

10 LLOYD, J.C., 1957 - The clay deposits of New South Wales, their nature, distribution and utilization. Symp. ceram. Tech. N S.W. Univ. Students Un., 4.

13 LLOYD, J.C., 1958 - Northumberland County Council District Planning Scheme. Proposed resiting of the city of Maitland. Dep. Min. N.S.W. tech. Rep. 1955, 3, 78.

10 LLOYD, J.C., 1958 - Diminishing clay resources. Clay Pipe News (Syd), 1(7), 8, 1(8), 8.

10 LLOYD, J.C., 1960 - Ceramic resources of New South Wales. Dep. Min. N.S.W. tech. Rep. 1957, 5, 214.

LONIE, M., 1957 - Structure of the Newcastle Coalfield. Annual Conference. Australas. Inst. Min. Metall. (reprinted).

10, 13 LOUGHNAN, F.C., 1954 - The Permian coal measures of the Stroud-Gloucester Trough. J. Roy. Soc. N.S.W., 88(4), 106-13. A line of meridional hills defines the rim of the syncline (Stroud-Gloucester Trough); the axial parts are flat and swampy. Permian terrestrial sediments (derived from the substratum) rest disconformably on rhyolitic lavas and conglomerates of the Upper Kuttung Series in which there is no evidence of mid-Burindi Kanimbla diastrophism. Six formations are defined within the Permian succession; coal seams occur within most of them.

4, 10 LOUGHNAN, F.C., 1960 - The origin, mineralogy and some physical properties of the commercial clays of New South Wales. Univ. N.S.W. Sch. Min. Engng appl. Geol., geol. Ser. 2. In section II the relative merits of the techniques employed for the determination of the physical properties are discussed and the mineralogy of the various samples described. Further sections are devoted to a description of the occurrence, mineralogy, and physical properties of clays utilized as industrial fillers and as raw material for pottery; the clays, shales, and slates used in the manufacture of heavy structural products (bricks, pipes etc.); talcs; bentonites; and the stratigraphic distribution of the clay minerals.

4, 14 LOUGHNAN, F.C., 1962 - Some aspects of the petrology of the Narrabeen Group. Aust. N.Z. Ass. Adv. Sci., 36th Cong. Sydney. A detailed petrological study of a complete section of the Narabeen Group exposed in the Metropolitan Colliery No. 6 bore, near Helensburgh.

10 LOUGHNAN, F.C., 1962 - Some tonstein-like rocks from New South Wales, Australia. Neues Jb. Miner., 99(1), 29-44. Sediments closely resembling the European tonsteins, useful in correlating coal measure strata and as a source of refractory kaolin, are described from N.S.W. Three distinct types have been recognized: a vermiform, similar to European crystal tonsteins, a brecciated form, similar to European graupen tonsteins, and an oolitic type. It is considered that these rocks have formed from volcanic materials which under tropical and subtropical climates weathered to kaolinite and bauxite. The leached residual minerals were transported a short distance to the depositional environments where resilicification of the bauxite minerals generated vermicular forms of kaolinite.

1, 4, 14 LOUGHNAN, F.C., 1963 - A petrological study of a vertical section of the Narrabeen Group at Helensburgh, N.S.W. J. geol. Soc. Aust., 10(1), 177-92. The stratigraphy and petrology of the Narrabeen Group in the Metropolitan Colliery No. 6 bore is described and compared with the

type-section at Clifton (Hanlon, 1953). The group thins from the No. 6 bore to the type section and lateral facies changes occur in some formations. Quantitative mineralogical analyses of the No. 6 bore sediments suggest that lateritic and volcanic conditions, changing from acid to basic (in 2 cycles), occurred in the Lower Trias provenances.

4, 10, 13 LOUGHNAN, F.C., 1966 - Analcite in the Newcastle Coal Measures sediments of the Sydney Basin, Australia. Amer. Miner., 51, 486-94. Analcite forms up to 35% of some of the Newcastle Coal Measure sediments and is associated with abundant quartz, subordinate feldspars, and a regular mixed-layer clay mineral. Evidence indicates that the analcite formed from vitric tuffs in a highly saline basin before burial. This may be the first record of analcite in sediments associated with commercially important coal seams.

1, 4, 10 LOUGHNAN, F.C., 1966 - A comparative study of the Newcastle and Illawarra Coal Measure sediments of the Sydney Basin. J. sediment. Petrol., 36(4), 1 016-25. Petrographical studies of vertical (bore) sections show the Newcastle sediments to be characterized by petromict conglomerate, lithic sandstone, crystal and analcite-bearing vitric tuffs, bentonite and kaolinitic claystone, and the less variable Illawarra sediments to consist of lithic sandstone and claystone with mixed assemblages of minerals. Apparently petrographic studies alone have little prospect of establishing a correlation between the two units although they assist in solving problems of sedimentation and provenance.

1, 13, 18 LOUGHNAN, F.C., 1967 - Some aspects of coal measure sedimentation in the Sydney Basin. Adv. Study Syd. Bas., 2nd Symp., Newcastle, 13-6. 1. Analcite formed as an authigene in coal measure lakes during periods of high aridity by the attack of Na-rich waters on glass and clay minerals. It occurs at several horizons within the Newcastle Coal Measures, but is too impersistent for widespread correlations. As it is concentrated more in the western part of the basin, this was the area of greatest Na concentration and of aridity. 2. The rare dawsonite, $NaAlCO_3(OH)_2$, is also an authigene in arid saline soils. Its occurrence in the Greta Coal Measures near Muswellbrook and in the Berry Formation of the Grose Valley supports the concept of periods of aridity and high Na Concentrations during the laying down of the Permian. 3. The new name Garie Member is proposed for the claystone marker horizon at the top of the Bald Hill Claystone instead of former names 'Narrabeen Chert/Clay Conglomerate/ Breccia, or Pelletal Claystone or Tonstein-like rock'. It consists of well-crystallized kaolinite usually with siderite and anatase. It is genetically related to the underlying 'chocolate shales'. There are other such claystones in the Sydney Basin Permian Coal Measures and they are related to the American 'flint kaolins'. The Garie Member forms an important

genetic link between the redbed sedimentation and kaolinitic claystones (flint kaolins and tonsteins in part) of the Permian and Carboniferous Coal Measures.

10, 13 LOUGHNAN, F.C , 1967 - The distribution of analcite in the Newcastle Coal Measure sediments of the Sydney Basin. Proc. Aust. Inst. Min. Metall., 223, 13-6. From an examination of eleven bore cores through the Newcastle Coal Measure sediments it was concluded that analcite is concentrated in the western sector of the original Newcastle Basin and this presumably was the region of greatest sodium concentration and aridity. The distribution appears to have little correlative values.

4 LOUGHNAN, F.C., 1969 - Triassic System - Petrography of the Narrabeen Group, (b) Redbeds. J. geol. Soc. Aust., 16(1), 403-4. Redbeds of the Stanwell Park, Bald Hill, and Collaroy Claystones and of the Burralow Formation are described and contrasted.

1, 4, 14 LOUGHNAN, F.C., 1970 - Flint clay in the coal-barren Triassic of the Sydney Basin, Australia. J. sediment. Petrol., 40(3), 822-8. Claystones similar in composition, texture, and structure to some of the flint clays of the Olive Hill area, Kentucky, form a persistent marker bed in the coal-barren Triassic Narrabeen Group of the Sydney Basin. The underlying sediments consist of a relatively thick succession of red-brown claystone, or 'chocolate shale', which, apart from the presence of abundant hematite, possesses the same mineralogical and textural features as the flint clay. The 'chocolate shale' is believed to represent a transported lateritic clay that was deposited in a non-reducing environment. The flint clay probably resulted from a change to reducing conditions within the depositional basin. The Garie Member of the Bald Hill Claystone is established.

1, 4, 16 LOUGHNAN, F.C., 1971 - Kaolinite claystones in the Sydney Basin. Adv. Study Syd. Bas., 6th Symp., Newcastle, 18.

10, 14 LOUGHNAN, F.C., and BAYLISS, P., 1963 - A chromium bearing dyke clay from Cowan, New South Wales. Aust. J. Sci., 26, 185. The shale and overlying sandstone are intersected by a dyke, 18" wide, composed predominantly of spheriodal masses of bright light-green clay. This clay was subjected to a spectrographic and chemical analysis. The source of the chromium is briefly discussed.

10, 13 LOUGHNAN, F.C., and CRAIG, D.C., 1960 - An occurrence of fully-hydrated halloysite at Muswellbrook, N.S.W. Amer. Miner., 45, 783-90. Intrusions of slag from the fusion of ferruginous sediments by the underground combustion of coal seams have partly altered the associated strata to assemblages of tridymite, cristobalite, and mullite. The halloysite resulted from the rehydration of metakaolinite formed by thermal metamorphism of well crystallized kaolinite.

10, 15 LOUGHNAN, F C., and CRAIG, D.C., 1961 - A complex interstratified clay material in the Pottery Shale from Marangaroo, N.S.W. Aust. J. Sci., 23, 374-5. The shale immediately underlying the No. 3 or Dirty Coal Seam at Marangaroo in the Western Coalfield has been a consistent supplier of raw material to the Sydney pottery industry. Present production is in excess of 1 500 tons p.a. from the 18-20" shale member. The properties of the shale are enumerated.

1, 4, 15 LOUGHNAN, F.C., and GOLDBERY, R., 1971 - Kaolinite claystone in the Burralow Formation of the Sydney Basin. Proc. Aust. Inst. Min. Metall., 238, 59-62. The claystone occurs near Putty and resembles the Garie Member in composition and structure. It is, however, lenticular and the associated redbeds contain abundant quartz and illite in addition to kaolinite. Possibly it is an extension of the Garie Member to the northwest, or it may be fine outwash from the coarse-grained kaolinite claystones in the Triassic of the Merrgoon-Binnaway area 100 miles to the northwest.

4 LOUGHNAN, F.C., and GOLDING, H.G., 1956 - Clay minerals in some Hawkesbury Sandstones. J. Roy. Soc. N.S.W., 1956, 90, 147-50. Examination by X-ray and D.T.A. reveals that (in six selected samples) illite is the predominant mineral, whilst kaolinite is either absent or uncommon. An authigenic origin is suggested for the illite (a) because it is not the predominant mineral in freshwater sediments (b) because in thin section, cores of kaolinite may be seen surrounded by illite, and quartz grains seem to have reacted with 'clay' to form illite. The conversion to illite involves a volume increase of 40%, which accounts for the high proportion of matrix in otherwise quartzose sandstones. The necessary K could come from an original 10% to 15% of K-feldspar.

10, 14 LOUGHNAN, F.C , and GOLDING, H.G., 1957 - The mineralogy of the commercial dyke clays in the Sydney district. J. Roy. Soc. N.S.W., 91, 85. Residual clays formed by the extensive leaching of Tertiary dykes in the Sydney district are predominantly kaolinitic, though up to 30% of illite may be present.

2, 4, 14 LOUGHNAN, F C., and GOLDING, H.G., 1958 - Some aspects in the weathering of basic dykes in the Sydney district. In Dolerite: a Symposium; Univ. Tas., 197-203. The considerable depth of weathering of the dykes is due to the attitude and the permeability of the enclosing sandstone. Kaolinite and illite clays from deeply weathered Tertiary analcite basanite dykes are inhomogeneous and iron-stained. Chemical and spectrographic analysis indicate removal from the original rock of alkalis, alkaline earths, iron, and 50% of the silica, whilst the residue is enriched in titanium and aluminium. Recovery of the leucoxene present may be considered as a source of titanium.

1, 4, 14 LOUGHNAN, F.C., GRIM, R.E., and VERNET, J., 1962 - Weathering of some Triassic shales in the Sydney area. J. geol. Soc. Aust., 8(2), 245-57. The subdivisions of the Wianamatta Group are given and attention drawn to the difficulty of distinguishing the boundary between shale-bearing upper Hawkesbury Sandstone and the Ashfield Shale. The mineralogy of 7 weathered profiles in the Sydney area (3 from the shales in the Hawkesbury Formation, 3 from the Ashfield Shale, and 1 from the Bringelly Shale) has been examined by X-ray and chemical techniques. The illite of the parent shales becomes, by loss of K^+, montmorillonite-illite interlayered minerals in the leached shale and mottled zones; but in the soil zone, where maximum leaching occurs, these tend to form kaolinite and a mineral like vermiculite (by oxidation of absorbed Fe^{++}). Though quartz is lost from the profiles, the kaolinite content increases surfacewards at the expense of illite and related degradation products.

4, 18 LOUGHNAN, F.C., KOKO, M., and BAYLISS, P , 1964 - The redbeds of the Triassic Narrabeen Group. J. geol. Soc. Aust., 11(1), 65-77. Narrabeen redbeds in central and southern Sydney Basin were deposited in a piedmont environment. Clay minerals are abundant on southern beds but quartz and feldspar are important in those to the north. Erosion of red soil, i.e. the re-sorting of laterites, is possibly the origin of some redbeds, but the origin of others is uncertain, particularly those north of the Hawkesbury River.

4, 10 LOUGHNAN, F.C., and SEE, G.T., 1959 - Bentonite and Fuller's earth deposits of New South Wales: i. Occurrence, mineralogy and physical properties. Proc. Aust. Inst. Min. Metall., 190, 85-104. Bentonites and Fuller's earths from seven localities in N.S.W. (5 of which occur in or near the Sydney Basin) have been analysed with respect to occurrence, mineralogy, and physical properties, and areas for future prospecting have been indicated.

10, 13, 18 LOUGHNAN, F.C., and SEE, G.T., 1967 - Dawsonite in the Greta Coal Measures at Muswellbrook, N.S.W Amer. Miner., 52, 7-8. A quartz-lithic sandstone with 20% argillaceous matrix contains 7% dawsonite. The dawsonite together the widespread analcite tends to support the concept that periods of high aridity and high soda-concentration accompanied the laying down of the Permian Coal Measures of the Sydney Basin.

4, 16 LOUGHNAN, F C., and WARD, C.R., 1971 - Phyrophyllite-bearing flint clay from Cambewarra Mountain, Sydney Basin, New South Wales. Clay Minerals Bulletin.

4, 16 LOUGHNAN, F.C., and WARD, C.R., 1971 - Gorceixite-goyazite in kaolinite rocks of the Sydney Basin. J. Proc. Roy. Soc. N.S.W., 103(2), 77-80. This phosphate mineral occurs at Fitzroy Falls in an indurated claystone at the top of the Illawarra Coal Measures, and in blocks of claystone in the overlying Hawkesbury Sandstone. It resembles kaolin coal tonsteins. It also occurs in two completely kaolinized igneous dykes that intersect Permian and Triassic strata at Fitzroy Falls and at Bullio 30 miles to the NW.

7, 18 LOVE, J.L., and BEMBRICK, C.S., 1963 - Further complete on the Minchinbury forams. J. Min. geol. Soc. Univ. N.S.W. 1. No conclusive evidence of the existence of a microfauna was found and Chapman's 'Foraminifera' are regarded as glauconite pellets and clay aggregations. The presence of the glauconite and the nature of the greywacke suggest that the sediments were laid down rapidly in unstable shelf conditions. In a siltstone conformably overlying the Minchinbury Sandstone were found plant fossils of Rhaeto-Liassic aspect. This would put the lower part of the Wianamatta Group into the Jurassic with the implication of a connexion between the Sydney and Great Artesian Basins during Jurassic and possibly Cretaceous time.

10, 14 LOVERING, J.F., 1949 - Barytes from the Wianamatta Shale at Ashfield. Syd. Univ. geol. Soc., 38. Records a new occurrence and considers method of formation.

4, 10 LOVERING, J.F., 1952 - Epigenetic common opal from the Hawkesbury Sandstone Formation of the Sydney Basin. Rec. Aust. Mus., 23(1), 29-31. An unusual occurrence of epigenetic common opal, apparently derived from the normal (siliceous but alkali-free) group-waters of the Hawkesbury Sandstone is described. The opal forms simple and botryoidal incrustations, simple and coralloidal stalactitic structures, and deposits on stalactites of lamellar limonite. Deposition of the latter two types is still in progress. R.I. values vary widely and haphazardly between 1.414 and 1.443.

7, 14 LOVERING, J.F., 1953 - A microfossil assemblage from the Minchinbury Sandstone, Wianamatta Group. Aust. J. Sci., 15, 171-3. In an examination of thin sections of the calcareous greywacke-type Minchinbury Sandstone from Kurrajong, a number of sections of organic origin were recognized. Notes on naming the microfossils are given.

4, 10, 14 LOVERING, J.F., 1953 - Mineralization of the Ashfield Shale, Wianamatta Group. J. Roy. Soc. N.S.W., 87(4), 163-70. Authigenic processes formed syngenetic siderite and pyrite under neutral to alkaline conditions. Epigenetic processes (acid supergene waters) reprecipitated siderite, converted pyrite to marcasite and sedimentary mica to kaolinite, and deposited barite and calcite. Some of these processes are still in progress. A hydrothermal episode, associated with the early Tertiary basic alkaline intrusions of the Sydney district, is suggested as the source of the massive vein barite.

1, 4 LOVERING, J.F , 1954 - The stratigraphy of the Wianamatta Group, Triassic System, Sydney Basin. Rec. Aust. Mus., 23(4), 169-210. The Wianamatta Group is divided into the Liverpool Subgroup (lower, 400' - shale) and the Camden Subgroup (upper, 350' - sandstone with shale). The former includes the Ashfield Shale, Minchinbury Sandstone, and Bringelly Shale; the latter includes the Potts Hill Sandstone, Annan Shale, Razorback Sandstone, Picton Formation, and Prudhoe Shale. The sedimentary petrology of the greywacke-type sandstones and the relation of the lithology to the sedimentary environment and tectonics is discussed. Post-depositional tectonics are also briefly discussed. Chapman's reference to foraminifera is considered mistaken.

1, 14, 16 LOVERING, J.F., and McELROY, C.T., 1969 - The Triassic System - the Wianamatta Group. J. geol. Soc. Aust., 16(1), 417-23. A detailed description, based on Lovering's work of 1954. The term 'Mittagong Formation' is introduced for the Passage Beds between the Hawkesbury Sandstone and the Liverpool Subgroup of the Wianamatta Shale. On p. 423 the petrography of the sandstone formations is given. Siderite, glauconite, clay matrix and calcite are always present.

1 LOVERING, J.F., McELROY, C.T., and STANDARD, J.C., 1969 - Hawkesbury - Wianamatta Group sedimentation. J. geol. Soc. Aust., 16(1), 443-4.

7 M'COY, F., 1847 - On the fossil botany and zoology of the rocks associated with the coal of Australia. Ann. Mag. nat. Hist., 20, 145-57, 226-36, 298-311.

1, 4, 13 McDONNELL, K.S., 1969 - The Gosford Formation in the Terrigal - Bouddi area. Advs. Study Syd. Bas., 4th Symp., Newcastle. The area has been mapped in detail, revealing 8 major sandy units separated by siltstones.

Lithology within each unit varies widely. Many of the silicified siltstones are packed with worm-burrows. Many root zones are also present. The regional dip of the Gosford Formation and Hawkesbury Sandstone is less than 1° to the southwest, steepening slightly at 4 monoclines. Near Kilcare a conglomerate - sand-silt-sand point bar sequence is repeated thrice in 25 feet vertical: in general a fluvio-deltaic environment is indicated.

9 McELHINNY, M.W., 1968 - The palaeomagnetism of the Permian of southeast Australia and its significance regarding the problem of intercontinental correlation. Geol. Soc. Aust., spec. Publ. 2, 1969, 61-7. During the Kiaman Magnetic Interval of reversed polarity the Pole lay just to the south of the Great Australian Bight. This lasted from Upper Carboniferous to Mid Cretaceous.

2, 16 McELROY, C.T., 1952 - Evidence of the intrusive nature of the Berkeley Latite, Wollongong district, N.S.W Aust. J. Sci., 15(3), 100. The Berkeley Latite near Wollongong was formerly described by Harper (1915) as the Berkeley Flow.

11, 16 McELROY, C.T., 1953 - Successive profile development in sand dunes at Port Kembla, N.S.W. Aust. J.Sci., 16, 112.

4 McELROY, C.T., 1954 - The use of the term 'Greywacke' in rock nomenclature in New South Wales. Aust. J. Sci., 16, 112. The author discusses the term 'greywacke' and suggests the use of 'petromictic sandstones' for certain arenites of Permian and Triassic age in N.S.W.

4, 16 McELROY, C.T., 1954 - Petrology of sandstones of the southern coalfields. Dep. Min. N.S.W. tech. Rep. 2.

1, 4, 15 McELROY, C.T., 1955 - Notes on the field use of heavy mineral studies in the Wollombi-Broke district. Dep. Min. N.S.W. tech. Rep. 3.

1, 2, 16 McELROY, C.T., 1956 - Reconnaissance geological survey of the Warragamba Catchment area - Preliminary report on western section. Dep. Min. N.S.W. tech. Rep. 4, 85-8. Folded Ordovician, Silurian, and Devonian strata are unconformably overlain by thin (300 ft) remnants of Permian (upper) marine segments and Permian coal measures. There are caps of Triassic beds and Tertiary basalts.

0 McELROY, C.T., 1956 - Sydney, N.S.W. beds 4-mile geological series. Bur. Miner. Resour. Aust. explan. Notes SI/565.

10, 16 McELROY, C.T., 1958 - Examination of zoning for extractive industries Illawarra Town Planning Scheme Progress report. Dep. Min. N.S.W. tech. Rep. 1955, 3, 80.

1, 15 McELROY, C.T., 1958 - The occurrence of the Gosford Formation, Narrabeen Group, in the Western Coalfield. Dep. Min. N.S.W. tech. Rep. 1955, 3, 81.

1, 4, 15 McELROY, C.T., 1958 - Notes on the field use of heavy mineral studies in the Wollombi-Broke area. Dep. Min. N.S.W., 6, 99-100. In the western and southern Coalfields, the Hawkesbury Sandstone contains abundant rutile, with tourmaline and zircon. The Narrabeen Group contains little rutile, but relatively abundant tourmaline and zircon (McElroy, 1954, 1955). This mineral assemblage result has been used to separate Hawkesbury from Narrabeen; a study of the map shows that the rutile-rich and rutile-poor assemblages maintain their stratigraphic identity.

10, 15 McELROY, C.T., 1959 - Extractive industries in the Blue Mountains. Dep. Min. N.S.W. tech. Rep. 7, 97.

10, 15 McELROY, C.T., 1960 - Geological survey of limestone deposit, Armour's Range, Parish Colong. Dep. Min. N.S.W. tech. Rep. 1957, 5, 227.

2 McELROY, C T., 1960 - Geological survey of volcanic neck, Parish Kedumba. Dep. Min. N.S.W. tech. Rep. 1957, 5, 229.

0 McELROY, C.T., 1962 - Sydney, N.S.W. 1:250,000 Geological series. Bur. Miner. Resour. Aust. explan. Notes SI/56-5, 2nd ed. Topics covered include physiography, stratigraphy (with a semi-detailed description of the Lithgow Coal Measures), heavy minerals (main studies listed), structure (description of main studies only), main geophysical investigations, economic geology. A bibliography and index of selected bores shown on the accompanying map (2nd ed.) are given.

1 McELROY, C.T., 1962 - Stratigraphy of marine Permian, western margin, Sydney Basin. Aust. N.Z. Ass. Adv. Sci., 36th Cong. Sydney. The thickness of the Permian marine sequence, based on units studied in outcrop, exceeds 4 000 ft in the Nowra-Wollongong district. The full succession consists of Shoalhaven Group and Gerringong Volcanics. In the Western Coalfield the Capertee Group is thickest in the Burragorang area, consisting of sandy siltstone underlain by Megalong Conglomerate. Part of the

Shoalhaven Group and Gerringong Volcanics is continuous with the Capertee Group and the use of the term 'Capertee Group' is no longer necessary. The critical unit in the correlation is the 1 000-foot thick Berry Siltstone, which continues from Kangaroo Valley northerly beyond Rylstone to the Goulburn Valley, thickening basinwards. The lenticular basal conglomerate units locally contribute up to 600 feet to the succession, attaining maxima in the Clyde River area, and in the Megalong-Kedumba Valley area.

3, 15 McELROY, C.T., 1967 - Valley anticlines in the Blue Mountains, N.S.W. Adv. Study Syd. Bas., 2nd Symp., Newcastle, 19-20. The anticlines follow the courses of the streams with dips steepest at stream level and imperceptible at the plateau surface. Arching or squeezing of rather incompetent beds into the space left by erosion is held responsible for the inclination.

1, 10, 16 McELROY, C.T., 1969 - Clyde Coal Measures. J. geol. Soc. Aust., 16(1), 556-7. The beds fill minor depressions in the older Palaeozoic basement. The maximum thickness is about 136 feet (41.5 m).

McELROY, C.T., 1969 - Triassic System - Narrabeen Group. J. geol. Soc. Aust., 16(1), 388-95. Detailed descriptions of the Narrabeen-Wyong districts and the South Coast district.

1 McELROY, C.T., 1969 - Narrabeen Group sedimentation. J. geol. Soc. Aust., 16(1), 439-42. 'The change from coal measure time to Narrabeen time was quite subtle and a vast deltaic plain is envisaged'.

0, 16 McELROY, C T., BRANAGAN, D.F., RAAM, A., and CAMPBELL, K.S.W., 1969 - Shoalhaven Group. J. geol. Soc. Aust., 16(1), 357-70.

1, 10, 13 McELROY, C.T., and COLEMAN, M.B., 1959 - Some aspects of the geology of the Teralba district (Hunter Valley). Dep. Min. N.S.W. tech. Rep. 7, 37. This deals with the area underlain by the Great Northern Seam and the economic potential of the Australasian Seam, Pacific Colliery, Teralba. Introduces two new terms - 'Fennel Bay Tuff' and 'Boulton Point Conglomerate'. Mention is made of the importance of pyroclastics in the Newcastle Coal Measures and the importance of the Teralba Conglomerate as a marker overlying the Great Northern Seam.

0, 16 McELROY, C.T., and RELPH, R.E., 1961 - Explanatory notes to accompany maps of the inner catchment Warragamba storage, 1958. Dep. Min. N.S.W. tech. Rep. 6, 65-80. Triassic beds (Wianamatta Shale, Hawkesbury Sandstone, Narrabeen Group) conformably overlie Permian

Lithgow Coal Measures, which themselves conformably overlie the Permian Capertee Group which is part of the marginal sequence of the Sydney Basin. The Capertee Group has a regional dip of 3°E, and unconformably overlies Ordovician, Silurian and Devonian rocks, which have been strongly folded about axes with meridional trend. Devonian, Carboniferous and Tertiary volcanics occur. Numerous faults (Oakdale, Nepean, Bargo) are known in the Triassic sediments, and in all cases downthrow to the east, and mostly pass into monoclinal folds along the strike.

10, 1, 5 McELROY, C.T., and ROSE, G., 1961 - Geological survey of the limestone deposit, Billys Creek, Parish of Colong. Dep. Min. N.S.W. tech. Rep. 1958, 6, 85.

0, 16 McELROY, C.T., and ROSE, G., 1962 - Reconnaissance geological survey: Ulladulla 1-mile military sheet, and southern part of Tianjara 1-mile military sheet. Geol. Surv. N.S.W. Bull. 17. Regional geology of some of the southern part of the Sydney Basin and its southwestern margin. Up to 2 400 feet of the Shoalhaven Group and thin Clyde Coal Measures rest unconformably on strongly folded Devonian and Ordovician sediments and intrusive and extrusive rocks. Details of 21 sections are given, including type sections for the Pigeon House Creek Siltstone and the Clyde Coal Measures.

0, 16 McELROY, C.T., and ROSE, G., 1966 - Wollongong, N.S.W. - 1:250,000 geological series. 2nd Ed. Geol. Surv. N.S.W. explan. Notes SI/56-9.

10 McFADYEN, W.T., 1965 - Oil from oil shales and tar sands. 8th Comm. Min. metall. Cong., 5, 277-84.

10 MacIVOR, R.W.E., 1887 - Note on the extensive discoveries of alumstone and sulphur in New South Wales. Chem. News, 57, 64.

0, 15 McKAY, R.M., 1961 - The Lambie Group at Mt Lambie. Part I. Stratigraphy and structure. J. Roy. Soc. N.S.W., 95, 17-21. The group is invaded by the Bathurst Granite, overlain by the almost horizontal basal conglomerates of the Permian Capertee Group, and unconformably overlies ? Middle Palaeozoic rocks. The structure, sequences, and petrology are given in detail, with plans and cross-section.

7, 15 McKAY, R.M., 1964 - Lepidophloios and Cyrtospirifer from the Lambie Group at Mt Lambie, New South Wales. J. Roy. Soc. N.S.W., 97, 83-9. The author discusses various species and the age of the Lambie Group, which is considered to be probably Upper Devonian.

0, 13 McKELLAR, M.G., 1969 - Maitland Group. J. geol. Soc. Aust., 16(1), 329-34.

