BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

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ANNOTATED BIBLIOGRAPHY OF THE GEORGINA BASIN, NORTHERN TERRITORY AND QUEENSLAND

by

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Introduction

This annotated bibliography includes all known references to the Georgina Basin up to December 1976. The limits of the Basin used to compile this bibliography are the 1:250 000 Geological Series Sheets covering the Brunette Downs, Lawn Hill, Glenormiston, Huckitta, Wallhallow, Beetaloo, Helen Springs, Barrow Creek, Alcoota, Hay River, Mount Whelan, Bedourie, Boulia and Duchess areas (or parts thereof). The depositional limits are the latest Proterozoic and the ?Triassic (Tarlton Formation). Some company reports are not available and are not listed because of their confidential nature: other company reports and some early BMR records have not been included because they are no longer available. Any information that becomes available under the Petroleum Search Subsidy Acts is listed under the operating company and not the author of the report.

ALLIANCE OIL DEVELOPMENT AUSTRALIA N.L., 1970 - Final report Toko Range Seismic Survey, A.P. 160P, Queensland. Bur. Miner. Resour. Aust., File 70/284 (unpubl.).

A reflection seismograph survey conducted in the area of the Toko Syncline in Authority to Prospect 160P, Queensland, identified two major reflectors, and established a closed high structure trending with the Lake Pulchera auticline. Horizon "A", at the Ninmaroo Formation, is a strong reflector throughout the Survey area. Horizon "C" is thought to represent a Lower Cambrian or Proterozoic erosional surface.

ALLIANCE OIL DEVELOPMENT AUSTRALIA N.L., 1975 - Well completion report Ethabuka No. 1 (unpubl.).

Presents the results from Ethabuka No. 1 which penetrated Cravens Peak Beds, "Ethabuka Beds", Mithaka Formation, Carlo Sandstone, Nora

Formation, Coolibah Formation and Kelly Creek Formation beneath the overlying Cretaceous rocks.

ALLIANCE PETROLEUM AUSTRALIA N.L., 1964 - Tarlton Downs gravity survey, Northern Territory, Well Completion Report (unpubl.).

Reports on gravity results from an area which includes all of Tobermory, and the southernmost part of Sandover River Sheet areas.

ALLIANCE PETROLEUM AUSTRALIA N.L., 1965 - Alliance Mulga No. 1 Well completion report, O.P. 63, Northern Territory, by A.C.M. Laing (unpubl.).

This well reached a total depth of 915 m and penetrated Ninmaroo Formation (53 m) and Marqua Beds (79 m); the latter unconformably overlie Proterozoic quartz sandstone with thin dolomite beds 314 m thick. No shows of hydrocarbons were obtained.

AMALGAMATED PETROLEUM EXPLORATION PTY LTD, 1963a - Lake Nash No. 1 Well completion report (unpubl.).

This well penetrated 303 m of carbonate rocks overlying a possible Proterozoic quartzite. Total depth was 401 m. Traces of asphalt and oil drops were found at 241 -244 m.

AMALGAMATED PETROLEUM PTY LTD, 1963b - Morstone No. 1 Well completion report (unpubl.).

Describes the sequence of Middle Cambrian and Proterozoic sediments intersected in the well, which bottomed at 634 m. The Cambrian sequence is 330 m thick.

BALL, L.C., 1945 - Oil Shales in Queensland. Qld Govt Min. J., 46, 74-75.

Records an oil shale occurrence in Cambrian calcareous rocks near Camooweal.

BARKLEY OIL COMPANY, 1965a - Frewena No. 1 Well completion report, by R.L. Pemberton and E.A. Webb (unpubl.).

This well penetrated to a depth of 312m, all but the initial 7.6m in rocks identified as Wonarah Beds.

BARKLEY OIL COMPANY, 1965b - Alroy-Wallhallow aeromagnetic survey by Adastra - Hunting Geophysics (unpubl.).

Reports that the top of magnetic basement is generally correlated with the Proterozoic-Palaeozoic unconformity, in this area.

BARLOW, B.C., 1965 - Georgina Basin reconnaissance gravity survey, N.T. and Qld, 1959. Bur. Miner. Resour. Aust. Rec., 1965/96 (unpubl.).

Records the setting up of ground stations for a reconnaisance gravity survey to serve as a control for later helicopter gravity surveys (see Barlow, 1966).

BARLOW, B.C., 1966 - Georgina Basin reconnaissance gravity surveys using helicopters. Bur. Miner. Resour. Aust. Rec., 1966/147 (unpubl.).

Presents a preliminary Bouguer anomaly contour map. The gravity anomaly pattern is interpreted and several gravity features are named.

BARRIE, J., 1965 - Notes on some phosphate test procedures. Bur. Miner. Resour. Aust. Rec., 1965/77 (unpubl.).

A general description of phosphate logging

techniques, including a phosphate log for BMR Elkedra No. 13 (Sandover River BMR No. 13).

BASTIAN, L.V., 1962 - Petrological examination of specimens from the Camooweal area, north Queensland; in RANDAL, M.A., & BROWN, G.A., 1962b. Bur. Miner. Resour. Aust. Rec., 1962/49 (unpubl.).

Compares thin sections taken from the Mail Change Limestone and Split Rock Sandstone at Split Rock Waterhole.

BASTIAN, L.V., 1967 - Petrographic description of cuttings from BMR No. 13 Sandover; in SMITH, K.G., Stratigraphic Drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 57.

Describes a bituminous and phosphatic dolomite at 900-907 m in BMR Elkedra No. 13.

BASTIAN, L.V., & THIEME, R., 1970 - The 1968 Bureau of Mineral Resources drilling programme in the Alexandria-Wonorah area, Northern Territory. Bur. Miner. Resdour. Aust. Rec., 1970/114 (unpubl.).

Six holes, Alroy BMR Nos. 1-3 and Ranken BMR Nos. 1-3, were drilled north of the Barkly Highway between "Soudan" and "Alroy Downs". Basement, either quartzitic sandstone (Mittiebah Sandstone) or basalt (Peaker Piker Volcanics), is overlain by dolomite; silty limestone and dolomite; and varicoloured limestone and dolomitic siltstone. The silty limestone is phosphatic intermittantly over a 60m section and carries a "Beetle Creek" fauna.

BATAAFSE INTERNATIONALE PETROLEUM MAATSCHAPPIJ N.V. 1961 - Geology of the Georgina Basin, Australia, by C.J. Mulder (unpubl.).

A report based on BMR field work and

considerable photointerpretation. Introduces some new but unofficial names for structural elements and lithological groupings.

BLANCHARD, R. & HALL, E., 1942 - Rock deformation and mineralization at Mount Isa. Proc. Aust. Inst. Min. Metall., 125, 1-60.

Refers to lead-zinc mineralization at Totts Creek as "sulphides cutting the Middle Cambrian".

BMR, 1960 - Summary of Oil Search Activities in Australia and New Guinea to 15th June 1959. Bur. Miner. Resour. Aust. Rep., 41A, 68 pp., + 5 app.

Lists Glenormiston No. 4 and Tyson No. 2 bores (Station bores). Glenormiston No. 4 gave traces of oil and Tyson No. 2 a kerosene smell.

BMR, 1962 - Australian formation correlators. Aust. Oil Gas J., 60(35), 72-75.

Presents stratigraphic columns for three areas of the Georgina Basin: southwest Northern Territory, Toko Range, and Mount Isa-Duchess areas.

BMR, 1967a - Geological Branch, Annual Summary of Activities. Bur. Miner. Resour. Aust. Rec., 1967/134 (unpubl.).

Contains reports on trilobite faunas from the Ninmaroo Formation and on mapping in the Burke River outlier. The dikelokephalinid trilobites from the Ninmaroo Formation are generically distinct from known Australian and extra-Australia forms. Twelve scout holes drilled on the Duchess Sheet are listed and brief descriptions of the sequences are given.

BMR, 1967b - Magnetic susceptibility and specific

gravity of samples from core 15, BMR No. 13 Sandover; Geophysical Branch in SMITH, K.G., Stratigraphic drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 55.

Records a magnetic susceptibility of 0.079 x 10-3C.G.S. units and an SG of 2.69 for gneiss at 1007.5 m.

BROWN, H.Y.L., 1895 - Report of Northern Territory explorations. S. Aust. parl. Pap., 82, 1-30.

Presents geological observations of the Barkly Tableland area between Renner Springs and Alexandria Station. A lithological log of a 500 m bore 26 km southeast of Alexandria station is included.

BROWN, G.A., 1962 - The petrology of the carbonate rocks of the western Undilla Basin. Bur. Miner. Resour. Aust. Rec. 1962/43 (unpubl.).

Illustrates and describes carbonate thin sections from the Camooweal Dolomite, Age Creek Formation, and V-Creek and Mail Change Limestones of the Undilla embayment. Presents a palaeogeographic synopsis for the Middle Cambrian of the Undilla embayment.

BROWN, M.C., 1968 - Middle and Upper Cambrian sedimentary rocks in the northern part of the Northern Territory. Bur. Miner. Resour. Aust. Rec., 1968/115 (unpubl.).

The petrology of Middle to (?) Upper Cambrian rocks of the Beetaloo and Helen Springs Sheet areas is discussed. Simple palaeoenvironmental maps are presented.

BROWN, M.C., & RANDAL, M.A., 1969 - Beetaloo, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SE/53-6, 14 pp.

Describes the physiography, stratigraphy, structure, geological history and economic geology of the Beetaloo Sheet area.

BRYAN, W.H., & JONES, O.A., 1946 - The geological history of Queensland. A stratigraphic outline. Pap. Univ. Qld Dept Geol., 2(N.S.), No. 12, 1-103.

Discusses the Cambrian and Ordovician geology of the Georgina Basin using Whitehouse's Series names and eleven stages. Notes that the lead-zinc mineralization at Lawn Hill occurs in the Middle Cambrian as well as the Precambrian.

CAMERON, W.E., 1901 - Geological observations in north-western Queensland. Geol. Surv. Qld Publ., 159, 10-15.

Gives brief descriptions of the geology of parts of the Georgina Basin. The finding of nautiloids in the Toko Range led to the speculation that much of the southern part of the Georgina Basin was of Silurian age, whereas the northern part was interpreted as post-Tertiary, because gastropods and vertebrate remains had been found in the O'Shannessy River area.

CARTER, E.K., BROOKS, J.H., & WALKER, K.R., 1961 - The Precambrian mineral belt of north-western Queensland. Bur. Miner. Resour. Aust. Bull., 51 (2 vols), vol. 1, Text, 344 pp., vol. 2, Atlas.

Includes details of the Upper Proterozoic and Cambrian stratigraphy of the Mt Isa area and includes details presented in Opik, 1960. Includes definitions of the Constance Sandstone, Mullera Formation, Pilpah Sandstone, Makbat Sandstone and Colless Volcanics.

CARTER, E.K., & OPIK, A.A., 1961a - Explanatory

Notes to the Duchess Geological Sheet. Bur. Miner. Resour. Aust. Rec., 1961/142.

This record is published as an Explanatory Note (Carter & Opik, 1963).

CARTER, E.K., & OPIK, A.A., 1961b - Lawn Hill - 4-mile Geological Series. Bur. Miner. Resour. Aust. explan Notes 21, SE/54-9, 17 pp.

Details the geomorphology, stratigraphy and lithology, structure, and economic geology of the Lawn Hill Sheet area which overlaps the Georgina Basin margin.

CARTER, E.K., and OPIK, A.A., 1963 - Duchess, Qld - 4-mile Geological Series. Ibid., 23, Sheet SF/54-6, 29 pp.

Details the physiography, geomorphology, geology, structure, tectonic history, economic geology, and underground water resources of the Duchess Sheet area, which straddles the eastern margin of the Georgina Basin.

CASEY, J.N., 1958a - Summary of Activities, 1957, Georgina Basin area. Bur. Miner. Resour. Aust. Rec., 1958/3 (unpubl.).

Discusses the derivation of the term 'Georgina Basin' and comments on the geology of the Boulia area, particularly the Boulia 1:250 000 Sheet area.

CASEY, J.N., 1958b - Georgina Party; in CONDON, M.A., 1958 - Summary of Activities Sedimentary Basins. Bur. Miner. Resour. Aust. Rec., 1958/116 (unpubl.).

Records the geological mapping of the Glenormiston and Toko Range areas.

CASEY, J.N., 1959 - New Names in Queensland Stratigraphy. Aust. Oil Gas J., 5(12), 31-36.

Formally erects Sun Hill Arkose, Sylvester Sandstone, Mungerebar Limestone, Chatsworth Limestone, Ninmaroo Formation and Swift Formation as valid names. Defines Goia Beds and Toko Beds.

CASEY, J.N., 1963; Appendix, pp. 18-19; in SMITH, K.G., 1963a - Hay River, N.T. - 1:250 000 Geological Series.Bur. Miner. Resour. Aust. explan. Notes, SF 53/16, 19 pp.

Defines the Nora and Mithaka Formations, the Carlo Sandstone and the Toko Group.

CASEY, J.N., 1965; Appendix, pp. 19-20; in SMITH, K.G., 1965b - Tobermory, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SF#53-12, 20 pp.

Defines the Kelly Creek and Coolibah Formations.

CASEY, J.N. 1968 - Boulia, Qld - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SF/54-10, 30 pp.

Details the topography, stratigraphy, structure, geological history and economic geology of the Boulia Sheet area. A detailed geology map of the Digby Peaks-Signal Hill area is included. Particular emphasis is placed on water resources.

CASEY, J.N., and GILBERT-TOMLINSON, JOYCE, 1956 - Cambrian Geology of the Huckitta-Marqua region, Northern Territory. In EL SISTEMA CAMBRICO, SU PALEOGEOGRAFIA Y EL PROBLEMA DE SU BASE. 20th Sess. int. geol. Cong. Mexico, 2, 55-74. (Also in Bur. Miner. Resour. Aust. Bull. 49).

Discusses the Cambrian geology of the southwestern portion of the Georgina Basin. Lithology and fossil content are outlined; Middle and Upper Cambrian faunas are recognized; and a Silurian orogeny is postulated.

CASEY, J.N., REYNOLDS, M.A., DOW, D.B., PRITCHARD, P.W., VINE, R.R., & PATEN, R.J., 1960 - The geology of the Boulia area, Western Queensland. Bur. Miner. Resour. Aust. Rec., 1960/12 (unpubl.).