1 McKELVEY, B.C., McCLUNG, G.R., and RUNNEGAR, B., 1971 - Nowra-Muree sands-definition, external morphology and age. Adv. Study Syd. Bas., 6th Symp., Newcastle, 22. Both sands result from a brief regression and are thought to represent the transgressive phase.

10 MACKENZIE, J., 1865 - The Coal Basin of New South Wales. Geol. Mag., 2, 325. A letter giving a brief account of a search for a coal seam west of Sydney and investigations into the extent of the Coal Basin.

10 MACKENZIE, J., 1873 - Sketch map of New South Wales coalfield, as far as at present examined. Sydney, 1873.

10 MACKENZIE, J., 1875 - Supplementary report on the coal seams of New South Wales. Mines and Min. Stat., 1875, 207-47.

10 MACKENZIE, J., 1875 - Report from the Examiner of coal fields on the condition and prospects of the coalfields, together with the reports of the Inspector of Collieries on the state of the various coal, petroleum oil, cannel coal and kerosene shale mines in New South Wales etc. for the year 1874. Folio, Sydney, 1875.

1, 10 MACKENZIE, J., 1877 - Report of the Examiner of coal fields for the Colony of New South Wales for the Year 1877. Dep. Min. N S W. Ann. Rep. 1877, 179-90. Stratigraphic column and strata measurements from the Coerwull Mine, Mt York, Joadja Creek, Cataract Creek (near Berrima), Coalcliff, Rathluba, Australasia Colliery, Ferndale, the Co-operative Colliery (Newcastle), and the Borehole Seam.

10 MACKENZIE, J., 1879 - Borings for coal. Dep. Min. N.S.W. Ann. Rep. 1879, 206-9. Boring results are tabulated from bores sunk below the Borehole Seam at Mullett Creek on the Hawkesbury and on the Sutherland Estate at Botany.

10 MACKENZIE, J., 1880 - Coal and shale. Dep. Min. N.S.W. Ann. Rep. 1880, 183, 195-207. A table showing the quantity and value of shale and coal won during 1880 is given as well as stratigraphical diagrams and bore measurements from the Borehole Seam, Rathluba Colliery, Fourmile Creek (No. 2 Seam), Wollombi Road, Stony Creek, Rixs Creek, Ellsmere Colliery, Berrima, Wollongong, Middle River (near Lithgow), Ferndale (near Newcastle), and Flaggy Creek in Co. Northumberland.

1, 10 MACKENZIE, J., 1881 - Report of the Examiner of coal fields. Dep. Min. N.S.W. Ann. Rep. 1881, 120-5. Stratigraphic columns and measurements from the Borehole Seam, No. 1 Coal Seam (Lake Macquarie), Grose Valley, and Bundanoon.

1, 10 MACKENZIE, J., 1882 - Report of the Examiner of coal fields. Dep. Min. N.S.W. Ann. Rep. 1882, 121-32. Stratigraphic columns and measurements from Stockton, Borehole, and Wallsend seams, Spring View Colliery (Port Macquarie), Bellevue Mine (Port Macquarie), Camden, Grose Valley, Irondale Colliery, and Pipers Flat.

10 MACKENZIE, J., 1883 - Report of the Examiner of coal fields. Dep. Min. N.S.W. Ann. Rep. 1883, 137-43. Borings for coal from Teralba, Stony Creek, Great Western Zig-Zag Seam, Berrima, Boghead Mineral seam, Bundanoon, Illawarra, and Bulli.

1, 10 MACKENZIE, J., 1884 - Report of the Examiner of coal fields. Dep. Min. N.S.W. Ann. Rep. 1884, 132-9. Sections and measurements of the following seams and strata: Burwood, Wallerawang district, Blue Mountains, also at Dapto, Mt Corrimal, and Coalcliff.

1, 10 MACKENZIE, J., 1886 - Report of the Examiner of coal fields for 1886. Dep. Min. N.S W. Ann. Rep. 1886, 120-2. Sections of coal seams including the Borehole Seam at Tighes Hill, and Flaggy Creek and seams at Gunnedah (Black Jack) and Hartley Vale.

1, 10 MACKENZIE, J., 1887 - Report of the Examiner of coal fields for 1887. Dep. Min. N.S.W. Ann. Rep. 1887, 122-6. Sections from Borehole Seam (Sea Pit) and at Bullock Island, Wickham and seams at Teralba and Rylstone (7 miles from Cudgegong).

10 MACKENZIE, J., 1887 - Collieries and Boghead Mineral Mines of New South Wales. Min. Prod. N.S.W., 1887, 97-185.

1, 10 MACKENZIE, J., 1888 - Report of the Examiner of coal fields for 1888. Dep. Min. N.S.W. Ann. Rep. 1888, 139-56. Sections of Borehole Seam at Stockton, Bullock Island and Redhead, Burwood and Great Northern seam at Fassifern, and other seams at Teralba, Cockle Creek, Lymington, Blue Gum Flat (Ourimba), Helensburgh, Mt Kembla, Dapto, Joadja Creek, Wanganderry Creek, Oakey Park Colliery, Vale Colliery, and Cullen Bullen.

1, 10 MACKENZIE, J., 1889 - Report of the Examiner of coal fields. Dep. Min. N S.W. Ann. Rep. 1889, 183-90. Strata measurements and sections from Tomago, Borehole Seam, Redhead, Cockle Creek, Minmi, Glebe (Newcastle), Fern Valley Colliery, Cullen Bullen, Black Jack Colliery (Gunnedah), and Curlewis.

1, 10 MACKENZIE, J., 1890 - Report of the Examiner of coal fields for 1890. Dep. Min. N.S W. Ann. Rep. 1890, 191-5. Sections and measurements from Burwood Colliery, Stockton, and Wellington.

1, 10 MACKENZIE, J., 1893 - Report of the Examiner of coal fields. Dep. Min. N.S.W. Ann. Rep. 1893, 88-9. Sections of coal seams at Lithgow, Pipers Flat, Glen Alice, and Nattai River near Mittagong.

1, 10, 13 MACKENZIE, J., 1894 - Examiner of coal fields report. Dep. Min. N.S.W. Ann. Rep. 1894, 90-1. Sections of two coal seams at Lake Macquarie.

1, 10, 15 MACKENZIE, J., 1895 - Examiner of coal fields report. Dep. Min. N.S.W. Ann. Rep. 1895. Sections of 7 coal and oil shale seams from the Western Coalfield.

1 MACKENZIE, J., and CLARKE, W.B., 1863 - Sections placed in their relative positions showing the strata and seams of coal at and near Newcastle and Maitland. Pub. Maitland. (Mentioned in bibliography of J. geol. Soc. Aust., 16(1), 598).

1, 10, 13 McKENZIE, P.J., 1962 - The revised stratigraphy of the Newcastle coal fields. B.H.P. (March 1962), 16. The Waratah Sandstone is taken as the basal unit of the Newcastle Coal Measures. Above this there are 4 subgroups (Lambton (bottom), Cardiff, Boolaroo, and Moon Island Beach) containing 29 formations, all of which are described. The Wallarah Seam is taken as the last formation in the Newcastle Coal Measures, but coal measure sediments continued to be deposited, forming units within the Munmorah Conglomerate of the Narrabeen Group, which begins with the Wallarah Tuff Member. There is a good E-W cross-section and vertical sections.

1, 10, 13 McKENZIE, P.J., 1967 - The application of stratigraphic methods in coal field geology. 8th Comm. Min. Metall., Cong., 6, 657-69. Isopach and isoash information on the Newcastle Coal Measures.

0, 13 McKENZIE, P.J., and BRITTEN, R.A., 1969 - Newcastle Coal Measures. J. geol. Soc. Aust., 16(1), 339-50.

7, 14 McKEOWN, K.C., 1937 - New fossil insect wings (Protohemiptera, Family Mesotitanidae). Rec. Aust. Mus., 20, 31. Descriptions are given of a new genus and two species of fossil insects from the Middle Triassic beds of Beacon Hill, Brookvale N.S.W. They occur in a lenticular mass of shale about 25 feet thick, enclosed in the Hawkesbury Sandstone.

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McLEOD, I R. (ed.), 1966 - Australian Mineral Industry: The Mineral Deposits. Bur. Miner. Resour. Aust. Bull. 72.

5, 13 McMAHON, T.A., 1964 - Hydrologic features of the Hunter Valley, N.S.W. Hunter Vall. Res. Fdn Monogr., 20. Evaluates the water resources of the Hunter Valley. A section is included on groundwater, pages 99-108.

5, 13 McMAHON, T.A., 1967 - Low flow characteristics of unregulated streams in the Hunter Valley. Hunter Vall. Res. Fdn Monogr., 26. Relates differing characteristics to their probable cause.

5, 13 McMAHON, T.A., 1967 - Storage-draft characteristics of Hunter Valley streams. Hunter Vall. Res. Fdn Monogr., 27.

5, 13 McMAHON, T.A., 1968 - Water resources research: aspects of a regional study in the Hunter Valley, N.S.W. J. Hydrol., 7(1), 14-38.

7 McMICHAEL, D.F., 1956 - A review of the fossil freshwater mussels (Mollusca, Pelecypoda) of Australasia. Proc. Linn. Soc. N.S.W., 81, 232-7. Includes descriptions and discussion of species from Bowral, Sydney, Waterloo, and Surrey Hills.

13 MAITLAND'S WESTERN SUBURBS PROGRESS ASSOCIATION, 1961 - Edgeworth David Memorial Seventy Fifth Anniversary 1886-1961. Maitland Mercury Print, 12-4.

10 MANNING, J., 1873 - Our coal and coal ports. Trans. Roy. Soc. N.S.W., 8, 105-34.

2, 9 MANWARING, G.A., 1962 - The palaeomagnetism of some igneous rocks of the Sydney Basin. J. Roy. Soc. N.S.W., 96(2-6), 141-51. Basic igneous rock bodies intruded into or extruded upon Triassic rocks have generally been considered to be of Tertiary age. A palaeomagnetic study was made of 3 rock bodies with a view to obtaining a more precise estimate of their age. A porphyritic olivine dolerite dyke at Luddenham is ascribed to the Mesozoic, and a fine-grained olivine dolerite (? a laccolith) at Peats Ridge to the Tertiary. The basalt flows capping Mt Tomah were not dated.

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1, 7 MARWICK, J., 1924 (1926) - Report of the Committee for the Palaeontological Correlation of the Australian and New Zealand Formations. Aust. Ass. Adv. Sci. Rep. 17, 41-8.

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8, 14 MAZE, W.H., 1933 - Pot-holes at Green Point, Broken Bay, New South Wales, and their significance in coastal uplift. Aust. Geogr., 2(1), 52-5.

11 MAZE, W.H., 1941 - Sand beds and humus podsols of the Newcastle-Sydney district. Aust. Geogr., 4, 107-12.

8 MAZE, W.H., 1945 - Evidence of an eustatic strand-line movement of 100 to 150 feet on the coast of New South Wales. Proc. Linn. Soc. N S.W. 70 (1 & 2), 41-6. Field observations and a statistical analyses of 1 mile topographic maps indicate a bench level between 100 and 150 feet above sea level which can be explained by marine erosion at this level. Valley in valley forms suggest that withdrawal of the sea was comparatively recent and that the earlier broad valleys with the 100-150 feet base took some time to develop. The terraces could have formed during an interglacial sea level rise (but there is no direct evidence of a eustatic change: title of paper is misleading).

9 MERCANTON, P.L., 1926 - Inversion de l'inclinaison magnetique terrestre aux ages geologiques. Terr. Magn. atmos. Elect., 31, 187-90.

3, 13 MILLARD, H.C., 1957 - Geological structures in the Hunter Valley Aust. Oil Gas J., Feb. 1957.

1, 10 MINES DEPARTMENT OF N.S.W. ANN. REP., 1877.
p. 179 - section of coal at Coerwull Mine Lithgow,
p. 180 - N.S.W. Shale and Oil Co's Mine at Mt York, Little Hartley,
pp. 180-92 - Petroleum Oil Cannel Coal Mine at Joadja Creek,
p. 183 - coal section, Brereton's near Berrima,
pp. 184-7 - coal sections in the Newcastle district.

1, 10 MINES DEPARTMENT N S.W. ANN. REP., 1878. At end of Volume: 46 pages of sections relative to the workings of the Waratah Coal company.

1, 14 MINES DEPARTMENT OF N.S.W. ANN. REP., 1879.
Opposite p. 208 - Section of diamond rock-drill 1 300 feet at Mullett Creek on the Hawkesbury River,
Opposite p. 208 - Botany section 2 200 feet Coal Cliff section 2 350 feet,
p. 229 - strata passed through in No. 8 borehole on the A.A Company's Newcastle property.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1880.
pp. 196-205 - detailed sections through sundry coal workings.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1881.
pp. 121-2 - sections at Flaggy Creek,
p. 123 - section at Lake Macquarie,
p. 124 - section at Mt Hay, Grose Valley,
p. 124 - section at Bundanoon.

1 MINES DEPARTMENT N.S W. ANN. REP., 1882.
pp. 121-2 - sections at Lake Macquarie,
p. 123 - section of the borehole and Wallsend Coal seam at Wickham,
p. 124 - Borehole Seam at New Lambton,
p. 125 - Cardiff Seam, Lake Macquarie. A seam at Springview Colliery, Lake Macquarie,
p. 126 - Cardiff seam(?) Bellevue Mine, Lake Macquarie,
pp. 129-30 - strata at Wyong,
p. 131 - coal seam at Meryla, Camden,
pp. 132-3 - coal seams in the Western Coalfields.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1883.
pp. 181-3 - 270 foot section at Stanwell Park, Coalcliff,
p. 184- 524 foot section at L.T. Creek near Lake Macquarie,
p. 185 - 568 foot section at Teralba,
p. 186 - 475 foot section at Dora Creek, Cooranbong,
p. 187 - a section at Wyong Creek 800-900 feet,
p. 187 - 77 foot section at Adamstown,
pp. 189-91 - 702 foot section at Long Swamp near Marulan,
p. 193 - 670 foot section at Barbers Creek, Marulan,
p. 194 - 74 foot section at Black Gully, Emmaville,
p. 195 - 546 feet-954 feet Fullerton Cove, Stockton,
p. 196 - 17 foot section at Moschito Island,
p. 197 - 1 003 foot section at Holt, Sutherland,
p. 137 - 718 foot section West Wallsend, Teralba,
pp. 138-42 - short sections through sundry seams.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1884.
pp. 137-9 - coal sections at Dapto, Wollongong and Coalcliff,
pp. 171-2 - 830 foot section at Colo Vale, Mittagong,
p. 173 - 460 foot section at Leconfield, Branxton,
pp. 175-7 - other sections at Leconfield,
pp. 177-8 - sections at Colo Vale,
p. 179 - section at Maitland Gaol,
p. 180 - section at Penrith,
pp. 181-3 - sections near Newcastle,
pp. 184-5 - sections at Wallerawang,
pp. 188-91 - sections at Hamilton, Newcastle,

pp. 192-212 - sections for city railway extension,
facing p. 212 - panoramic view of Central Coast with boreholes at Stanwell Park, Holt, Sutherland, Penrith, Gladesville, Wyong, Dora Creek, Col Point, Teralba, L.T. Creek, Cockle Creek, Hamilton, Dempsey Island, Moschito Island, Fullerton Cove.

MINES DEPARTMENT N.S.W. ANN. REP., 1886.
pp. 155-80 - sections at Newcastle, Branxton, Port Waratah, Mittagong, North Shore, Penrith, Minmi, Heathcote, Lake Macquarie (Pelican Flat), and Werris Creek.

MINES DEPARTMENT N.S.W ANN. REP., 1887.
pp. 120-1 - sections from sundry boreholes through coal seams in the Hunter Valley,
p. 128 - section through coal working 3 miles from Hartley Vale,
p. 122 - section at Hartley Vale, N.S.W. Shale and Oil Co's shaft,
p. 176 - note on new Labyrinthodonts from Gosford,
pp. 184-91 - borehole sections in coal measures; Clarence Siding Wallsend, Bundanoon, Redhead, Adamstown, Holt-Sutherland, Waratah, and Ballimore.

MINES DEPARTMENT N.S.W. ANN. REP., 1888.
p. 139 - a note on cupriferous shales in the Holt-Sutherland borehole at Sydney. It may be connected with the eruption of cupriferous igneous rocks in the Kiama district,
p. 159 - section of diamond-drill bore near Mittagong,
p. 166 - pseudo-corals resembling Lithostrotion from the Upper Marine of Mt Vincent, near Mt Minmi,
p. 145 - Mr Stonier discovered marine fossils near Morpeth which fix the actual boundary-line between the Upper Marine Series and the overlying Coal Measures of East Maitland (in T.W.E. David's Progress Report for 1887),
pp. 185-93 - borehole section at Bundanoon, Redhead, Clarence Siding, Mittagong, Ballimore and Sunny Corner.

MINES DEPARTMENT N.S.W. ANN. REP., 1889.
pp. 140-52 - sections through sundry coal seams,
p. 164 - notes on joints in the syenitic granite of 'Gib Rock', Bowral,
pp. 208-221 - sections of boreholes including Joadja, Charleston, Redhead, Lochend, Woodford, Fassifern, Hexham Island, Ash Island.

MINES DEPARTMENT N.S.W. ANN. REP., 1890.
pp. 136-74 - sections at Mt Joadja, Buttai, Lochend, Woodford, Fassifern, Moorebank, Redhead, Seatam, Ravensworth.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1891.
p. 137 - data on Moorebank, Nowra, Joadja Creek, Cessnock, Cremorne, Ravensworth, Wyee; drill holes were given.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1891.
pp. 151-80 - bore sections at Gulgong (8 bores), Cessnock to 1 220', Nobbys to 324', Greta to 1 307', Ana Bay to 1 213', Cremorne to 3 095', Wyee to 946', Bulli 1 to 805', Waratah to 1 127'.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1892.
pp. 75-83 - bore sections at Doughboy Hollow to 283', Cremorne to 1 875' Bulli No. 2 to 865', Bulli No. 3 to 749'.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1898.

1 MINES DEPARTMENT N.S.W. ANN REP., 1899.
p. 106 - section of bore No. 2, Hexham, to 602',
pp. 195-206 - miscellaneous analyses.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1900.
p. 114 - diamond drill sections, including: Catherine Hill Bay No. 1 54' to 114', Catherine Hill Bay No. 2 to 151', Catherine Hill Bay No. 3 to 496', Otford No. 1 to 305'.

1 MINES DEPARTMENT OF N.S.W. ANN. REP., 1901.
p. 91 - diamond drill sections, including Otford No. 1 from 305' to 720', Walsh Island No. 1 from 0' to 601',
p. 161 - a brief description of the coal seams at Balmain and Cremorne.

1 MINES DEPARTMENT N S.W. ANN. REP., 1902.
p. 82 - diamond drill sections for Rhodda No. 1 bore to 1 000', Merewether No. 2 bore to 186', Walsh Island No. 1 bore from 601' to 2 200.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1903.
p. 76 - diamond drill sections of Tarro (near Hexham) No. 1 from 405' to 1 327', Tarro No. 3 to 515', Stanwell Park No. 1 to 368', Stanwell Park No. 2 to 259', Seaham Colliery (Wallsend) No. 1 to 673'.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1904.
p. 78 - section of diamond drill bore at Quigley's estate, Teralba,
p. 139 - reference to a nepheline rock occurring as laccoliths in the coal measures and Hawkesbury Sandstone of the Rylstone, Lue, and Barrigan districts,
p. 142 - a brief note on the Commonwealth Coal Mine, 5 miles from Rylstone and 3 miles from Carwell,

p. 146 - a note on a supposed occurrence of kerosene shale in the Corang Valley, Braidwood. Upper marine sandstones cap the hills of Devonian slates: there is no coal or shale,
p. 149 - a note on the constitution of the Bumbo lava as a road metal. It is ranked below dolerite and above granite.

1, 2 MINES DEPARTMENT N.S.W. ANN. REP., 1905.
p. 75 - borehole section at Abermain, Cessnock, to 334' with detailed section of the Greta Seam.

10, 13 MINES DEPARTMENT N.S.W. ANN. REP., 1906.
p. 75 - bore 3 miles north of Stockton to 494'. Shallow bores in dolerite at Port Kembla.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1907.
p. 74 - section of Stockholm borehole from 494'-1 059',
pp. 154-61 - detailed section of strata of the Birthday Shaft, Sydney Harbour Collieries Ltd, Balmain. Total depth 3 014,
p. 165 - bore sections at Wyong, Bungaree Norah, Wallarah, Wyee,
pp. 166-8 - detailed section of Bungaree Norah bore.
pp. 171-2 - notes and section of Lang's Coal seam at West Dapto, Wollongong, showing an invading dyke.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1908.
pp. 74-5 - 13 shallow boreholes at Mt Drysdale,
p. 75 - section of the Hawkesbury River bore 1 072',
p. 76 - section of the Munmorah Lake bore 191',
p. 77 - South Australian Government bore 1 380',
p. 78 - Thornton bore 583',
p. 79 - Ellalong No. 1 bore 631', Ellalong No. 2 bore 364',
p. 80 - Mt Victoria 661' (detailed),
p. 166 - coal below Muswellbrook Common and in Muscle Creek.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1909.
p. 70 - Windeyer's Hawkesbury bore, 1 072' to 2 199',
p. 71 - Munmorah Lake No. 1 from 191' to 400', Munmorah Lake No. 2 from 22' to 396',
p. 73 - Heddon-Greta bore, to 572',
p. 74 - Ellalong No. 2 364' to 1 124',
p. 76 - Abermain bore, Stanford to 235'.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1910.
p. 68 - Windeyer's Hawkesbury bore 2 199' to 3 005',
p. 68 (opposite) - section between Sydney and Newcastle, is shown by Munmorah Lake bore; Bungaree Norah: Windeyer's Hawkesbury and Cremorne No. 2,

p. 69-72 - complete log of Windeyer's Hawkesbury bore,
p. 73 (opposite) - section in Abermain No. 2, p. 73 (opposite) - section in Abermain No. 1,
pp. 74-5 - Hebburn bores, No. 1 to 662', No. 2, to 1 333', No. 3 to 942',
p. 75 - Balmoral bore to 999',
p. 188 - mentions zircon sand, 10 miles northeast of Gosford, with traces of Au and Ag.

1 MINES DEPARTMENT N S.W. ANN. REP., 1911.
p. 60 - mentions iron ore from Mittagong,
p. 61 - mentions limestone from Capertee,
p. 76 - gives section of Hebburn bore No. 4 to 787', Mt Edgecumbe bore No. 4 to 487' - Western State Coalmine No. 1 bore to 1 272',
p. 78 - Western State Coalmine, Aberdeen to 569',
p. 189 - a list of places in the Sydney area where prismatic sandstone occurs in the Hawkesbury Sandstone,
p. 192 - W.S. Dun states there is a direct succession without break of sedimentation between the Permian and the Triassic Narrabeen stage Upper Coal Measures.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1912.
p. 73 - Northern State coal bore, Aberdeen to 1 011' Maroubra and Yerranderie,
p. 191 - description of sandstone quarried or available at Maroubra and Randwick.

1, 10 MINES DEPARTMENT N.S.W. ANN REP., 1913.
pp. 76-7 - strata encountered by bores at Yerranderie, Bellevue Hill, Coogee, St Marys Cathedral and Annandale.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1914.
p. 78 - analyses of coal from State Colliery, National Park,
Facing p. 78 - log of No. 1 Bore State Colliery to about 1 500 feet,
p. 207 - report on coal seams within the Warragamba Watershed. L.F. Harper.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1915.
p. 74 - log of No. 2 bore, State Colliery, National Park to 1 953 feet,
p. 182 - logs of Nos 1, 2 bores, Great Western Coalmining Co. (at Ballimore about 22 miles from Dubbo),
pp. 183-4 - logs of coal seams in county of Lincoln.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1916.
p. 73 - sections of Nos 1, 2, 3 bores at Abermain Colliery,
p. 206 - sections of coal seams at East Maitland.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1917.
p. 68 - five bores for North Shore Bridge foundations, two bores at Rothbury Colliery, Mt Macquarie Bore (Wongawilli parish, County of Camden), penetrating 4 coal seams total depth of 954'.
p. 71 - Otford bore (Bulgo parish, County of Cumberland), to total depth of 721'.
pp. 154-8 - sections of coal seams, County of Rous and County of Roxburgh.

1, 10 MINES DEPARTMENT N.S.W. ANN. REP., 1919.

1, 10 MINES DEPARTMENT N.S.W. ANN. REP., 1920.
pp. 74-8 - sections of 78 shallow bores from Cordeaux Dam,
p. 78 - sections of 9 shallow bores from Chichester Dam,
p. 79 - sections of 2 bores, Aellalong No. 1 to 1 078', No. 2 to 1 043'.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1921.
p. 42 - sections of 2 bores at Ellalong to over 400', sections of 4 bores at Coorabin to over 300',
p. 115 - sections through the Coorabin Coal Field,
p. 117 - section from No. 3 to No. 4 boreholes, Coorabin,
p. 118 - Coorabin bore No. 5.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1921.
p. 42 - site and section of Bargo bore to 1 410',
pp. 44-5- section Newnes Junction bore to 701'.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1922.
p. 43 - site and section of Joadja bore to 353',
p. 44 - site and section of Fletcher's bore, Muswellbrook to 211',
p. 45 - site and section of Bulli bore to 1 070',
p. 92 - site and section of Upper Cordeaux bore, County of Camden to 780'.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1923.
p. 41 - site and 1 815 foot section of Holland's Aellalong bore coal analyses,
Facing p. 90 - sections at Katoomba, Wentworth Falls, Brimstone Gully, Rileys Gully.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1924.
pp. 96-7 - sections of various coal seams in the Mossvale - Exeter - Berrima district.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1925.
p. 41 - section of lower portion of Thirlmere bore (Bulli Extended) to 1 353'. Also a note by L.F. Harper on p. 104.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1926.
p. 41 - Metropolitan Coal Co's Helenborough No. 1 bore 756' - 1 321'.

10 MINES DEPARTMENT N.S.W. ANN. REP., 1928.
p. 42 - sections of No. 1 bore, State Coal Mine area, Ovingham near Singleton to 1 058, sections of No. 2 bore State Coal Mine area, Ovingham to 346'.

1 MINES DEPARTMENT N.S.W. ANN. REP., 1951.
At end of volume, a geological map of the Ovingham area, in the Tomago Coal Measures.

1 MINES DEPARTMENT N S.W. ANN. REP., 1952.
p. 122-30 - reports on pneumatic stowage investigations in the Cessnock area.

10 MINES DEPARTMENT N.S.W., 1967 - The mineral wealth of N.S.W. Sydney, N.S.W. Govt Printer.

10 MINGAYE, J.C.H., 1890 - Report on cokes manufactured in New South Wales with analyses of their cokes and their ashes. Dep. Min. N.S.W. Ann. Rep. 1890, 283-305. The results of the analyses show the relative values of cokes of the various districts sampled. The Newcastle Series of the Northern Coalfield and the Southern Coalfield are mainly represented.

10, 16 MINGAYE, J.C.H., 1891 - Analyses and report on a sample of coke manufactured from coal at the Mt Pleasant Colliery, near Wollongong. Dep. Min. N.S.W. Ann. Rep. 1891, 278. Report on analyses of a sample of coke manufactured from Mt Pleasant coal with a view to ascertaining its suitability for metallurgical purposes.

10 MINGAYE, J.C.H., 1891 - Analyses of cokes from various coke-producing coals in the northern, southern and western districts. Geol. Surv. N.S.W. Rec. 2, 109-16. Tables of analyses with reference to the ash contents.

10, 14 MINGAYE, J.C.H., 1893 - On analysis of coal from Cremorne bore. Dep. Min. N.S.W. Ann. Rep. 1893, 70-1. Six analyses of successive sections of the seam showed that the coal was good for household purposes (with a low ash percentage) and yielded an 'excellent' coke.

10 MINGAYE, J.C.H., 1904 - Assays. Dep. Min. N.S.W. Ann. Rep. 1904, 151-4. Samples assayed include many from localities in the Sydney Basin.

11, 13 MINGAYE, J.C.H., 1905 - Re-occurrence of black sand on the beach at Terrigal Haven. Dep. Min. N.S.W. Ann. Rep. 1905, 159. The heavy black sand resembles the concentrated beach sand of the Richmond and Shoalhaven River beaches. On assay, samples yielded neither gold, silver, platinum, tin, nor rare earths of the cerium group (monazite). The sand is thought to be derived from the Hawkesbury Sandstone.

10 MINGAYE, J.C.H., 1905 - Analyses of New South Wales clays. Dep. Min. N.S.W. Ann. Rep. 1905, 161. The table includes analysis of several samples from the Sydney Basin.

10, 16 MINGAYE, J.C.H., 1905 - Coal from Albion Park, south coast. Dep. Min. N.S.W. Ann. Rep. 1905, 161-2. Proximate analysis of the coal and list of the chemical composition of the ash.

10 MINGAYE, J.C.H., 1905 - Selected analyses and assays. Dep. Min. N.S.W. Ann. Rep. 1905, appendix.

10, 13 MINGAYE, J.C.H., 1922 - Halotrichite, from Central Greta Colliery, N.S.W. Geol. Surv. N.S.W. Rec. 10(2), 208.