A detailed report on the geology of the Boulia area with extensive notes on the flora, fauna and climate. Includes discussions on silicification and dolomitization. The economic geology of the area, particularly groundwater and hydrocarbons are covered in detail. Analysis of carbonate rocks are also included. Some of the information is published in the Boulia Sheet area explanatory notes (Casey, 1968) and in Smith (1972).

CHAPMAN, F., 1929 - On some trilobites and brachiopods from the Mount Isa District, N.W. Queensland. Proc. Roy. Soc. Vic, 41(2), 206-16, pls. 21, 22.

Describes two species of brachiopods (phosphatic) and nine species of trilobites from rocks which can be assigned to the Beetle Creek Formation.

CHENON, C., 1966a - Cockroach waterhole area experimental seismic survey. Bur. Miner. Resour. Aust. Rec., 1966/75.

Reports on experimental seismic work carried out to determine whether a suitable seismic method could be developed despite difficult drilling conditions and the prevalence of random high- frequency noise.

CHENON, C., 1966b - BMR No. 12 (Cockroach) well velocity survey, Northern Territory, 1964. Bur. Miner. Resour. Aust. Rec., 1966/131 (unpubl.).

The study comprises a conventional well velocity survey and sonic log. The best reflection, at 830 m, is the boundary between the Arrinthrunga Formation and Marqua Beds.

CHEWINGS, C., 1928 - Further notes on the stratigraphy of Central Australia. Trans. R. Soc. S. Aust., 52, 62-81.

Records Agnostus and Eodiscus from a locality 64 km south east of Elkedra Station.

CONDON, M.A., 1958 - Summary of activities, sedimentary basins, 1958. Bur. Miner. Resour. Aust. Rec., 1958/106 (Unpubl.).

Comments on the geological setting of the Oorabra Arkose, Duicie Sandstone and "Tarlton Glacials". Records a glacial pavement on the "Sylvester Sandstone". Considers the Sun Hill Arkose to be a turbidite sequence similar to the Oorabra Arkose. Concludes that the Thorntonia Limestone and Beetle Creek Formation are the same unit - the former unweathered, the latter weathered; similarly the Blazan Shale, Quita Formation and Steamboat Sandstone are one unit.

CONDON, M.A., 1961 - Notes on field trips, 1960. Bur. Miner. Resour. Aust. Rec., 1961/46 (unpubl.).

Discusses the affect of weathering on various rock units in the Georgina Basin.

CONDON, M.A., & SMITH, K.G., 1959 - Permian glacials in Central Australia. Bur. Miner. Resour. Aust. Rec., 1959/29 (unpubl.).

Proposes the name Tarlton Formation for a sequence of sandstone, siltstone, and conglomerate considered to be of Permian age, resting unconformably on Ordovician, ?Cambrian,and Proterozoic sediments.

CONYBEARE, C.E.B., & CROOK, K.A.W., 1968 - Manual of Sedimentary Structures. Bur. Miner. Resour. Aust. Bull., 102, 327 pp., pls 82, 87, 92, and 93.

Illustrates sedimentary structures from the Carlo Sandstone of the Tarlton Range.

COOK, P.J., 1972 - Petrology and geochemistry of the phosphate deposits of northwest Queensland, Australia. Econ. Geol., 67, 1193-1213.

Two main types of phosphorite, pelletal and non- pelletal, are recognized in the Middle Cambrian Beetle Creek Formation. The pelletal phosphorites rarely contain secondary fluorite. High values of Ag (20 ppm), Cu (1000 ppm), Pb (4000 ppm) and Zn (3000 ppm) are noted from the northern and northeast areas of the basin in Queensland.

COOK, P.J., 1973 - Regional geology of the phosphogenic province of the Georgina Basin. Bur. Miner. Resour. Aust. Rec., 1973/37, (unpubl.).

Describes the regional geology of the Georgina Basin in terms of lithosomes, following de Keyser & Cook (1972) and de Keyser (1973).

COOK, P.J., 1976a - Sedimentary phosphate deposits, pp. 505-537n in Wolf, K.H. (ed) - HANDBOOK OF STRATABOUND AND STRATIFORM ORE DEPOSITS, vol. 7, xii + 656 pp., Elsevier, Amsterdam, 1976.

A general discussion of sedimentary phosphate

desposits, with examples drawn from the Undilla and Duchess areas of the Georgina Basin.

COOK, P.J., 1976b - Georgina Basin phosphatic province, Queensland and Northern Territory - regional geology pp. 245-250 in KNIGHT, C.L. (Ed.), ECONOMIC GEOLOGY OF AUSTRALIA AND PAPUA NEW GUINEA. 4. INDUSTRIAL MINERALS AND ROCKS. Aust. Inst. Min. Metal., Monogr. Ser., 8.

Describes the history of exploration for phosphorite in the Georgina Basin; the general stratigraphy; and Middle Cambrian sedimentology.

COOK, P.J., & ARMSTRONG, K.A., 1972 - Clay mineralogy of the Middle Cambrian Beetle Creek Formation, Georgina Basin, Northwest Queensland. Bur. Miner. Resour. Aust. Bull., 125, 7-16.

Diffractometer analysis showed that the clay fraction of the Beetle Creek is composed predominantly of kaolinite with common illite and minor smectite and chlorite. Phosphatic Beetle Creek Formation is richer in illite.

CROHN, P.W., 1962 - Annual reports 1960-1961. Resident Geological Section, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1962/10 (unpubl.).

Reports on a brief investigation of surface outcrop of the Box Hole Lead Prospect.

CROHN, P.W., 1963 - Annual report - Resident Geological Section, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1963/168 (unpubl.).

Reports on a regional geological study of the Sandover River Sheet area, conducted to ascertain ground water supply. Records pelletal and ooid dolomites (which Crohn thought to be Arrinthrunga Formation), of possible early Middle Cambrian age by

comparison with fossils found in Lake Nash No. 1. The dolomites have interstitial and vuggy porosity.

CROHN, P.W., & OLDERSHAW, W., 1965 - The geology of the Tennant Creek One-mile Sheet area, N.T. Bur. Miner. Resour. Aust. Rep., 83, 72 pp., 5 pls.

Briefly mentions Cambrian rocks in the Tennant Creek area.

CSIRO, 1954 - Survey of Barkly Region 1947-48. CSIRO, Lands Res. Ser. 3, 182 pp., 16 pls.

See Noakes & Traves, 1954, and Traves & Stewart, 1954.

CSIRO, 1962 - Lands of the Alice Springs area, Northern Territory (compiled by R.A. Perry). Ibid., 6, 280 pp., 20 pls.

Discusses landforms, geomorphology, geology, mineral resources, water resources, soils and vegetation of the Alice Springs area which includes some of the Georgina Basin.

DANES, J.V., 1911 - Physiography of some limestone areas in Queensland. Proc. R. Soc. Qld, 23, 75-83.

Discusses the weathering features and water potential of carbonates on the Barkly Tableland. Mentions several caves and sinkholes in the Camooweal area.

DAVID, T.W.E., 1932 - Explanatory notes to accompany a new geological map of the Commonwealth of Australia. 177 pp. Commonwealth Council for Sci. Ind. Research, Sydney.

Discusses Cambrian and Ordovician palaeogeography of the Georgina Basin area.

DAVID, T.W.E., & BROWNE, W.R. 1950 - THE GEOLOGY OF THE COMMONWEALTH OF AUSTRALIA. Vol. 1, xx + 747 pp., London, Arnold & Co.

Discusses the Cambrian and Ordovician geology of the Georgina Basin as part of a general discussion on the rocks of these periods which are found in Australia. Briefly mentions water supplies in the Northern Territory including the Georgina Basin.

DAVIDSON, A.A., 1905 - Journal of Exploration in Central Australia 1898-1900. S. Aust. Parl. Pap., 27, 1-76.

Mentions the discovery of fossils near Elkedra Station.

DAVIES, J.S., - Southern Georgina Basin seismic survey, Northern Territory and Queensland 1965. Bur. Miner. Resour. Aust. Rec., 1974/89 (unpubl.).

The results tend to confirm gravity indications that there is a shelf area west of Tobermory with few deep reflections - unlike the Toko Syncline in which there are a number of reflectors in the thick Palaeozoic sequence.

DE KEYSER, F., 1968 - The Cambrian of the Burke River Outlier. Bur. Miner. Resour. Aust. Rec., 1968/67 (unpubl.).

Forms the basis of much of de Keyser & Cook (1973), and de Keyser (1973), but includes detailed description of formations, and an appendix on Cambrian palaeontology by Shergold in which new collections within the Beetle Creek Formation, Inca Formation, Roaring Siltstone, Devoncourt Limestone, Selwyn Range Limestone, O'Hara Shale, Pomegranate Limestone and Chatsworth Limestone are reported.

DE KEYSER, F., 1969a - On the genesis of the Georgina Basin phosphorites, northwest Queensland. Bur. Miner. Resour. Aust. Rec., 1969/79 (unpubl.).

Discusses the stratigraphic context and genesis of phosphorites in the Georgina Basin. In an appendix the question of diagenetic silicification of carbonate beds is examined.

DE KEYSER, F., 1969b - The phosphate-bearing Cambrian Formations in the Lawn Hill and Lady Annie Districts, northwestern Queersland. Bur. Miner. Resour. Aust. Rec., 1969/147 (unpubl.).

Describes the geology of the margins of the Undilla embayment and discusses the facies, relationships and palaeo-environment of the Cambrian units.

DE KEYSER, F., 1972 - Proterozoic tillite at Duchess, northwestern Queensland. Bur. Miner. Resour. Aust. Bull., 125, 1-6, pl. 1.

A boulder clay unit in the Mount Birnie Beds near Duchess is recognized as a tillite and named the Little Burke Tillite. It is thought to be the first recorded Proterozoic tillite in northwestern Queensland , and to correlate with similar units elsewhere in the Georgina Basin, the Amadeus and Ngalia Basins, and the Kimberleys.

DE KEYSER, F., 1973 - A review of the Middle Cambrian stratigraphy in the Queensland portion of the Georgina Basin. Bur. Miner. Resour. Aust. Bull., 139, 13-27.

Uses the concept of lithosomes developed in de Keyser & Cook (1973) to interpret the Middle and part of the Upper Cambrian geology of the Georgina Basin in Queensland.

DE KEYSER, F., & COOK, P.J., 1973 - Geology of the Middle Cambrian phosphorites of northwestern Queensland. Bur. Miner. Resour. Aust. Bull., 138, 79 pp., 28 pls.

Divides the Middle and Upper Cambrian sediments of northwest Queensland into six lithosomes which are used to illustrate a regional pattern of deposition. Six main areas of phosphorite deposition are noted, and several types (including pelletal, collophane mudstone and phoscrete) of phosphorite are differentiated.

DELHI-SANTOS, 1964 - Coopers Creek aeromagnetic Survey by Adastra-Hunting Geophysics (unpubl.).

Delineates the probable southern boundary of the Georgina Basin in the Bedourie area.

DEVINE, S.B., & YOUNGS, B.C., 1975 - Review of the Palaeozoic stratigraphy and petroleum potential of northern South Australia. APEA J. 15 (1), 45-54.

Discusses the petroleum potential of the Cambrian, Ordovician, and Devonian of the Georgina Basin among others.

DODSON, R.G., 1968 - Resident Geologist's - Northern Territory Annual Summary of Activities. Bur. Miner. Resour. Aust. Rec., 1968/27 (unpubl.).

Reports that anomalous phosphate values were obtained from borehole cuttings on the Barkly Tableland.

DRUCE, E.C., 1974 - Georgina Basin Project 1974 - 1980 a proposal. Bur. Miner. Resour. Aust. Rec., 1974/44 (unpubl.).

Summarizes geological knowledge of the basin up to 1972 and proposes further studies on critical areas.

DRUCE, E.C., 1975a; in ALLIANCE OIL DEVELOPMENT AUSTRALIA N.L., 1975 - Well Completion Report Ethabuka No. 1 (unpubl.).

Lists fossils, mainly conodonts, from the Toko Group (973-1921 m) in Ethabuka No. 1 well.

DRUCE, E.C., 1975b - Georgina Basin Project in Geological Branch Summary of activities 1974. Bur. Miner. Resour. Aust. Rep., 189, 13-16.

Records state of progress of work undertaken in the Chatsworth Limestone, Ninmaroo Formations and Swift Formations.

DRUCE, E.C., 1976 - Georgina Basin in Geological Branch Summary of Activities 1975. Bur. Miner. Resour. Aust. Rep., 194, 9-13.

Records work progress on the Field River Beds, Arthur Creek and Marqua Beds, the Ninmaroo Fromation, and the units of the Toko Group along the Southern margin of the basin.

DRUCE, E.C., & JONES, P.J., 1968 - Stratigraphical significance of conodonts in the Upper Cambrian and Lower Ordovician sequence of the Boulia region, western Queensland. Aust. J. Sci., 31, 88.

Briefly mentions the discovery of conodonts from the Chatsworth Limestone and Ninmaroo Formation, and their use in correlation.

DRUCE, E.C., & JONES, P.J., 1971 - Cambro-Ordovician conodonts from the Burke River

Structural Belt, Queensland. Bur. Miner. Resour. Aust. Bull., 110.

Describes the conodont fauna from the Chatsworth Limestone , Gola Beds and Ninmaroo Formation. Fifty-three species are described, of which 13 are new, belonging to sixteen genera; Strigaconus [junior synonym of Hirsutodontus Miller] is new. Six assemblage-zones are recognized in the Tremadocian. The phylogenetic relationships of the species are discussed. Rates of sedimentation are given.

DUFF, P.G., 1967a - Core analysis, BMR No. 11 Cattle Creek in SMITH, K.G., Stratigraphic drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 38.

DUFF, P.G., 1967b - Core analysis, BMR No. 12 Cockroach; in SMITH, K.G., Stratigraphic drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 48.

DUFF, P.G., 1967c - Formation tests, DST No. 1 BMR No. 13 Sandover; in SMITH, K.G., Stratigraphic drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 58-9.

Records recovery of 22 cu ft gas-cut mud at 61 lb/cu ft, salinity 800 ppm NaCl at 899-911.5 m.

DUFF, P.G., 1967d - Core analysis, BMR No. 13 Sandover; in SMITH, K.G., Stratigraphic drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 64.

DUNSTAN, B., 1920 - Geological notes on the Cloncurry - Camooweal - Burketown - Boulia Area.

Qld Geol. Surv. Publ., 265, 1-47.

Describes the Cambro-Ordovician limestones of the Camooweal-Boulia area as fresh water Jurassic limestones. The rocks of the Toko Range and the Mount Isa-Cloncurry area are tentatively referred to the Silurian; those of the Mount Isa Group were considered to be metamorphosed equivalents of the Toko Range sediments.

ETHERIDGE, R., 1896 - Official contributions to the palaeontology of South Australia, No. 9. On the occurrence of Olenellus in the Northern Territory. S. Aust. parl. Paps., 1896, 13-16, pl. 1.

Describes Olenellus browni from Alexandria Station and mentions gastropods and nautiloids from the Queensland part of the Toko Range.

ETHERIDGE, R., Jr., 1902 - Official contributions to the palaeontology of South Australia. No. 13. Evidence of further Cambrian trilobites. S. Aust. parl. Pap., (1902).

Describes Agnostus elkedraensis and Microdiscus significans from a locality 64 km southeast of Elkedra Station.

ETHERIDGE, R., Jr., 1919 - The Cambrian trilobites of Australia and Tasmania. Trans. Roy. Soc. S. Aust., 43, 373-93, pls. 39, 40.

Discusses the occurrence of Cambrian trilobites in the Northern Territory part of the Georgina Basin. Describes a new species, Ptychoparia alroiensis from near Alroy Downs.

EXOIL OIL CO PTY LTD, 1965a - Huckitta No. 1 Well completion report, by R.L. Pemberton, (unpubl.).

Describes the sequence of Cambrian and

Proterozoic rocks intersected in Huckitta No. 1 well, which bottomed at 1223 m in granite. The Cambrian sequence is 689 m and the Upper Proterozoic 428 m thick.

EXOIL OIL CO PTY LTD, 1956b - Lucy Creek No. 1 Well completion report, by R.L. Pemberton (unpubl.).

This hole penetrated to a depth of 1105m : Tomahawk Beds, 15.8m; Arrinthrunga Formation, 714.5m; Marqua Beds, 362-7m; and bottomed in igneous basement. Lower Cambrian and Upper Proterozoic sediments were not identified. Dead oil fluorescence in flushed vuggy dolomites in the basal Arrinthrunga Formation provided most of the evidence encountered for hydrocarbons.

FARMOUT DRILLERS N.L., 1963 - Ammaroo Wells Nos 1 and 2, N.T., Well completion report by H.J. Newton (unpubl.).

Reports on two shallow stratigraphic holes which penetrated 150+ m of Middle Cambrian sediments and bottomed in schistose basement rocks (Ammaroo No. 1) or weathered granite (Ammaroo No. 2). Both wells contained traces of hydrocarbons.

FEHR, A., & NICHOLS, R.A.H., 1963 - Report on Well Grg 4 (Georgina Basin). Inst. Francais Petrol. Rep., Aus/85 (unpubl.).

Presents a lithological log together with results of a petrological study of the core.

FLAVELLE, A., 1965 - Helicopter gravity survey by contract, N.T. and Qld, 1965. Part 1. Bur. Miner. Resour. Aust. Rec., 1965/212 (unpubl.).

Notes that the Ooratipra Gravity High delineates a zone of metamorphic and igneous rocks which includes the Tennant Creek and Hatches Creek mineral fields (Precambrian).

The Ammaroo Gravity Depression is extended on to the Barrow Creek Sheet area and its northern margin defined.

FLEMING, P.J.G., 1973 - Bradoriids from the Xystridura Zone of the Georgina Basin, Queensland. Geol. Surv. Qld Publ., 356, 1-9, pls 1-4.

Nine species of Bradoriida are described belonging to the Indianidae, Bradoriidae, Beyrichonidae, and family incertae sedis. Two genera, Monasterium and Zepaera, are new. The fauna is considered to have lived as in-faunal benthos, restricted to a carbonate skeletal sand environment in shallow water of very high organic productivity.

FLEMING, P.J.G., 1974 - Origin of some Cambrian bedded cherts, and other aspects of silicification in the Georgina Basin, Queensland. Geol. Surv. Qld Publ., 358, 1-9, pls 1-6.

Demonstrates that chert beds result from the replacement of lime mud by silica. Replacement may be either pre-compaction and lithification, or very late (?Tertiary).

FLEMING, P.J.G., & RIGBY, J.F., 1972 - Possible land plants from the Middle Cambrian, Queensland. Nature, 238, 266.

Two fossil fragments, possibly stems of land plants, were discovered in the Middle Cambrian Beetle Creek Formation. The fragments are similar to Lower Devonian genera.

FLETCHER, H.O., 1935 - Trilobite hunting in the North. Aust. Mus. Mag., 5, 305-12.

Reports on a field trip to north west Queensland and the Northern Territory to

collect trilobites. It is written for the lay public but contains useful information on the history of the area and on localities which include Templeton River, Thornton River, and Alexandria.

FRENCH PETROLEUM COMPANY (AUST.) PTY LTD, 1964 - Etude geologique de la partie sud du Bassin de Georgina. Report No. RG 304 by R. Cooper (unpubl.).

Presents many measured sections of Cambrian and Ordovician units from the area between Boulia and Huckitta.

FRENCH PETROLEUM COMPANY (AUST.) PTY LIMITED, 1965a - Bedourie seismic and gravity survey. January-November, 1964. Final report by C.G.G. (unpubl.).

Presents the results of a detailed seismic survey over the southern (concealed) part of the Toko Syncline. Delineates the southern boundary of the Georgina Basin.

FRENCH PETROLEUM COMPANY (AUST.) PTY LIMITED, 1965b - Final report on Coopers Creek aeromagnetic survey (Oil leases OP 66 & 67, Queensland) for French Petroleum Co (Aust) Pty Ltd, by Adastra - Hunting Geophysics Pty Ltd. (unpubl.).

FRENCH PETROLEUM COMPANY (AUST.) PTY LIMITED 1965c - Well completion report of The Brothers No. 1 (Queensland) by P. Magnier & P. Sweeney (unpubl.).

The Brothers No. 1 well was drilled to a total depth of 1264 m and intersected Lower Ordovician and Upper and Middle Cambrian limestone and shale over a 914 m interval.

FRENCH PETROLEUM COMPANY (AUST.) PTY LIMITED 1965d

- Well completion report of Marduroo No. 1 (Queensland) by P. Sweeney (unpubl.).

This well, drilled to a depth of 1177m, intersected 798m of sandy and calcareous shale, siltstone, conglomerate and dolomite, assigned to the Proterozoic, below 337m of unconformable Jurassic (100m) and Cretaceous (237m) sediments.

FRENCH PETROLEUM COMPANY (AUST.) PTY LIMITED 1965e - Sandringham seismic and gravity survey. April - May, 1965. Final report by C.G.G. (unpubl.).

A seismic and gravity survey was conducted on ATP 66-67, southwest Queensland, following drilling of the Brothers No. 1 and Marduroo No. 1 exploratory wells and the Bedourie Scouthole. As a result the area was divided into three zones : the Toko Syncline with Proterozoic to Divonian sediments; a Border Zone where the section includes Proterozoic to Ordovician sediments; and the Bedourie Block comprising Proterozoic and Cambrian sediments. All three zones are concealed below Mesozoic rocks.

FROME-BROKEN HILL CO PTY LTD, 1957 - Review of the geology of the Georgina River Basin by N.M. Thomas (unpubl.).

Gives a brief resume of the basic geology of the Georgina Basin.

FROME-BROKEN HILL PTY LTD, 1959a - Report on the examination of fossils collected from the Georgina Basin, Queensland and Northern Territory, 1958, by D.J. Taylor. Rep. 4400 G12 (unpubl.).

Records generic, and occasionally specific, names of fossils collected from Middle Cambrian to Middle Ordovician units in the southern Georgina Basin.

FROME-BROKEN HILL PTY LTD, 1959b - Geology of the southern Georgina area, Queensland and Northern Territory, by R.B. Leslie. Rep. 4400G 13 (unpubl.).

Gives a concise synopsis of the geology of the southern part of the Georgina Basin.

GATEHOUSE, C.G., 1966a - Summary of the palaeontology of the Barkly Tableland. Bur. Miner. Resour. Aust. Rec., 1966/216 (unpubl.).

Lists species from the Ranken Limestone, Wonarah and Burton Beds, and the Gum Ridge Formation, and gives fossil localities on the Brunette Downs, Alroy, Avon Downs, and Ranken Sheet areas.

GATEHOUSE, C.G., 1966b - Palaeontological report on samples from Helen Springs 1:250 000 sheet area. Appendix B in RANDAL, M.A. et al., The geology of the Helen Springs and Beetaloo 1:250 000 sheet areas. Bur. Miner. Resour. Aust. Rec., 1966/110.

Lists Middle Cambrian fossils from fourteen samples from the Gum Ridge Formation.

GATEHOUSE, C.G., 1967a - Palaeontological report, BMR No. 11 Cattle Creek; in SMITH, K.G., 1967 - Stratigraphic Drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 36.

Lists trilobite, brachiopod and conodont fragments, sponge spicules, and Biconulites? from BMR Avon Downs No. 11.

GATEHOUSE, C.G., 1967b - Palaeontological report, BMR No. 13 Sandover; in SMITH, K.G., 1967, Stratigraphic drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 53.

Lists trilobites (Pagetia significans, Xystridura sp.), phosphatic brachiopods, and sponge spicules from the Arthur Creek Beds.

GATEHOUSE, C.G., 1967c - First record of lithistid sponges in the Cambrian of Australia. Bur. Miner. Resour. Aust. Bull., 92, 57-67, pls. 7, 8.

Describes a lithistid sponge, Arborella mors from the Middle Cambrian of the Georgina Basin.

GEOLOGICAL SOCIETY OF AUSTRALIA, 1962 - Geological notes in explanation of the Tectonic Map of Australia. Bur. Miner. Resour. Aust., 1962.

Briefly mentions the stratigraphy of the Georgina Basin.

GEOLOGICAL SURVEY OF QUEENSLAND, 1958 - Summary report: Limestone resources of Queensland. Geol. Surv. Qld Publ., 292, 1-31.

Briefly mentions the limestones of the Barkly Tableland, the Georgina River area, and the Burke River Structural Belt.

GIBB, R.A., 1966 - Western Queensland reconnaissance gravity surveys, 1957-1961. Bur. Miner. Resour. Aust. Rec., 1966/13 (Unpubl.).

Presents and then interprets the results of a gravity survey in the eastern part of the Georgina Basin.

GIBB, R.A., 1967 - Western Queensland reconnaissance gravity surveys, 1957-1961. Bur. Miner. Resour. Aust. Rept., 129, 47pp., 8pls.

As above reprinted as a report.

GILBERT-TOMLINSON, J., 1960 - Lower Ordovician fossils in the area of Boulia 4-mile sheet, Queensland; in Casey et al., The geology of the Boulia area, western Queensland. Bur. Miner. Resour. Aust. Rec., 1960/12 (unpubl.).

Notes the occurrence of fossils in the Ninmaroo and Swift Formations, discusses their relationships, and gives generic names to some of the fauna which includes trilobites, molluscs, brachiopods, echinoderms, and a graptolite.

GILBERT-TOMLINSON, J., 1962 - Georgina Basin in Sedimentary Basins and Palaeontology Sections Summary of Activities, 1962. Bur. Miner. Resour. Aust. Rec., 1962/175 (unpubl.).

Reports a new genus of kaolishaniid trilobite from the Lower Ordovician near Southern Cross Bore (Marqua) on the Tobermory sheet.

GILBERT-TOMLINSON, J., 1963 - Cambrian fossils from Phillips- Sunray Black Mountain No. 1 Well, Boulia area, Queensland; in Phillips-Sunray Stratigraphic Drilling area, ATP 54P, Queensland. Well Completion Reports on Black Mountain No. 1, Canary No. 1, Beantree No. 1 and Elizabeth Springs No. 1, by D.C. Green, D.D. Hamling, & N. Kyranis (unpubl.).

Records Idamean trilobites in Core 4 and Mindyallan trilobites in Core 5. Core 12 contains the archaeostracan Aluta and Core 13 Xystridura, which commonly occurs in the Beetle Creek Formation.

GILBERT-TOMLINSON, J., 1968 - A new record of Bothriolepis in the Northern Territory of Australia. Bur. Miner. Resour. Aust. Bull., 80, 191-224, pl. 15.

Records ten fish localities in the Devonian of the Georgina Basin. Bothriolepis and

Phyllolepis are reported.

GILBERT-TOMLINSON, J., 1969 in Hill, D., Playfoird, G., & Woods, J.T. Ordovician and Silurian fossils of Queensland. Qld. Palaeonogr. Soc., 18 pp., 15 pls.

Isotelus sp., Proetus sp., and Warendia bidecorata Tomlinson, gen. et sp. nar.; Riberia? sp.; and Teiichispira cornucopiae Tomlinson, sp. nov. are illustrated and briefly diagnosed.

GILBERT-TOMLINSON, J., 1973 - The Lower Ordovician gastropod Teiichispira in northern Australia. Bur. Miner. Resour. Aust. Bull., 126, 65-88, pls 29-34.

Describes in detail the gastropod Teiichispira cornucopiae from the Coolibah Formation, discusses the fauna of the unit, and its age.

GUILLEMOT, J., & TISSOT, B., 1965 - La geologie des principaux bassins sedimentaires australiens. Rev. Inst. Franc. Petrol., 20, 451-62.

Briefly discusses the geological history of the Georgina and Amadeus Basins, and the Lower Palaeozoic rocks of the Flinders Range.

HALDANE, A.D., 1967 - Spectrographic analyses of samples from BMR Sandover No. 13 in SMITH, K.G., Stratigraphic drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 63.

Gives values for Ni, Co, Cu, V, and Pb (one Mo value) for sixteen shale samples in the interval 76-497m in the Arrinthrunga Formation.

HENDERSON, R.A., 1974 - Shell adaption in

acrothelid brachiopods to settlement on a soft substrate. Lethaia, 7, 57-61.

Illustrates specimens of Orbithele sp. nov. from the Mungerebar Limestone, 80km SW of Dajarra, which show protegular growth stages.

HENDERSON, R.A., 1976 - Idamean (early Upper Cambrian) trilobites from northwestern Queensland. Palaeontology 19 (2), 325-364, pls 47-51.

Revises local species of Pseudagnostus, Proceratopyge, Eugonocare, Stigmatoa and Pagodia (Idamea) from the Georgnia Limestone south of Glenormiston. Recognizes Aplotaspis and Prismenaspis as new genera, and reports occurrence of Pterocephalia, Yuepingia and Prochuangia. Discusses the problems associated with the recognition of biomeres in Australia, and offers a revision of the Idamean biostratigraphic Zonal scheme.