10, 15 MINGAYE, J.C.H., and JONES, L.J , 1920 - Oil boring at Penrith. Dep. Min. N.S.W. Ann. Rep. 1920, 119. A depth of 2 700 feet was reached, with a 12-foot coal seam at 2 523-35 feet. Traces of oil and a large volume of gas were met with. A sample of the gas was analysed.

2, 4, 14 MINGAYE, J.C.H., and WHITE, H.P., 1905 - Notes and analyses of olivine basalt rocks from the Sydney district (No. 1). Geol. Surv. N.S.W. Rec. 7, 226-30.

4, 6 MINTY, E.J., 1959 - Petrology in relation to road materials. Part 1: The rock types used to produce 'Aggregate' J. Roy. Soc. N.S.W., 93, 27-38.

2, 6 MINTY, E J., 1968 - Engineering geology of the Prospect intrusion. Adv. Study Syd. Bas., 3rd Symp., Newcastle, 43. Possible uses of the rock and other features are listed. An hypothesis to explain the differentiation is presented.

1, 7 MITCHELL, J., 1892 - Note on the occurrence of certain fossils in previously unrecorded localities in New South Wales, with remarks on the correlation of certain beds in the Newcastle and Illawarra districts. Proc. Linn. Soc. N.S.W., 7(2), 345-6. Plant fossils are discussed.

7 MITCHELL, J., 1893 - Note on the fructification of Glossopteris. Proc. Linn. Soc. N.S.W., 7(2), 377-8.

7, 13 MITCHELL, J., 1922 - A new gasteropod from the lower Marine Series of New South Wales. Proc. Linn. Soc. N.S.W., 47, 278. A Platyschisma allandalensis is described from a railway cutting near Allandale Railway Station.

7, 13 MITCHELL, J., 1922 - Descriptions of two new trilobites and note on Griffithides convexicaudatus Mitchell. Proc. Linn. Soc. N.S.W., 47, 535. The locality is near Clarencetown.

7, 13 MITCHELL, J., 1924 - A preliminary reference to a new species of Elonichthys from the lower beds of the Newcastle Coal Measures. Proc. Linn. Soc. N.S.W., 49, 503.

7, 13 MITCHELL, J., 1924 - Eleven new species of Aviculopecten from Carboniferous rock, Myall Lakes, N.S.W. Proc. Linn. Soc. N.S.W., 49, 468-74. The author is of the opinion that the containing beds may belong to the upper Lower Carboniferous or lower Middle Carboniferous.

7, 13 MITCHELL, J., 1925 - Descriptions of a new species of Leaia. Proc. Linn. Soc. N.S.W., 50, 438. The locality is the Belmont Quarries.

7, 13 MITCHELL, J., 1925 - Exhibit fossil Pelecypoda from Belmont. Proc. Linn. Soc. N.S.W., 50, x/vi.

7, 16 MITCHELL, J., 1927 - A new Deltopecten from the Illawarra district, N S.W. Proc. Linn. Soc. N.S.W. 52, 104.

7 MITCHELL, J., 1927 - The fossil Estheriae of Australia. Proc. Linn. Soc. N.S.W., 52, 105-12. Mode of occurrence and description of 13 species.

3 MOELLE, K.H.R., 1968 - On joint analysis in the Sydney Basin. Adv. Study Syd. Bas., 3rd Symp., Newcastle, 45. The regional measurements of 9 000 joints reveal geometrical relationship to various geologic features.

10 MORRIS, J., 1863 - The coal fields of New South Wales. Min. J., 33, 898.

2, 4 MORRISON, M., 1904 - Notes on some of the dykes and volcanic rocks of the Sydney district, with observations on the columnar sandstone. Geol. Surv. N.S.W. Rec. 7(4), 241-81. Morrison's report includes information

from a report by J.B. Henson dated 29/11/1892 re dykes in city and suburbs; which was sent to Mitchell Library 1958. Descriptions are given of 43 dykes and 6 volcanic necks intruded into mainly Triassic sediments of the Sydney district. The paper also deals with certain features of columnar structure in sandstones close to these intrusions.

0, 15 MORRISON, M., 1911 - Notes on the geology of the country between Rydal and the Jenolan Caves. Dep. Min. N.S W. Ann. Rep. 1911, 189. The main formations are granites, Silurian slates, cherts, etc., and Devonian sandstones and quartzites. A small outcrop of Permo-Carboniferous rocks exists 10 miles from Rydal on the Caves Road.

3, 14 MORRISON, M., 1911 - Report on the occurrence of prismatic sandstone in Mr Llewellyn Jones' Quarry, Georges River. Dep. Min. N.S.W. Ann. Rep. 1911, 189. The quarry is in Hawkesbury Sandstone. No sign of prismatization was found. The known occurrences of prismatic sandstone in the metropolitan area are discussed.

10, 14 MORRISON, M., 1912 - Report on boring operations at Maroubra and Randwick for proposed state sandstone quarry. Dep. Min. N.S.W. Ann. Rep. 1912, 191-3. The object of the boring operations is to locate an area of good 'yellow block' sandstone for the purpose of a state sandstone quarry. A detailed account is given of the properties of 'yellow block' and the characteristics of the stone at Maroubra, and Queens Park, Randwick.

6, 13 MORRISON, M., 1917 - Road metal at Port Stephens. Dep. Min. N.S.W. Ann. Rep. 1917, 168. The deposits are mainly porphyry. A brief description of each deposit is given.

10, 14 MORRISON, M., 1917 - Report on Blakes Quarry, Blakehurst. Dep. Min. N.S.W. Ann. Rep. 1917, 169.

10, 14 MORRISON, M., 1918 - Report on sandstone suitable for abrasive purposes. Dep. Min. N.S.W. Ann. Rep. 1918, 161-2. The use of sandstones from Ravensfield and Pyrmont in the railway workshop's Tasker grinder as a replacement for imported argillaceous sandstone is examined.

2, 6, 13 MORRISON, M., 1919 - Report on blue metal in the Gosford district. Dep. Min. N.S.W. Ann. Rep. 1919, 170-1. The volcanic rocks is a dense hard olivine basalt apparently occurring as a plug intruding Hawkesbury Sandstone. Economic aspects are discussed.

10, 15 MORRISON, M , 1919 - Report on silver-lead find in the Lithgow district. Dep. Min. N.S.W. Ann. Rep. 1919, 170-1. The prevailing rock

in the locality is orthoclase granite which is capped by Upper Marine conglomerate in the vicinity of the find. Analyses of samples suggest that the deposit is not payable.

10, 13 MORRISON, M., 1921 - Coal at Gloucester. Dep. Min. N.S.W. Ann. Rep. 1921, 65. A section across a coal seam exposed in the bank of the Avon River is tabled. Notes on the occurrence of coal in other parts of the Gloucester district are given.

10, 16 MORRISON, M , 1921 - The occurrence of oil shale in the Joadja Valley. Dep. Min. N.S.W. Ann. Rep. 1921, 66-9.

10, 16 MORRISON, M., 1922 - Mittagong bore. Dep. Min. N.S.W. Ann. Rep. 1922, 94. A section of the bore is tabled, with an analysis of some coal seams.

5, 15 MORRISON, M., 1924 - Prospect of obtaining a supply of water from underground sources for the town of Werris Creek. Dep. Min. N.S.W. Ann. Rep. 1924, 88-9. The physiography of the area and the sites of the most probable bores are discussed.

1, 5, 13 MORRISON, M., 1925 - Report on the existence of 'hydraulic stowage' material in the Lower Hunter Valley. Dep. Min. N.S.W. Ann. Rep. 1925, 115-27. Cross-sections for Broken Back, Millfield, Conjewai, Barraba, Quarrybylong, Myall, Hedton and Great Sugarloaf Mountain are given. The Ravensfield Sandstone and Narrabeen Stage sandstones and the Pleistocene and Recent deposits all have suitable material, in addition to that of the Hawkesbury Sandstone areas.

0, 13 MORRISON, M., 1925 - Progress report on the geological survey of the Muswellbrook-Singleton Coalfield. Dep. Min. N.S.W Ann. Rep. 1925, 127-8. Notes on the Carboniferous Lower Coal Measures, Upper Marine Series, Upper Coal Measures, and igneous rocks are given. The prospects of discovering a large coalfield south of Muscle Creek free from the destructive action of dolerite and syenite sills are not good. The Loder and Sedgefield structures were mapped by using a conglomerate within the Muree Beds as a key horizon.

10, 15 MORRISON, M., 1926 - Suggested site for the establishment of a State coal mine on Bong Bong Mountain. Dep. Min. N.S.W. Ann. Rep. 1926, 97-8. The coal is of inferior quality, containing 7-9% more ash than other coals of the Western Coalfield; its thickness and quality vary rapidly; and igneous intrusions are likely to have cindered the coal in places.

10, 13 MORRISON, M., 1926 - Coal seams south westerly from Mirimbah Railway Platform - Great Northern line. Dep. Min. N.S.W. Ann. Rep. 1926, 98-100. The prospecting operations have proved the existence of at least four coal seams, and as the full thickness of the Upper or Newcastle Coal Measures occurs within the area it is probable that other seams will be located there. Analyses and sections of the seams are discussed.

6, 14 MORRISON, M., 1926 - Proposed dam site on Woronora River. Dep. Min. N.S.W. Ann. Rep. 1926, 100. This describes the Hawkesbury Sandstone and the joint systems. The site is suitable for a 200-foot high dam.

10, 13 MORRISON, M., 1927 - The Loder bore. Dep. Min. N.S.W. Ann. Rep. 1927, 111. A log of the bore to 2 277 feet is given.

10, 13 MORRISON, M., 1928 - Proposed State coal mine in Northern district - especially between Cessnock and Singleton. Dep. Min. N.S.W. Ann. Rep. 1927, 110-1. Various areas near Muswellbrook, Ravensworth-Rixs Creek, Singleton-Cessnock-Mirimbah are discussed.

10 MORRISON, M., 1928 - Building and ornamental stones in the mineral industry of New South Wales. Dep. Min. N.S.W. Ann. Rep. 1928, 205.

10, 15 MORRISON, M., 1929 - 'Oil shale' in the Wollar district. Dep. Min. N.S.W. Ann. Rep. 1928, 110.

10, 15 MORRISON, M , 1935 - Examination of Barrigan Wollar deposits of oil shale. Dep. Min. N.S.W. Ann. Rep. 1935, 78-9. A brief account of some economically unimportant occurrences.

3, 13 MORRISON, M., and JONES, L.J., 1925 - Belford, Loder and Sedgefield structures. Dep. Min. N.S.W. Ann. Rep. 1925, 128.

10, 13 MORRISON, M., and KENNY, E.J., 1922 - Coal seams, Boolaroo. Dep. Min. N.S.W. Ann. Rep. 1922, 94-5. The country around Boolaroo was examined to determine the depths to and relationships of coal seams expected to occur beneath the Sulphide Corporation's property at Cockle Creek. In descending order the seams in the Lake Macquarie area are Wallarah, Great Northern, Fassifern, Upper Pilot, Lower Pilot, Australasian, Burwood, Nobbys Dirty, Yard, Young Wallsend, and Borehole.

10, 13 MORRISON, M., and KENNY, E.J., 1922 - Report on the Muswellbrook Coalfield. Dep. Min. N.S.W. Ann. Rep. 1922, 95-6. The Muswellbrook area was surveyed to determine whether certain seams occur within the Upper or Lower Coal Measures. Numerous analyses are tabled.

10, 13 MORRISON, M., and KENNY, E.J., 1922 - Coal measures, Roxburgh. Dep. Min. N.S.W. Ann. Rep. 1922, 96. The Upper Coal Measures occur in the form of low foothills bounding a wide stretch of alluvium occupying the Hunter River valley. Section and analysis are tabled and indicate that the coal should prove useful for local use.

0, 15 MORRISON, M., and KENNY, E.J., 1923 - Report or a geological reconnaissance between Wentworth Falls and Burragorang. Dep. Min. N.S.W. Ann. Rep. 1923, 89-90.

10, 16 MORRISON, M., and KENNY, E.J., 1930 - Reedy Creek oil shale and coal prospects. Dep. Min. N.S.W. Ann. Rep. 1930, 77. The Reedy Creek (near Joadja) oil shales are probably only restricted lenticular beds in a coal seam, and the occurrence is not likely to be commercially important.

10, 15 MORRISON, M., and KENNY, E.J., 1931 - The Coolaway oil shale deposit. Dep. Min. N.S.W. Ann. Rep. 1931, 77-8. The place is 7 road miles southeast from Rylstone. The oil shale is probably not more than 100 feet above the Marangaroo Conglomerate and is of good quality.

10, 15 MORRISON, M., and KENNY, E.J., 1931 - Oil shale, Upper Burragorang. Dep. Min. N.S.W Ann. Rep. 1931, 78. The shale comes from Tonalli Mountain, and was mentioned by Carne in 1903. Two sections are given, and the approximate horizon of the shale, together with analyses.

10, 13 MORRISON, M., and KENNY, E.J., 1932 - The Baerami-Widdin oil-shale deposits. Dep. Min. N.S.W. Ann. Rep. 1932, 82-6. A detailed description with analyses.

10, 15 MORRISON, M., and KENNY, E.J., 1933 - Wollar oil shale and Barrigan oil shale. Dep. Min. N.S.W. Ann. Rep. 1933, 80-2. A few details of analyses and seam sections are given from Wollar, Barrigan Creek, and Peters Creek.

10, 15 MORRISON, M., and KENNY, E.J., 1935 - Marangaroo oil shale. Dep. Min. N.S.W. Ann. Rep. 1935, 86-7. A few details of analyses and sections of seams.

10, 15 MORRISON, M., and KENNY, E.J., 1935 - Oil shale in Warlands Creek, Murrurundi district. Dep. Min. N.S.W. Ann. Rep. 1935, 87. The oil shale may represent an isolated block torn from a previously extant block during a period of eruption and deposited in a crater with volcanic ejectamenta.

10, 13 MORRISON, M., and RAGGART, H.G., 1928 - Singleton-Muswellbrook Coalfields - progress report. Dep. Min. N.S.W. Ann. Rep. 1928, 111-5. Gives some detailed geology and geological maps of the area between Greta and Warkworth (showing the 3 domes), and of the Muswellbrook-Jerry Plains area.

17 MOZLEY, Ann, 1964 - James Dwight Dana in New South Wales, 1839-1840. J. Roy. Soc. N.S W., 97(6A), 185-91. This describes a safari by Dana and Clarke, visiting various geological and geomorphological features in the Sydney Basin.

17 MOZLEY, Ann, 1965 - Foundations of the Geological Survey of N.S.W. J. Roy. Soc. N.S.W., 98, 91.

10, 16 MUIR, M.J., 1962 - Bulli Colliery - occurrences of methane. Dep. Min. N.S.W. Rep. Coalfields Bur., 1962, 5.

10, 13 MULHOLLAND, C. St J., 1942 - Baerami - Widdin Brook oil shale deposits. Geol. Surv. N.S.W. geol. Rep. 1939-45, 109-14. Detailed geological survey of the oil shale deposits. There is a geological map on the scale ½ mile:1 inch.

6, 15 MULHOLLAND, C. St J., 1945 - Glenbawn dam site. Geol. Surv. N.S.W. geol. Rep. 1939-45, 120. Findings of a survey to determine the best positions on which to sink test shafts to check the accuracy of percussion bores sunk in 1940.

0, 13 MULHOLLAND, C. St J., 1945 - Geology and mineral resources of the Newcastle region. Regional Planning Committee.

10, 13 MULHOLLAND, C. St J., 1945 - Mineral resources of the upper Hunter region. Geol. Surv. N.S.W. There are important deposits of coal and oil shale. In the N.E. gold occurs and limestone is present N.E. from Muswellbrook. It is expected that the principal mining activity will be the production of coal. The Baerami oil shale deposits could produce motor fuel.

1, 16 MULHOLLAND, C. St J., 1948 - Shoalhaven River investigation - preliminary geological report. Dep. Min. N.S.W. Ann. Rep. 1948, 64. The Permian rocks consist of the Nowra Grits (at Endrick they are 600 feet thick), dipping gently towards Nowra.

9, 14 MUMME, I.A., 1960 - An appraisal of absolute gravity values for gravity base-stations in Sydney, Melbourne and Adelaide. J. Roy. Soc. N.S.W., 1961, 94, 237-8. At Sydney University the probable value of gravity is 979.6829 gals.

9, 11, 14 MUMME, I.A., 1965 - Radioactive laterites in the National Park area. J. Roy. Soc. N.S.W. 98(2), 101-4. The nodular lateritic masses covering the Hawkesbury Sandstone were found to be weakly radioactive. Gamma-ray spectrometry showed that the radioactivity was mainly due to thorium series with a small contribution from radium C.

9 MUMME, I.A., 1969 - The nature and distribution of surface radioactivity in the Sydney environs. Adv. Study Syd. Bas., 4th Symp., Newcastle. The surface gamma-ray intensities were generally characteristic of the underlying rock formations except in the case of transported soils. Relevant tables are given.

9 NARAIN, H., and BHASKARARAO, V., 1957 - Magnetic properties of rocks. J. Roy. Soc. N.S.W., 91, 36. Gives the magnetic susceptibility of sundry rocks, mostly from the Sydney Basin.

9 NARAIN, H., and RAO, V., 1957 - Magnetic properties of rocks. J. Roy. Soc. N.S.W., 91, 36-54.

1, 2 NASHAR, Beryl, 1957 - Estuarine deposits of the Hunter River. J. Hunter Riv. Vall. Res. Fdn, 1957, 29-31.

0, 13 NASHAR, Beryl, 1964 - THE GEOLOGY OF THE HUNTER VALLEY. Sydney, Jacaranda Press. An elementary text in two parts. Part I deals with the general geological characteristics of the Hunter Valley, and Part II with the geology of various areas of the Valley and suggested field excursions.

0 NASHAR, Beryl, 1967 - GEOLOGY OF THE SYDNEY BASIN. Sydney, Jacaranda Press, 1967. The geology is presented as for field excursions, with several useful diagrams and sketches.

2, 4 NASHAR, Beryl, 1968 - Petrological aspects of the upper Palaeozoic rocks in New South Wales. Geol. Soc. Aust., spec. Publ. 2, 1969, 169-75. In the late Palaeozoic the regions extending from the Lower Hunter Valley to just north of the Queensland border formed a petrographic province of calc-alkaline rocks ranging in composition from olivine basalts to acid rhyolite. This vulcanicity began in Carboniferous Lower Kuttung time and continued to the beginning of the Greta Coal Measures. Along the South Coast several flows and/or shallow sills of latite (shoshonite of Joplin) make up the Gerringong Volcanics.

2, 13 NASHAR, Beryl, and CATLIN, C., 1960 - Dykes in the Port Stephens area. J. Roy. Soc. N.S.W., 93, 99-103. A swarm of some 60 nonolivine-bearing basaltic dykes of probably Tertiary age crops out along the coast line. They intrude Carboniferous lavas and fall into 2 natural groups, striking approx. N-S and E-W.

8, 16 NAYLOR, G.F.K., 1930 - The history of the development of the present drainage system in the Marulan district with special reference to river capture. J. Roy. Soc. N.S.W., 64, 19. The problem of the Shoalhaven-Wollondilly river capture in the neighbourhood of Marulan.

0, 16 NAYLOR, G.F.K., 1935 - Notes on the geology of the Goulburn district with special reference to Palaeozoic stratigraphy. J. Roy. Soc. N.S.W., 69, 75. This contains a reference to the Kamilaroi rocks on the eastern margin of the area, and to the Carboniferous Marulan batholith.

2, 16 NAYLOR, G.F.K., 1939 - The age of the Marulan batholith. J. Roy. Soc. N.S.W., 73, 82. The intrusion took place between the close of the Silurian and the beginning of the Upper Devonian - probably in Middle Devonian time.

9 NEWSTEAD, G., and WATT, P., 1960 - A telemetered seismic net in Australia. Nature, 186, 704.

10 NORRIE, J.S., 1858 - Analysis of Australian and New Zealand coals. Sydney Mag. Sci. Arts., 1858, I, 94.

0, 13 ODERNHEIMER & HERBORN (AUST. AGRICULTURAL CO.), 1855-57 - Geology and mineralogy of the following estates of Aust. Ag. Co: Port Stephens, Waratah, Newcastle.

10 OERTEL, G., and WALTON, E.K., 1967 - Lessons from a feasibility study for computer models of coal-bearing deltas. Sedimentology, 9(2), 157-68. At the present stage of development of computers and with the present state of knowledge of the quantitative aspects of transportation and sedimentation it is not yet possible to set up a model of a coal-bearing delta. Simulated successions are tested against the East Coalfields and the Southern and Newcastle Coalfields of the Sydney Basin (see Duff, 1966).

3 OFFICER, C.B., 1955 - Southwest Pacific crustal structure. Trans. Am. geoph. Un, 36(3), 449-59. The crustal thickness of the Tasman Basin is the same, 5 to 10 km, as the South Pacific Basin to the east of New Zealand. The thickness of the East Cape - Kermadu - Tonga Ridge and the Lord Howe Rise is 20-25 km, and New Zealand 20 km. The interior region of ridges and troughs, northeast of New Zealand is 15-20 km thick. The results indicate an origin from successive orogenic belts built out over an oceanic crust. The area is not part of an extensive continent.

5 OLD, A.N., 1942 - The Wianamatta Shale waters of Sydney district. Agric. Gaz. N.S.W., 53(5), 215-21.

10 OLDHAM, R.D., 1886 - Memorandum on the correlation of the Indian and Australian coal-bearing beds. Geol. Surv. India, Rec. 19(1), 39-47.

2, 4, 16 O'REILLY, Suzanne, Y., 1971 - Basaltic rocks from the Moss Vale-Mittagong area. Adv. Study Syd. Bas., 6th Symp., Newcastle, 13. There are 3 broad categories: 1. gabbroic, dioritic and syenitic bodies 2. tholeiitic basalts 3. alkali basalts and dolerites. K-Ar dating gives 194 m.y. for the tholeiites and 35 m.y. for the alkali basalts.

2, 4, 14 OSBORNE, G.D., 1920 - The volcanic neck at the Basin, Nepean River. J. Roy. Soc. N.S.W., 54, 113-45. There were two stages of activity, an earlier explosive epoch yielding a fine-grained breccia, and a later epoch marked by intrusion of dykes and a plug. The Basin neck formed an important unit in the physiographic evolution of the area in the Cainozoic.

3, 13 OSBORNE, G.D., 1921 - A preliminary examination of the late Palaeozoic folding in the Hunter River district, New South Wales. J. Roy. Soc. N.S.W., 55, 124-38. The author gives a section from Rixs Creek to Morina Point, and discusses the degree of folding, concluding that in late Permo-Carboniferous time a diastrophism of intermediate intensity produced a crustal compression whereby 70.56 miles were reduced by 7.46 miles.

1, 13 OSBORNE, G.D., 1922 - The geology and petrography of the Clarencetown - Paterson district. Part I. Proc. Linn. Soc. N.S.W., 1922, 47, 161-98. 'A detailed geological and topographical survey was made of an area bounded by a line running from Wallarobba past Hilldale southwest to Vacy, south to Mt Johnstone and Paterson, east-southeast to Seaham, across to Limeburner's Road, about 6 miles from Clarencetown, and west along that road through Clarencetown and back to Wallarobba, a region, of 200 square miles. It is proposed in the present paper to describe the detailed stratigraphical (of the Burindi & Kuttung Series) succession and regional geology. (Tectonics, physiography and petrology to be left for a later communication)'.

3, 8, 13 OSBORNE, G.D., 1922 - The geology and petrography of the Clarencetown - Paterson district. Part II. Proc. Linn. Soc. N.S.W., 1922, 47, 519-34. Tectonic geology and physiography under the following sub headings: general tectonics of the area, faulting, general considerations concerning the faulting and folding, structural relations between the Kutting Series and the Permo-Carboniferous system, physiography.

2, 13, 18 OSBORNE, G.D., 1925 - The geology and petrology of the Clarencetown - Paterson district. Part III. A study of the main glacial beds at Seaham. Proc. Linn. Soc. N.S W., 50, 67-79. 'The Kuttung Series..... showed a more or less well marked threefold division into the basal, volcanic and glacial stages. The last of these was subdivided into a lower portion and the Main Glacial Beds, these two being separated by the dellenite - toscanite lava (Paterson type), which was found to occupy a constant stratigraphical horizon throughout the area. In the lower portion there occurs a definite band of varve rock, as well as a great thickness of arenaceous sediments, but in the Main Glacial Beds we have an assemblage of rocks which show unmistakable evidence of the existence of a pronounced glaciation during the period of their accumulation'.

4, 13 OSBORNE, G.D., 1925 - The geology and petrology of the Clarencetown - Paterson district Part IV Petrography. Proc. Linn. Soc. N.S.W., 50, 112-38. A detailed petrographic account of the Kuttung Series is given, and certain Cainozoic rocks which occur in small masses throughout the area are mentioned. The rocks of the Burindi Series are not described because their outcrops are small and are southward continuations of large areas to the north, where important massive igneous rocks occur.

1, 3, 13 OSBORNE, G.D., 1926 - Stratigraphical and structural geology of the Carboniferous rocks in the Mt Mirannie and Mt Dyrring districts, near Singleton, New South Wales. Proc. Linn. Soc. N.S.W., 21(3), 387-407. 'This paper describes the structure and stratigraphy of the Carboniferous rocks along a belt about 6 miles wide between Glendonbrook and the neighbourhood of Glennies Creek, in the Singleton district. This area is a portion of the important Carboniferous belt of northeast N.S.W., which flanks the western and southwestern margin of the New England plateau and, passing north of Maitland, continues to the east coast of New South Wales in the neighbourhood of Port Stephens and the Manning River'.

0, 13 OSBORNE, G.D., 1927 - The geology of the country between Lamb's Valley and the Paterson River. Proc. Linn. Soc. N.S.W., 52(2), 85-103. 'The main portion of the area examined consists of a somewhat dissected plateau. .... . Sufficient work however was done to arrive at an understanding of the general features of the structure, stratigraphy, physiography and petrography, and the field survey was such as to permit the drawing of a map'.

0, 13 OSBORNE, G.D., 1928 - The Carboniferous rocks between Glennies Creek and Muscle Creek, Hunter River district, New South Wales. Proc. Linn. Soc. N.S.W., 53(5), 565-87. A detailed account of the structure and

stratigraphy of this part of the Carboniferous belt which runs along the northern and northeastern margin of the Hunter Valley, with a brief account of the outstanding features of the physiography.

1, 3, 13 OSBORNE, G.D., 1928 - The Carboniferous rocks in the Muswellbrook-Scone district, with special reference to their structural relations. Proc. Linn. Soc. N.S.W., J 3(5), 588-97. The area described stretches from Muscle Creek to the Scone-upper Hunter Road; in the west it consists of Kuttung rocks and in the east of the Burindi Series. The western boundary of the Kuttung Series is the Hunter Fault, a great overthrust against which occur the Permian rocks. The eastern boundary of the Kuttung belt is a normal fault, the Brushy Hill fault which has thrown the Kuttung Series down against the Burindi Series. The paper deals chiefly with the structure of the Carboniferous belt, particularly the Kuttung section. Stratigraphy is considered only in a general way.

3, 13 OSBORNE, G.D., 1929 - Some aspects of the structural geology of the Carboniferous rocks in the Hunter River district between Raymond Terrace and Scone. Proc. Linn. Soc. N.S.W., 54(4), 436-62. The Carboniferous/Permian geology is briefly described and types of structures discussed area by area. Four main trends are noted - N, NE, NNW, and NW (Hunter Overthrust). The first trend formed just before Upper Coal Measure deposition, the second and third just after (conflicting near Wallarobba). The Hunter Overthrust is thought post-Palaeozoic (possibly early Tertiary); it increased closure on some of the Hunter Valley domes and basins.

4, 16 OSBORNE, G.D., 1931 - Contact metamorphism and related phenomena in the neighbourhood of Marulan. Geol. Mag., 68, 289.

3, 13 OSBORNE, G.D., 1937 - On some major geological faults north of Raymond Terrace and their relation to the Stroud-Gloucester trough. J. Roy. Soc. N.S.W., 71, 385-90. The author discusses in particular the Williams River and Tarean Faults, and the age of the earth movements.

1, 3, 8 OSBORNE, G.D., 1948 - A review of some aspects of the stratigraphy, structure and physiography of the Sydney Basin. Proc. Linn. Soc. N.S.W., Presidential address, 73(1 & 2), iv-xxxvii. This deals with Triassic stratigraphy with emphasis on environmental conditions during Narrabeen and Hawkesbury sedimentation. Narrabeen sections at Cancel Head, Bilgola Head, Coalcliff, and Undola are given in detail; Narrabeen redbeds are discussed, and a chronological account of investigations of the Hawkesbury Sandstone is presented. The later tectonic and physiographic history of the Sydney Basin is reviewed with emphasis on physiographic problems of the Cumberland Basin.