HENDERSON, R.A., 1977 - Stratigraphy of the Georgina Limestone and a revised zonation of the Early Upper Cambrian Idamean Stage. J. Geol. Soc. Aust., 23 (4), 423-433.

Shallow subtidal, supra - and intertidal depositinal environments are proposed for the Georgina Limestone. Sun Hill Arkose is considered to post-date the Cambrian. Five Idamean trilobite assemblage - zones are recognized : in ascending order Glyptagnostus reticulatus, Proceratopyge cryptica, Erixanium sentum, Stigmatoa diloma and Irvingella tropica. The Browns Creek Section is nominated as the type section for the Idamean Stage.

HENDERSON, R.A., & SHERGOLD, J.H., 1972 - Cyclocystoides from early Middle Cambrian rocks of northwestern Queensland, Australia. Palaeontology, 14, 704-10, pl. 138.

Describes the new species Cyclocystoides, primotica from the Yelvertoft Bed (early Middle Cambrian). First record of Cyclocystoidea from rocks older than Middle Ordovician and from the southern hemisphere.

HILL, Dorothy, 1951 - Geology. In HANDBOOK OF QUEENSLAND. Aust. Assoc. Adv. Sci., 13-24.

Briefly discusses the geological history of the Georgina Basin.

HILL, Dorothy, & MAXWELL, W.G.H., 1962 - ELEMENTS OF THE STRATIGRAPHY OF QUEENSLAND. Univ. Qld Press, Brisbane, pp. 12-21.

Gives a brief synopsis of the Cambrian and Ordovician stratigraphy of the Georgina Basin.

HILL, Dorothy, PLAYFORD, G., & WOODS, J.T., 1969 - Ordovician and Silurian fossils of Queensland. Qld palaeont. Soc., Brisbane, 18 pp.

Illustrates brachiopods, gastropods, pelecypods, cephalopods, trilobites, conodonts and trace fossils from the Ordovician sequence in the Queensland portion of the Georgina Basin. New conodont genera Tokognathus and Trigonodus, are credited to Nieper.

HILL, Dorothy, PLAYFORD, G., & WOODS, J.T., 1971 - Cambrian fossils of Queensland. Qld Palaeontogr. Soc., Brisbane, 32 pp.

Illustrates brachiopods, hyolithids, gastropods, sponges, pelmatozoans, trilobites, algae, bradoriids, and conodonts from the Cambrian of the Georgina Basin.

HILLS, E.S., 1955 - Die Landoberflache Australiens. Erde, 3-4, 195-205.

Mentions the Barkly Tableland and figures the Georgina Lineament.

HILLS, E.S., 1959 - Record of Bothriolepis and Phyllolepis from the Northern Territory of Australia. Proc. R. Soc. NSW., 92, 174-5.

Describes five fish plates and some fragments from the Dulcie Sandstone.

HODGE-SMITH, T., 1932 - Geological and mineralogical observations in central Australia. Rec. Aust. Mus., 18, 415-42.

Records the presence of Palaeozoic rocks in the vicinity of Tobermory and the Tarlton Range. Pyrolusite was recorded 38 km west of Tobermory station.

HOSSFELD, P.S., 1954 - Stratigraphy and structure of the Northern Territory of Australia. Trans. R. Soc. S. Aust., 77, 103-161.

The article is mainly concerned with the central part of the Northern Territory; scant attention is paid to the Georgina Basin (called the Barkly Basin) but the sequence of Cambrian carbonates and Ordovician clastics is noted.

HOWARD, P.F., 1971 - Discovery of phosphorite in northern Australia. Aust. Inst. Min. Eng. Trans., 250, 269-74.

Discusses the exploration techniques used to discover the phosphate deposits in the Alexandria-Wonarah region.

HOWARD, P.F., 1972 - Exploration for phosphorite in Australia - a case history. Econ. Geol., 67, 1180-1192.

Details the fifteen phosphorite deposits

known to occur in the Georgina Basin.

HOWARD, P.F., & COONEY, A., 1976 - D Tree phosphate deposit, Georgina Basin, Queensland, pp. 265-273 in KNIGHT, C.L. (Ed.) ECONOMIC GEOLOGY OF AUSTRALIA AND PAPUA NEW GUINEA.4. INDUSTRIAL MINERALS AND ROCKS. Aust. Inst. Min. Metall. Monogr. Ser., 8.

Describes the search for phosphorite in the Yelvertoft-Thorntonia region by IMC Development Corporation; stratiography, sedimentary sequence and distribution, and structive. The phosphate occurs as orthochemical mudstone associated with platy and nodular orthochemical chert, and as diagenetically replaced micritic carbonate, calcarenite and coquina. Slump and breccia structures are present. Localized contemporaneous weathering and erosion is documented. The phosphorite was deposited in an elongate basin between the Precambrian and an offshore carbonate bank.

HOWARD, P.F., & PERRINO, F.A., 1976 - Wonarah phosphate deposit, Georgina Basin, Northern Territory. pp. 273-277. in KNIGHT, C.L. (Ed.) ECONOMIC GEOLOGY OF AUSTRALIA AND PAPUA NEW GUINEA. 4. INDUSTRIAL MINERALS AND ROCKS. Aust. Inst. Min. Metall. Monogr. Ser., 8.

Phosphorite was found in lower Middle Cambrian rocks in the Alexandria-Wonarah area by IMC Development Corporation and Continental Oil Corporation. Entirely subsurface, drilling indicates the phospharite is almost totally collophane mudstone with only rare laminae of pelleral phosphorite. Deposition is thought to have taken place between an island of basic volcanics and offshore carbonate banks.

HYNDMAN, R.D., 1967 - Heat flow in Queensland and Northern Territory, Auystralia. J. Geophys. Res., 72; 527-539.

Gives results of heat flow measurements in BMR Avon Downs No. 11 [BMR 11(Cattle Creek)], Frewena No. 1, and Alice No. 1.

IRVING, S., SMITH, K.G., & WALKER, J., 1958 - Sedimentary basins of Australia: a glossary of nomenclature. Bur. Miner. Resour. Aust. Rec., 1958/80 (unpubl.).

The present Georgina Basin is dealt with under three headings: Camooweal Basin, Georgina Basin, and Undilla Basin.

IVANAC, J.F., 1954 - The geology and mineral deposits of the Tennant Creek Goldfield, Northern Territory. Bur. Miner. Resour. Aust. Bull., 22, Vol. 1, Description, 164 pp.; Vol. 2, Maps.

Contains a contribution by Opik on the Middle Cambrian Gum Ridge Formation.

JACK, R.L., 1895 - Stratigraphic notes on the Georgina Basin, with reference to the question of Artesian water. Proc. R. Soc. Qld, 11, 71-74.

Discusses the borehole information obtained in the Queensland part of the Georgina Basin in the nineteenth century.

JACK, R.L., 1897 - Note on the discovery of organic remains in the Cairns Range, western Queensland Proc. R. Soc. Qld., 12, 47-49.

Reports the finding of nautiloids in the Toko Range.

JEFFERY, P.M., COMPSTON, W., GREENHAUGH, D., & de LAETER, J., 1955 - On the carbon-13 abundance of limestones and coals. Geochem. Cosmochem. Acta, 7, 255-285.

Includes a section on carbon-13 abundance from Middle Cambrian limestones of the Undilla embayment and the Barkly Tableland.

JELL, P.A., 1970 - Pagetia ocellata, a new Cambrian trilobite from northwestern Queensland. Mem. Qld Mus., 15, 303-313, pls 23, 24.

Describes a new species of eodiscinid trilobite from the Beetle Creek Formation; the growth stages are illustrated and discussed in detail.

JELL, P.A., 1974 - Faunal provinces and possible planetary reconstruction of the Middle Cambrian. J. Geol., 82, 319-350.

Uses palaeontological data from the Georgina Basin in synthesis of Columban, Viking and Tollchuticook Middle Cambrian faunal provinces.

JELL, P.A., 1975a - The abathocroal eye of &dHPagetia, a new type of trilobite eye. Fossils and Strata, 4, 33-43.

This new type of eye is recognized in material from the Burton Beds (Xystridura templetonensis Zone), the Beetle Creek Formation (Ptychagnostus gibbus Zone), Currant Bush Limestone (Pt. atavus Zone), and V-Creek Limestone (Pt. nathorsti Zone).

JELL, P.A., 1975b - Australian Middle Cambrian Eodiscoids with a review of the Superfamily. Palaeontographica, Abt A, 150, 1-97, pls 1-29.

Uses numerical taxonomy to suggest familial classification and to define lineages. Sexual dimorphism is recognized in three species of Pagetia. Sixteen new species of Pagetia; P. edura, P. fluitata, P. howardi, P. inferstrix, P. leptoskolos, P. macrommatia, P. oepiki, P.

pollosta, P. polygnota, P. prolata, P. salebra, P. sinesulcata, P. thorntonensis, P. triaena and P. whitehousi: three new species of Opsidiscus; O. brevicaudatus, O. microspinus, and O. teretistes: and Helepagetia bitruncula sp. nov. and Macannaia stenorhachis sp. nov. are described. Helepagetia and Macannaia are new genera.

JENSEN, H.I., 1914 - Geological report on the Darwin Mining District, McArthur River District and the Barkly Tableland. Bull. N. Terr. Aust., 10, 14 pp.

Briefly mentions flat-lying limestone and sandstone in the Camooweal area.

JENSEN, H.I., 1925 - Palaeogeography of Queensland. Qld Govt Min. J., 26, 379-82, 422-24, 459-64.

Presents maps of probable extent of sea in Queensland during the Cambrian and Ordovician periods.

JESSON, E.E., RADESKI, A., & WIEBENGA, W.A., 1964 - BMR No. 11 electrical and gamma-ray logging, Georgina Basin, N.T. 1963, Bur. Miner. Resour. Aust. Rec., 1964/85 (unpubl.).

Provides electric and gamma-ray logs for BMR Avon Downs No. 11 [BMR No. 11 (Cattle Creek)].

JEWELL, F., 1960 - Great Artesian Basin, aeromagnetic reconnaisance survey 1958. Bur. Miner. Resour. Aust. Rec., 1960/14 (unpubl.).

Demonstrates that the Burke River Structure is marked by a magnetic anomaly extending SSE to Springvale. It is paralleled by two other magnetic anomalies, one 20 kilometres to the east, and the other 32 kilometres west of Boulia.

JOHNSON, N.E.A., NICHOLS, R.A.H., & BELL, M.D., 1964 - Completion report BMR No. 11 Well, Cattle Creek, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1964/45 (unpubl.).

Presents a lithological log for BMR Avon Downs No. 11 [BMR No. 11 (Cattle Creek)].

JOHNSON, N.E.A., SMITH, K.G., & NICHOLS, R.A.H., 1967 - Core descriptions, BMR 11 Cattle Creek; in SMITH, K.G., 1967 - Stratigraphic Drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 33-35.

Describes the core recovered from Avon Downs No. 11 [BMR No. 11 (Cattle Creek)].

JOKLIK, G.F., 1955 - The geology and mica fields of the Harts Range, central Australia. Bur. Miner. Resour. Aust. Bull., 26, 226 pp., 30 pls.

Briefly discusses the geology of the Huckitta-Jervois area.

JONES, N.O., & QUINLAN, T., 1959 - An outline of the water resources of central Australia. Bur. Miner. Resour. Aust. Rec., 1959/77 (unpubl.).

Refers to the Barkly Basin as an underground water basin. Recognizes four groundwater provinces in the area of the Georgina Basin covered by the report: the Plenty, Stirling, Sandover and Barkly. Published in Jones & Quinlan, 1962.

JONES, N.O., & QUINLAN, T., 1962 - An outline of the water resources of the Alice Springs area. in Lands of the Alice Springs Area, Northern Territory, 1956-57. CSIRO Land Res. Ser. No. 6, 150-62.

Describes the occurrence and nature of

surface and groundwater in the Barkly, Sandover and Stirling groundwater provinces.

JONES, O.A., 1953 - The structural geology of the Precambrian in Queensland in relation to mineralization. In GEOLOGY OF AUSTRALIAN ORE DEPOSITS. 5th Emp. Min. Metall. Cong., 1, 344-351.

Mentions lead-zinc mineralization at Tott's Creek.

JONES, P., 1965 - Southeast Georgina Basin Seismic Survey 1964 progress report. Bur. Miner. Resour. Aust. Rec., 1965/39 (unpubl.).

Reports that attempts to follow a Lower Palaezoic refraction marker in the Ninmaroo Formation proved impractical. The sedimentary section (Palaeozoic plus Mesozoic) increases in thickness from 900m near Marion Downs to 2500m near Canary. One borehole drilled near Marion Downs penetrated limestone yielding trilobite fragments.

JONES, P., & ROBERTSON, C.S., 1967 - Southeastern Georgina Basin seismic survey, Queensland, 1963-64. Bur. Miner. Resour. Aust. Rec., 1967/90 (unpubl.).

Reports on experimental work to determine the most suitable reflection and refraction techniques. The main relector in the southeast part of the basin is the top of the Ninmaroo Formation. Section thickens in the Toko Syncline to the southeast, totalling at least 4500m of Palaeozoic and possble 4500m of Proterozoic sediments. Suggests the the faulting on the southwestern margin of Toko Syncline is thrust faulting. Records presence of trilobite fragments similar to forms from the Chatsworth Limestone in the interval 110-143m in the BMR Marion Downs No. 1 Scouthole.

JONES, P.J., 1961 - Discovery of conodonts in the Upper Cambrian of Queensland. Aust. J. Sci., 24, 143-44.

Records Upper Cambrian conodonts from the Chatsworth and Mungerebar Limestones.

JONES, P.J., 1964 - The Upper Silurian - Lower Devonian age of the sandstone overlying the Toko Group, Georgina Basin; in Reynolds, M.A. & Pritchard, P.W., 1964 - The Geology of the Glenormiston 1:250 000 sheet area. Bur. Miner. Resour. Aust. Rec., 1964/28 (unpubl.).

Reports coelolepid fish scales from the Cravens Peak Beds, and conodonts from the Mithaka Formation.

JONES, P.J., 1971 - Lower Ordovician conodonts from the Bonaparte Gulf Basin and the Daly River Basin, northwestern Australia. Bur. Miner. Resour. Aust. Bull., 117, 1-80, pls 1-9.

Recognizes Acodus housensis in the Georgina Basin.

JONES, P.J., SHERGOLD, J.H., & DRUCE, E.C., 1971 - Late Cambrian and Early Ordovician Stages in western Queensland. J. geol. Soc. Aust., 18, 1-32.

Payntonian, Datsonian and Warendian Stages are proposed for a sequence of trilobite and conodont faunas straddling the Cambrian-Ordovician boundary in the Burke River Structural Belt. Correlations are made with sequences between northern and central Australia, China, Manchuria, Korea, Europe and North America.

KINGDOM, E., WOOLLEY, D.R.G., & FAULKS, I., 1967 -

Water-bore locations in central Australia. Bur. Miner. Resour. Aust. Rec., 1967/83 (unpubl.).

Names and locates all water-bores (up to Jan 1967) in the Georgina Basin south of latitude 180 south.

KOBAYASHI, T., 1935 - The Cambro-Ordovician Formations and Faunas of South Chosen. Part III. J. Fac. Sci. Imp. Univ. Tokyo, 4(2), 49-344, pls. 1-24.

Suggests that the identification of Agnostus chinensis by Chapman (1929) from the Georgina Basin may be incorrect, and the species is probably A. rakuroensis Kobayashi.

KONECKI, M.C., 1960 - Examination of outcrop samples from the Boulia area, western Queensland; in Casey J.N. et al., The geology of the Boulia area, western Queensland. Bur. Miner. Resour. Aust. Rec., 1960/12 (unpubl.).

Reports on porosity, permeability and fluid saturation of samples from the Pomegranate and Chatswsorth Limestones and the Ninmaroo Formation. Results indicate that the residual oil content of parts of these formations is not inconsistent with those of petroleum source beds.

LAHERRERE, J., & DRAYTON, R.D., 1965 - Some geophysical results across the Simpson Desert. APEA J., 1965, 48-58.

Discusses the southern margin of the Georgina Basin and the correlation of The Brothers No. 1 well to wells in the Pedirka Basin.

LINDSAY, D., 1889 - An expedition across Australia from south to north, between the telegraph line and the Queensland Boundary, in 1885-6. Proc. R. Geogr. Soc., 11, 650-71.

Traversed the Georgina Basin from the Tarlton Range northeast to Lake Nash and north to Burketown. Reports silver-lead in the vicinity of Lake Nash.

LLOYD, A.R., 1968 - An outline of the Tertiary geology of northern Australia. Bur. Miner. Resour. Aust. Bull., 80, 105-32.

Discusses the stratigraphy and palaeontology of Tertiary sediments in northern Australia and presents the evidence for marine and non-marine origin of the various units.

LLOYD, A.R., & BELL, M., 1964 - Completion report BMR No. 13 Well, Sandover, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1964/127 (unpubl.).

Discusses the well history and stratigraphy of BMR Elkedra No. 13 and includes appendices on sample and core descriptions, palaeontology, geochemistry, organic geochemistry and formation tasks. Magnetic susceptibility and specific gravity of ?Archaean gneiss is also included. The well penetrated 1016 m of Cambrian sediments.

LLOYD, A.R., SHAW, R.D., & NICHOLS, R.A.H., 1967 - Core descriptions, BMR Sandover No. 13 in SMITH, K.G., - Stratigraphic drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 49-52.

Contains detailed descriptions of the sixteen cores recovered from BMR Elkedra No. 13 [BMR No. 13 (Sandover)].

LONSDALE, G.F., 1962 - Great Artesian Basin reconnaissance gravity survey using helicopters, Queensland, 1961. Bur. Miner. Resour. Aust. Rec., 1962/14 (unpubl.).

Presents gravity details for Bedourie 1:250 000 sheet area, and a Bouguer anomaly map for the southeastern part of the Georgina Basin.

MACKAY, N.J., & JONES, N.O., 1956 - Report on a petroliferous gas occurrence in a bore on Ammaroo Station, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1956/67 (unpubl.).

Discusses the occurrence of gas at Ammaroo bore.

McKELLAR, R.G., 1963 - Beantree No. 1 Palaeontological Report; in PHILLIPS PETROLEUM COMPANY 1963 - Phillips-Sunray stratigraphic drilling Boulia area, ATP 54P Queensland. Well Completion Reports : Black Mountain No. 1, Canary No. 1, Beantree No. 1 and Elizabeth Springs No. 1, by D.C. Green, D.D. Hamling & N. Kyranis (unpubl.).

Lists fossils found in the core from Beantree No. 1 well.

MADIGAN, C.T., 1932 - The geology of the eastern MacDonnell Ranges, central Australia. Trans. R. Soc. S. Aust., 56, 71-117.

Compares the geology of the Huckitta area with that of the Amadeus Basin and concludes that they are virtually identical.

MADIGAN, C.T., 1937 - Additions to the geology of central Australia. The region north of the Macdonnell Ranges and eastward from the Telegraph Line to the Queensland border. Rept. Aust. Ass. Adv. Sci., 23, 89-92.

Summarizes the geology of the Jervois, Tarlton and Toko ranges and reports the discovery of fossil algae from Adelaidean and Cambrian rocks, and shelly fossils from the

Ordovician.

MADIGAN, C.T., 1938 - The Simpson Desert and its borders. Proc. R. Soc. NSW., 71, 503-35.

Briefly discusses the geology of the desert border areas, including the Georgina Basin. Pays special attention to the geology of the Tarlton Range and reinterprets some of the observations made by Winnecke (1884).

MARSHALL, C.E., & NARIAN, H., 1954 - Regional gravity investigations in the eastern and central Commonwealth. Univ. Sydney, Dept. Geol. Geophys., Mem., 1954/2, (unpubl.).

Records residual Bouguer Anomalies between Cloncurry, Duchess and Mount Isa, including the Duchess embayment.

MILLIGAN, E.N., 1963 - The Bureau of Mineral Resources Georgina Basin core drilling program. Bur. Miner. Resour. Aust. Rec., 1963/86 (unpubl.).

Records the preliminary results of the core drilling program which showed inter alia: that Georgina Basin sediments extend westward to the Stuart Highway; that limestone and dolomite of the Arrinthrunga Formation is interbedded with red, brown, and purple calcareous siltstone; near Tarlton Downs blue, grey shale and coquinite of the Nora Formation overlies sandy Kelly Creek Beds and sandstones of the Tomahawk Beds; asphalt is present in vuggy dolomite (?Camooweal Dolomite) in BMR Sandover River No. 14 (Grg 14), near Lake Nash Homestead in the Sandover River Sheet area; that the "Ninmaroo Formation" mapped northeast of Urandangi is indistinguishable from the underlying Camooweal Dolomite.

MILLIGAN, E.N., 1964 - The regional geology of the

northern half of the Alcoota 1:250 000 Sheet area, N.T. Bur. Miner. Resour. Aust. Rec., 1964/43 (unpubl.).

Reports on the results of the mapping program in the northern part of the sheet area with particular reference to the Georgina Basin sequence. Particular emphasis is placed on underground water. Some of this Record forms the basis for particulars of the Alcoota Explanatory Notes (Shaw & Warren, 1975).

MONTECCHI, P., & ROBERTSON, C.S., 1966 - Southern Georgina Basin seismic survey, Northern Territory and Queensland, 1965. Bur. Miner. Resour. Aust. Rec., 1966/28 (unpubl.).

A number of different techniques, including various shot and geophone patterns, noise testing, collinear offset shooting, air-shooting and multiple coverage, failed to provide useful reflections. The results tend to confirm a shelf area between BMR Tobermory No. 1 [BMR No. 12 (Cockroach)] and Tobermory.

MORRIS, J., MULREADY, J., & CADART, M., 1975 - Core and cutting descriptions Alliance Ethabuka No. 1; in ALLIANCE OIL DEVELOPMENT AUSTRALIA N.L., 1975 - Well Completion Report Ethabuka No. 1, (unpubl.).

MOTT, W.D., BROOKS, J.H., MADDEN, T.J., & ALLEN, R.J., 1961 - Occurrences of petroleum and natural gas in Queensland. Geol. Surv. Qld Publ., 299, 89 pp.

Mentions the occurrence of residual oil in the Pomegranate Limestone, Chatsworth Limestone, and Ninmaroo Formation in the Boulia area. Gives volume of oil, porosity and permeability.

MURRAY, L.R., 1967 - Analysis of samples from water

bore for BMR Sandover No.13 in SMITH, K.G., Stratigraphic drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 62.

Records a water hardness of 254 ppm and a T.D.S. of 420 ppm from BMR Elkedra No. 13 [BMR 13 (Sandover)].

NEUMANN, F.J., 1959a - Preliminary report on a reconnaissance gravity survey in the Georgina Basin area, Queensland. Bur. Miner. Resour. Aust. Rec., 1959/8 (unpubl.).

Contains rock density tables and maps of Bouguer Anomalies over portions of the Queensland part of the Basin. Suggests that the Precambrian basement of the Mount Isa area extends southward beneath the basin in the Duchess-Boulia area. In the western part, the trends are northwest and gravity "highs" alternate with "lows".

NEUMANN, F.J.G., 1959b - Preliminary report on a gravity survey in the Toko Range area, western Queensland. Bur. Miner. Resour. Aust. Rec., 1959/51 (unpubl.).

Reports on gravity measurements on the western half of the Glenormiston Sheet area.

NICHOLS, R.A.H., 1963 - The sedimentary petrology of the Alroy and Brunette Downs Sheet areas, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1963/69 (unpubl.).

The petrology and depositional environment of the Anthony Lagoon Beds (Cambrian) are discussed. Fossils identified include algae, trilobites, and echinoderms.

NICHOLS, R.A.H., 1964 - The geology of the Sandover River 1:250 000 Sheet area, Northern Territory.

Bur. Miner. Resour. Aust. Rec., 1964/63 (unpubl.).

Discusses the physiography and stratigraphy of the Sandover River Sheet area, including notes on the lithology of the units and the fossils.

NICHOLS, R.A.H., 1965a - Sedimentary petrology of some units from the Sandover River Sheet area, N.T. Bur. Miner. Resour. Aust. Rec., 1965/211 (unpubl.).

Illustrates and describes dolomitic rocks from the Meeta and Tomahawk Beds. Deposition occurred under variable shallow-water shelf conditions; dolomitization is considered to be penecontemporaneous.

NICHOLS, R.A.H., 1965b - BMR No. 12 (Cockroach). Appendices 1 & 2 - Sample descriptions and Core descriptions; in NICHOLS, R.A.H., & BELL, M.D., Completion report for BMR No. 12 (Cockroach), Northern Territory. Bur. Miner. Resour. Aust. Rec., 1965/60 (unpubl.).

Gives rock descriptions for the cuttings (collected at 10' intervals) and cores (14 in all) from BMR Tobermory No. 1 [BMR No. 12 (Cockroach)].

NICHOLS, R.A.H., 1966a - Report on core hole Grg 9A, Georgina Basin, and comparison with Grg 14. Bur. Miner. Resour. Aust. Rec., 1966/2 (unpubl.).

Compares the distribution of pellets, ooliths, breccia, cross-bedding, scour and fill, slumped beds, quartz, tourmaline and zircon in core holes BMR Urandangi No. 9A (Grg 9A) and BMR Sandover River No. 14 (Grg 14).

NICHOLS, R.A.H., 1966b - Petrology of some carbonates in the Georgina Basin. Bur. Miner.

Resour. Aust. Rec., 1966/145 (unpubl.).

Defines the different types of carbonates found in the Georgina Basin, discusses their mode of origin and diagenesis, and postulates depositional environments. Concludes that trace elements may be useful in correlation, but that clay minerals have a limited use for correlation; rather they reflect the character of the source material.

NICHOLS, R.A.H., 1966c - Sandover River, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes., SF/53-8, 11 pp.

Details the physiography, stratigraphy, structure, and economic geology of the Sandover River sheet area. Gives list of waterbores.

NICHOLS, R.A.H., 1966d - Mulga No. 1 Well and its stratigraphic implications, Georgina Basin, N.T. Bur. Miner. Resour. Aust. Rec., 1966/155 (unpubl.).

Presents a summary of the petrography of Mulga No. 1, Lake Nash No. 1, BMR Avon Downs No. 11 [BMR 11 (Cattle Creek)] and BMR Tobermory No. 1 [BMR No. 12 (Cockroach)]. Concludes that the dolomite units penetrated are the same and should not be recognized as different formations.

NICHOLS, R.A.H., & BELL, M.D., 1965 - Completion report for BMR No. 12 (Cockroach), Northern Territory. Bur. Miner. Resour. Aust. Rec., 1965/60 (unpubl.).

This stratigraphic hole reached a TD of 4000' and penetrated Ninmaroo Formation, Arrithrunga Formation and Marqua Beds. Aquifers were intersected at 80 m, 155 m and 280 m.

NICHOLS, R.A.H., & FEHR, A.E., 1964 - Report on

corehole Grg 14, Georgina Basin, and correlation with Grg 4. Bur. Miner. Resour. Aust. Rec., 1964/69 (unpubl.).

Presents an extremely detailed lithological log for BMR Sandover River No. 14 (Grg 14) and discusses the correlation with BMR Elkedra No. 4 (Grg 4).

NICHOLS, R.A.H., & RANDAL, M.A., 1967 - Core descriptions, BMR No. 12 Cockroach; in SMITH, K.G., Stratigraphic Drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 39-46 (see Nichols & Bell, 1965, for complete description).

NOAKES, L.C., 1951 - The structure of the Northern Territory in relation to mineralization. Bur. Miner. Resour. Aust. Rec., 1951/64 (unpubl.).

Records a silver-lead occurrence near Morstone Station in the Undilla embayment. The mineralization is in Middle Cambrian dolomite and cannot be related to known metallogenetic epochs. Also records copper mineralization at Wollogorang in ?Lower Cambrian lavas.

NOAKES, L.C., 1956 - Upper Proterozoic and Sub Cambrian rocks in Australia. Int. geol. Congr., 20th Sess., Mexico 2, 213-38. (Also in Bur. Miner. Resour. Aust. Bull., 49, 1957).

In discussing strata at or about the Proterozoic-Palaeozoic boundary, mentions Camooweal Dolomite and the Mopunga Group.

NOAKES, L.C., CARTER, E.K., & OPIK, A.A., 1959 - Urandangi - 4-mile Geological Series. Bur. Miner. Resour. Aust. explan. Notes 1, SF/54-5, 2nd ed., 16 pp.

Details physiography, stratigraphy, geological history, and underground water

resources of the Urandangi Sheet area.