4, 14 OSBORNE, G.D , 1948 - Note on the occurrence of tridymite in metamorphosed Hawkesbury Sandstone at Bundeena and West Pymble, Sydney district, New South Wales. J. Roy. Soc. N.S.W., 82(4), 309-11. Where penetrated by basic intrusions and volcanic vents the Hawkesbury Sandstone shows two types of contact metamorphism. Purely thermal (non-additive) metamorphism has caused the baking of sandstone with some mineralogical and textural modifications (including prismatic shrinkage), and addition of siliceous solutions has contributed to the development of glassy, quartzitic derivatives. It is believed that there is a direct relation between the quantity of feldspar in the sediment and the quantity of tridymite developed.

2, 16 OSBORNE, G.D., 1949 - Contributions to the study of the Marulan Batholith. I. The contaminated granodiorites of South Marulan Creek. J. Roy. Soc. N.S.W., 82, 116.

1, 7, 13 OSBORNE, G D., 1949 - The stratigraphy of the Lower Marine Series of the Permian system in the Hunter Valley, New South Wales. Proc. Linn. Soc. N.S.W., 74, 203-23. 'The chief aim of the writer has been to establish the detailed succession in many areas and to study the facies variation from place to place. Numerous sections have been measured and some correlation of these has been attempted. General geographic distribution of the various stages is obtained from inspection of the accompanying map... At the end of the paper is a list of megascopic fossils from the various stages'.

2, 4, 13 OSBORNE, G.D., 1950 - The Kuttung vulcanicity of the Hunter-Kurah district, with special reference to the occurrence of ignimbrites. J. Roy. Soc. N.S.W., 83, 288-301. The stratigraphical incidence of the ignimbrite horizons is made clear by the statement of many detailed sections from the area. The ignimbrites are shown, by their texture, field occurrence, and vulcanological environment, to correspond to products of the Katmai type of nuée ardente eruption.

0, 13 OSBORNE, G.D., 1950 - The structural evolution of the Hunter-Manning-Myall Province, New South Wales. Roy. Soc. N.S.W. Monogr. 1. The author: (1) describes the general geology and structural relations between main series, (2) lists and describes the Palaeozoic structural elements of the Province, (3) deals with serpentine and associated intrusions and tectonic and petrogenetic evolution of the Woods Reef Serpentine, and (4) describes the structural history of the province.

2, 4, 16 OSBORNE, G.D., 1952 - Contributions to the study of the Marulan Batholith. II, the granodiorite - quartz porphyrite hybrids. J. Roy. Soc. N.S.W , 86, 108.

3, 13 OSBORNE, G.D., and ANDREWS, P B., 1948 - Structural data for the northern end of the Stroud-Gloucester Trough. J. Roy. Soc. N.S.W., 82(3), 202-10.

13, 18 OSBORNE, G.D., and BROWNE, W.R., 1921 - Note on a glacially striated pavement in the Kuttung Series of the Maitland district. Proc. Linn. Soc. N.S.W., 46, 259-62. The pavement is situated in Portion 10, Parish of Wolfingham; direction of the striae, composition of the floor of the pavement, and evidence of ice action are noted.

3, 13 OSBORNE, G.D., and RAGGATT, H.G., 1929 - On some interesting geological faults in the vicinity of Branxton, New South Wales. J. Roy. Soc. N.S.W., 1929, 63, 131-9. The general strike of the faults is parallel to that of the Greta Fault and the Hunter Overthrust; they represent shear-planes developed about the same time as the Greta Fault and are not due to tensional forces. There is a section of the Branxton Stage and diagrams of the faults.

10 OWEN, H.B., 1954 - Bauxite in Australia. Bur. Miner. Resour. Aust. Bull. 24.

9, 13 OWEN, H.B., BURTON, G.M., and WILLIAMS, L.W., 1954 - Geological and geophysical surveys, Ashford Coalfield. Bur. Miner. Resour. Aust. Rep. 8.

10, 13 OXENFORD, R.A., 1954 - Washability characteristics of the Liddell Seam. Proc. Aust. Inst. Min. Metall , 173, 113-45.

0 PACKHAM, G.H., 1962 - An outline of the geology of New South Wales. Aust. N.Z. Ass. Adv. Sci.: Jubilee, Science in N.S.W. A one-page outline of the geology of the Sydney Basin.

0 PACKHAM, G.H., (Ed.) 1969 - The geology of New South Wales. J. geol. Soc. Aust., 16(1).

9 PARKINSON, W.D., and CUREDALE, R.G., 1960 - Isomagnetic maps of Australia for the Epoch 1957.5. Part I, Eastern Australia. Bur. Miner. Resour. Aust. Rep. 55.

17 PERON, F.A , and FREYCINET, L., 1807 - Voyage de Découvertes aux Terres Australes..... pendant les annees 1800-1804. Paris, 1807.

7 PHILLIP, G.M., 1965 - Australian fossil Crinoids. 2. Tribrachiocrinus clarkei McCoy. Proc. Linn. Soc. N.S.W., 89(2), 199-202.

12 PHIPPS, C.V.G., 1963 - Topography and sedimentation of the continental shelf and slope between Sydney and Montague Island, N.S.W. Aust. Oil Gas J., 10(3), 40-6. A progress report; mentions various features discovered, including canyons and Mt Woolnough. A break at the 60-65 fathom-line divides the 'shoreline zone' from the shelf-plain zone which extends to the edge of the continental shelf. This break is thought to represent an old Pleistocene shoreline. From Montague Island to Jervis Bay the continental slope has a very irregular and presumably rocky surface; between Jervis Bay and Sydney it is smooth. There is a submarine canyon off Jervis Bay.

3, 1 PHIPPS, C.V.G., 1966 - Evidence of Pleistocene warping off the New South Wales continental shelf. Geol. Surv. Canada Pap., 66-15, 280-93. Submarine terraces were formed as (horizontal) shoreline features during periods of still-stand as the Wisconsin ice-sheets melted. There has been downwarping of the outer part of the shelf between Sugarloaf Point and Jervis Bay, where two prominent rises extend across the shelf. There is a third rise just north of Newcastle and a lesser one defined off Botany Bay. These features may be the surface expression of structures in the basement rocks. The Permo-Triassic Basin has been rejuvenated.

12 PHIPPS, C.V.G., 1967 - The character and evolution of the Australian continental shelf. APEA J., 7(2), 44-9. The shelf varies in width from about 12 miles off southern New South Wales to over 200 miles in the north and northwest. The evolution and character is related to the geology of the hinterland, the character of the continental slope, and features of ocean basins, and involves that part of the continent most susceptible to tectonic modification where there is the transition from thick sialic crust to thinner oceanic crust.

12 PHIPPS, C.V.G., 1967 - Sedimentation and structure of the continental shelf off central New South Wales. Adv. Study Syd. Bas., 2nd Symp., Newcastle, 26-7. Down to 20 fathoms the bottom is closely related to the present coast. From 20 to 70 fathoms the shelf extends in series of terraces with characteristics of shorelines. From 70 fathoms to the shelf break is a flat plain. Down to 70 fathoms sediments reduce from sand to silt and clay; seawards of 70 fathoms are coarse calcareous brown sands aged 12 800 yrs, by C14-dating. Shell's seismic survey indicates that the structure of the shelf is a wedge of sediments extending seawards from 70 fathoms; there is no sediment wedge south of Montague. There are some indications of Permo-Triassic sediments dipping west on the outer shelf. The instability of the shelf area is shown by the warping of the Pleistocene terraces.

12 PHIPPS, C.V.G., and EMERSON, D.W., 1968 - Seismic profiling studies in the lower section of Port Jackson. Adv. Study Syd. Bas., 3rd Symp., Newcastle, 40. Information has been obtained on thickness of unconsolidated sediments, structures, and bedrock configurations.

8, 11 PIDGEON, I M., 1938 - The ecology of the central coastal area of New South Wales: II. Plant succession of the Hawkesbury Sandstone. Proc. Linn. Soc. N.S.W., 63(1 & 2), 1-26. The Hawkesbury Sandstone country is covered by a mosaic of plant communities of various scrub-forests, low scrub and swamp in less favourable areas, and by high forest and patches of mesophytic vegetation in the more favourable areas. The sclerophyllous vegetation has developed under conditions of bright sunlight, exposure, and ready drainage through a shallow soil of poor water-retaining capacity. Sandy soils with varying humus content occur thinly on the plateau habitat and more thickly in the favourable gully habitats.

8, 11 PIDGEON, I.M., 1941 - The ecology of the central coastal area of New South Wales: IV. Forest types on soils from Hawkesbury Sandstone and Wianamatta Shale. Proc. Linn. Soc. N.S.W., 66(3 & 4), 113-7. Vegetation of the forest-type varies with soil type which in turn is related to bedrock type. There is a difference in vegetation growing on sandstone and on shale, irrespective of climate.

PIGOT, E.F., 1909 - Note on the new Wiechert Seismometers at Riverview College, Sydney. J. Roy. Soc. N.S.W., 43, 388.

7, 14 PINCOMBE, T.H , 1928 - Cleithrolepsis granulatus from Tambourine Bay. Proc. Linn. Soc. N.S.W., 52. 'Mr T.H. Pincombe exhibited C. granulatus found (July 1927) in sewer tunnelling at the head of Tambourine Bay, Sydney, in a similar deposit to that at Brookvale'.

2, 4, 16 PINKSTONE, D.R., 1962 - Petrological report on specimens from the Camden area. Geol. Surv. N.S.W. Rep. 12, 12 (Appendix). A brief examination of olivine basalts from various Tertiary intrusions in the district.

4, 16 PINKSTONE, D.R., 1962 - Report on rock specimens collected within the Ulladulla and Tianjara 1 mile areas. Geol. Surv. N.S.W. Rec. 17, 63.

4, 16 PINKSTONE, D.R., 1964 - Petrographic report on specimens from the Shoalhaven district. Geol. Surv. N.S.W. Rep. 18, 18. The petrography of a siltstone and a silty claystone from near the junction of Broughton Creek and Shoalhaven River.

4, 16 PINKSTONE, D.R., 1966 - Petrological determinations of specimens from the Yalwal Goldfield. Geol. Surv. N.S.W. Rep. 46. (Appendix).

10, 14 PITTMAN, E.F., 1892 - Report for the site for a new bore at Cremorne. Dep. Min. N.S.W. Ann. Rep. 1892, 109, Appendix 1A. The site of the bore is midway between two volcanic dykes, assuming that the influence of the dykes on the coal does not extend the distance.

10, 15 PITTMAN E.F., 1892 - Supposed auriferous deposit at Springwood. Dep. Min. N.S.W. Ann. Rep. 1892, 117, Appendix 1C. The supposed reef consists of a stratified deposit of siliceous ironstone interbedded with Hawkesbury Sandstone. Bare traces only have been found and assay yielded neither gold nor silver.

10 PITTMAN, E.F., 1893 - Progress report of the geological survey of New South Wales. Dep. Min. N.S.W. Ann. Rep. 1893, 102. Detailed section of the Cremorne bore No. 2, with a brief note in the report. Also a note on a coal seam at Burragorang Mountain.

5, 14 PITTMAN, E.F., 1893 - Report on water supply for Pitt Town. Dep. Min. N.S.W. Ann. Rep. 1893, 107, Appendix 1B. There is no probability of an artesian water supply being obtained by boring. Alternatives are suggested.

10, 16 PITTMAN, E.F., 1894 - Note on coal seams at Joadja. Dep. Min. N.S.W. Ann. Rep. 1894, 105. At the top of the upper coal measures is a seam about 18 feet thick of coal bands. About 100 feet below this seam is the shale seam which in the Joadja Creek mine has varied very much in thickness. 11 feet below the shale is a seam about 5 feet 6 inches in thickness, of rather dirty coal bands. The possible extent and working of the seams are discussed.

10 PITTMAN, E.F., 1894 - Comparative values of Hawkesbury Sandstone and Bowral 'Trachyte' for building purposes. Dep. Min. N.S.W. Ann. Rep. 1894, 104, Appendix A. The erosive effects of the salt atmosphere of Sydney on the two rocks are compared.

10, 14 PITTMAN, E.F., 1896 - Rumoured discovery of gold at Parramatta. Dep. Min. N.S.W Ann. Rep. 1895, 124, Appendix 6. The sandstones and conglomerates of the Hawkesbury Series are known to contain gold in very small quantity. Any auriferous deposits are unlikely to be payable.

2, 10, 14 PITTMAN, E.F., 1897 - Report on Chadwick and Cane's propsecting operations at Long Bay. Dep. Min. N.S.W. Ann. Rep. 1896, 99, Appendix 4. Hawkesbury Sandstone xenoliths, charged with pyrite, in a basaltic dyke

had been considered as quartz reefs by prospectors. They contain neither gold nor silver.

10, 13 PITTMAN, E.F., 1898 - Report on coal seams at Hexham. Dep. Min. N.S.W. Ann. Rep. 1898, 148-9. The seams are geologically below the Newcastle Coal Measures. The possible results of boring in the vicinity of Ironbank Brush are discussed with a view to future economic value of the seams.

3, 10, 14 PITTMAN, E.F., 1899 - Report on the rock cracks at South Head. Dep. Min. N.S.W. Ann. Rep. 1899, 164-6. Appendix 7. Jointing of the sandstone is examined in relation to the stability of the site of a building.

10 PITTMAN, E.F., 1899 - Prospecting works to test the iron ore deposits of New South Wales. Dep. Min. N.S.W. Ann. Rep. 1899, 167-8. Appendix 10. Two localities, Mittagong and Wallerawang, are considered with a view to establishing an iron smelting works.

6, 14 PITTMAN, E.F., 1900 - Report on rock cracks at South Head. Dep. Min. N.S.W. Ann. Rep. 1900, 164-6.

10 PITTMAN, E.F., 1901 - The Mineral resources of New South Wales. Geol. Surv. N.S.W., Coal, 307-48.

10, 14 PITTMAN, E.F., 1901 - Report on coal seams struck in the Sydney Harbour collieries mine at Balmain. Dep. Min. N.S.W. Ann. Rep. 1901, 161. The author considers that the main Bulli seam has divided locally into 3 thin seams. This opinion is based on 'the geological details' and occurrence of Schizoneura just above the first Balmain seam.

10, 14 PITTMAN, E.F., 1902 - Ironstone deposits at Long Bay. Dep. Min. N.S.W. Ann. Rep. 1902, 178. Ironstone is a shallow capping to the Hawkesbury Sandstone near intruding basalt dykes (the largest of which 'was unsuccessfully exploited a few years ago for gold'.) The ironstone makes good road-metal.

6, 14 PITTMAN, E F., 1903 - Report on the Prospect Reservoir. Dep. Min. N.S.W. Ann. Rep. 1903, 124. The causes of slips in the embankment of the reservoir are examined.

10, 13 PITTMAN, E.F., 1903 - Gold find near Denman, on the Hunter River, N S.W. Dep. Min. N.S.W. Ann. Rep. 1903, 125. A small drift deposit on a bar in the Hunter River. Probable sources of the gold are discussed.

10, 16 PITTMAN, E.F., 1904 - Coal mining under Cataract Reservoir. Dep. Min. N.S.W. Ann. Rep. 1904, 135-6. The problems of, and precautions necessary for, coal mining under the reservoir are examined.

10, 16 PITTMAN, E.F., 1904 - Coal-mining under the catchment area, Sydney water supply, (Cataract Dam). Dep. Min. N.S.W. Ann. Rep. 1904, 136. Briefly describes the coal seams underlying the Cataract Dam. There are two cross-sections.

10, 13 PITTMAN, E.F., 1904 - The occurrence of kerosene shale at South Greta Colliery, Font Hill, West Maitland. Dep. Min. N.S.W. Ann. Rep. 1904, 139-40. Results of analyses of seams at South Greta Colliery are given.

10, 15 PITTMAN, E.F., 1904 - Commonwealth Coal Mine, near Rylstone. Dep. Min. N.S.W. Ann. Rep. 1904, 142. Curber Melon range is a long narrow outlier of the Upper Coal Measures, capped by the Hawkesbury Series, the latter in places also by patches of basalt. Several seams occur. Investigation of the lowest seam (directly above the Marangaroo Conglomerate) shows the quality of the coal to be equal to lithgow coal.

0 PITTMAN, E.F., 1907 - The geology of New South Wales. Dep. Min. N.S.W. Ann. Rep. 1907, 162-5. The members of the Permo-Carboniferous and Triassic systems are listed on page 164.

10, 14 PITTMAN, E.F., 1907 - Further report re reserve for the State coal bearing lands in the neighbourhood of the Railway Line. Dep. Min. N.S.W. Ann. Rep. 1906, 166.

10, 16 PITTMAN, E.F., 1909 - Report on Yerranderie silver field. Dep. Min. N.S.W. Ann. Rep. 1909, 176-7. Work done on the field during the decade shows that the lodes persist in depth and contain deposits of high-grade silver-lead ore. The construction of a light railway is recommended.

1, 10 PITTMAN, E.F., 1912 - The coal resources of New South Wales. Dep. Min. N.S.W. Bull. 6. Deals with the general geology of the Permian coal basin, the by-products, and coal analyses from various seams.

10, 16 PITTMAN, E.F., 1914 - Report on Yerranderie silver field. Dep. Min. N.S.W. Ann. Rep. 1914, 187-9. Review of the progress of mining operations and production presented as a case for the construction of a light railway from Picton to Yerranderie.

7, 13 PLAYFORD, G., and HELBY, R., 1968 - Spores from a Carboniferous section in the Hunter Valley, New South Wales. J. geol. Soc. Aust., 15(1), 103-19. The species were selected as being the most characteristic and distinctive forms found in the Italia Road formation at its well-exposed type section in the Hunter Valley, east-central N.S.W.

10 PLEWS, H.T., 1858 -On the coal fields of New South Wales. N. Eng. Min. Inst. J., 6, 22.

1, 15 POGSON, D.J , and ROSE, D.M., 1969 - Preliminary investigations of the stratigraphy of the Triassic Narrabeen Group in the north-western section of the Sydney Basin, New South Wales. Geol. Surv. N.S.W. Rec. 11(2), 61-78. There are three lithofacies, a basal coarse lithic conglomerate succeeded by a lithic sandstone, which is overlain by a quartz sandstone-shale facies. A progressive upwards change from lithic to quartz detritus goes with a decrease in pebble size. Sedimentation was firstly from a lithic source in the northeast and later from a quartz detritus area in the west.

9 POLACH, M.A., STIPP, J.J., GOLSON, J., and LOVERING, J.F., 1968 - A.N.U radiocarbon date lists (II) Radiocarbon, 10, 179-99.

10 POWER SURVEY SECTIONAL COMMITTEE, 1955 - The coal resources of the Commonwealth of Australia. Stand. Ass. Aust.

4, 16, 18 RAAM, A., 1968 - Petrology and diagenesis of Broughton Sandstone (Permian), Kiama district, N.S.W. J. sediment. Petrol., 38, 319-31. The sequence contains authigenic minerals of the laumontite zone of the zeolite facies. The sediments were derived from a volcanic provenance and deposited in a possibly near-shore environment. Physicochemical parameters of the early diagenetic environment significantly influenced the nature of the authigenic minerals - the zeolitic reactions certainly appear to have occurred under much lower temperatures-pressure conditions than has previously been thought possible.

2, 4, 7, 16 RAAM, A., 1969 - Gerringong Volcanics. J. geol. Soc. Aust., 16(1), 366-8. Describes the component latites and sandstones, the mode of emplacement of the latites, their age, and palaeomagnetism. Gives a list of fossils in the sandstones.

7 RADE, J., 1963 - Permian microspores and tracheids from the Narrabri-Curlewis area, New South Wales. Proc. Linn. Soc. N S.W., 88(2), 130-6.

1, 9, 14 RAE, J.L.C., PITTMAN, E.F., and DAVID, T.W.E., 1899 - Records of rock temperatures at Sydney Harbour Colliery Birthday Shaft, Balmain, Sydney, New South Wales. J. Roy. Soc. N.S.W., 33, 207. A detailed section

of the Birthday Shaft (Sydney Harbour Colliery) to 1 500 ft. The average temperature gradient was 1°F for every 90.7 feet.

2, 13 RAGGATT, H.G., 1927 - Basalt and volcanic breccia near Woy Woy. Dep Min. N.S.W Ann. Rep. 1926, 102. Two occurrences are described: a possible volcanic neck in Patonga Parish, Northumberland, and a volcanic neck in Patonga Parish, Cumberland.

6, 10, 13 RAGGATT, H.G., 1928 - Clay suitable for brick making from the Upper Coal Measures at Carrington, Near Jerrys Plains. Dep. Min. N.S.W. Ann. Rep. 1928, 132-4. The results of tests on 4 samples are given.

0, 10, 13 RAGGATT, H.G., 1929 - Singleton - Muswellbrook Coalfield. Dep. Min. N.S.W. Ann. Rep. 1929, 100-4. A comprehensive account particularly of the Upper Marine Series, over a large area. The effect of sills on the Greta Coal, and oil and gas prospects, are discussed. There is a map, sections and cross-sections.

4, 13 RAGGATT, H.G., 1929 - Calcareous concretions in the Upper Marine Series, Singleton district, New South Wales. Proc. Linn. Soc. N.S.W., 54(3), 149-61. Contemporaneous with the enclosing rock in a relatively warm, shallow sea subject at times to the influx of cold water.

3, 13 RAGGATT, H.G., 1929 - Note on the structural and tectonic geology of the Hunter Valley between Greta and Muswellbrook, with special reference to the age of the diastrophism. Proc. Linn. Soc. N S.W., 54(4), 273-82. It is shown that although some folding immediately post-dated Upper Coal Measure deposition ('late-Palaeozoic deformation'), folding also took place after the Triassic, and since ? Tertiary igneous intrusion are thought to have been incorporated with the folding in some places, Tertiary orogenic movements are postulated.

6, 11, 13 RAGGATT, H.G., 1930 - Some sand and gravel deposits of the Hunter River and its tributaries. Dep. Min. N.S.W. Ann. Rep. 1930, 82-3. Three classes of deposits are given from localities at Oakhampton, Luskintyre, Dalwood, Dunolly, Singleton, Abbey Green, Glennies Creek, Bowmans Creek, and Belford.

1, 10, 13 RAGGATT, H.G., 1930 - Liddell Coal Seam. Dep. Min. N.S.W. Ann. Rep. 1930, 82. The seam is in the Upper Coal Measures, 650 to 700 feet above the top of the Crinoidal Shales. It is probably the best so far disclosed in the Upper Coal Measures of the Muswellbrook - Singleton area.

1, 3, 13 RAGGATT, H.G., 1930 - Thrust faults and compression joints in the Muree beds, near Grasstree, New South Wales. J. Roy. Soc. N.S.W., 64, 148-70. The Muree Beds consist of competent beds between thick series of incompetent beds east of the Muswellbrook Dome. Thrust faults and compression joints formed in the competent beds and are described according to the strain-ellipsoid method of analysis.

0, 13 RAGGATT, H.G., 1932 - Notes on the geology of the Quinindi-Werris Creek district. Dep. Min. N.S.W. Ann. Rep. 1932, 90-1. Comments are made on the Upper Coal Measures, the Werrie Basalts, the Greta Coal Measures, the Kuttung Series and the geological structure.

4 RAGGATT, H.G., 1937 - On the occurrence of glendonites in New South Wales, with notes on their mode of origin. J. Roy. Soc. N.S W., 71, 336-49. Localities of glendonites are described and the ideas of authors concerning their formation reviewed. A theory is outlined which 'requires a rather nice adjustment between the degree of concentration of the necesary salts and temperature'.

8, 11 RAGGATT, H.G., 1938 - Note on the silicified terrace sands ('grey billy') in the Hunter Valley (N.S.W.). J. Roy. Soc. N.S.W., 72, 318-24. 'Grey billy' may represent remnants of terrace river sands cemented by now denuded Tertiary basalts. Examples occur at Abbey Green (130' above Hunter River), Jerrys Plains (130'), and Denman Road (120'). The suggested history is -Oligocene: folding and intrusion of basic sills; Miocene: peneplanation; Mio-Pliocene: 2 000 feet uplift and valley formation; Pliocene: 'newer' basalt flows; post-Pliocene: 130 feet uplift of Hunter Valley.

10 RAGGATT, H.G., 1943 - Australia's mineral industry in the present war. J. Roy. Soc. N.S.W., 77. Balmain Colliery gas supply, 59.

1 RAGGATT, H.G., 1953 - A.N.Z.A.A.S. standing committee on stratigraphic nomenclature; first and second meetings. Aust. J Sci., 15(4), 122-5. A review is given of the stratigraphic code of 1950 (Aust. J. Sci., 12, 170-3). Examples of difficulties in application of stratigraphic terms are given; for example, Narrabeen Group and 'Upper Marine Series' are discussed.

10 RAGGATT, H.G., 1954 - Search for oil in Australia and New Guinea. J. Roy. Soc. N.S.W., 88 (symposium: Oil, Australia and the Future). S5-S21. There is a note on the Narrabeen redbeds on p. S10, and Permian palaeogeographic maps of the Sydney Basin on p. S18.

RAGGATT, H.G., 1969 - Triassic System - Narrabeen Group: macroflora and fauna. J. geol. Soc. Aust., 16(1), 405-7.

1, 4, 10, 14 RAGGATT, H.G., and CRESPIN, Irene, 1940 - Discussion of 'Possibilities of heavy mineral correlation of some Permian sedimentary rocks, New South Wales' by D. Carroll. Bull. Amer. Ass. Petrol. Geol., 24(9), 1682. Letter commenting on a paper by D. Carroll (24(4), 636-48) regarding the interpretation of a drill log from Kulnura.

10, 14 RAGGATT, H.G., and CRESPIN, Irene, 1941 - Geological notes on Natural Gas and Oil Corporation's bore at Balmain, City of Sydney, New South Wales. Aust. J. Sci., 4(3), 102. Discusses the depths at which coal seams occurred in the Balmain Shaft and gives a note on the occurrence of methane and ethane gas.

2, 10, 13 RAGGATT, H.G., and WHITWORTH, H.T., 1930 - The intrusive rocks of the Muswellbrook - Singleton district: I - Introduction. J. Roy. Soc. N.S.W., 64(1), 78-82. The igneous rocks may be classified into 3 groups: alkaline basic sills, plugs, and dykes and small sills. There is a geological map of the area.

2, 10, 13 RAGGATT, H.G., and WHITWORTH, H.T., 1932 - The intrusive igneous rocks of the Muswellbrook - Singleton district: II. The Savoy Sill. J. Roy. Soc. N.S.W., 66(2), 194-233. The Savoy sill differs from the Plashett, Carrington, and Fordwich alkaline basic sills in having a slightly higher acidic component. It is intruded concordantly into Greta Coal Measures at the southern end of the Muswellbrook dome and consists of analcite dolerite, syenite, and basalt. The age of intrusion is said to be late Tertiary.

3, 9, 16 RAO, V.B., and NARAIN, H., 1955 - Regional magnetic survey of the south Sydney Basin. J. Roy. Soc. N.S.W., 89(4), 194-211. Results of a combined ground magnetic and gravity survey over about 1 500 square miles of the southern part of the Sydney Basin. The magnetic anomalies are in general agreement with structure contours produced by Willan (1925), but magnetic and gravity profiles are not in agreement. Overall, the survey illustrates the trough-like nature of the basin in the southern area.

7 RATTE, F., 1884 - On Tribrachiocrinus corrugatus (F. Ratte) spec. nov. from the Carboniferous sandstone of New South Wales. Proc. Linn. Soc. N.S.W., 9, 1 158-64.

7 RATTE, F., 1886 - Second note on Tribrachiocrinus corrugatus, Ratte and on the place of the genus among Palaeocrinoidea. Proc. Linn. Soc. N.S.W. I(2), 1 069-77.

7 RATTE, F., 1886 - Note on two new fossil plants from the Wianamatta Shales. Proc. Linn. Soc. N.S.W., I(2), 1 078-83. A description of Jeanpaulia (?) palmata sp. nov. and Cycadopteris (?) scolopendrina.

7 RATTE, F., 1887 - Notes on some Australian fossils. Proc. Linn. Soc. N.S.W., 2, 137-8. Brief discussion of (I) Salisburia palmata, amend from Jeanpaulia or Baiera palmata, Ratte and (II) the muscular impression of the genus Notomya (Maeonia).

7 RATTE, F., 1887 - Additional evidence of fossil Salisburia. Proc. Linn. Soc. N.S.W., 2, 159. A discussion of the naming of several plants by de Saporta and Meer as Salisburia.

1, 10, 13 RATTIGAN, J.H., 1964 - Occurrence and stratigraphic position of Carboniferous coals in the Hunter Valley, New South Wales. Aust. J. Sci., 27(3), 82. Coal associated with Rhacopteris and Lepidodendron floras is developed in many seams over a stratigraphic interval exceeding 10 000 feet in the Carboniferous sequence of the Hunter Valley. The occurrence of coal in Garrett's seam and in the Wallaringa Formation is discussed. The coal and its relations to adjoining strata are best exposed near Balickera, underlying possibly the oldest Permian coal of Garrett's Seam, with which Gangamopteris is associated. The oldest coal occurs in the Wallaringa Formation.