NOAKES, L.C., & TRAVES, D.M., 1954 - Outline of the geology of the Barkly Region, in Survey of the Barkly Region; Northern Territory and Queensland, 1947-48. CSIRO Land Res. Ser., 3, 34-41.

A brief summary of the geological knowledge of the Barkly region before detailed surveys of the area were undertaken by BMR.

OGILVIE, C., 1954 - The hydrology of the Queensland portion of the Great Artesian Basin. Appendix H, in artesian water supplies in Queensland, Brisbane, by Authority.

This paper is not concerned with the Georgina Basin but uses the term Georgina Hydrological Group to encompass boreholes drilled in the general Boulia- Hamilton River area.

OIL AND GAS JOURNAL, 1962 - Generalized formation correlates in Australia and Papua. Aust. Oil Gas J., 1962, 72-73.

Gives stratigraphic columns for the southwest, south, and northeast Georgina Basin.

OPIK, A.A., 1948a - Preliminary report on Cambrian fossils collected from the Barkly Tableland and adjacent areas in Queensland and the Northern Territory. Bur. Miner. Resour. Aust. Rec., 1948/73 (unpubl.).

Reports trilobites, archeocyathids, biconulitids, sponge spicules, brachiopods, hyolithids, and cystid plates from Cambrian rocks of the Barkly Tableland. A sequence of five successive faunas is recognized

OPIK, A.A., 1948b - Re-examination of fossils of locality B.68 (20.4 miles west of Dajarra),

Queensland, with a note on the palaeogeography of the Middle Cambrian. Bur. Miner. Resour. Aust. Rec., 1948/84 (unpubl.).

Points out that the fauna from Dajarra is of "eastern" rather than "western" aspect as had been suggested earlier.

OPIK, A.A., 1949 - Geological observations during a journey to eastern Jervois Ranges. Bur. Miner. Resour. Aust. Rec., 1949/92.

Presents observations on the sequence in the vicinity of Oorobra Rockholes and Grant Bluff.

OPIK, A.A., 1951 - Progress in the study of Cambrian fossils from the Northern Territory and N.W. Queensland. Bur Miner. Resour. Aust. Rec., 1951/26 (unpubl.).

Discusses the Redlichia fauna of northern Australia and includes drawings of Xystridura browni (Etheridge).

OPIK, A.A., 1952 - Discovery of fossiliferous Upper Cambrian in central Australia. Bur. Miner. Resour. Aust. Rec., 1952/17 (unpubl.).

Records latest Cambrian fossils collected from the Ross River section (cf. Madigan, 1932). A brief mention is made of a Precambrian Collenia from Acacia Well.

OPIK, A.A., 1954a - Cambrian stratigraphy of the Camooweal Region (Progress Report). Bur. Miner. Resour. Aust. Rec., 1954/31 (unpubl.).

Defines, in an unpublished record, the formations, stages (or faunizones) and trilobite genera of the Undilla embayment. The Undilla Basin is also defined. Aspects of the interprovincial correlation of the Middle Cambrian are also reported.

OPIK, A.A., 1954b - Dolomite Problems. Bur. Miner. Resour. Aust. Rec., 1954/51 (unpubl.).

Discusses the modes of formation of dolomite and the relations between dolomite and mineralization.

OPIK, A.A., 1956a - Cambrian geology of Queensland; in EL SISTEMA CAMBRICO SU PALEOGEOGRAFIA Y EL PROBLEMA DE SU BASE. 20th Sess. int. geol. Congr. Mexico, 2, 1-24. (Also in Bur. Miner. Resour. Aust. Bull., 49).

Essentially a geology of the Georgina Basin, including a brief biostratigraphic zonation. The trilobite faunas vary between Oriental-Pacific, American-Pacific and Acado-Baltic (agnostids).

OPIK, A.A., 1956b - Cambrian geology of the Northern Territory. Ibid., 2, 25-84. (Also in Bur. Miner. Resour. Aust. Bull., 49).

Synthesizes the Cambrian geology of the Northern Territory up to 1955. The Camooweal Dolomite is considered as older than Cambrian and extending over most of the central part of the basin. The Georgina Basin is generally, considered under the headings 'Barkly Tableland' and 'Shelf Region'. Historical investigations, lithostratigraphy and fossils are discussed. A correlation of the Georgina Basin with western North America is suggested. The relationships of the fauna with that from other areas of Australia is outlined.

OPIK, A.A., 1956c - Cambrian palaeogeography of Australia. Ibid., 2, 239-84 (also in Bur. Miner. Resour. Aust. Bull., 49).

Presents a detailed discussion of the palaeogeography and palaeoclimatology of

Australia during the Cambrian and Ordovician. Also included is a discussion on provinces, tectonics and polar positions.

OPIK, A.A., and others, 1957a - The Cambrian geology of Australia. Bur. Miner. Resour. Aust. Bull. 49.

Contains papers by Australian contributors to the 20th IGC Session in Mexico listed elsewhere in this index. See Opik 1956a, 1956b, 1956c; Casey & Gilbert-Tomlinson, 1956; and Noakes 1956. All these papers are contained in this volume.

OPIK, A.A., 1957b - Cambrian succession in Queensland south of the 22nd parallel. Bur. Miner. Resour. Aust. Rec., 1957/95 (unpubl.).

Discusses the Cambrian geology of the Glenormiston, Mt Whelan, Duchess, and Boulia sheet areas.

OPIK, A.A., 1958a - The Middle Cambrian trilobite Centropleura in Queensland. Nature, 182, 204.

Reports the finding of Centropleura in the Duchess area.

OPIK, A.A., 1958b - The Cambrian trilobite Redlichia; organization and generic concept. Bur. Miner. Resour. Aust. Bull., 42, 5-38, pls 1-6.

Discusses the genus Redlichia and illustrates seven species from the Georgina Basin.

OPIK, A.A., 1959 - Correlation chart of Cambrian and Ordovician in Australia. Bur. Miner. Resour. Aust. Rec., 1959/52 (unpubl.).

Presents a detailed correlation chart for the Queensland part of the Georgina Basin and the

Barkly Tableland.

OPIK, A.A., 1960 - Cambrian and Ordovician geology in Hill, D., & Denmead, A.K. (eds) The geology of Queensland. J. geol. Soc. Aust., 7, 89-109.

Describes the Georgina Basin formations which crop out in Queensland, and the faunal zonation.

OPIK, A.A., 1961a - Alimentary caeca of Agnostids and other trilobites. Palaeontology, 3, 410-38, pls 68-70.

Describes Glystagnostus stolidotus from the Upper Cambrian of the Georgina Basin.

OPIK, A.A., 1961b - The geology and palaeontology of the headwaters of the Burke River, Queensland. Bur. Miner. Resour. Aust. Bull., 53, 249 pp., 24 pls.

Discusses the stratigraphy and palaeontology of the northern end of the Duchess embayment. Defines the Mount Birnie Beds, Roaring Siltstone, Devoncourt Limestone, Selwyn Range Limestone and O'Hara Shale following Opik 1956 and 1960. The fauna includes sponges (Pleodioria n.gen.), phosphatic brachiopods, worms and trilobites. Of the latter Delagnostus, Blystagnostus, and Tosotychia are new genera. Svealuta and Aristaluta are new genera of bradoriids. Three species of trilobites are described from the Undilla embayment and one from the Glenormiston area. Rhodonaspis longula Whitehouse from the Upper Cambrian of the Glenormiston area is illustrated and mentioned.

OPIK, A.A., 1963a - Nepea and the nepeids (trilobites, Middle Cambrian, Australia). J. geol. Soc. Aust., 10 (2), 313-316.

Discusses the concept of the genus Nepea with reference to material from the Split Rock Sandstone in the Undilla Embayment. Gives reconstruction of Nepea narinosa Whitehouse, 1939.

OPIK, A.A., 1963b - Early Upper Cambrian fossils from Queensland. Bur. Miner. Resour. Aust. Bull. 64, 133 pp., 9 pls.

Recognizes Mindyallan and Idamean as new stages based on a sequence of eight trilobites faunas (assemblage-zones) from Glenormiston and the Duchess

embayment. New genera include: Agnostardis, Agnostotes, and Hercantyx. Bradoriids and a hydroid are also described.

OPIK, A.A., 1966a - Cambrian. Bur. Miner. Resour. Aust. Rec., 1966/6 (unpubl.).

Mentions the Middle and Upper Cambrian of the Georgina and Burke River areas and their trilobite faunas.

OPIK, A.A., 1966b - The early Upper Cambrian crisis and its correlation. J. Proc. Roy. Soc. NSW., 100, 9-14.

Discusses the faunal changes at the Mindyallan- Idamean boundary.

OPIK, A.A., 1967a - The Mindyallan fauna of northwestern Queensland. Bur. Miner. Resour. Aust. Bull., 74, vol 1, text, 404 pp.; plates, 167pp., pls 1-67.

Describes in detail the trilobite fauna of the early Upper Cambrian of the Glenormiston area, compares with fauna from the Burke River Structural Belt; lists fossils from Ross River, N.T. Amends the Mindyallan Stage to include three zones. The

following genera are new: Innitagnostus, Hadragnostus, Idolagnostus, Triadospis, Connagnostus, Ammagnostus Agnostoglossa, Agnostascus, Oxyagnostus, Xestagnostus, Plurinodus, Alomataspis, Lampropeltis, Nilegna, Erediaspis, Acrodirotes, Adelogonus, Cermataspis, Interalia. Agelagma, Auritama, Metopotropis, Leichneyella, Iniotoma, Lophoholcus, Nomadinis, Aedotes, Meropalla, Rhyssometopus, Plectrifer, Quitacetra, Quitalia, Dipyrgotes, Cyrtoprora, Meringaspis, Dipentaspis Histiomona, Palaeadotes, Henadoparia, Lynaspis, Dorematáspis, Ferenepea, Ascionepea, Biaverta, Aulacodigma, Anopocodia, Placosema, Polycyrtaspis, Townleyella, and Griphasaphus. The subgenera Lispagnostus, Mindycrusta, and Rostrifinus are also new. Additionally bradoriids, worm castings, and burrows are reported.

OPIK, A.A., 1967b - the Ordian Stage of the Cambrian and its Australian Metadoxididae. Bur. Miner. Resour. Aust. Bul., 92, 133-69, pls 19, 20.

Formally erects the early Middle Cambrian Ordian Stage and discusses its fauna.

OPIK, A.A., 1968 - Ordian (Cambrian) Crustacea Bradoriida of Australia. Bur. Miner. Resour. Aust. Bull., 103, 44 pp., 4 pls.

Describes the bradoriid fauna of the Yelvertoft Bed (and one species from the Sandover Beds, Northern Territory). Two new families, Comptalutidae and Svealutidae, and four new genera, Indota, Tropidiana, Ophiosema, and Comptaluta are erected.

OPIK, A.A., 1970a - Nepeid trilobites of the Middle Cambrian of northern Australia. Bur. Miner. Resour. Aust. Bull., 113, 48 pp., 17 pls.

Discusses the temporal succession, geographical distribution, and ecology of

twenty five species of Australian Middle Cambrian Nepeidae, of which 14 are new. Penarosa, Loxonepea, and Folliceps are newly described genera. The term BSOU, biostratigraphic operatioal unit, is introduced.

OPIK, A.A., 1970b - Redlichia of the Ordian (Cambrian) of northern Australia and New South Wales. Bur. Miner. Resour. Aust. Bull., 114, 39 pp., 14 pls.

Describes redlichids from the Yelvertott Bed, Thorntonia Limestone, and unnamed sequences in the Georgina Basin. Describes the morphology and affiliation, occurence and stratigraphic distribution of Redlichia. Describes the taxonomy, mode of life and burial of nine new species : R. advialis, R. petita, R. amadeana, R. micrograpta, R. versabunda, R. vertumnia, R. myalis, R. lepta and R. creta. R. venulosa (Whitehouse, 1939), R. idonea Whitehouse, 1939 and R. chinensis Walcott, 1905 are undescribed.

OPIK, A.A., 1975 - Templetonian and Ordian Xystridurid Trilobites of Australia. Bur. Miner. Resour. Aust. Bull., 121, 1-84, pls 1-32.

Describes 5 Ordian and 18 Templetonian species of xystridurinae. One new genus, Galahetes; two new subgenera Inosacotes and Polydinotes; fifteen species, X. (P) verticosa, X. (P) triligata, X. (X.) carteri, X. (X.) hamosa, X. (X.) filifera, X. (X.) lauta, X. (X.) avidsoni, X. (X.) altera. X. (X.) remorata X. (X.) sandoverensis, X. (X.) fracta, X. (X.) gayladia, X. (X.) yaringensis,X. (X.) negrina and G. fulcrosus; and one subspecies, X. altera obtusa, are new. Also presented are discussions on Templetonian palaeogeography and the habitat and evolution of the Xystridurinae.

OPIK, A.A., CARTER, E.K., & NOAKES, L.C., 1961 - Mount Isa - 4-Mile Geological Series. Bur. Miner.

Resour. Aust. Explan. Notes, 20, SF/54-1, 20 pp.

Details the physiography, geomorphology, geology, and economic geology of the Mount Isa Sheet area, which straddles the margin of the Georgina Basin.

OPIK, A.A., CARTER, E.K., & RANDAL, M.A., 1973 - Notes on the first edition Camooweа of the Geological Sheet, Queensland, 1961. Bur. Miner. Resour. Aust. Rec., 1973/83 (unpubl.).

This record serves as the explanatory notes for the Camooweal sheet. It covers previous investigations, physiography, geomorphology, structure, geological history, stratigraphy, economic geology, and water resources.

PAPUAN APINAIPI PETROLEUM COMPANY LIMITED, 1960 - Report on gravity survey in authority to prospect 54P, Queensland (by L.J. Starkey) (unpubl.).

Published as Bur. Miner. Resour. Aust. Pet. Search Sub. Act Publ., 37.

PAPUAN APINAIPI PETROLEUM COMPANY LIMITED, 1962 - Boulia Area, gravity survey, Queensland, 1959. Bur. Miner. Resour. Aust. Pet. Search Subs. Act Publ., 37, 14 pp.

The survey indicated four distinct zones of gravity "highs" trending north-northwest, and associated with Proterozoic sediments.

PAPUAN APINAIPI PETROLEUM COMPANY LIMITED, 1964 - An airborne magnetometer survey of Brunette Downs, N.T. Final Report by Adastra- Hunting Geophysics (unpubl.).

Demonstrates that the Proterozoic-Palaeozoic unconformity is shallow and gently undulating. Severe faulting is present in the basement but

does not appear to affect the Palaeozoic sequence. Presents maps of total magnetic intensity and an interpretive map for an area just larger than the Brunette Downs sheet area.

PAPUAN APINAIPI PETROLEUM COMPANY LIMITED, 1965a - Brunette Downs No. 1 Well completion report (unpubl.).

Describes the Cambrian and Upper Proterozoic sediments intersected in the well, which bottomed at 622 m. The Cambrian carbonate sequence is 320 m thick.

PAPUAN APINAIPI PETROLEUM COMPANY LIMITED, 1965b - Netting Fence No. 1 Well, Queensland. Well completion report by Mines Administration Pty Ltd (unpubl.).

This well penetrated 2010 m of Ordovician and Cambrian sediments overlying granitic basement. Solid bitumen and very minor gas shows were numerous.

PATEN, R.J., 1964 - The Tertiary geology of the Boulia region, western Queensland. Bur. Miner. Resour. Aust. Rep., 77, 1-30, pls 1-12.

Relates the Tertiary geology, in part, to underlying palaeozoic carbonates of the Georgina Basin, and notes that Georgina Basin structures have affected Tertiary sedimentation.

PETROLEUM TECHNOLOGY LABORATORY, BMR, 1967a - Test of bituminous material and cuttings from BMR No. 13. Sandover; in SMITH, K.G., Stratigraphic drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 56.

Reports a small amount of oil (S.G. 0.93) from 901-902.5 m, and asphaltic hydrocarbon

from 347.5-353 m and 416-417.5 m.

PETROLEUM TECHNOLOGY LABORATORY, BMR, 1967b - Mud tests, BMR No. 13 Sandover; in SMITH, K.G., Stratigraphic Drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 60.

Reports a small amount of oil (SG 0.93-0.98) from mud sample from 900-902.5 m.

PETROLEUM TECHNOLOGY LABORATORY, BMR, 1967c - Core and cavings analysis, BMR No. 13 Sandover; in SMITH, K.G., Stratigraphic drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 61.

PHILLIPS PETROLEUM COMPANY, 1963 - Phillips-Sunray Stratigraphic drilling, Boulia area, A.T.P. 54P, Queensland. Well completion reports, by D.C. Green, D.D. Hamling, & N. Kyranis (unpubl.).

Summarizes the geological information obtained in drilling Black Mountain No. 1, Beantree No. 1, Canary No. 1, and Elizabeth Springs No. 1.

PHILLIPS PETROLEUM COMPANY & SUNRAY MID-CONTINENT OIL COMPANY, 1962 - Seismic survey report, Authority to Prospect 54P (Boulia-Springvale-Marion Downs and Glenormiston areas) Queensland, by Austral Prospectors Pty Ltd (unpubl.).

The survey outlined one pronounced structural feature in the Springvale area at a reflecting level presumed to be of Mesozoic age; crossed a second feature in the Springvale area; suggested the location of two pre-Mesozoic structures in the Glenormiston area; and provided information on the thickness of the pre-Mesozoic section to the north of the Springvale area, and in the Boulia area SW of the Lucknow Ridge.

PLAYFORD, P.E., & JOHNSTONE, M.H., 1959 - Oil exploration in Australia. Bull. Amer. Assoc. Petrol. Geol., 43, 397-433.

Briefly mentions the discovery of oil and gas at Ammaroo.

PLUMB, K.A., & RHODES, J.M., 1963 - Explanatory notes on the Wallhallow 1:250 000 geological series Sheet SE/53-7. Bur. Miner. Resour. Aust. Rec., 1963/116 (unpubl.).

Published as explanatory notes (Plumb & Rhoces, 1963).

PLUMB, K.A., & RHODES, J.A., 1965 - Wallhallow, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SE/53-7, 21 pp.

Details the physiography, stratigraphy, structure, geological history, and economic geology of the Wallhallow Sheet area, which straddles the margin of the Georgina Basin. A list of water-bores is included.

POJETA, J.Jr., & GILBERT-TOMLINSON, J., in press - Australian Ordovician pelecypod molluscs. Bur. Miner. Resour. Aust. Bull., 174.

This is the first definitive paper on Georgina Basin pelecypods and includes eleven species belonging to ten genera from the Nora Formation and Carlo Sandstone. The genera Alococoncha, Fidera, Eritropis, Inaequidens, Johnmartinia, Lophoconcha, Sthenodonta, Zeehania, Pharcidoconcha, Leconychia, Glyptonychia, Pteronychia, Denticelox, Runnegaria, Colpantyx, Xestoconcha, Copidens, Noradonta, Brachylyrodesma, and Sphenosolen are new. Twenty seven of the 38 named species are also new. Two new rostroconch molluscs are also named.

POJETA, J.Jr., GILBERT-TOMLINSON, & J., SHERGOLD, J.H., in press - Cambrian and Ordovician Rostroconch Molluscs from Northern Australia. Bur. Miner. Resour. Aust. Bull., 171, 54pp., 27pls.

This is the first definitive work on Australian rostroconchs. Twenty species are reported from the Georgina Basin in the following formations: Mungerabar Limestone, Georgina Limestone, Ninmaroo Formation, Swift Formation, Tomahawk Beds, Coolibah Formation, and Nora Formation. New genera include Apoptegma, Cymatopegma, Ptychopegma, Kimopegma Pauropegma and Pleuropegma.

POJETA, J., & RUNNEGAR, B., 1976 - The paleontology of rostroconch mollusks and the early history of the Phylum Mollusca. Prof. Pap. U.S. geol Surv., 968, 88 pp., 54 pls.

Describes and illustrates, inter alia, Ribeiria australiensis sp. nov., from the Mungerebar Limestone, Glenormiston; Ribeiria sp. and Tolmachovia jell; sp. nov., from the Ninmaroo Formation at Digby Peaks, Boulia area; and Oepikila cambrica (Runnegar & Pojeta) from the Erixanium sentum Zone, Georgina Limestone, Glenormiston.

PRITCHARD, P.W. 1959 - The geology of the eastern part of the Toko Range and its foothills. Bur. Miner. Resour. Aust. Rec., 1959/91 (unpubl.).

Describes the stratigraphic sequence in the Glenormiston-Toko area from the Georgina Limestone (Upper Cambrian) to the Mithaka Formation (?Middle Ordovician) with an unknown sandstone overlying. Comments on the strong Tertiary weathering profile and the NW fold-axis trend. Two sets of strong joints are recognized (70-1000 & 160-1750) and one weak set (1400).

PRITCHARD, P.W., 1960 - The Ordovician section in the Toko Range; in HILL, D., & DENMEAD, K. (Eds) - The geology of Queensland. J. geol. Soc. Aust., 7, 110-14.

Describes the sequence from Upper Cambrian Georgina Limestone to Middle Ordovician Toko Beds in the Glenormiston-Toko Range area.

QUEENSLAND MINES DEPARTMENT, 1975; in ALLIANCE OIL DEVELOPMENT AUSTRALIA N.L., 1975 - Well completion report Ethabuka No. 1 (unpubl.).

Presents a water and a gas analysis from Ethabuka No. 1 well.

QUINLAN, T., 1962 - An outline of the geology of the Alice Springs area. in Lands of the Alice Springs area, Northern Territory, 1956-57. CSIRO, Land. Res. Ser., 6, 129-45.

Relates geological structural units to land systems and gives a generalized geological succession for the Huckitta area.

RANDAL, M.A., 1962a - Georgina Basin Alroy Party. in Sedimentary Basins and Palaeontology sections Summary of Activities. Bur. Miner. Resour. Aust. Rec., 1962/175 (unpubl.).

Reports on field work on Brunette Downs, Alroy, and Wallhallow Sheet areas. Contains a summary of core-hole drilling completed to November 1962.

RANDAL, M.A., 1962b - The hydrology of the eastern Barkly Tableland (Progress report, 1962). Bur. Miner. Resour. Aust. Rec., 1962/175 (unpubl.).

Presents information on 125 bores and the

evaluation of the underground water resources.

RANDAL, M.A., 1966a - Ranken, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SE/53-16, 16 pp.

Details the physiography, stratigraphy, geological history, structure and economic geology of the Ranken Sheet area. The groundwater chemistry is synthesized.

RANDAL, M.A., 1966b - Brunette Downs, N.T. - 1:250 000 Geological Series. Ibid., SF/53-11, 16 pp.

Details the physiography, stratigraphy, structure, geological history, and economic geology of the Brunette Downs Sheet area. Gives resume of groundwater geochemistry.

RANDALL, M.A., 1966c - Groundwater in the Barkly Tableland (Northern Territory). Bur. Miner. Resour. Aust. Rec., 1966/11 (unpubl.).

Published as Bur. Miner. Resour. Aust. Bull. 91.

RANDAL, M.A., 1966d - Alroy, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SE/53-15, 15 pp.

Details physiography, stratigraphy, structure, geologic history, and economic geology of the Alroy Sheet area.

RANDAL, M.A., 1966e - Avon Downs, N.T. - 1:250 000 Geological Series. Ibid., SF/53-4, 15 pp.

Details the physiography, stratigraphy, geological history and structure, and economic geology of the Avon Downs Sheet area.

RANDAL, M.A., 1967 - Groundwater in the Barkly Tableland, N.T. Bur. Miner. Resour. Aust. Bull., 91, 111 pp.

Broadly defines the aquifer system in the Middle Cambrian carbonate rocks: its surface ranges from 5 to 180 m above sea level in the northwestern part of the region, and sea level to 180 m in the southeast. The piezometric surface indicates that two groundwater areas, around Anthony Lagoon and the Georgina River Basin, are present. The water chemistry also serves to distinguish these provinces.

RANDAL, M.A., 1973 - Groundwater in the northern Wiso Basin and environs, Northern Territory. Bur. Miner. Resour. Aust. Bull., 123, 141 pp.

Briefly mentions aquifers in Georgina Basin including Anthony Lagoon Beds and Gum Ridge Formation.

RANDAL, M.A., & BROWN, G.A., 1962a - The geology of the Avon Downs 1:250 000 sheet area, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1962/56 (unpubl.).

Discusses the physiography, stratigraphy, geological history, and economic geology of the Avon Downs Sheet area.

RANDAL, M.A., & BROWN, G.A., 1962b - Additional notes on the geology of the Camooweal 4-mile Sheet area. Bur. Miner. Resour. Aust. Rec., 1962/49 (unpubl.).

Discusses the sedimentary structures, interrelationships and depositional environments of the Camooweal and Age Creek Dolomites. Presents a depositional model for the Undilla embayment.

RANDAL, M.A., & BROWN, G.A., 1962c - The geology of

the Ranken 1:250 000 Sheet area, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1962/55 (unpubl.).

Discusses the physiography, stratigraphy, geological history, and economic geology of the Ranken Sheet area.

RANDAL, M.A., & BROWN, M.C., 1970 - Helen Springs, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SE/53-10, 27 pp.

Details the physiography, stratigraphy, structure, geological history, and economic geology of the Helen Springs Sheet area. Defines the Tomkinson Creek Beds.

RANDAL, M.A., BROWN, M.C., & DOUTCH, H.F., 1966 - The geology of the Helen Springs and Beetaloo 1:250 000 Sheet areas. Bur. Miner. Resour. Aust. Rec., 1966/110 (unpubl.).

Discusses the physiography, stratigraphy, structure, geological history, and economic geology of the Helen Springs and Beetaloo Sheet areas. Piezometric and salinity maps are presented.

RANDAL, M.A., & NICHOLS, R.A.H., 1963 - The geology of the Alroy and Brunette Downs 1:250 000 sheet areas, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1963/72 (unpubl.).

This record contains much information published in the Explanatory Notes (Randal, 1966b, 1966c). Additionally it includes photographs of various Cambrian units and chemical analysis of laterites.

REEVES, F., 1951 - Australian oil possibilities. Bull. Amer. Assoc. Petrol. Geol., 35, 2479-525.

Rates the Georgina Basin as having no oil

possibilities because of the probability that only the oldest formations occupy the crests of folds.

REYNOLDS, M.A., 1960 - Geology of the Springvale 4-mile Sheet area, Queensland. Bur. Miner. Resour. Aust. Rec., 1960/92 (unpubl.).

This record is concerned mainly with the post-Palaeozoic sediments which crop out, however, details of bores which penetrated Palaeozoic sediments are presented diagrammatically, and correlations are added. Some discussion of the Palaeozoic structure is also presented.

REYNOLDS, M.A., 1964 - Explanatory Notes on the Mount Whelan Geological Sheet. Bur. Miner. Resour. Aust. Rec., 1964/138 (unpubl.).

Discusses the physiography, stratigraphy, structure, and economic geology of the Mount Whelan 1:250 000 Sheet area.

REYNOLDS, M.A., 1965a - Glenormiston, Qld - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SF/54-9, 16 pp.

Details the topography, stratigraphy, biostratigraphy, structure, and economic geology of the Glenormiston Sheet area.

REYNOLDS, M.A., 1965b - Springvale, Qld - 1:250 000 Geological Series. Ibid., SF/54-14, 16 pp.

Details the subsurface geology of the Georgina Basin in the Springvale Sheet area. Gives a subsurface contour map at the base of the Cretaceous sediments for Boulia, Springvale, and parts of Mount Whelan, Bedourie, and Machattie Sheet areas.

REYNOLDS, M.A., 1965c - The sedimentary basins of Australia and the stratigraphic occurrence of hydrocarbons; in Development of petroleum resources of Asia and the Far East. ECACE, Tokyo, 1-97.

Outlines the geology of the Georgina Basin and reports small gas shows in PAPC Netting Fence No. 1 and asphaltic material.

REYNOLDS, M.A., 1965d - Appendix, pp. 19-20; in SMITH, K.G., 1965b - Tobermory, N.T. - 1:250 000 Geological Series.Bur. Miner. Resour. Aust. explan. Notes, SF/53-12.

Defines the Cravens Peak Beds.

REYNOLDS, M.A., 1968a - Mount Whelan, Qld - 1:250 000 Geological Series. Ibid., SF/54-3, 15 pp.

Details the physiography, stratigraphy, structure, and economic geology of the Mount Whelan Sheet area.

REYNOLDS, M.A. 1968b - Bedourie, Qld. - 1:250,000 Geological Series. ibid., SG/54-1, 20pp.

Details the physiostratigraphy, stratigraphy, structure, and economic geology of the Bedourie Sheet area.