4, 13 RATTIGAN, J.H., 1965 - A Carboniferous bentonite province in New South Wales. Proc. Aust. Inst. Min. Metall., 214, 113-23. The bentonites are altered aeolian ash-fall tuffs. Most are the Ca-montmorillonite type without the swelling characteristics of the Wyoming deposits. But their situation, thickness, and response to beneficiation through cation exchange may make them potentially economic deposits. They are best revealed in a 7 000 foot stratigraphic sequence near Balickera, in the Gilmore Volcanics of the Kuttung Series.

0, 13, 18 RATTIGAN, J.H., 1966 - The Balickera section of the Carboniferous Kuttung facies, New South Wales. J. Roy. Soc. N.S.W., 100, 75-84. The stratigraphic section includes zeolite facies sediments and volcanic rocks, carbonaceous strata, floral zones, volcanic and pyroclastic rocks of a basalt-andesite-rhyolite association. The section is regarded as critical in studies of world climate at a time when major climatic changes were taking place.

1, 3, 14 RATTIGAN, J.H , 1966 - Cyclic sedimentation in the Carboniferous continental Kuttung facies, New South Wales, Australia. J. Roy. Soc. N.S.W., 100 (3 & 4), 119-28. The thick sequence of continental rocks of Carboniferous age (Kuttung facies) of the Hunter Valley, N.S.W., includes fluvial and

glaciolacustrine sediments which display several types of cyclical lithology. Some cyclothems resemble those described from similar facies in the northern hemisphere, while others present features not previously described.

1, 13 RATTIGAN, J.H., 1967 - Phenomena about Burning Mountain, Wingen, New South Wales. Aust. J. Sci., 30(5), 183-4. The author discusses the geology of the Mt Wingen Ridge in relation to the natural coal fibreres beneath Mt Wingen.

3, 4 RATTIGAN, J.H., 1967 - Depositional, soft sediment and post-consolidation structures in a Paleaeozoic aqueo-glacial sequence. J. geol. Soc. Aust., 14(1), 5-18. The structures include glacially derived and current-oriented forms, and forms resulting from soft sediment deformation by slumping, loading, and auto-intrusion of sand. Polished surfaces, drag marks, and contorted zones are attributed to grounding of flow ice. Several deformational structures resemble common depositional forms.

4, 13 RATTIGAN, J.H., 1967 - Diamictites of the 'Gondwana' sequence in the Hunter Valley, N.S.W. Adv. Study Syd. Bas., 2nd Symp., Newcastle, 20-1. The author deals with the term 'diamictite' mentioning 'doubts on the glacigene origin of deposits once considered as tillites'. From studies of the Hunter diamictites, he concludes that they include direct glacial deposits, redistributed boulder clay, deposits of 'couronts Turbides de surface'. Marine deposits are distinguished by dominance of illite and high carbonate and sulphate content, whilst continental deposits have a chloritic matrix, low carbonate, and frequently zeolitic matrix. A sizings gap over the fine sand interval 1 mm to 4 mm is observed in most diamictites.

0, 13 RATTIGAN, J.H., 1969 - The Dalwood Group. J. geol. Soc. Aust., 16(1), 319-32.

0, 13 RATTIGAN, J.H., and McKENZIE, P.J., 1969 - Permian of the Hunter Valley, an introduction. J. geol. Soc. Aust., 16(1), 313-9.

1, 2, 3, 13 RATTIGAN, J.H., and McKENZIE, P.J., 1969 - History of sedimentation in the Sydney Basin: A - Hunter Valley. J. geol. Soc. Aust., 16(1), 426-34. A detailed description with several tables, and with reference to synchronous tectonics.

1, 10, 15 RAYNER, E.O., 1948 - Preliminary report on the Blackmans Flat area of the western Coalfield, N S.W with special reference to open-cut possibilities. Dep. Min. N.S.W. Ann. Rep. 1948, 89-91. There are two good geological maps and notes on the geology and structure.

1, 2, 10, 15 RAYNER, E.O., 1949 - The Ulan area, Western Coalfield. Dep. Min. N.S.W. Ann. Rep. 1949, 86-90. A volcanic neck of probable Tertiary age intrudes the Coal Measures. Triassic cliff-forming sandstones conformable on the Permian dip northeast. The Upper Coal Measures are deposited directly on granite and thought to be Carboniferous. The coal seam worked at Ulan may be correlated with the Lithgow seam. From Ulan eastwards to Wollar the Upper Coal Measures thicken, with more finer-grained beds. The regional dip is northeast at 2°, but immediately east of Wollar a north striking anticlinal axis is superimposed. Oil-shale occurs in the area.

1, 10, 15 RAYNER, E.O., 1950 - Coal bores and reserves, Ulan area, Western Coalfield. Dep. Min. N.S.W. Ann. Rep. 1950, 73-8. Supplementary to Rayner, 1949 report. The results of a diamond drilling programme show an 'impressive improvement in thickness and quality to the north-east or down-dip'. Logs of the 5 bores and tables of analyses are given.

1, 10, 15 RAYNER, E.O., 1951 - The Kirby's Hill - Ben Bullen area and the Rowsell's (Ivanhoe) area, Western Coalfield. Dep. Min. N.S.W Ann. Rep. 1951, 74-6. The Lithgow Seam ranges in thickness from 13 feet plus in the Kirby's Hill area to 3 feet in the northeast. Its quality is poor. The Irondale seam is 40 to 50 feet below the Lithgow Seam, and the trace of its horizon has been obtained by mapping the overlying thin but prominent 'Vertebraria Sandstone.' The Lower Marangaroo Conglomerate is strongly developed. The area is the most westerly occurrence of Coal Measures in the area. In the Ivanhoe Leases, the Lithgow Seam ranges in thickness from about 5 to 8 feet. The Lidsdale horizon (above the Upper Marangaroo) consists of carbonaceous shale and sandstone. The Irondale consists of a number of bands of good quality coal. There are 4 geological maps.

1, 10, 15 RAYNER, E.O., 1954 - Marangaroo Valley area, Western Coalfield. Dep. Min. N S.W. Ann. Rep. 1950, 78-81. The base of the Lithgow Seam is some 266 feet below the Dirty Seam. It lies between the Lower Marangaroo Sandstone and the Upper Marangaroo Sandstone and improves in status as it is followed northeast down-dip. There are sections and cross-sections and a geological map at end.

10, 15 RAYNER, E.O., 1955 - Rowsell's (Ivanhoe) area, Western Coalfield. Dep. Min. N.S.W. Ann. Rep. 1951, 75-6.

10 RAYNER, J.M., 1969 - Governmental activities in petroleum exploration. APEA J., 23-30.

1, 3, 16 READ, H.W , 1969 - Application of modern geological techniques in the Southern Coalfield, N.S.W. Aust. Inst. Min. Metall. Ann. Conf. Sec. E(3). Thicknesses of the Illawarra Coal Measures, Narrabeen Group, and Hawkesbury Sandstone are given at Macquarie Pass and Helensburgh. Structures are due chiefly to differential subsidence and compaction. There are many faults with displacements up to 300 ft and formed by intermittent movement. Dykes and sills are common and have caused cindering of the coal. Structure contours, sections and stratigraphical columns are given.

1, 4, 16 READ, H.W., and COOK, A.C., 1969 - Note on coals containing marcasite plant petrifications, Yarrunga Creek, Sydney Basin, New South Wales. J. Proc. Roy. Soc. N.S.W., 102, 197-9.

1 REID, J.H., 1932 - Correlation of the Queensland Permo-Carboniferous Basin. The Dilly Stage of the Lower Bowen. J. Roy. Soc. Qld, 43(11), 56-72.

1, 13 REINHOLD, J.J., 1969 - Revised stratigraphy of the Greta Coal Measures in the South Maitland Coalfield. In 'Decisions of the Standing Committee on coalfield geology of New South Wales'. Geol. Surv. N.S.W. 5.2/1-57.

1, 10, 13 RELPH, R.E , 1956 - Limestone deposits in the vicinity of Port Stephens. Dep. Min. N.S.W. tech. Rep. 4, 75-9.

1, 7, 13 REYNOLDS, M.A., 1956 - The identification of the boundary between coal measures and marine beds, Singleton-Muswellbrook, New South Wales. Bur. Miner. Resour. Aust. Rep. 28. Nine lithological units have been distinguished in the transition interval from the 'Upper Marine Series' (Mulbring Stage) to the Tomago Stage. Ammodiscus multicinctus, present in marine beds only, identifies the change.

9 RICHTER, C.F., 1935 - An instrumental magnitude scale. Bull. seism. Soc. Amer., 25, 1.

7, 14 RIEK, E.F., 1950 - A fossil mecopteran from the Triassic beds at Brookvale, N.S W. Rec. Aust. Mus., 22(3), 254-6. A wing remains of Choristopanorpa bifasciata sp. nov. have been found in a shale lens in Hawkesbury Sandstone at Brookvale, N.S.W

7 RIEK, E.F., 1953 - Fossil mecopteroid insects from the Upper Permian of New South Wales. Rec. Aust. Mus., 23(2), 55-87. This paper deals with the Mecoptera and all related orders of insects collected from the Upper Permian strata between Belmont and Warners Bay, N.S.W.

7, 14 RIEK, E.F., 1954 - Further Triassic insects from Brookvale, N.S.W. (orders Orthoptera, Saltatoria, Protorthoptera, Perlaria). Rec. Aust. Mus., 23(4), 161-8.

7, 14 RIEK, E.F., 1955 - A new Xiphosuran from the Triassic sediments at Brookvale, New South Wales. Rec. Aust. Mus., 23(5), 281-2. Amongst the fossils obtained from the shale beds at Brookvale is an almost complete specimen of Xiphosurau. The Brookvale sediments are generally considered to be freshwater origin. They contain insects as well as fish, Estheria and Leaia. As Xiphasura occurs in both freshwater and marine sediments this specimen throws no light on the probable nature of the sediments. The features of the Xiphosuran are discussed, the species being considered in a new genus for which a new family is erected.

7 RIEK, E.F., 1964 - Merostomoidea (Arthropoda, Trilobitomorpha) from the Australian Middle Triassic. Rec. Aust. Mus., 21(13), 327-32.

7 RIEK, E F., 1968 - Robinjohnia Tillyardi Martynova, a mecopteran from the Upper Permian of Belmont, N.S.W. Rec. Aust. Mus., 27, 299-302.

7 RIEK, E.F., 1968 - Undescribed fossil insects from the Upper Permian of Belmont, N.S.W. Rec. Aust. Mus., 27, 303-10.

7, 14 RIEK, E.F., 1968 - Re-examination of two arthropod species from the Triassic of Brookvale, New South Wales. Rec. Aust. Mus., 27(17), 313-21. The two fossil arthropod species, Austrolimulus fletcheri Riek and Synaustus brookvalensis Riek, are re-examined and reconstructions based on their apparent structure are presented for comparison with related species. A modified reconstruction of Euthycarcinus kessleri Handlirsch is also included for comparison with Synaustrus.

7, 13 RIEK, E.F., 1971 - The presumed heads of Homoptera (Insecta) in the Australian Upper Permian. Pal. 14(2), 211-21. Deals with specimens from the Belmont beds near Newcastle.

7, 16 RIGBY, J.F , 1961 - The discovery of Glossopteris fructifications in New South Wales. Aust. J. Sci., 23, 230. In a bed 18 feet below the Unanderra Seam, lowest named seam of the Permian Illawarra Coal Measures near Wollongong, two specimens of Scutum thomasii Plumstead, as well as some fragments of possible fructifications, have been found.

7 RIGBY, J.F., 1964 - Contributions on Palaeozoic floras Pt 1. Proc. Linn. Soc. N.S.W., 89(1), 152-4. 'A neotype for Glossopteris cordata Dana has been selected. Glossopteris feistmanteli nom. nov., is proposed to describe specimens of Glossopteris cordata Feistmantel non Dana described from India and South Africa'.

7 RIGBY, J.F., 1964 - Contributions on Palaeozoic floras Pt 2. An unusual fossil tree from Wollar, N.S.W. Proc. Linn. Soc. N.S.W., 89(1), 167-70. 'A small tree, in situ, of Permian age is described. Insufficient evidence is available to classify the tree, although there is some information regarding its habit (all growth of woody parts occurred in a vertical direction) and environment.'

7 RIGBY, J.F., 1966 - Some Lower Gondwana Articulates from New South Wales. Symposium on Floristics and Stratigraphy of Gondwanaland (issued by Birbal Sahni Inst. Palaeobot., Lucknow), 48-54. Further specimens of Stellotheca hobusta suggest it was a plant similar in habit to a small Calamites. Stems are of the Paracalamites type. Paracalamites is introduced to Lower Gondwana literature to cover all stems without distinctive foliage which were previously regarded as Phyllotheca or Schizoneura.

7 RIGBY, J.F., 1967 - On Gangamopteris walkomii sp. nov. Rec. Aust. Mus., 27(8), 175-82. Gangamopteris walkomii sp. nov. is erected to contain certain small Gangamopteris-like leaves from the Permian of N.S.W. These leaves grew spirally on long and short shoots, and were deciduous. Many specimens were found at Duncans Pass, Narrowneck, near Katoomba.

3, 8, 13 RITCHIE, A.S., 1951 - Evidence of a spasmodic retreat of the sea at Newcastle, N.S.W. Aust. J. Sci., 14(2), 57. Evidence of recent retreats of the sea along the N.S.W. coast has been summarized by Cotton (1946) and tentatively dated by Browne (1945). This paper presents further evidence of recent retreat at Dixon Park, Newcastle, but in this case it was apparently spasmodic.

1, 3, 18, 13 ROBERTS, J , 1961 - The geology of the Gresford district, New South Wales. J. Roy. Soc. N.S.W., 95, 77-91. The beds in the Gresford district are lower Carboniferous. Faunal lists are included and the ages of the faunas briefly considered. The palaeogeography of the area is discussed. Four new elements in the structure of the area have been recognized - the Lewinsbrook Syncline, Ararat Basin, Colstoun Basin, and Gresford Basin. The origin of these structures is considered in the light of present structural knowledge of the Hunter Valley Province.

7 ROBERTS, J., 1963 - A lower Carboniferous fauna from Lewinsbrook, New South Wales. J. Roy. Soc. N.S.W., 97(1), 1-29. A fauna unique in the Carboniferous of N.S.W. is described as of Upper Tournaisian age from the lowest known fossil horizons in the Bingleburra Formation, Burindi Group. Three new genera and 14 new species are described.

7, 18 ROBERTS J., 1964 - Lower Carboniferous faunas from Wiragulla and Dungog, New South Wales. J. Roy. Soc. N.S.W., 97, 193-215, pl. 1-5. The Middle to Upper Visean faunas are examined and their palaeoecology discussed. The stratigraphy is briefly considered, including the first description of the Wiragulla Beds which occur between the Ararat and Wallaringa Formations on the eastern limb of the Wallarobba Basin. Taxonomic descriptions are given.

7 ROBERTS, J., 1964 - Lower Carboniferous brachiopods from Greenhills, New South Wales. J. geol. Soc. Aust., 11(2), 173-94. The brachiopod fauna from Greenhills near Hilldale N.S.W. is listed and described. The age of the fauna is redetermined as Middle Visean.

1, 7 ROBERTS, J., 1965 - Lower Carboniferous zones and correlations based on faunas from the Gresford-Dungog district, New South Wales. J. geol. Soc. Aust., 12(1), 105-22. Three Lower Carboniferous marine faunal zones and one faunal assemblage are recognized. In ascending order they are the ?Thomasaria voiseyi Assemblage Zone, the Schellwienella cf. burlingtonensis Fauna, the Werriea australia Assemblage Zone and the Delepinea aspinosa Assemblage Zone.

7 ROBERTS, J., 1965 - A Lower Carboniferous fauna from Travellyn, New South Wales. Palaeontology, 8(1), 54-81.

1, 10, 16 ROBERTSON, J.R M., 1892 - The coalfields south of Sydney, New South Wales. Trans. Fed. Inst. Min. Engng, 4, 83-111 and J. Iron Steel Inst., 1893, 43, 227.

1, 10, 13 ROBERTSON, J.R.M , 1901 - The Newcastle Coalfield. Its winning and working. Trans. N Engl. Inst. Min. Engng, 2, 10.

1, 10, 13 ROBERTSON, J.R.M., 1922-23 - The Greta and South Maitland Coalfields, N.S.W. Trans. Inst. Min. Engrs, 64, 313.

2, 9 ROBERTSON, W.A., 1963 - The palaeomagnetism of some Mesozoic intrusives and tuffs from eastern Australia. J. geophys. Res., 68, 2 299-312.

2, 9, 16, 18 ROBERTSON, W.A., 1964 - Palaeomagnetism of the monzonite porphyry from Milton, N.S.W. Geofis. pura appl., 59(3), 93-9.

0, 13 ROBINSON, J.B., 1969 - Tomago Coal Measures. J. geol. Soc. Aust. 16(1), 334-8.

0, 13 ROBINSON, J.B., 1969 - Singleton Coal Measures. J. geol. Soc. Aust., 16(1), 350-4.

3, 12 ROD, E., 1966 - Clues to ancient Australian geosutures. Ecl. geol. helv., 1966, 59(2), 849-83. The present Australian Platform consists of at least two dozen crustal blocks welded into a solid assembly. There were great horizontal movements along geosutures (which are defined) in pre-Mesozoic time. A palaeotectonic map for the close of the Palaeozoic straightens out New Zealand and New Guinea and fits them to the eastern Australian platform. There is a perfect fit of ancient geosutures, facies provinces, peridotite belts, and old structural axes.

3, 12 ROD, E., 1968 - Continental drift with particular reference to Australia and New Zealand. APEA J., 8(11), 62-6. The author matches the Southland Syncline with the Sydney Basin, the New Zealand serpentine belt with the Great Serpentine Belt of N.S.W., the schist axis and basement high of New Zealand with the New England Massif, and the Alpine geosuture with the Rosedale geosuture of Victoria and the Diamantina fracture zone of the Great Australian Bight.

10 ROSE, D.M., 1962 - Oil exploration. Aust. N.Z. Ass. Adv. Sci., 36th Cong., Sydney. The exploration techniques used in the search for petroleum deposits in the Sydney Basin are discussed in relation to the work of the geologist, the geophysicist, and the drilling engineer. Emphasis is placed on the cost structure of exploration involving these techniques.

3, 13 ROSE, D.M., 1967 - Aspects of Permian-Mesozoic sedimentation in the Dubbo-Singleton-Tamworth 1:250,000 sheets. Adv. Study Syd. Bas., 2nd Symp., Newcastle, 26. The aspects are: '.....progressive movement of a mobile front....development of welts and furrows in time and place . ..a northeast direction of movement in its final stages. ..Permian-Mesozoic time represents a transition between mobility and final stability of the region.'

1, 4, 8, 13 ROSE, G., 1958 - The geology of the Triassic rocks in the southern section of the Hunter River catchment. Dep. Min. N.S.W. tech. Rep. 6, 97-8. The obscure Hawkesbury/Narrabeen boundary was mapped on the basis of 'microscopic study of sandstones and conglomerates'. Results agree substantially with those of McElroy (1958), who used heavy mineral assemblages to distinguish the two units at (amongst other places) three localities in the area studied by Rose.

1, 10, 15 ROSE, G., 1958 - Geological survey of limestone deposits in the Colong area. Dep. Min. N.S.W. tech. Rep. 6, 81-3.

4, 10, 16 ROSE, G., 1960 - The mineral industry of New South Wales - Gemstones. Geol. Surv. N S.W. Miner. Ind., 18, 33. A note on the Mittagong diamond field, where a few diamonds were recovered from a Tertiary drift overlying a pipe of volcanic breccia.

6, 10, 14 ROSE, G., 1962 - Extractive industries, Gosford Shire. Geol. Surv. N.S W. Rep. 10.

1, 8, 14 ROSE, G., 1965 - Triassic rocks of the Sydney district. J. Aust. nat. Hist., 15(1), 22-8. A broad outline of the geology with photographs showing how the various units fit into the geomorphology.

10 RUDD, E.A., 1961 (et. seq.) - Petroleum developments in the south-west Pacific region. Bull. Amer. Ass. Petrol. Geol., 45. Rudd has written brief yearly summaries of activities from 1960-1969.

10 RUDD, E.A., 1967 - A review of petroleum exploration in Australia. Proc. World Petrol. Congr., 7, 171-9.

7 RUNNEGAR, B., 1965 - The bivalves Megadesmus Sowerby and Astartila Dana from the Permian of eastern Australia. J. geol. Soc. Aust., 12, 227. Megadesmus Sowerby 1838 and Astartila Dana 1847 are two of several closely related bivalve genera of the Australian Permian. The paper is a revision of the Qld and N.S.W. species of Megadesmus and Astartila.

7 RUNNEGAR, B., 1967 - Preliminary faunal zonation of the eastern Australian Permian. Qld Govt Min. J., 68(794), 552-5.

7 RUNNEGAR, B , 1967 - Desmodont bivalves from the Permian of eastern Australia. Bur. Miner. Resour. Aust. Bull. 96.

7 RUNNEGAR, B., 1968 - Preserved ligaments in Australian Permian bivalves. Palaeontology, 11(1), 94-103.

1, 7 RUNNEGAR, B., 1968 - The Carboniferous-Permian boundary in eastern Australia: macrofossil evidence. J. geol. Soc. Aust., Specialist Symposium on Permian of Australia. The lower limit of the Eurdesma fauna and the upper limit of the Rhacopteris fauna overlap in at least 2 sequences in eastern Australia.

1, 7 RUNNEGAR, B., 1969 - The Permian faunal succession in eastern Australia. Geol. Soc. Aust. spec. Publ., 1969, 2, 73-98. Five distinct marine faunas may be recognized. The oldest (Allandale) is restricted to the Sydney Basin, the Yarrol Basin and Tasmania, and overlaps the

last of the Rhacopteris flora. Next come Faunas II and IV (Dickins) in the Sydney Basin and Tasmania and II, III and IV in the Bowen Basin. The Sydney Basin has the Ulladulla Fauna (a mixture of II and IV) where Fauna III might occur. The stratigraphical significance of Fauna III is doubtful. There are several tables of correlation and comparison. The faunal succession is described for the northeastern Bowen Basin, the western and southwestern Bowen Basin, the Hunter Valley, the South Coast of N.S.W. and Tasmania.

1, 13 RUNNEGAR, B., 1969 - Permian sedimentation in the North Sydney - south Bowen Basins. Adv. Study Syd. Bas., 4th Symp., Newcastle. Permian sediments are continuous between the two basins and were influenced by the Hunter-Mooki-Goondiwindi Faults. There is a disconformity between early Permian coal measures and late Permian sandstones, related to a diastrophism which folded early Permian and older sediments east of the faults.

1, 7, 16 RUNNEGAR, B., 1969 - Permian fossils from the southern extremity of the Sydney Basin. In 'Campbell, K.S.W., ed. - Stratigraphy and Palaeontology'. Canberra, ANU Press, 276-98. Fossils are described from the Conjola Formation.

9 RUSSEL, M.C., 1885 - Local variations and vibrations of the earth's surface. J. Roy. Soc. N.S.W., 19, 51.

10 RUSSELL, W.L., 1960 - PRINCIPLES OF PETROLEUM GEOLOGY. 2nd Edition. N.Y., McGraw Hill. Reference is made (p. 235) to carbon ratios in the Sydney Basin. In the middle and upper coals, ratios are 60 to 65 percent, while in the Greta coals which lie 7 000 feet lower in the section the ratios are 50 to 55 percent (after Wade, 1926). The upper coals are bituminous, the lower cannels. The prospects for oil production become less promising as the carbon ratios of near-surface coals rise over 60-65% Gas production may be found in areas with carbon ratios up to 90%, but where the carbon ratios are over 70% much of the production of both gas and water comes from fractures. Where the carbon ratios of coals increase rapidly with depth, the prospects for oil production at depths greater than 5 000 feet are less promising than where they decrease very slowly with depth. Where the average porosities of nearly pure quartz sandstone are less than 10%, oil prospects are less promising than where they are greater.

3, 16 SACH, A J , 1892 - On a sample of cone-in-cone structure found at Picton, N.S.W. Geol. Mag., 9, 505-7.

9 SASS, J.H., 1964 - Heat flow values for eastern Australia. J. geophys. Res., 60, 3 889-93.

1, 13 SCHUCHERT, C., 1928 - Review of late Palaeozoic formations and faunas with special reference to the ice-age of mid-Permian times. Bull. geol. Soc. Amer., 39, 862-75. Part VII. Permian and Carboniferous of N.S W. There is a complete discussion of the Permian and Carboniferous beds of the Hunter River district.

1, 18 SCHUCHERT, C., 1932 - The Australian late Palaeozoic glaciations. Amer. J. Sci., 23, 540. The Kuttung stratigraphy confirms the existence of a glacial time preceding that associated with the Glossopteris flora. The younger glacial materials of Australia, if they are actually indicative of ice-ages in the later Permian, are apparently peculiar to that continent, and remain unsolved problems in the climatology of Permian times.

0, 13 SCOTT, Beryl, 1947 - Geology of the Stanhope district, New South Wales. J. Roy. Soc. N.S.W., 81, 221-47. Kuttung and Permian rocks were folded into a basin at the close of the Palaeozoic. The Kuttung consists of a great thickness of volcanic and glacials, with both glacial and volcanic conditions persisting throughout. The Permian near Cranky Corner is unconformable on the Kuttung, but to the south and west of the area has been brought against the Carboniferous by the Hunter Overthrust.

SCOTT, Beryl - see also NASHAR, Beryl.

5, 14 SHEIL, G., 1942 - Investigation of Botany sand beds - emergency water supply. Sydney, Premier's Dep.

6, 16 SHELLSHEAR, W., 1890 - On the treatment of slips on the Illawarra Railway at Stanwell Park. J. Roy. Soc. N.S.W., 24, 58.

8 SHEPARD, F.P , 1961 - Sea level rise during the past 20,000 years. Z. Geomorph., Supp., 3, 30-5.

7, 16 SHERRARD, K.M., 1949 - Graptolites from Talong and the Shoalhaven Gorge, New South Wales. Proc. Linn. Soc. N.S.W., 74, 62-82. Upper Ordovician graptolites from Tallong and the Shoalhaven Gorge are described and figured, one of them a new species. Corynoides calicularis, characteristic of North European and North American graptolite bearing beds, is recorded in Australia for the first time.

7, 18 SHERWIN, L., 1969 - Amphibian footprints as an indication of the depth of the deposition of the Hawkesbury Sandstone. Adv. Study Syd. Bas., 4th Symp., Newcastle. The footprints were formed by Stereospondyl

amphibians crawling diagonally upwards in cross-bedded units deposited during floods or periods of high water.

10, 16 SHIBAOKA, M., 1971 - The influence of geological factors on the properties of coals in the Southern Coalfield, New South Wales. Aust. Ass. Adv. Sci., Brisbane, Sec. 3, 89.

10 SHIBAOKA, M , and SWAINE, D.J., 1969 - Correlations in the Illawarra and Newcastle coal measures using inorganic constituents. Adv. Study Syd. Bas., 4th Symp., Newcastle. The study of certain trace elements suggests the correlations Bulli = Wallarah; Balgownie = Great Northern; Wongawilli = Fassifern; or Bulli = Great Northern and Balgownie = Fassifern.

12 SHIRLEY, J., 1965 - An investigation of the sediments on the continental shelf of New South Wales, Australia. J. geol. Soc. Aust., 11, 331. Dredging on the continental shelf of N.S.W. between Crowdy Head and Batemans Bay has shown that three belts of sediment can be distinguished: (1) the near-shore coarse sediments, (2) a belt of fine terrigenous sediments, and (3) an outer belt of coarse calcareous sediment which covers most of a wide flat plain existing from 70 fathoms out to the continental shelf break at 85-100 fathoms. This calcareous material is derived from shells, mostly mulluscan, living at present time at these depths. Suggestions are offered on the causes of the topography and distribution of the sediments.

10 SIMMONDS, R.L., 1878 - The coal resources of our Colonies. No. 22, New South Wales and Victoria. Min. J., 45, 192.

11, 14 SIMONETT, D.S., 1950 - Sand dunes near Castlereagh, New South Wales. Aust. Geogr., 5(8), 3.

0 SINGLETON, F.A., 1941 - The Tertiary geology of Australia. Proc. Roy. Soc. Vic., 53(2), 1.

7 SKWARKO, S.K., 1967 - Bibliography of the Mesozoic palaeontology of Australia and eastern New Guinea. Bur. Miner. Resour. Aust. Bull. 108, 237-79.

1 SLEE, W H.J , 1893 - Superintendent of diamond drills report. Dep. Min. N.S.W. Ann. Rep. 1893, 69-79. Report on Cremorne bore No. 2. Sections at Bulli, Cremorne and Yalaba.

4, 14 SMITH, H.G., 1891 - On the occurrence of barytes in the Hawkesbury Sandstone, near Sydney. Proc. Linn. Soc. N.S.W., 2nd ser., 6, 131-2. 'In a quarry in the borough of Marrickville, I recently found barytes in very perfect and pure crystals. A description of the crystals and the results of an analysis follows.'

4, 10 SMITH, H G., 1891 - On kaolinite from Hawkesbury Sandstone. J. Roy. Soc. N.S.W., 25, 171. Mineralogical descriptions of several good specimens of a mineral assumed to be kaolinite.

10, 14 SMITH, H.G., 1892 - Preliminary note on limestone occurring near Sydney. J. Roy. Soc. N.S.W., 26, 302. Argillaceous limestone is described from Duck Creek, Auburn, and from Homebush.

4, 10, 14 SMITH, H.G., 1894 - On almandine garnets from the Hawkesbury Sandstone at Sydney. J. Roy. Soc. N.S.W., 28, 47-50. Small fragmentary garnets were found in a thin conglomerate bed intercalated with sandstones at a Pyrmont quarry. Other pebbles include quartz, jasper, and mica. Chemical analysis gave magnesia-rich almandine. These garnets may have been derived from the decomposition of granite; crystal faces were detected in only a few cases.

18 SMITH, T.H., and IREDALE, T , 1924 - Evidence of a negative movement of the strand line of 400 feet in New South Wales. J. Roy. Soc. N.S.W., 58, 157-68. The evidence is both geological and biological and it is concluded that an old shoreline exists along the 70 fathom line over a length of 400 feet. The negative movement took place not earlier than Pleistocene and probably in Recent time. The area under consideration is between Montague Island and Broken Bay.

7 SMITH-WOODWARD, A., 1902 - On Atherstonia australis and Ctenolates avus, two new species of fossil fishes from N.S.W. Geol. Surv. N S.W. Rec. 7, 88-90.

7, 14 SMITH-WOODWARD, A., 1908 - The fossil fishes of the Hawkesbury Series at St Peters. Geol. Surv. N.S W. palaeont. Mem., 10.

1, 10 SMYTH, M., 1966 - Coal petrology applied to the correlation of some New South Wales Permian coals. Proc. Aust. Inst. Min. Metall., 221, 11-7. Detailed petrographic analyses of coal seams from the Newcastle, Illawarra, and Lithgow Coal Measures yielded characteristic standard profiles for each seam. Two broad types of profile were found; one in which vitrite-poor and vitrite-rich layers alternate, and another in which there is a steady decrease in vitrite from the base to the top of the seam. From comparison of the petrographic profiles it was concluded that the Great Northern Seam in the Northern Coalfield is a possible equivalent to the Bulli in the Southern, and the Fassifern to the Balgownie.

10, 13 SMYTH, M., 1967 - The petrography of some New South Wales Permian coals from the Tomago Coal Measures. Proc. Aust. Inst. Min. Metall., 225, 1-9. The Permian coal seams from the Tomago Coal Measures in the Northern Coalfield, N.S.W. were analysed petrographically and reflectance measurements made for each. Standard seam profiles were drawn up and from these an idealized Tomago seam sequence was compiled. The vitrite contents of 11/13 seams were medium to high. The mineral contents were relatively low. Petrographic correlation of coal piles was possible between 2 or more profiles of the same seam. The Tomago coals may be of pseudo-allochthonous origin.

10, 18 SPRIGG, R.C., 1966 - Palaeogeography of the Australian Permian in relation to oil-search. APEA J., 1966, 17-29. The geological history and tectonic development of Gondwanaland. The high palaeolatitude of Australia in the Permian is a broadly favourable factor in the formation of hydrocarbons, as high latitudes today have an abundance of marine life.

17 SPRIGG, R.C., 1967 - A short geological history of Australia. APEA J., 7(11), 59-81.

12 STANDARD, J.C., 1961 - Submarine geology of the Tasman Sea. Bull. geol. Soc. Amer., 72, 1 777 - 88. Three guyots are described. The continental slope of southeastern Australia marks the maximum eastward development of the Australian continent. Lord Howe Rise is orogenic in origin and probably of early Palaeozoic age. The Tasman Basin is a stable area underlain by permanent ocean-type crust which may have acted as a nucleus for the eastward growth of the island areas which lie between the Tasman Basin and the South Pacific Basin.

4 STANDARD, J.C., 1961 - A new study of the Hawkesbury Sandstone: preliminary findings. J. Roy. Soc. N.S.W., 95(3 & 4), 145-6. The Hawkesbury Sandstone is a uniform formation and shows little change in appearance or composition throughout its entire area of deposition. Six criteria are given for distinguishing the Narrabeen Group from the base of the Hawkesbury. 4 000 current-direction readings indicate that currents flowed towards the northeast.

4, 18 STANDARD, J.C., 1962 - Hawkesbury Sandstone. Aust. N.Z. Ass. Adv. Sci., 36th Congr., Sydney. Detailed measurements of the cross-bedding of the Hawkesbury Sandstone indicate that it was not laid down in a basin. Much of the area mapped as Hawkesbury Sandstone, especially in the Blue Mountains area, is in reality Narrabeen Group. The thickness of some 700 feet of Hawkesbury Sandstone along the coast near Sydney, the uniform direction of deposition, and the uniform composition of the sandstone indicate a possible marine lagoonal environment.

0 STANDARD, J.C., 1969 - Triassic System - Hawkesbury Sandstone. J. geol. Soc. Aust., 16(1), 407-15. The rocks are described under the headings: distribution, thickness, stratigraphy, petrography, petrology, sedimentation and structures.

10 STANDARDS ASSOCIATION OF AUSTRALIA, 1955 - A report on the coal resources of the Commonwealth of Australia. Power Survey Rep. 503. Prepared by the Coal and Lignite Panels of the Power Survey Sectional Comm. Publ. by Standards Ass. Aust., Science House, Sydney.

1, 14 STANTON, R.L., 1956 - Palaeozoic rocks of the Wisemans Creek - Burraga area, N.S.W. J. Roy. Soc. N.S.W., 89, 131-45.

7 STEPHENS, W.J., 1878 - Presidential address. Proc. Linn. Soc. N.S.W., 3, 431-4. Mention made of the fossil species of the Carboniferous at Port Stephens, the N.S.W. Coalfields, and the Hawkesbury and Wianamatta rocks.

1, 8, 15 STEPHENS, W.J., 1883 - Notes on the geology of the Western Coalfield, Part I: Capertee. Proc. Linn. Soc. N.S.W., 1st ser., 7, 548-55. A discussion of the gorges of the Wollondilly, Warragamba, Cox, Colo, Wolgan, Grose, and Nepean Rivers in the Blue Mountains. Three new formations are named, the Lower Capertee Shales, Capertee Grits, Upper Capertee Shales, with mention of the Wallerawang Coal Measures, and the relative position of the Marangaroo Beds and the Hawkesbury Sandstone.

1, 7, 15 STEPHENS, W.J., 1883 - Notes on the geology of the Western Coalfield, Capertee, Part II. Proc. Linn. Soc. N.S.W., 7, 598-606. 'About 75 feet below the base of the Upper Coal Measure occurs a bed of ferruginous conglomerate of the Upper Marine Series, containing an abundance of Spirifera vespertilo, Producta, Euomphalus, Pecten, Conularia etc. These beds appear to have a slight dip to the northeast, and to be conformable to the overlying Glossopteris beds.' Discussion concerns the marine origin of these Marangaroo beds.

7, 14 STEPHENS, W.J., 1887 - Note on a labyrinthodont fossil from Cockatoo Island, Port Jackson. Proc. Linn. Soc. N.S.W., 2nd ser., 1, 931-40. This involves a discussion of the occurrence of similar fossils in other parts of the world, notably India. 'The specimen (was) a thoracic or throat-plate of Mastodonsaurus.'

7 STEPHENS, W.J., 1887 - On some additional labyrinthodont fossils from the Hawkesbury Sandstone of New South Wales. Proc. Linn. Soc. N.S.W., 2nd ser., 2, 1 175-92. This is a detailed account of Platyceps wilkinsonii and other fossils from Gosford and Bowral, N.S.W.

7, 18 STEPHENS, W.J., 1887 - On the Biloela labyrinthodont. Proc. Linn. Soc. N.S.W., 2nd ser., 1, 1 113-21. In the former (1887 p. 931) paper some general statements were made as to the date of the Hawkesbury rocks, and the atmosphere or climatic conditions under which they were deposited. As a preliminary to a more extended examination into the evidence of their homotaxis with Indian, South African, North Asiatic, European and American rocks, it may be well to recapitulate what we know ourselves of the sequence in New South Wales.' Also some discussion on the evidences of ice in Hawkesbury Sandstones.

1, 10 STEPHENS, W.J , 1889 - An attempt to synchronise the Australian, South African and Indian Coal Measures. Part I: The Australasian and New Zealand Formations. Proc. Linn. Soc. N.S.W., 4, 331-8, 348.

2, 4, 16 STEVENS, R., 1954 - Quartzite xenoliths in the Tertiary magmas of the Southern Highlands, N.S.W. J. Roy. Soc. N.S.W., 88, 89-96. The specimens come from the Mittagong, Bowral, and Moss Vale regions. Tertiary olivine-titanaugite basalt has invaded the Hawkesbury Sandstone and xenoliths, indistinguishable in the hand specimen from olivines, have reacted with it.

2, 4, 16 STEVENS, R., 1956 - Observations on Mt Gibraltar, N.S.W. J. Roy. Soc. N.S.W., 90(2), 101-9. This is a description of the medium-grained microsyenite and narrow pegmatite veins forming Mt Gibraltar, and some discussion on the amount of cover of Sydney Basin rocks at the time of intrusion.

10, 16 STONIER, G.A., 1889 - Report on a new gold discovery, County St Vincent. Dep. Min. N.S.W Ann. Rep. 233.

2, 13 STONIER, G.A., 1892-93 - On the occurrence of basaltic glass (tachylite) at Bulladelah. Geol. Surv. N.S.W. Rec. 55, 234.

0, 13 STORY, R , GALLOWAY, R.W., van de GRAAF, R.H.M., and TWEEDIE, A.D., 1963 - General report on the lands of the Hunter Valley. Sci. ind. Res. Org. Melb. Land Res. Ser., 8. Contains papers on the land systems, climate, geology, geomorphology, soils, and vegetation of the Hunter River catchment area.

10 STREVENS, J , 1962 - Some aspects of the New South Wales search. APEA J., 1962, 45-8. Analyses of the hydrocarbon 'slicks' which come ashore on the N S.W. central coast. Oil from the Terrigal bore corresponds to the slicks. The source rocks are thought to be marine beds underlying the Upper Coal Measures and the reservoir rocks to be chiefly in the Lower and Middle Narrabeen Group.

10 STREVENS, J., 1963 - The significance of the Terrigal No. 1 bore, N.S.W. Aust. Oil Gas J., 9(6), 54-7. The author outlines the course of events at this well, with a map showing structures. A brown oil was encountered in a top sandstone of the middle Narrabeen Group at 315 feet and persisted to 2 130 feet in the Newcastle Coal Measures. It is said to become lighter at depth.

7 STRUSZ, D.L., 1961 - Palaeozoic coals from N.S.W. Palaeontology, 334-61.

8 STRZELECKI, P.E., de, 1845 - PHYSICAL DESCRIPTION OF NEW SOUTH WALES AND VAN DIEMANS LAND. London, Longman, Brown, Green & Longman.

10 STRZELECKI, P.E , de, 1845 - On certain varieties of Australian coal. Tas. J. nat. Sci., 1, 190.

1 STUNTZ, J., 1962 - The Narrabeen Group - stratigraphical notes. Aust. N.Z. Ass. Adv. Sci., 36th Congress, Sydney. Nature, distribution, and thickness. Previous subdivisions are listed and correlations attempted. Stratigraphical cross-sections and a map showing isopach data and the known distribution of the group are presented.

0, 10 STUNTZ, J., 1962 - The Sydney Basin. Aust. Oil Gas J., 9(2), 18-20. Outlines the geology and the search for oil to 1962.

1, 10 STUNTZ, J., 1968 - Stratigraphic correlations, 'Upper Coal Measures', Sydney Basin, N S.W. Adv. Study Syd. Bas., 3rd Symp., Newcastle. The author presents an isopach map of the Permian 'Upper Coal Measures' and evidence to support a basin-wide subdivision of the Upper Coal Measures into units equivalent to the Newcastle and Tomago Coal Measures.

1, 13, 18 STUNTZ, J., 1969 - The depositional and structural boundaries of the Sydney Basin. Adv. Study Syd. Bas., 4th Symp., Newcastle. Seismic and borehole data and mapping clearly denote shelf conditions near the southern and western boundaries, followed basinwards by hingeline and deep-basin conditions. In the northwest, aeromagnetic and seismic work suggest the boundary with the Oxley Basin is not the Goulburn River but a basement ridge from Bogee in the Capertee Valley to Muswellbrook. In the north, the Allandale and Lochinvar Formations may have been deposited in the Carboniferous basin, with the Permo-Triassic basin beginning with the Rutherford Formation. In the east the coastal strip coincides with the axis of a major syncline; a major structural high appears to pass north-east close to Nowra and submarine Mt Woolnough. Whatever its nature, this high barred the basin from the open sea.

2, 4, 16 SUSSMILCH, C.A., 1905 -On the occurrence of inclusions of basic plutonic rocks in a dyke near Kiama. J. Roy. Soc. N.S.W., 39, 65-71. Basic and ultrabasic xenoliths are described from a monchiquite dyke in Bumbo Quarry.

SUSSMILCH, C.A., 1911 - AN INTRODUCTION TO THE GEOLOGY OF NEW SOUTH WALES. Sydney, Angus and Robertson.

0, 15 SUSSMILCH, C.A., 1912 - Note on the geology of Jenolan. Aust. Ass. Adv. Sci. Rep. 13, 120.

6, 8, 14 SUSSMILCH, C.A., 1913 - Note on some recent marine erosion at Bondi. J. Roy. Soc. N.S.W., 46, 155-8.

SUSSMILCH, C.A., 1914 - AN INTRODUCTION TO THE GEOLOGY OF NEW SOUTH WALES. 2nd Edition. Sydney, Angus and Robertson.

0, 13, SUSSMILCH, C.A., 1921 - The geology of the Gloucester district. J. Roy. Soc. N.S.W., 55, 234-62. Devonian, Carboniferous, and Permian rocks are described, with details of the Carboniferous strata, and analyses (by W.G. Stone) of the igneous rocks.

2 SUSSMILCH, C.A., 1923 - The history of vulcanism in New South Wales. Pres. Add. J. Roy. Soc. N.S.W., 57, 12-49.

0, 15 SUSSMILCH, C.A., 1923 - Geological notes on the trip to Jenolan Caves Guide book to excursion, Blue Mountains and Lithgow. Pan-Pacif. Sci. Congr., 1923.

4, 10 SUSSMILCH, C.A., 1925 - On the occurrence of water-worn pebbles of coal measures of Red Head, New South Wales. J. Roy. Soc. N.S.W., 54, 383-6. At Red Head, 6 miles south of Newcastle, is a conglomerate in the Upper Coal Measures containing waterworn pebbles of coal. Their composition suggests they were derived from the Greta Coal Measures, and if so it seems that the Greta was folded and denuded before the Upper Coal Measures were laid down.

1 SUSSMILCH, C.A., 1926 - Carboniferous and Permo-Carboniferous rocks of New South Wales. Aust. Ass. Adv. Sci. Rep. 18, 52-3.

10, 13 SUSSMILCH, C.A., 1929 - Coal resources of the Hunter River district. J. Instn Engrs Aust., 1, 144-5.

1 SUSSMILCH, C.A., 1931 - The Carboniferous and Permian Series of New South Wales. Aust. Assoc. Adv. Sci., 20, 68-72.

2, 3 SUSSMILCH, C.A., 1932 - Relation of the Tertiary alkaline rocks of eastern Australia to late Tertiary tectonic lines. J. Roy. Soc. N.S.W., 66(2), 394-404. The various known occurrences of alkaline igneous rocks of (?)Tertiary age are arranged, with one exception, in two parallel meridional lines situated along the western and eastern margins of the main tableland belt of N.S.W. These lines were apparently tensional fractures formed during the Kosciusko uplift near the close of the Pliocene.

1, 15, 18 SUSSMILCH, C.A., 1933 - The Devonian strata of the Kandos district, New South Wales. J. Roy. Soc. N.S.W., 67, 206. Permian shoreline deposits overlie the Devonian. They contain evidence of prevailing glacial conditions.

1 SUSSMILCH, C.A., 1935 - Correlation of the Carboniferous and Permian formations in Australia. Rep. Res. Committee A.N.Z.A.A.S., 22, 455-6.

18 SUSSMILCH, C.A , 1935 - The Carboniferous Period in eastern Australia. Aust. N.Z. Ass. Adv. Sci., 22, 83-118.

18 SUSSMILCH, C.A., 1936 - Evidence of a change of sea-level at Botany Bay. J. Roy. Soc. N.S.W., 1936, 265. The evidence is the occurrence, in boreholes and wells, of beds of peat and fossil tree-stumps below sea-level.

8, 13 SUSSMILCH, C.A., 1940 - The geomorphology of the Hunter River district, New South Wales. Proc. Linn. Soc. N.S.W., 65, 301-22. A detailded account of the geomorphology of the Lower Hunter, Barrington, Upper Hunter, and Goulburn River Tablelands, with brief mention of the Blue Mountain Tableland and its relationship to the others. Further notes are on the Hunter River and Valley, the river terraces, faulting, and warping, followed by a summary and some conclusions.

18 SUSSMILCH, C.A., 1941 - The climate of Australia in past ages. J. Roy. Soc. N.S.W., 75, 47. (Clarke Memorial Lecture).

0, 13 SUSSMILCH, C.A., and CLARK, W., 1928 - The geology of Port Stephens: I, Physiography and general geology. J. Roy. Soc. N.S.W., 62, 168-81. Physiography, eustasy, recent sedimentation, and a more recent 'elevation' of more than 190 feet in the Port Stephens area are discussed. The stratigraphy and structure are described as Kuttung

and minor Burindi Series beds up to 6 315 feet thick in the form of a large south-plunging anticline. The main rock types are described as acid/intermediate lavas, cherts and conglomerates.

4, 13 SUSSMILCH, C.A , CLARK, W., and GREIG, W.A., 1928 - Geology of the Port Stephens area, Part II, Petrology. J. Roy. Soc. N S.W., 62, 168.

1, 7, 13 SUSSMILCH, C.A., and DAVID, T.W.E., 1920 - Sequence glaciation and correlation of the Carboniferous rocks in the Hunter River district, New South Wales. J. Roy. Soc. N.S.W., 52, 246-338. An exhaustive account dealing with (1) previous work, (2) subdivision of the Burindi and Kuttung Series, (3) correlation with other parts of the world, (4) floras and petrological notes, lists of fossils, (5) maps, sections, cross-sections and photographs.

2, 4, 13 SUSSMILCH, C.A., and GREIG, W.A., 1928 - The geology of Port Stephens: II. Petrography. J. Roy. Soc. N.S.W., 62, 181-91. The Port Stephens Kuttung Lavas are andesites, toscanites, and rhyolites, extruded in that order. A table of chemical analyses is presented.

0, 15 SUSSMILCH, C.A., and STONE, W.S., 1915 - Geology of the Jenolan Caves district. Pan-Pacif. Sci. Congr., 49, 332.

10, 16 SWAINE, D.J., 1960 - Occurrence of nickel in coal and dirt samples from the Coalcliff Colliery (Bulli Seam). Aust. J. Sci., 23, 301-2.

10 SWAINE, D.J., 1962 - Boron in New South Wales coals. Aust. J. Sci., 25, 265.

4 SWAINE, D.J., 1967 - Trace elements as environmental indicators in coals of the Sydney Basin N.S.W. Adv. Study. Syd. Bas., 2nd Symp., 16. Some elements show significant differences between marine-influenced coals from the Greta Coal Measures, and freshwater-influenced coals from the Illawarra Coal Measures.

2, 4, 14 SYDNEY UNIV. STUDENTS GEOL. SOC., 1964 - An analysis of the volcanic relationships at Bondi. J. Syd. Univ. Students geol. Soc., 2. An analysis of the igneous material and the associated rocks present on the island, termed a volcanic neck, are described. The relationship between the columnar sandstone and the intrusion is discussed.

1, 10 TAYLOR, A.A., 1954 - A review of the Western coal fields of New South Wales. Proc. Aust. Inst. Min. Metall., 173, 99. A general account of the extent, geology, quality of product, working methods, and trials

of the coal mining industry of New South Wales from 1946, with particular reference to the Western field.

9, 10 TAYLOR, C.P., 1965 - Determination of the structure of the Bulli Coal Seam at Appin Colliery, N.S.W., by the seismic reflection method. Proc. Aust. Inst. Min. Metall., 214, 103-11. The seismic reflection method was used because there is a reflector near the seam, as was revealed during exploration for petroleum in an area northwest of Appin. Measurement of the seismic velocity at two ventilation shafts showed that the reflector was probably the Bulli Coal Seam.

10 TAYLOR, G.F., 1968 - Dolomite in New South Wales Permian coals. Aust. J. Sci., 31, 230-1. Dolomite has recently been identified in various Mg-rich coals of the Basin. Not all the coals in which dolomite has been identified are believed to have been affected by marine influences.

2 TAYLOR, G.H., 1971 - Some observations on the formation of volcanic breccias in the Sydney Basin. Adv. Study Syd. Bas., 6th Symp., Newcastle, 10. Coal containing Triassic spores from within the pipes is of the same rank as that of Triassic coal outside.

1, 8, 13 TAYLOR, T.G., 1906 - A correlation of contour, climate and coal. Proc. Linn. Soc. N.S.W., 31, 517-29. An outline of the stratigraphy and physiography of the Sydney Basin precedes a discussion of the diversities in temperature and rainfall of the Hunter district.

7, 13 TAYLOR, T.G., 1906 - The first recorded occurrence of Blastoidea in New South Wales. Proc. Linn. Soc. N.S.W., 31, 54. A description of specimens found in the Glenwilliam Carboniferous Series (Jaquet) at Clarencetown, New South Wales.

8 TAYLOR, T.G., 1911 - Physiography of eastern Australia. Bur. Met. Bull., Melb., 8.

8, 16 TAYLOR, T.G., 1923 - The coast south of Sydney. Proc. Pan-Pacif. Sci. Cong., II. Guide Book to the excursion to the Illawarra district, 10-7. The author describes the physiography and the development of the 'Nepean ramp' and its river systems, as well as the geology of the coastal plain and its physiographic development, including shorelines, lagoons etc. along the Illawarra coast. Evidence of sea level changes in the Oxford area is also given.

8, 15 TAYLOR, T.G., 1923 - The Nepean Gorge and the warp lakes. A guide book to excursions in the Sydney district. Pan-Pacif. Sci. Cong.

8, 15 TAYLOR, T.G., 1923 - The Blue Mountain Plateau. A guide book to excursions in the Sydney district. Pan-Pacif. Sci. Cong.

0, 16 TAYLOR, T.G., and MAWSON, D., 1903 - The geology of Mittagong. J. Roy. Soc. N.S.W., 37, 306. A general description, with the igneous rocks and the chalybeate deposits dealt with more fully.

8, 16 TAYLOR, T.G., and WOOLNOUGH, W.G., 1906 - A striking example of river capture in the coastal district of New South Wales. Proc. Linn. Soc. N.S.W., 31, 546-53. 'Throughout the greater part of the length of the seaboard, the upper waters of the rivers of N.S.W. have a marked tendency to flow parallel with the coast line. This is the case particularly with the Shoalhaven, Hawkesbury, Macleay and Clarence Systems. The authors were independently struck with remarkable arrangements of the water courses in the neighbourhood of Marulan and came to the conclusion from the theoretical considerations, that the present structure pointed to river capture on a magnificent scale in that area.'

7 TEICHERT, C., 1953 - A new ammonoid from the eastern Australian Permian province. J. Roy. Soc. N.S.W., 87, 46-50. Pseudogastrioceras pokolbinense is described from the uppermost part (Farley Formation) of the Lower Marine Group. The evidence of this species points towards an Artinskian age of these beds.

1, 7, TEICHERT, C., and FLETCHER, H.O., 1943 - A Permian ammonoid from New SouthWales and the correlation of the Upper Marine Series. Rec. Aust. Mus., 21, 156.

10 TEK, M.R., 1968 - Recent developments in production, conservation and storage of natural gas. Aust. Oil Gas Rev., 14(8), 22-38. The author discusses the prospects for gas storage in the Sydney Basin.

18 TENISON WOODS, J.E., 1867 - On the glacial period of Australia. Trans. Roy. Soc. Vic., 8, 43-7. The author comes to the conclusion that 'there has been no glacial period in Australia.'

TENISON WOODS, J E., 1882 - Physical structure and geology of Australia. Proc. Linn. Soc. N.S.W., 7, 378. The author discusses briefly the age of the Hawkesbury Sandstone and Wianamatta Group.

4 TENISON WOODS, J E., 1882 - The Hawkesbury Sandstone. J. Roy. Soc. N.S.W., 16, 53-116. The author quotes Clarke's description in full from the 'Sedimentary formations, N.S W.', then gives a long description of the rocks.

7 TENISON WOODS, J.E., 1882 - On some Carboniferous marine fossils. J. Roy. Soc. N.S.W., 15, 143. Specimens of Aphanaia mitchelli (M'Coy) and Aphanaia gigantea (De Koninck) from Branxton are described and figured.

4 TENISON WOODS, J.E., 1883 - On the Wianamatta Shales. J. Proc. Roy. Soc. N.S.W., 17, 75-85. The author quotes Clarke's description in full followed by a long account of and comments on shales in the Sydney Basin. He concludes by asserting that the term 'Wianamatta formation' should be abandoned as not being represented by any distinct group of rocks.

7, 10 TENISON WOODS, J.E., 1883-84 - On the fossil floras of the coal deposits of Australia. Rec. Aust. Mus., 8, 39-167 and Proc. Linn. Soc. N.S.W., 8, 39-167. The author discusses the writings of earlier workers such as Dana, Jukes, Strezelecki, W.B. Clarke, McCoy, Daintree and Feistmantel, followed by a description of the coal formations of each state and the fossils contained therein. On pages 59-62 is a list of fossils, following which is a detailed description of each. Eleven picture plates are appended.

4, 16 THIELE, E.D., 1903 - On the occurrence of striated boulders in the Permo-Carboniferous rocks near the mouth of the Shoalhaven River, New South Wales. Proc. Roy. Soc. Vic., 16(1), 57-9. A great variety of boulders and pebbles of igneous and metamorphic rocks are embedded in argillaceous sandstone forming the headland where Crookhaven Lighthouse stands. Some exhumed boulders show striations.

13, 18 THOM, B.G., 1964-65 - Late Quaternary coastal morphology of the Port Stephens-Myall Lakes area, N.S.W. J. Roy. Soc. N.S.W., 98(1), 23-36. Two main periods of deposition occurred in this area, as is shown by study of many landforms.

0, 16 THOMPSON, A.M., 1870 - Notes on the geology of the country around Goulburn. J. Roy. Soc. N.S.W., 4, 64.

7 TILLYARD, R J., 1916 - Mesozoic and Tertiary insects of Queensland and New South Wales. (Stratigraphical features by B. Dunstan) Geol. Surv. Qld Publ., 253.

1, 7 TILLYARD, R.J., 1917 - Permian and Triassic insects from New South Wales in the collection of Mr John Mitchell. Proc. Linn. Soc. N.S.W., 42, 720-56. Eight are from the Wianamatta Shale and four from the coal measures. The Permian insects are from orders Hemiptera (Dirty Seam, Newcastle and Belmont Beds localities) and Mecoptera (locality Belmont Beds). The Triassic fossils from the Wianamatta Shale are mostly similar to forms already described from the St Peter's beds (Sydney). The single specimen from the later horizon at Narellan belonged to a genus so far confined to Ipswich, where it is abundant. Orders are Protorthoptera, Mecoptera, Coleoptera, and Hemiptera.

7 TILLYARD, R.J., 1918 - A fossil insect wing from the roof of the coal seam in the Sydney Harbour Colliery. Proc. Linn. Soc. N S.W., 43, 260. An insect wing is associated with the Taeniopteris described by Dun, 1911.

7, 13 TILLYARD, R.J , 1919 - A fossil wing belonging to the new order Paramecoptera, ancestral to the Trichoptera and Lepidoptera, from the Upper Coal Measures of Newcastle, New SouthWales. Proc. Linn. Soc. N.S.W., 44, 231-56. 'The Wing, found at Belmont, solves the question of the origin of the Trichoptera and Lepidoptera while as well giving a hint of the probable origins of other Panorpoid orders. The characters of the wing are such that it cannot be placed in any known order, fossil or recent. It is allied to Mecoptera and Protomecoptera on one hand and to Trichoptera and Lepidoptera on the other.'

7, 13 TILLYARD, R.J., 1921 - Two fossil wings in the collection of Mr John Mitchell, from the Upper Permain of Newcastle, N.S.W., belonging to the Order Hemiptera. Proc. Linn. Soc. N.S.W., 46, 413. 'These two wings were obtained from the debris of the embankments of the Burwood Colliery Railway at Merewether Beach, south of Newcastle. The genera described belong to Families Prosbolidae and Lophioneuridae.'

7, 13 TILLYARD, R.J., 1922 - Some new Permian insects from Belmont, N.S.W., in the collection of Mr John Mitchell. Proc. Linn. Soc. N.S.W., 47, 279-92. A description is given of genera of the orders Homoptera, Protomecoptera, Paramecoptera, Mecoptera, Planipennia.

7, 13 TILLYARD, R.J., 1924 - Upper Permian Coleoptera and a new order from the Belmont Beds, New South wales. Proc. Linn. Soc. N.S.W., 49, 429-35. Descriptions are given of the orders Coleoptera (Permophilidae, Permosynidae), Protecoleoptera (new order) (Protocoleidae).

7, 14 TILLYARD, R.J., 1925 - A new fossil insect wing from Triassic beds near Dee-Why, New South Wales. Proc. Linn. Soc. N.S.W., 50, 374-7. This is the description of a fragment of fossil insect wing from shale about the middle (approx. 500 ft above the base) of the Hawkesbury Sandstone on a quarry at Beacon Hill near Dee-Why, Sydney. Order: Protohemiptera. Genus: Mesotitan.

7 TILLYARD, R.J., 1926 - Upper Permian insects of New South Wales. Part I: Introduction and order Hemiptera. Proc. Linn. Soc. N.S.W., 51, 1-30. The fossils are mainly from the Upper Permian of Warners Bay and Belmont, N.S.W.

7 TILLYARD, R J., 1926 - Upper Permian insects of New South Wales. Part II: The orders Mecoptera, Paramecoptera and Neuroptera. Proc. Linn. Soc. N.S.W., 51, 265-82. A description is given of fossils from the Upper Permian of New South Wales at Belmont.

7 TILLYARD, R.J., 1935 - Upper Permian insects of the New South Wales: III. The order Copeognatha. Proc. Linn. Soc. N.S.W., 60 (3 & 4), 265-79. The author describes twelve winged insects of the order Copeognatha recovered from the Upper Permian at Warners Bay and Merewether Beach, N.S.W. These insects are a more advanced type than those described in the Lower Permian of Kansas.

7 TILLYARD, R.J., 1935 - Upper Permian insects of New South Wales: IV. The order Odonata. Proc. Linn. Soc. N.S.W., 60 (5 & 6), 374-84. Fossil dragonflies of the order Odonata recovered from the freshwater beds of Upper Permian age of Belmont and Warners Bay (presumably the Newcastle Coal Measures).

7 TILLYARD, R.J., 1935 - Upper Permian insects of New South Wales: V. The order Perlaria or Stone-flies. Proc. Linn. Soc. N.S.W., 60 (5 & 6), 385-91. Fossil stone-flies (order Perlaria) are described from the Upper Permian beds of Warners Bay (presumably Newcastle Coal Measures).

TOWNROW, J.A., 1957 - On some species of Phyllotheca. J. Roy. Soc. N.S.W., 89, 39-63.

7 TOWNROW, J.A., 1957 - On Dicroidium, probably a pteridospermous leaf, and other leaves now removed from this genus. Trans. geol. Soc. S. Afr., LX, 21-60. The Marrattiaceous fern Asterotheca fuchsii (Zeiller) Kurtz

is described, and it is concluded that the fertile specimens attributed to Dicroidium lancifolium and D. feistmanteli by Walkom (and others) are specimens of Asterotheca fuchsii. The genus Dicroidium Gothan is redefined, largely on cuticle characters, and its age and distribution are discussed. Four species of Dicroidium are described. Certain leaves originally placed in Dicroidium are separated into a new genus, Hoegia, of which two species are described.

7 TOWNROW, J.A., 1966 - On Lepidopteris madogascariensis Carpentier (Peltaspermaciae). J. Roy. Soc. N.S.W., 88, 4.

7 TOWNROW, J.A , 1967 - On Voltziopsis, a southern conifer of Lower Triassic age. Proc. Roy. Soc. Tas., 101, 173-88. This is a very detailed botanical treatment of specimens from the Lower Triassic of N.S.W. The genus is redefined.

TURNER, A.C., 1965 - Oil-shale. In Australian Mineral Industry. Bur. Miner. Resour. Aust. Bull. 72

9 UNDERWOOD, R., 1965 -A crustal seismic experiment near Sydney. Aust. N.Z. Ass. Adv. Sci. Rep. 38, Section C, abstracts.

10 UNITED STATES GEOLOGICAL SURVEY, 1896 - Platinum and vanadium in Australian coal. U.S. geol. Surv. Ann. Rep. 17(3), 282.

2, 4 VALLANCE, T.G., 1960 - Presidential address: Concerning spilites. Proc. Linn. Soc. N.S.W., 85, 8-45. Among world occurrences that in the Nundle region is dealt with.

2, 4 VALLANCE, T.G , 1969 - Mesozoic and Cainozoic igneous rocks. A: Central and southern N.S.W. J. geol. Soc. Aust., 16(1), 513-29. A comprehensive account with the headings: extrusive rocks; intrusive rocks; teschenites; nepheline-bearing basic rocks; syenitic intrusives; diatremes of the Sydney district; inclusions in Cainozoic igneous rocks; thermal metamorphism; chemistry of Mesozoic and Cainozoic igneous rocks.

17 VALLANCE, T.G., and BRANAGAN, D.F , 1966 - New South Wales geology, its origins and growth. In 'A centruy of scientific progress', Centenary Vol. Roy. Soc. N.S.W., 265-79.

9 VAN HILTEN, D., 1964 - Evaluation of some geotectonic hypotheses by palaeomagnetism. Tectonophysics, 1, 3, 171.

0, 13 VEEVERS, J J., 1960 - Geology of the Howick area, Singleton - Muswellbrook district, New South Wales. Bur. Miner. Resour. Aust. Rep. 53. B M R. bores in Howick area penetrated 1 580 ft of Permian rocks, comprising 430 ft of Mulbring Beds (incl. 280 feet of Ponds Creek Formation units 4, 5, and 6 of Reynolds, 1956) and 1 150 of Tomago Coal Measures. Three major cycles of sedimentation are identified in the Tomago Coal Measures (cf. Booker et. al., 1953).

2, 4, 14 VERNON, R H., 1960 - Volcanic breccia from Minchinbury, N.S.W. Sci. ind. Res. Org. Melb., mineragr. inv. Rep. 821. Specimens from a breccia pipe at the Walgrove Quarry, Minchinbury (Liverpool Subgroup) show fine oval amygdales filled with analcite, chlorite, and carbonate. Some plagioclase and abundant iron oxide suggest the rock was basic. Rock fragments are mostly altered volcanics, but also some sedimentaries, including coal.

2, 4 VERNON, R.H., 1962 - Recent petrological work on the igneous rocks of the Sydney Basin. Aust. N.Z. Ass. Adv. Sci., 36th Congr., Sydney. A brief summary of all available recent description and deduction and except for the section on the Prospect Intrusion deals only with published work, under the following headings: latites, Illawarra area; teschenite-picrite intrusive rocks (Nebo district and Prospect); alkali basalts; syenitic intrusive rocks.

7 VIRKKI, C., 1945 - Spores from the Lower Gondwana of India and Australia. Proc. nat. Acad. Sci. India, 15(4-5), 93-117.

0, 13 VOISEY, A.H., 1934 - A preliminary account of the geology of the middle north coast district of New South Wales. Proc. Linn. Soc. N.S.W., 59, 333. The Upper Palaeozoic succession in the Macleay River district and the Lower Palaeozoic rocks of the Nambucca and Bellinger districts are discussed in detail.

1, 3, 13 VOISEY, A.H., 1938 - The Upper Palaeozoic rocks in the neighbourhood of Taree, New South Wales. Proc. Linn. Soc. N.S.W., 63, 453-62.

1, 4, 13 VOISEY, A.H , 1939 - The upper Palaeozoic rocks between Mount George and Wingham. Proc. Linn. Soc. N.S.W., 64, 242-54.

0, 13 VOISEY, A.H., 1939 - The geology of the lower Manning district of New South Wales. Proc. Linn. Soc. N.S.W., 64, 394.

0, 13 VOISEY, A.H., 1940 - The upper Palaeozoic rocks between the Manning and Karuah Rivers, New South Wales. Proc. Linn. Soc. N.S.W., 65, 192-210.

13, 18 VOISEY, A.H., 1942 - The Tertiary land surface in southern New England. J. Roy. Soc. N.S.W., 76, 82.

1, 13 VOISEY, A.H., 1945 - Correlation of some Carboniferous sections in New South Wales, with special reference to changes in facies. Proc. Linn. Soc. N.S.W., 70(142), 34-40. Carboniferous sedimentary sections are described from localities in the area bounded by the Hunter Valley to the south and Drake (near the Qld boundary) to the north. The bottom-most unit in the general area is the marine Lower Burindi Series; it is overlain by the marine Upper Burindi Series and the terrestrial equivalents (lavas) in the south, the Lower Kuttung Series. The latter unit is overlain by the terrestrial volcanic and glacials of the Upper Kuttung Series; these beds change facies towards the north into the marine glacials of the Kullatine Series (newly defined) and, farther north again, into the marine tuffs and mudstones of the Emu Creek Series.

1, 7, 13 VOISEY, A.H., 1950 - The Permian rocks of the Manning - Macleay province, New South Wales. J. Roy. Soc. N.S.W., 84, 64. The Macleay Series (Voisey, 1934) probably corresponds to the Lower Marine of the Hunter and is divisible into (1) the Warbro Stage (2) the Yessabah Stage (3) the Taits Creek stage. It is not known if younger Permian ever existed. The abundance of Linoproductus springsurensis here and in Queensland, but not in the Hunter, suggests a land barrier. This is supported by changes in the Yessabah Limestone and the fact that the Gloucester Coal Measures rest directly on Carboniferous Beds.

18 VOISEY, A.H., 1952 - The Gondwana system in New South Wales. 19th int. geol. Cong., Alger., Symposium on the Gondwana Series, 50.

3 VOISEY, A H., 1954 - New South Wales diastrophism. Aust. N Z. Ass. Adv. Sci., 1954 (Canberra) Section C, 'Correlation and subdivision of the Australian Permian.'

4 VOISEY, A.H., 1957 - Clarke Memorial Lecture: Further remarks on the sedimentary formations of New South Wales. J. Roy. Soc. N.S.W , 91, 165. This gives tables for the several periods, showing regions, authors, and formations.

3, 18 VOISEY, A.H., 1959 - Tectonic evolution of north-eastern New South Wales, Australia. J. Roy. Soc. N.S.W., 92, 191-203. Movements within a eugeosyncline developing through the Palaeozoic are considered in detail only for the Carboniferous and Permian, but affected various parts of the belt, with different intensities, from Precambrian to Recent. The orogen is characterized by border thrusts, a central heavily deformed

and slightly metamorphosed core intruded by granite and lying between 2 subparallel east-dipping thrusts containing serpentine, upthrust blocks bordered in part by transcurrent faults, a belt of basins, and a belt of domes. It is almost surrounded by Mesozoic sediments derived partly from the belt itself, which rose isostatically after the mountain building of Permian times. The remnants of Tertiary basalt flows remain on the terrace of New England Plateau in the centre of the old denuded orogenic tract.

3, 18 VOISEY, A.H., 1959 - Presidential address, Section C, A.N.Z.A.A.S.: 'Australian geosynclines.' Aust. J Sci., 22, 188. Describes the New England Eugeosyncline, the Lambian Miogeosyncline, and the Newcastle Exogeosyncline, amongst others.

VOISEY, A H., 1965 - Geology and mineralization of eastern New South Wales. 8th Comm. Min. Metall. Cong., 1, 402-20. Of particular significance in the northern and central Highlands are structures such as the Hunter-Mooki Thrust, Newcastle Exogeosyncline, Belford and Loder Domes, the erosional residuals of the Blue Mountains, and dykes and plugs around Sydney. Orebodies are considered, but few references are relevant to Sydney Basin.

2, 3 VOISEY, A.H., 1967 - Post-Palaeozoic earth-movements in New South Wales. Aust. N.Z. Ass. Adv. Sci., 1967, Section C, Abstract Q6. After the major earth movements culminating in the Permian, an exogeosyncline continued to develop beyond New England, with folds and faults forming both during and after deposition. Some faults and joints provided channels for basalt. The intrusion of large masses of igneous rock in the late Mesozoic and Tertiary was also associated with earth-movements.

7 WADE R.T., 1930 - The fossil fishes of the Australian Mesozoic rocks. J. Roy. Soc. N.S.W., 64, 115-47. This lists the fish-bearing beds and gives detailed notes on fossils described to 1930. The fossils from the Hawkesbury Series at Brookvale are described. There is a detailed list of all species, with locality, age and also an extensive bibliography.

7, 14 WADE, R.T., 1935 - The Triassic fishes of Brookvale, N S.W. Brit. Mus. (nat. Hist.), xiv. The outstanding features of the fauna are: (1) The absence of sharks. (2) The number and variety of Palaeoniscids and Catopterids. (3) The presence of but one genus, Promecosomina (two individuals) of forms known with certainty to be higher than the Chondroste (4) In three species, the occurrence of a number of individuals of different stages of maturity. The age of the Brookvale Beds (shales 560 feet above the base of the Hawkesbury Sandstone, i.e. midway between the Gosford and St Peters Fish-beds) is mid-Middle Triassic.

7, 13 WADE, R.T., 1939 - The Triassic fishes of Gosford, New South Wales. J. Roy. Soc. N.S.W., 73, 206.

7 WADE, R T , 1941 - The Jurassic fishes of New South Wales. J. Roy. Soc. N.S.W., 75, 7-84.

7 WADE, R.T., 1941 - Australian Triassic fishes. Parts I and II. J. Roy. Soc. N.S.W., 74, 377. Except for the Palaeoniscidae, the Sub-Holostei become dominant in mid-Triassic, then decrease and are eclipsed by the Holostei in the Upper Triassic (Wianamatta).

7 WADE, R.T., 1942 - The Triassic fishes of New South Wales. J. Roy. Soc. N.S.W., 75, 144.

7 WADE, R.T., 1953 - Jurassic fishes of N.S W. (Macrosemiidae) with a note on the Triassic genus Promecosomina. J. Roy. Soc. N.S.W , 1953, 87, 63.

10 WALKER, G B., 1891 - Notes on the coal fields of New South Wales. Trans. Fed. Inst. Min. Engng, 2, 268-330.

11, 14 WALKER, P.H., 1960 - A soil survey of the Country of Cumberland, Sydney region, N.S.W. Soil Surv. Unit, Dep. Agr. N S.W., Bull. 2.

8, 11, 14 WALKER, R.T., and HAWKINS, C.A , 1957 - A study of river terraces and soil development on the Nepean River, New South Wales. J. Roy. Soc. N.S.W., 91, 67. This establishes the physiographic and climatic history of the area in relation to soil development.

1, 7, 13 WALKOM, A.B., 1913 - Stratigraphical geology of the Permo-Carboniferous system in the Maitland-Branxton district. Proc. Linn. Soc. N.S.W., 38, 114-45. This describes, with lists of fossils and sections, the stratigraphy of the Lower and Upper Marine Series, and the Greta Coal Measures. There are notes and maps of the palaeogeography of the Permo-Carboniferous.

1, 13 WALKOM, A.B., 1913 - The geology of the Permo-Carboniferous system in the Glendon Brook district, Singleton, New South Wales. Proc. Linn. Soc. N.S.W., 38(1), 146-59. This describes the Carboniferous Webbers Creek Series and Tangorin Series, and the Permo-Carboniferous Cranky Corner Basin and the area west of the Elderslee fault.

4, 13 WALKOM, A.B., 1913 - Notes on some recently discovered occurrences of the pseudomorph, glendonite. Proc. Linn. Soc. N.S.W., 1913, 38, 160-8. Specimens obtained for the first time from the Lower Marine Series, from near Harpers Hill (Allandale).

1 WALKOM, A.B., 1918 - The geology of the Lower Mesozoic rocks of Queensland with special reference to their distribution and fossil flora, and the correlation with the Lower Mesozoic rocks of other parts of Australia. Proc. Linn. Soc. N.S.W., 43, 82-8. There are remarks on the Hawkesbury, Talbragar, Clarence and Artesian series in N.S.W. and the Walloon and Ipswich Series in Qld, with a note on their possible relationship to each other.

7, 15 WALKOM, A.B., 1921 - Mesozoic floras of New South Wales, Part 1: Fossil plants, from Cockabutta Mountain and Talbragar. Dep. Min. N.S.W. palaeont. Mem., 12.

7 WALKOM, A.B , 1925 - Fossil plants from the Narrabeen Stage of the Hawkesbury Series. Proc. Linn. Soc. N.S.W., 50, 214-24. This is the first description of collections from the Narrabeen Stage. Twenty species are described and ascribed a Lower Triassic age. The specimens came mostly from Turnimetta Head in shales which are 6-8 feet above high water mark and 150 feet stratigraphically below the top of the Narrabeen Stage.

7 WALKOM, A.B., 1928 - Fossil plants from the Upper Palaeozoic rocks of New South Wales. Proc. Linn. Soc. N.S.W., 53, 255-67. The species described are from both Volcanic and Basal stages of the Kuttung Series, the Ravensfield Sandstone at the base of the Farley Stage of the Lower Marine Series, and the Newcastle Coal Measures at Lake Macquarie.

7, 16 WALKOM, A.B., 1928 - Lepidodendroid remains from Yalwal, N.S.W. Proc. Linn. Soc. N.S.W., 53, 310-4. The few specimens described indicate an Upper Devonian age for the rocks at Yalwal in which they occur.

7 WALKOM, A B , 1928 - Notes on some additions to the Glossopteris flora in New South Wales. Proc. Linn. Soc. N S.W , 53(5), 555-64.

7 WALKOM, A.B., 1932 - Fossil plants from Mount Piddington and Clarence Siding. Proc. Linn. Soc. N.S.W., 57(3 & 4), 123-6. This flora was recovered from rocks thought to be part of the Hawkesbury Sandstone Series near Mt Victoria (now considered part of the Narrabeen Group) The specimen from Clarence Siding is different from any found in Australian Mesozoic rocks.

7 WALKOM, A.B., 1934 - Note on some Carboniferous plants from New South Wales. Proc. Linn. Soc. N.S.W., 59, 430. The specimens were all obtained from the Upper Stage of the Kuttung Series, and mostly from a horizon about the middle of the upper (glacial) stage.

7 WALKOM, A.B., 1935 - Some fossil seeds from the Upper Palaeozoic rocks of the Werrie Basin, New South Wales. Proc. Linn. Soc. N.S.W., 60(5 & 6), 459-63. The seeds come from the Kuttung Series (mainly Glacial Stage), Greta Coal Measures, and Newcastle Coal Measures of the Werrie Basin (Caney, 1934). Attention is drawn to the great variety of seeds compared to the few known fossil vegetative organs; this has also been noted in Upper Palaeozoic rocks in other parts of the world.

7 WALKOM, A.B., 1944 - Succession of the Carboniferous and Permian floras in New South Wales. J. Roy. Soc. N.S.W., 78, 4-13. There are three distinct fossil floras in our Carboniferous-Permian succession: (1) Lepidodendron veltheimianum (2) Rhacopteris (3) Glossopteris. The floras of other Gondwana lands are described for comparison.

3, 16 WALLIS. G.R , 1962 - Observations on joint directions in the Nowra Sandstone. Geol. Surv. N.S.W. Rec. 17, 66, Appendix 4.

10 WALLIS, G.R., 1965 - Geological report on Wallents' Somersby Clay Pit. Geol. Surv. N.S.W. Rep. 27, 15-9. The Somersby Clay Pit occurs in a 6-foot lens 300 feet above the base of the Hawkesbury Sandstone. Laterite has been located in a set of drive holes. The clay is suitable for use in stoneware and pipe manufacture.

2, 14 WALLIS, G.R., 1965 - Geological reconnaissance of the area surrounding Cabbage Tree Flat breccia deposit. Geol. Surv. N S W. Rep. 41, 15-6.

6, 10, 11, 14 WALLIS, G R., 1965 - Glass sand occurrences - Kurnell Peninsula, preliminary investigation. Geol. Surv. N.S W. Rep. 27, 1-12. Five localities have been sampled by bore and auger holes and mechanically analysed, and two samples chemically analysed. The sand, which possesses similar sorting characteristics throughout, is graded within a narrow range, 80% lying between 36 and 72 mesh and half of the samples containing somewhat greater than 10% plus 36 mesh sand. The iron content of the sand is outside British Standard limits, being above 0.10% Fe_2O_3. It is not considered suitable as glass-making sand.

5 WALLIS, G.R., and JOHNSON, M., 1968 - Some hydrogeological aspects of the Triassic rocks of the Sydney Basin. Adv. Study Syd. Bas., 3rd Symp., Newcastle, 41-2.

5 WALLIS, G.R., and JOHNSON, M., 1969 - Hydrogeological study of the Sydney Basin: Progress report No. 1. Geol. Surv. N.S.W. Rec. 11(1), 23-4. Water is widespread in the Wianamatta rocks with a maximum of 1 500 gph. In the Hawkesbury/Narrabeen rocks potential is limited to three areas,

Moss Vale-Bowral, Mt Wilson, and Mangrove Mountain, with a maximum of 5 000 gph. The Wianamatta has a higher concentration of total salts. Fluorine and boron are lower in Basin groundwaters than elsewhere in Australia. The Hawkesbury/Narrabeen waters have a high (HCO_3) component.

4 WALTON, S.G., and BONNEY, R.S., 1906 - Analysis of chocolate shale and tuffaceous sandstone from the Narrabeen Series. J. Roy. Soc. N.S.W., 40, 154-7.

18 WANLESS, H.R., and CANNON, J.R , 1966 - Late Palaeozoic glaciation. Earth Sci. Rev., 1(4), 247-86.

6, 16 WARD, C.R., 1968 - Geological features influencing roof failure, Coalcliff Colliery, N.S W. J. Univ. N.S.W. geol. Soc., 13-7.

4, 18, 16 WARD, C.R., 1969 - Palaeocurrents and petrology of the Narrabeen Group in the southern Sydney Basin. Adv. Study Syd. Bas., 4th Symp., Newcastle. Except for the Coal Cliff Sandstone, palaeocurrents flowed to the southeast; locally in the Bulgo Sandstone there was a westward flowing current. Changes in petrology and mineralogy have application to consideration of source-areas and basin-development.

1, 7 WASS, R E., 1968 - Permian faunas and sediments from the South Marulan district, N S.W Adv. Study Syd. Bas., 3rd Symp., Newcastle, 38-9. Recent mapping has given a more accurate stratigraphy. A long list of fossils is given, and the most significant for correlation noted. The South Marulan sediments may best be correlated with the Wandrawandian Siltstone/Nowra Sandstone boundary. There was a progressive transgression in a northwesterly direction along the southwestern margin of the basin, so that the sediments become younger in this direction.

1, 7 WASS, R.E., 1968 - A review of some recent studies in the Sydney Basin - palaeontological studies. Geol. Soc. Aust. spec. Publ., 2, 1969. The lowest sediments of the Conjola Subgroup are correlatable with the Allandale Formation of the Hunter Valley, and the middle and upper units contain faunas resembling those of the Farley and lower Branxton Formations. Mixing of faunas is noted in the South Coast beds. The Branxton Beds south of Cessnock have yielded a rich fauna. Possibly the sequence of faunas along the western margin of the basin is more complete than elsewhere.

7, 18 WASS, R.E., 1969 - Australian Permian polyzoan faunas: distribution and implications. In CAMPBELL, K S.W., ed. - STRATIGRAPHY AND PALAEONTOLOGY. Canberra, A.N.U. Press, 236-49. There are greater

similarities between the polyzoan faunas of the early Permian of eastern and western Australia than had been previously suspected. These similarities are virtually confined to Fauna II (early Artinskian)time. Migration probably took place via a central or northern route rather than a southern one and ceased because of tectonism.

7, 13 WASS, R.E., and BANKS, M.R., 1971 - Some Permian trilobites from eastern Australia. Pal. 14(2), 222-41. Describes species from the Branxton formation of N.S.W. and the Enstone Park Limestone of Tasmania.

1, 7, 16 WASS, R.E., and GOULD, I.G., 1968 - Permian faunas and sediments from the South Marualan District, N.S.W. Proc. Linn. Soc. N.S.W., 93(2), 212-26. A richly fossiliferous Permian outlier yielded a fauna and flora of 41 species of which one, Elimata prima, is new. A correlation with beds about the Wandrawandian/Nowra boundary is suggested. It is considered that the arrangement of pelitic sediments with lavas and sandstones with a marine fauna betokens lagoonal and littoral deposition associated with a Permian transgression.

1 WASS, R E., WOOD, K G., BUNNY, M.R., and GOLDBERY, R., 1969 - A review of some recent studies in the Sydney Basin. Geol. Soc. Aust. spec. Publ., 2, 7-12.

16 WATERHOUSE, L.L., 1930 - Exhibit of ice-scratched pebbles from Permo-Carboniferous on Badgerys Track, S E. of Tallong, N.S.W. J. Roy. Soc. N.S.W., 64, Geological Section, XXX.

2, 4, 11, 16 WATERHOUSE, L.L., and BROWNE, W.R., 1929 - Note on an occurrence of quartzite containing common opal and chalcedony at Tallong, N.S.W. J. Roy. Soc. N.S.W., 63, 140. The occurrence is at Badgerys Lookout, Tallong, Shoalhaven River. Horizontal 'Permo-Carboniferous' rocks are unconformable on Ordovician, and Tertiary basalt overlies the Permo-Carboniferous. It is thought that a mantle of sandy soil formed on these rocks was impregnated with silica-bearing fluids from the basalt to produce a quartzite-opal rock.

6 WATERHOUSE, L.L., BROWNE, W.R., and MOYE, D.G., 1951 - Preliminary geological investigations in connection with proposed Warragamba Dam, New South Wales. J. Instn Engrs Aust., 23, 74.

7 WATERHOUSE, J.B , 1965 - Designation of lectotypes and neotype for a Cretaceous and some Permian bivalve species from Australia. N.Z. J. Geol. Geophys., 8(5), 849-52.

7 WATERHOUSE, J.B., 1967 - A new species of Attenuatella (Brachiopoda) from Permian beds near Drake, New South Wales. Rec. Aust. Mus., 27(7), 167-73.

7 WATSON, D.M.S., 1958 - A new labyrinthodont (Paracyclotosaurus) from the Upper Trias of New South Wales. Brit. Mus. nat. Hist. (Geol.) Bull. 3, 233-63.

10 WATT, C., 1881-3 - Analyses of coal and shale. Dep. Min. N.S.W. Ann. Rep. 1881, 1882, 1883.

9, 16 WEBB, A.W., and McDOUGALL, I , 1967 - Isotopic dating evidence on the age of the Upper Permian and Middle Triassic. Earth plan. Sci. Letters, 2(5), 483-8.

8, 14 WENTWORTH, C.K., 1940 - Shore platforms near Sydney: a discussion. J. Geomorph., 3, 154-5.

1, 8, 13 WHETTEN, J.T., 1965 - Carboniferous glacial rocks from the Werrie Basin, New South Wales, Australia. Bull. geol. Soc. Amer., 76, 43-56. The Rosedale Member of the Carboniferous Currabubula Formation consists largely of varved mudstone with abundant ice-rafted pebbles. Most of the rocks of the Currabulula Formation are pebble conglomerates and lithic greywackes, most of which are stratified. They were probably deposited by streams, perhaps as glacial outwash. Rhyolitic and andesitic tuffs were deposited subaerially. Volcanic clastic sediments were probably locally derived and are suggestive of alpine glaciation. It is not necessary to infer widespread Carboniferous glaciation for the deposition of these rocks.

4 WHITE, H.P., 1924-26 - Assays and analyses. Dep. Min. N.S.W. Ann. Rep. 1924-26. Analyses of various samples from the Sydney Basin are included.

5 WHITING, J.W., 1956 - Groundwater supplied. In 'Symposium on the water resources of Australia.' N.S.W. Univ. Tech., 39.

0, 10, 16 WHITING, J.W., and RELPH, R.E., 1969 - Illawarra Coal Measures. B-Southwestern Coalfield. J. geol. Soc. Aust., 16(1), 379-81. The units recognized are (from below upwards); Tonalli Seam, Higgins Creek Conglomerate, Kooloo Seam, Brimstone Seam, Lacys Creek Sandstone, Brimlow Seam, Colemans Creek Sandstone, Bend Creek Seam, Burragorang Chert, Gillans Creek Seam, Nattai Seam.

10 WHITWORTH, H.F., 1926 - Physical factors governing burning period of coke. Dep. Min. N.S.W. Ann. Rep. 1926, 104-5.

4, 10, 11 WHITWORTH, H.F., 1931 - The mineralogy and origin of the natural beach sand concentrates of New South Wales. J. Roy. Soc. N.S.W., 65, 59-74. The main constituents are zircon, ilmenite, and rutile. The most likely origin for the heavy minerals in the beaches between Newcastle and the Shoalhaven is the Triassic and Upper Coal Measure sandstones.

10, 14 WHITWORTH, H.F., 1935 - Natural gas. Dep. Min. N.S.W. Ann. Rep. 1935, 92. This deals with the methane flow in the Balmain Colliery and the CH_4/CO_2 in Gas Drillers Ltd hole at Mulgoa.

4, 10, 11 WHITWORTH, H.F., 1956 - The zircon-rutile deposits on the beaches of the east coast of Australia with special reference to their mode of occurrence and the origin of the minerals. Dep. Min. N.S.W. tech. Rep. 4. The sands originate from Permian and Mesozoic sediments including those of the Sydney Basin, but the source of the heavy minerals in these sediments is unknown.

4, 13 WHITWORTH, H F., 1958 - Investigation of the slag outcrops in the Ravensworth district. Dep. Min. N.S.W. tech. Rep. 6, 101-3. The slag-like material is the result of fusion of clay shales and sandstones, caused by the burning of a coal seam.

4, 13 WHITWORTH, H.F., 1959 - The occurrence of some fused sedimentary rocks, Ravensworth, N.S.W. J. Roy. Soc. N.S.W., 92(4), 204-8.

4, 13 WHITWORTH, H F., 1959 - A further occurrence of fused sedimentary rocks in the Muswellbrook district. Dep. Min. N.S.W. tech. Rep. 7, 121-3. 'The slag outcrops in the Muswellbrook-Singleton area are not of igneous origin and....they represent sedimentary rocks fused by the internal heat of burning coal seam.....'

0, 15 WILKINSON, C.S., 1875 - Geological map of the districts of Hartley, Bowenfels, Wallerawang and Rydal. Geol. Surv. N.S.W.

1, 10, 13, 16 WILKINSON, C.S., 1877 - Examination of certain coal lands at Teralba, Lake Macquarie, Anvil Creek and in the Bulli district. Dep. Min. N.S.W. Ann. Rep. 1877, 197. This deals with coal near Sugarloaf Mountain and the conglomerates under which all the various coals of the Newcastle Field are likely to be found. There is also a note on coals, coal-measures, and the effect of intrusive basalt into coals, in the Bulli-Coalcliff region.

10 WILKINSON, C.S., 1879 - Notes on the geology of New South Wales. Dep. Min. N.S.W. Ann. Rep. 1878, 62.

0, 16 WILKINSON, C.S., 1879 - Permian and Triassic occurrences in Shoalhaven, Mittagong area. Dep. Min. N.S.W. Ann. Rep. 1879, 214-7. Short notes on coal-measures, trachyte intrusions, and plant fossils.

2, 6, 10, 14 WILKINSON, C.S., 1879 - Report on the road-metal quarries at Prospect and Pennant Hills. Dep. Min. N.S.W. Ann. Rep. Appendix A, 218. Brief notes on the dark grey fire-clay Wianamatta Shales and the 'dense basalt' and 'coarse-grained hornblendic greenstone' intrusions.

1, 14, 15 WILKINSON, C.S., 1880 - Note on the occurrence of remarkable boulders in Hawkesbury rocks. J. Roy. Soc. N.S.W., 13, 105. '.. .Angular boulders of shale up to 20' in diameter....inclined at all angles....in the Sydney area and the Blue Mountains...(are ascribed to)....the disturbing of shale beds by ice'.

2, 6, 14 WILKINSON, C.S., 1880 - Report on the road metal quarries at Prospect and Pennant Hills. Dep. Min. N.S.W. Ann. Rep. 1879, Appendix A, 218-9. A general note on the 'basalt rock' of Prospect Hill and of Pennant Hill quarries.

WILKINSON, C.S., 1881 - Occasional notes on the rocks of the Sydney Basin. Dep. Min. N.S.W. Ann. Rep. 1880, 239.

1, 10, 16 WILKINSON, C.S., 1882 - Report upon coal measures near Mittagong. Dep. Min. N.S.W Ann. Rep. 1882, 141-5. A description of the coal measures, with strata measurements.

1, 6, 10 WILKINSON, C.S., 1883-4 - Presidential address. Proc. Linn. Soc. N.S.W., 8 565-80. 'The Northern, Western and Southern coalfields are so named because of their relation to Sydney, in the middle of the basin. The Upper Coal Measures are Permian in age and outcrop at Lithgow, Katoomba in the Western field, Jamberoo in the Southern Coalfield. The Lower Coal Measure outcrop at Greta and Maitland in the Northern field.' Seam thicknesses, yields and uses are given for each field with an estimate of the total area and reserves. There is a brief mention of Hawkesbury Sandstone and Wianamatta Shale in relation to building material.

1, 10, 13 WILKINSON, C.S., 1884 - Observations made during an inspection of country on the western side of Lake Macquarie. Dep. Min. N.S.W. Ann. Rep. 1884, 148. The country consists of the Upper Coal Measures, and drill bores put down at Teralba, Awaba, Coorumbung, Wyong, and other localities have revealed coal seams at a workable depth.

1, 14 WILKINSON, C.S., 1884 - Report on diamond drill bore at Heathcote, near the Illawarra Railway Line. Dep. Min. N.S.W. Ann. Rep. 1884, 151. The occurrence of coal at 846 feet and the thicknesses of the strata encountered are noted.

1, 10, 13 WILKINSON, C.S., 1884-5 - Report on the coal measures in the Greta and Branxton district. Dep. Min. N.S.W. Ann. Rep. 1884-1885, 149-51. Discussion mainly concerns Anvil Creek and Greta Collieries. Strata measurements are made and the results of analyses noted. Other seams in the Singleton-Maitland district and the occurrence of limonite interstratified with coal at Ravensworth and Westbrook Creek are mentioned.

0, 16 WILKINSON, C.S., 1885 - The general geology of the Clyde-Shoalhaven River district. Dep. Min. N.S.W. Ann. Rep. 1885, 126.

1, 16 WILKINSON, C.S., 1885 - Report upon the coal seams discovered in the Milton and Ulladulla district, near Jervis Bay. Dep. Min. N.S.W. Ann. Rep. 1885, 131-2. Appendix B. The Clyde River has eroded a precipitous ravine about 600 feet deep, at the bottom of which the coal seams crop out. A description of the strata (especially the coal) is given.

7, 14 WILKINSON, C.S., 1887 - Report on the discovery of fossils at Gosford and Bowral. Dep. Min. N.S.W. Ann. Rep. 1886, 176, Appendix 0. A brief account of the discovery of labyrinthodont fossils at Gosford.

14 WILKINSON, C.S., 1888 - Report of the Geological Surveyor-in-charge. Dep. Min. N S.W. Ann. Rep. 1887, 137-41. Contains a few comments on coal measures, and the diamond drill-hole at Holt-Sutherland. An analysis accompanies a comment on the cupriferous shales.

10 WILKINSON, C.S., 1887 - The mineral products of New South Wales. Dep. Min. N.S.W.

2, 6, 16 WILKINSON, C.S., 1888 - On the syenitic granite quarries, 'Gib Rock' Bowral. Dep. Min. N.S W. Ann. Rep. 1888, 163-4, Appendix 1. The quarry, physical properties of the rock, and its uses are discussed.

10, 14 WILKINSON, C.S., 1889 - On gas at Pyrmont. Dep. Min. N.S.W Ann. Rep. 1889, 206. A note on the source of inflammable gas issuing from a fissure at the base of a sandstone cliff near Pyrmont.

1, 10, 14 WILKINSON, C.S., 1889 - Appendix 0. Dep. Min. N.S.W. Ann. Rep. 1889, 206-8. Describes the diamond-drill core from the South Cumberland Coal-mining Company's property at Oxford. The upper of 2 seams of coal encountered has been affected by dolerite.

0, 16 WILKINSON, C.S , 1890 - Progress report of the Geological Surveyor-in-charge for 1890. Dep. Min. N.S.W. Ann. Rep. 1890, 202-3. A geological account of the country west of Jervis Bay between Cambewarra Mountain and Milton. The whole of this district consists of Permo-Carboniferous formations except for some small areas of Silurian or Devonian schists, and some more recent intrusive basaltic rocks. The discovery of coal seams of Greta age in the Clyde region is recorded.

10, 16 WILKINSON, C.S , 1890 - Report on the mineral resources of the Mittagong, Bowral and Berrima districts. Dep. Min. N.S.W. Ann. Rep. 1890, 206-11, Appendix B. The principal minerals of economic value are coal, kerosene shale, iron ore, gold, gemstones including diamonds and sapphires. Besides these there is syenite and sandstone for building purposes, basalt for road metal, brick and pottery clays.

10 WILKINSON, C.S., 1891 - Report on the iron ore deposits of New South Wales. Dep. Min. N.S.W. Ann. Rep. 1891, 212. There are important, rich deposits of iron ore in N.S.W. Three localities are favourably situated for the establishment of smelting works, near Mittagong, Wallerawang, and Rylstone. The economics of these deposits is discussed.

0, 14 WILLAN, T.L., 1923 - The geology of the Sydney district and the Nepean River district near Mulgoa. Proc. Pan-Pacif. Sci. Cong., II.

0, 14 WILLAN, T L., 1925 - Geological map of Sydney district. Dep. Min. N.S.W.

10, 16 WILSHIRE, F.R., 1878-80 - Mining Registrar's reports, Berrima district. Dep. Min. N.S.W. Ann. Rep. 1878, 1879, 1880.

2, 4, 14 WILSHIRE, H.G., 1959 - Contact metamorphism adjacent to a teschenite intrusion. J. geol. Soc. Aust., 6(1), 11. Prospect Hill, 18 miles west of Sydney, is an annular teschenite intrusion into Upper Triassic Wianamatta Shale. A detailed account of the mineralogy and chemistry of both the metamorphosed shale and adjacent teschenite is presented.

2, 4 WILSHIRE, H.G , 1961 - Layered diatremes near Sydney, New South Wales J. geol., 69, 473. Diatremes belonging to the Tertiary alkali-basalt province of N.S.W. are common as intrusions in the Hawkesbury and Wianamatta Shale. There are detailed descriptions of occurrences to the west and northwest of Sydney and interpretations are offered.

2, 4, 14 WILSHIRE, H.G., 1961 - Sedimentary xenoliths and dolerite patch pegmatites from an analcite basalt intrusion. Amer. J. Sci., 1961, 259,

260-79. A detailed petrologic account is given of the Peats Ridge analcite basalt plug some 50 miles north of Sydney. It is intrusive into the Hawkesbury Formation.

2, 4, 14 WILSHIRE, H.G., 1967 - The Prospect alkaline diabase - picrite intrusion, N.S.W. J. Petrol., 8, 97-163. An exhaustive treatment dealing with processes of differentiation and with structures.

4 WILSHIRE, H.G., and BINNS, S.R.H., 1961 - Basic and ultrabasic xenoliths from volcanic rocks of New South Wales. J. Petrol., 2, 185. These xenoliths are mostly peridotites, which are unstable in their host-rock and show marked marginal reactions. They probably represent portions of the earth's mantle incorporated in magmas originating from within the zone.

2, 4, 16 WILSHIRE, H.G., and HOBBS, B.E., 1962 - Structure, sedimentary inclusions and hydrothermal alteration of a latite intrusion. J. Geol., 70, 328-41. This describes the latite laccolith in the marine tuffaceous Permian of Port Kembla. Movement in the direction of primary flow structures continued into post-consolidation and post-alteration stages. The country rocks were unconsolidated, so that the margin of the intrusion was irregular. Sediment was included in zones broadly oriented in planes of flow foliation and was injected into fractures in the latite. Hydrothermal alteration in the latite was caused mainly by the absorption of Na-rich connate water from the sediments: the results were similar to those expected of purely magmatic differentiation. Diagenetic alteration of country rock far from the intrusion produced secondary minerals identical with the dominant products of hydrothermalism.

2, 4, 13 WILSHIRE, H.G., and STANDARD, J.C., 1963 - The history of vulcanism in the Mulally district, New South Wales. J. Roy. Soc. N.S.W., 96 (2-6), 123-8. Deeply dissected remains of an extensive volcanic field in the Mulally district consist of dolerite, alkali basalt, and minor trachyte flows and pyroclastic rocks. These were deposited on a mature erosional surface on Permian sandstone and shales, and are separated from the main Warrumbungle volcanic field by a high ridge of sedimentary rocks.

0, 13 WILSON, M.G.A., 1959 - The coalfields of the Lower Hunter Valley. N. Z. Geogr., 15(1), 18-41.

1, 10, 16 WILSON, R G., WRIGHT, E.A., TAYLOR, B.L., and PROBERT, D.N., 1957 - Review of the geology of the Southern Coalfield. New South Wales. Proc. Aust. Inst. Min. Metall., 187, 81-103. The relationship between the

Illawarra Coal Measures and the overlying Triassic and underlying Upper Marine Series is briefly explained and the stratigraphy of each is described. The 8 coal seams are then treated in more detail as to their thickness, quality, areas of distribution, and best occurrences.

0, 16 WILSON, R.G., 1969 - Illawarra Coal Measures. A - Southern Coalfield. J. geol. Soc. Aust., 16(1), 370-5.

0, 13, 15 WILTON, C.P.N., 1883 - The geology of the Goulburn and the Hunter. N.S.W Mag., 1(3), 178.

0 WILTON, C.P.N , 1883 - A sketch of the geology of 6 miles of the S.E. line of the coast of Newcastle in Australia etc. Phil. Mag., 1 (N.S.), 92-5; Neues Jb. Miner., 449.

10 WOOD, H., 1882 and 1887 - Mineral products of New South Wales. Sydney.

10 WOOD, H., 1877-1895 - Analyses of coal, iron and other substances. Dep. Min. N.S.W. Ann. Rep. 1877-1895.

7, 16 WOOD, K G., 1962 - Report on fossil specimens collected within the Ulladulla and Tiarjara 1 mile areas. Geol. Surv. N.S.W. Rec. 17, 59, Appendix 2.

1, 10, 16 WOOD, K.G., 1967 - The Southern Coalfield: drilling programme and some aspects of the coal resources of the areas. Adv. Study Syd. Bas., 2nd Symp., Newcastle, 23. The results of 72 fully cored holes at 2 mile centres show that only the Bulli and Wongawilli Seams are of major economic significance; the Balgownie Seam has some local development and the thin Tongarra Seam is of reasonable quality.

1, 16 WOOD, K.G., and BUNNY, M.R., 1969 - A review of some recent studies in the Sydney Basin - the stratigraphy of the Southern Coal Reserve. Geol. Soc. Aust. spec. Publ., 2. The Illawarra Coal Measures are subdivided into the Sydney Subgroup (comprising the Bulli Seam, Eckersley Formation, Wongawilli Seam, Kembla Sandstone, Allans Creek Formation, Appin Formation, Tongarra Seam, and Wilton Formation) and the Cumberland Subgroup (comprising the Erins Vale Formation and the Pleasant's Nest Formation). Correlations are based on interseam units rather than on coal seams, which are subject to lateral variations.

1, 16 WOOD, K.G , and BUNNY, M.R., 1969 - Revised stratigraphy of the Illawarra Coal Measures in the Southern Coalfield. In 'Decisions of the Standing Committee, on coalfield geology in New South Wales.' Geol. Surv. N.S.W. 6:2/1-33.

7 WOODS, J.T., 1965 - The geological history of the Crustacea with some remarks on their phylogeny. Proc. Roy. Soc. Qld, 76, 1-14.

1, 7, 14 WOODWARD, A.S., 1890 - The fossil fishes of the Hawkesbury Series at Gosford. Geol. Surv. N S.W. palaeont. Mem., 1-55. Nearly 400 specimens were obtained from a layer of dark grey shale, 4 feet thick, interstratified with the massive beds of sandstone belonging to the Hawkesbury Formation at Gosford N.S.W. The descriptions are preceded by a stratigraphical note on the fish-bed at the Railway Ballast quarry, near Gosford.

7 WOODWARD, A.S., 1890 - On the discovery of a Jurassic fish fauna in the Hawkesbury Beds of New South Wales (Abstract) Geol. Mag., 1890, 565. This notes the discovery of fossil fishes from the Hawkesbury-Wianamatta Series of Talbragar, New South Wales and their pending examination by Wilkinson C.S. & Etheridge, R.E., Jnr, of the Geol. Surv. N.S.W.

7, 15 WOODWARD, A.S , 1895 - The fossil fishes of the Talbragar Beds (Jurassic?). Geol. Surv. N.S.W. palaeont. Mem., 9.

7, 14 WOODWARD, A.S., 1908 - The fossil fishes of the Hawkesbury Series at St Peters. Geol. Surv. N.S.W. palaeont. Mem., 10.

7, 13 WOODWARD, A.S., 1909 - A fish (Urosthenes) from Upper Coal Measures at Lithgow. Ann. Mag. nat. Hist., 8, 365.

9 WOODWARD, D.B., and HUNT, T.M. - Crustal structure across the Tasman Sea. N.Z. J. Geol. Geoph., 14(1), 39. A quasi-continental type crust exists under the Dampier Ridge (20 km), Lord Howe Rise (26 km), West Norfolk Ridge (21 km), and Norfolk Ridge (21 km). The Crust beneath the New Caledonia Basin is oceanic. Dense magnetic intrusives occur within or beneath a thin (less than 1 km) sediment cover on the Ridges. Sediments in the centre of the Basin are about 1 km thick and increase to 2 km at the foot of Lord Howe Rise and 3 km at the foot of the West Norfolk Ridge. These two ridges are thought to be the remnants of a system of orogenic belts which developed during the Palaeozoic marginal to the Australian continent, and which provided sediments for the late Palaeozoic New Zealand Geosyncline. Seafloor spreading or continental drift since then is thought to have resulted in a foundering and fracturing of these remnants and the creation of a new oceanic basin, the Tasman Basin.

0, 16 WOOLNOUGH, W.G., 1909 - General geology of Marulan and Tallong, N.S.W. Proc. Linn. Soc. N.S.W., 34, 782-808. 'In addition to the interesting problems it presents in river development, the district is very remarkable

for the variety of its rock formations. Within a radius of about six miles we have sediments of Ordovician, Silurian, Devonian (?), Permo-Carboniferous and Triassic (?) ages. Intrusive rocks are represented by a great mass of granodiorite intersected by numerous aplitic dykes and passing into granite porphyry and quartz porphyry at its margins. Extensive Tertiary basalt flows occur in the eastern part of the area and with them are associated plant-bearing tuffs and bauxites.' The eruptive rocks and the petrology of the eruptive and contact rocks are described.

3, 6, 16 WOOLNOUGH, W.G., 1910 - 'Stone rolls' in the Bulli Coal Seam of New South Wales. J. Roy. Soc. N.S.W., 44, 334-40. The 'stone rolls' take the form of long ridges on the floor shale of the Bulli Seam. Occasionally rolls at right angles are encountered, known as 'tie rolls.' The occurrence of the rolls is limited, and they appear to extend from Mt Kembla on the south to Bulli in the north. It is suggested that the rolls are of the nature of expansion 'folds' due to swelling up of the shale as a result of hydration or oxidation or both.

7 WOOLNOUGH, W.G., 1910 - Note on the occurrence of Eurydesma in the Upper Marine (Permo-Carboniferous) of New South Wales. J. Roy. Soc. N.S.W., 44, 556-9. Eurydesma was found in Upper Marine Beds, 3½ miles northeast of Singleton. The fossil had been regarded as indicative of Lower Marine Beds until Sussmilch first found it in Upper Marine sedimen near Belford in 1905. The fossil zone was found at the base of a 100-foot thick unit containing very large erratics.

11 WOOLNOUGH, W.G., 1927 - The duricrust of Australia. J. Roy. Soc. N.S.W., 61, 48-53.

8, 16 WOOLNOUGH, W.G., and TAYLOR, T.G , 1906 - A striking example of river-capture in the coastal district of New South Wales. Proc. Linn. Soc. N.S.W., 31, 546-54. The point of capture is near Marulan/Tallong, where the Upper Shoalhaven originally continued on to the Wollondilly until diverted eastwards by the Lower Shoalhaven.

9, 16 WOOTTON, P.P., 1971 - Magnetic properties in the Stanwell Park-Appin part of the Sydney Basin. Adv. Study Syd. Bas., 6th Symp., Newcastle 15-6. One could deduce that the edge of the Sydney Basin is within 5 miles of the Stanwell Park coastline.

10 WINN, D.W., 1961 - Iron. Miner. Industr. N.S.W.

10, 15 YOUNG, L , 1880 - Note on gold discovery at Mount Werong. Dep. Min. N.S.W Ann. Rep. 1880, 264-5.

UNPUBLISHED INFORMATION

*Unpublished reports submitted in accordance with the requirements of the Petroleum Search Subsidy Acts; available for study at the Bureau of Mineral Resources, Canberra and Geological Survey of New South Wales, Sydney.

ADAMSON, C.L. - Unpublished reports for Dep. Min. N.S.W.

1960 - Construction materials resources of the City of the Blue Mountains.

1960 - Quarry-site at Mt Tomah.

1960 - Thickness of estuarine deposits between Sydney and Newcastle.

1960 - Volcanic necks at Reals Bight.

1960 - Geological report on the terrace, North Richmond.

1962 - Geological report on landslides affecting the rising main, Moss Vale district water supply.

1966 - The crushed stone and gravel industry in the County of Cumberland, N S.W.

2, 10 ADAMSON, C.L., 1969 - Crushed stone and gravel resources of the Sydney Region, New South Wales. Geol. Surv. N.S.W. Rec. 11(2), 93-114. Lists 96 igneous aoccurrences, other than dykes and large intrusions.

9 AGOSTINI, A., 1963 - A magnetic survey of part of the Southern Coalfield: south Sydney Basin. B.Sc. (Hons) Thesis, Syd. Univ.

2, 9 AGOSTINI, A . 1966 - A magnetic investigation of the Warren Basalt, Kulnura, N.S.W. M Sc. Thesis, Syd. Univ.

9 AGOSTINI, A., 1967 - Chain Valley magnetometer surveys. Dep. Min. N.S.W.

9 AGOSTINI, A., 1969 - A magnetometer survey in the Darkes Forest area. Dep. Min. N.S.W.

9 AGOSTINI, A., and COONEY, P.M., 1967 - Magnetometer survey at Chichester Dam. Dep. Min. N.S.W.

9 AGOSTINI, A., and HENDERSON, R.J., 1965 - Magnetometer survey of the Glenorie Basaltic intrusion, Dep. Min. N.S.W.

9 AGOSTINI, A., and HENDERSON, R.J., 1966 - Electromagnetic survey at Danjera Creek. Dep. Min. N.S.W.

9 AGOSTINI, A., and IRVINE, R., 1964 - Magnetometer survey of Warren Basalt, Kulnura. Dep. Min. N.S.W.

9 AGOSTINI, A., and IRVINE, R., 1965 - Chain Valley magnetometer survey. Dep. Min. N.S.W.

9, 13 AGOSTINI, A., and IRVINE, R., 1965 - Jerrys Plains resistivity survey. Dep. Min. N.S.W.

9, 13 AGOSTINI, A., and IRVINE, R., 1965 - West Wallsend magnetometer survey. Dep. Min. N.S.W.

9, 13 AGOSTINI, A., and IRVINE, R., 1966 - Magnetometer survey of the Aberdave East area, near Cessnock, N.S.W. Dep. Min. N.S.W.

9 AGOSTINI, A., and PRATT, D.A., 1968 - Darkes Forest magnetometer survey. Dep. Min. N.S.W.

2, 9 AGOSTINI, A., COONEY, P.M., HEALEY, R., HENDERSON, R.J., IRVINE, R., PEGUM, D.M., and WEBSTER, S.S., 1969 - Magnetometer surveys of some blue metal deposits in the Sydney Basin. Geol. Surv. N.S.W. Rec. 11(1), 43-56. Gives petrological and geomagnetic details of several igneous bodies, including those at Cabbage Tree Flat, Kulnura, Luddenham, Blair Duguid, Glenorie and Maroota. New bodies of basalt were found at Patonga, Marsden Park and Campbelltown.

1, 4, 14 ALCOCK, P.J., 1968 - Petrological study of Stockyard Mountain (Farmount) No. 1 well, Sydney Basin, New South Wales. Bur. Miner. Resour. Aust. Rec. 1968/31. The well penetrated 45 feet of Gerringong Volcanics, 3 255 feet of Shoalhaven marine beds and 516 feet of presumed Devonian basement. Porosity and permeability have been reduced by diagenesis. The Shoalhaven Group contains some porous beds and possible source rocks. There is a 280 feet thick porphyritic mafic igneous body in the lower Shoalhaven Group.

1, 4, 14 ALCOCK, P.J., 1968 - A petrological study of Woronora (A.O.G.) No. 1 well, Sydney Basin, New South Wales. Bur. Miner. Resour. Aust. Rec. 1968/58. The well penetrated 7 473 feet of Triassic and Permian sediments and terminated in presumed granitic basement at 7 587 feet; Hawkesbury Sandstone, Narrabeen Group, Upper Coal Measures and Shoalhaven Group are all represented. The study distinguished 41

lithologic units, which were grouped into 8 lithogenetic units. There was general agreement between major boundaries picked in the study and those given by the company. The Narrabeen Group formations as described by Hanlon et al (1953) from the south coast were found to be consistent in thickness and lithological type in the subsurface at Woronora No. 1. The distribution of lithic as opposed to quartz-rich sandstones was demonstrated for the succession. Some of the sandstones in the Narrabeen Group were regarded as having good porosity but there were no traces of hydrocarbons. Sandstones in the Shoalhaven Group were tight.

9 ALLIANCE OIL DEVELOPMENT AUST. N L., 1963 - Caroona seismic (refraction) survey, final report. (Unpubl. company report. Bur. Miner. Resour. Aust. File 63/1549).

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10 ANDREWS, E.C., 1926 - Bunnerong bore site for testing coal. Dep. Min. N.S.W.

10, 16 ANDREWS, E.C., and MORRIS, W., 1925 - Coal prospects Wollondilly, Warragamba and Nattai Rivers. Dep. Min. N.S.W.

0, 13 ANDREWS, P.B., 1947 - Gloucester - Stratford district. B.Sc. (Hons) Thesis, Syd. Univ.

2, 14 ANON, 1949 - Volcanic necks at Erskine Creek. J. Sydney Univ. Students geol. Soc., 1949.

10, 13 ANON, 1952 - A preliminary survey of resources; the Newcastle region. Div. Reconst. Dev. Govt N.S.W., Premier's Dept.

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9 ANON, 1964 - Experimental vibroseis survey, Hawkesbury Sandstone N.S.W 1964. Bur. Miner. Resour. Aust. Rec. 1964/191.

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9 ANON, 1965 - Otway and Sydney Basins experimental 'Vibroseis' survey, 1964. Bur. Miner. Resour. Aust. Rec. 1965/198.

ANON, 1969 - Decisions of the Standing Committee on coalfield geology of New South Wales.

*1, 14 AUSTRALIAN OIL AND GAS CORPORATION LTD, 1962 - Mulgoa No. 2 well completion report. (Unpubl. company report. Bur. Miner. Resour. Aust. File 62/1024).

*1, 14 AUSTRALIAN OIL AND GAS CORPORATION LTD, 1962 - Mount Hunter No. 1 well completion report. (Unpubl. company report. Bur. Miner. Resour. Aust. File 62/1083).

*1, 13 AUSTRALIAN OIL AND GAS CORPORATION LTD, 1962 - Loder No. 1 well completion report. (Unpubl. company report. Bur. Miner. Resour. Aust. File 62/1135).

*3, 9, 16 AUSTRALIAN OIL AND GAS CORPORATION LTD, 1962 - Sydney Basin seismic survey, final report. (Unpubl. company report. Bur. Miner. Resour. Aust. File 62/1546).

*9 AUSTRALIAN OIL AND GAS CORPORATION LTD, 1962 - Singleton-Camden seismic survey, final report. (Unpubl. company report. Bur. Miner. Resour. Aust. File 62/1605).

*9, 14 AUSTRALIAN OIL AND GAS CORPORATION LTD, 1962 - Woronora-Dural seismic survey, final report. (Unpubl. company report. Bur. Miner. Resour. Aust. File 62/1642).

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6, 10, 16 JACKSON, M.J., 1969 - Engineering geology and economic resources of Commonwealth Territory, Jervis Bay. Bur. Miner. Resour. Aust. Rec. 1969/88. The Jervis Bay Sandstone (Permian) is described together with the Quaternary sands, and dolerite intrusions. The sandstone dips gently and is broken by vertical joints trending 330° and 90°, and by low-angled faults trending northeast. The chief economic deposit is white clay derived from the 'decomposition of Tertiary silts and dykes'. Gravels, sandstone, and sand also occur. The water supply is related to Lakes Windermere and Mackenzie and to the Quaternary sands. Excavation and foundation conditions and the logs of three boreholes are given. There are several detailed maps and diagrams.

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