REYNOLDS, M.A., & PRITCHARD, P.W., 1964 - The geology of the Glenormiston 1:250 000 sheet area. Bur. Miner. Resour. Aust. Rec., 1964/28 (unpubl.).

Presents a detailed stratigraphy and geological history of the Glenormiston area.

REYNOLDS, M.A., & others, 1963 - the sedimentary basins of Australia and New Guinea. Bur. Miner. Resour. Aust. Rec., 1963/159 (unpubl.).

Gives a brief outline of the Georgina Basin and notes the discovery of asphaltic material in the Middle Cambrian and the presence of source rocks in the Ordovician rocks of the Toko Syncline.

RHODES, J.M., 1967 - Petrographic description of sample from Core No. 15, BMR Sandover; in SMITH, K.G., Stratigraphic drilling in the Georgina Basin, Northern Territory. Bur. Miner. Resour. Aust. Rep., 124, 54.

Describes sample of feldspathic gneiss from near base (1008.5 m) of drill hole.

ROBERTSON, C.S., 1963 - Undilla Basin seismic survey, Queensland, 1961. Bur. Miner. Resour. Aust. Rec., 1963/63 (unpubl.).

Notes that the presence of limestone near the surface throughout the basin presented problems in the applications of both the reflection and refraction seismic methods. Results obtained were poor.

ROGERS, J.K., & KEEVERS, R.E., 1976 - Lady Annie - Lady Jane phosphate deposits, Georgina Basin, Queensland. pp. 251-65. In KNIGHT, C.L. (ed) ECONOMIC GEOLOGY OF AUSTRALIA AND PAPUA NEW GUINEA. 4. INDUSTRIAL MINERALS AND ROCKS. Aust. Inst. Min. Metall. Monogr., Ser., 8.

Decides the exploration and evaluation, stratigraphy and structure of the phosphorite deposits in the Lady Annie - Lady Jane area on the eastern margin of the Georgina Basin north of Yelvertoft. The distribution of Middle Cambrian lithofacies and depositional environment and palaeogeography of the Beetle Creek Formation are also discussed. The stratigraphy is known from surface outcrop, 33 shafts and 7 excavationPelletal phosphorite

constitutes the major of phosphorite but collophane mudstone and replacement phosphorite also occurs.

RUDD, E.A., 1961 - Petroleum developments in southwest Pacific region, during 1960. Bull. Amer. Assoc. Petrol. Geol., 45, 1244-48.

Uses the terms Georgina and Barkly basins on a map of Australian Sedimentary Basins.

RUDD, E.A., 1962 - Petroleum developments in southwest Pacific region during 1961. Bull. Amer. Assoc. Petrol. Geol., 46, 1298-1302.

Continues to use the terms Barkly and Georgina Basins for the area now considered to be in the Georgina Basin. No drilling activity is reported.

RUDD, E.A., 1963 - Petroleum development in southwest Pacific region during 1962. Bull. Amer. Assoc. Petrol. Geol., 47, 1785-93.

Lists wells drilled in the Georgina Basin during 1962.

RUNNEGAR, B., & JELL, P.A. 1976 - Australian Middle Cambrian molluscs and their bearing on early molluscan evolution. Alcheringa, 1, 109-38, 11 figs.

Describes the new genera and species Eotebenna pontifes, Mellopegma georginensis and Protowenella flemingi; two new species of Pelagiella (P. corinthiana and P. deltoides); and undetermined species of Tannuella and Vallatotheca? from low is the Currant Bush Limestone, 6 km. SSW of Thorntonia Homestead.

RUNNEGAR, B., & POJETA, J., 1974 - Molluscan phylogeny: the palaeontological viewpoint.

Science, 186, 311-17.

Illustrates and diagnoses the new technophorid genus Oepikila, type species O. cambrica from the Georgina Limestone south of Glenormiston, western Queensland. Figures a species of Ribeiria from the Georgina Basin.

RUSSELL, R.T., 1967 - Discovery of major phosphorite deposits in northwest Queensland. Qld Govt Min. J., 68, 153-7.

Announces the discovery of the Duchess phosphate deposit as a result of a systematic exploration program. Divides the Middle Cambrian Beetle Creek Formation into three members and introduces the term Monastery Creek Phosphorite Member.

RUSSELL, R.T., 1968 - Discovery of major phosphate deposits in northwest Queensland, Australia. ECAFE Miner. Resour. Devel. Ser., 32, 241-8.

This information was published in the Queensland Government Mining Journal (Russell, 1967).

RUSSELL, R.T., & TRUEMAN, N.A., 1971 - The geology of the Duchess phosphate deposits, northwestern Queensland, Australia. Econ. Geol., 66, 1186-1214.

Discusses the lithofacies of the Middle Cambrian Beetle Creek Formation. The unit is divided into two members, rather than three, as in earlier publications. Phosphorite is mainly pelletal and deposition was essentially non-clastic, with the formation of chert, limestone and phosphorite. The overlying Inca Formation is divided into informal Shale and Limestone Members.

SAINT-SMITH, E.C., 1924 - Note on the occurrence of

Cambrian strata near Mount Isa, north-west Queensland. Qld Govt Min. J., 25, 411.

Reports the discovery of trilobites in the headwaters of the Templeton River and points out that the evidence suggests that underlying Mount Isa series is probably Precambrian.

SEDIMENTARY BASINS AND PALAEONTOLOGY SECTIONS, 1961 - Summary of activities, 1961. Bur. Miner. Resour. Aust. Rec., 1961/147 (unpubl.).

Presents field results for the Sandover River area, the western margin of the Georgina Basin, and the eastern Barkly Tableland. The transition from Cambrian to Ordovician is briefly discussed.

SEDIMENTARY BASINS AND PALAEONTOLOGY SECTIONS. Summary of Activities 1963. Bur. Miner. Resour. Aust. Rec. 1963/142 (unpubl.).

Reports early results from the mapping of Sandover River, Frew River, Bonney Well, and Tennant Creek Sheet areas.

SEDIMENTARY BASINS AND PALAEONTOLOGY SECTIONS, 1964 - Summary of Activities, 1964. Bur. Miner. Resour. Aust. Rec., 1964/151 (unpubl.).

Summarizes the results of the 1964 drilling program in the Georgina Basin.

SEDIMENTARY BASINS SECTION. Summary of Activities, 1965. Bur. Miner. Resour. Aust. Rec., 1965/216 (unpubl.).

Records scout-hole drilling on Beetaloo and Helen Springs Sheet areas, and describes outcrop of the Gum Ridge Formation.

SEDIMENTARY BASINS SECTIONS, GEOLOGICAL BRANCH.

Summary of Activities, 1966. Bur. Miner. Resour. Aust. Rec., 1966/187 (unpubl.).

Records that Ordovician trilobites from the Canning Basin are similar to those recorded from the Georgina Basin. The fossil fish in the Georgina Basin are of late Silurian or early Devonian age.

SEDIMENTARY SECTION, 1958. Summary of activities Bur. Miner. Resour. Aust. Rec., 1958/116 (unpubl.).

Records initial results of the 1:250 000 mapping of the Glenormiston, Mount Whelan, Tobermory, Hay River and Huckitta Sheet areas.

SEDIMENTARY SECTION, 1960. Summary of activities. Bur. Miner. Resour. Aust. Rec., 1960/122 (unpubl.).

Reports on the mapping of the Hay River, Tobermory, Huckitta and Elkedra Sheet areas. Records a 25 m thick sequence of unknown age overlying tillitic material south of Gnallan-a-gea Waterhole on the Hay River Sheet. Reports trilobites from a sandstone lens in the uppermost part of the Arrinthrunga Formation. Suggests an unconformity between the Arrinthrunga Formation and the Tomahawk Beds in the northeast corner of Huckitta Sheet area.

SHAW, R.D., & STEWART, A.J., 1975 - Arunta Block - region geology, pp. 437-42 in KNIGHT, C.L., ECONOMIC GEOLOGY OF AUSTRALIA AND PAPUA NEW GUINEA. 1, METALS. Aust. Inst. Min. Metall. Monogr. 5, XV + 1126 pp.

Shows upper Proterozoic correlations between Arunta Block and Amadeus Basin and the Georgina Basins. Comments on timing of orogenic events effecting southern margin of Georgina Basin.

SHAW, R.D., & WARREN, R.G., 1975 - Alcoota, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SF/53-10, 35 pp.

Includes a discussion of the Adelaidean to lower Ordovician sediments of the Georgina Basin which outcrop in the northeastern corner of the Alcoota Sheet area.

SHAW, R.D., WARREN, R.G., SENIOR, B.R., & YEATES, A.N., in prep. Geology of the Alcoota 1:250 000 Sheet area. Bur. Miner. Resour. Aust. Rec.

Describes the geology of the Alcoota Sheet area, the northeastern part of which comprises Georgina Basin sediments. The geology is important because it includes sediments of both the Georgina and Wiso Basins. A detailed description of sediments straddling the Precambrian-Cambrian boundary is presented.

SHELDON, R.P., 1966 - Preliminary appraisal of the Australian continent for sedimentary phosphate deposits. Bur. Miner. Resour. Aust. Rec., 1966/16 (unpubl.).

Notes that the Inca Formation consists of a shale/chert assemblage which is known to be associated with phosphorite in other parts of the world. Cuttings from Morstone No. 1, showed anomalous values. Also notes the presence of a phosphatic sandstone of Ordovician age in the southern part of the Georgina Basin.

SHEPHERD, S.R.L., 1945a - Cambrian oil shale, Camooweal. Qld Govt Min. J., 45, 75-77.

Reports on the oil shale horizons penetrated in the 79.6 mile bore on the Mount Isa-Camooweal road, and gives logs of all bores drilled during the construction of the road.

SHEPHERD, S.R.L., 1945b - Cloncurry water supplies. Qld Govt Min. J., 46, 267-269.

Mentions the lead occurrence at Signal Hill (Noranside), and also that a bore hole 995 m deep was sunk at the headwaters of Woodya Creek in Cambrian calcareous shales.

SHERGOLD, J.H., 1968 - Cambrian palaeontology; in dE KEYSER, F., 1968 - The Cambrian of the Burke River Outlier. Bur. Miner. Resour. Aust. Rec., 1968/67 (unpubl.).

Reports on 89 palaeontological samples and their fauna collected during 1967.

SHERGOLD, J.H., 1969 - Oryctocephalidae (Trilobita: Middle Cambrian) of Australia. Bur. Miner. Resour. Aust. Bull., 104, 66 pp., 12 pls.

Describes the morphology and relationships of seven genera and thirteen speices of Australian Middle Cambrian Oryctocephalidae, including material from the Sandover Beds, Wonarah Beds, Burton Beds and Beetle Creek Formation in the Georgina Basin. Sandoveria and Barklyella are new genera.

SHERGOLD, J.H., 1971 - Resume of data on the base of the Ordovician in northern and central Australia. Mem. Bur.Rech. geol. minier., 73, 391-402.

Synthesizes the information available on Late Cambrian and Early Ordovician faunas and rock units of central and northern Australia.

SHERGOLD, J.H., 1972 - Late Upper Cambrian trilobites from the Gola Beds, western Queensland. Bur. Miner. Resour. Aust. Bull., 112, 126 pp., 19 pls.

Describes the trilobite fauna of the Gola

Beds and recognizes ten new genera: Atopasaphus, Crucicephalus, Distagnostus, Duplora, Golasaphus, Lophosaukia, Lorrettina, Mansuyites, Palacorona, and Sigmakainella. The associated conodont faunas are also briefly discussed.

SHERGOLD, J.H., 1973a - Bibliography and index of Australian Cambrian trilobites. Bur. Miner. Resour. Aust. Bull., 140, 67-84.

Lists, among others, papers concerning trilobites from the Georgina Basin.

SHERGOLD, J.H., 1973b - A new conocoryphid trilobite from the Middle Cambrian of western Queensland. Bur. Miner. Resour. Aust. Bull., 126, 19-25, pls 10-12.

Describes a new species, Meneviella viatrix, from the Roaring Siltstone of the Duchess embayment.

SHERGOLD, J.H., 1975a - Late Cambrian and Early Ordovician trilobites from the Burke River Structural Belt, western Queensland, Australia. Bur. Miner. Resour. Aust. Bull., 153, 1-251, pls 1-58 (2 vols).

Erects seven trilobite assemblage zones in the Late Cambrian of Western Queensland as a result of describing ninety six trilobite species and subspecies. These belongto forty two genera of which Galerosaukia, Caznaia, Mictosaukia, Atratebia, Mendosina, Hapsidocare, and Ceronocare are new.

SHERGOLD, J.H., 1975b - Biostratigraphical synopsis: eastern Georgina Basin (Appendix to International Geological Congress Excursion Q4C Guidebook). Bur. Miner. Resour. Aust. Rec., 1975/69 (unpubl.).

Lists the fauna known from each of the zones identified in the Cambrian-Ordovician sequence of the eastern part of the Georgina Basin.

SHERGOLD, J.H., DRUCE, E.C., RADKE, B.M., & DRAPER, J.J., 1976 - Cambrian and Ordovician stratigraphy of the eastern portion of the Georgina Basin, Queensland and eastern Northern Territory. 25th. Sess. int. geol.

Ordovician formations visited by IGC Excursion 4C : lithology, thickness, distribution in space and time, and environment of deposition.

SKWARKO, S.K., 1967 - Some Ordovician graptolites from the Canning Basin, Western Australia. 1. On the structure of Didymograptus artus Elles & Wood. Bur. Miner. Resour. Aust. Bull., 92, 171-189, pls 21-23.

Mentions the finding of Sigmagraptus laxus in the Swift Formation.

SMITH, J.W., & ROBERTS, H.G., 1960 - Explanatory notes to the Mount Drummond 4-mile area Northern Territory. Bur. Miner. Resour. Aust. Rec., 1960/70 (unpubl.).

Amended and revised as Record 1962/113 and published as Smith & Roberts, 1963.

SMITH, J.W., & ROBERTS, H.G., 1962 - Explanatory notes to the Mount Drummond 1:250 000 Sheet area, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1962/113 (unpubl.).

Published as Explanatory Notes (Smith & Roberts, 1963).

SMITH, J.W., & ROBERTS, H.G., 1963 - Mount Drummond, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes,

SE/53-12, 17 pp.

Details the physiography, stratigraphy, structure, and economic geology of the Mount Drummond Sheet area which straddles the Georgina Basin margin.

SMITH, K.G., 1960 - Summary of the geology of the Hay River 4-Mile Sheet, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1960/73 (unpubl.).

Presents a brief summary of the geology of the Hay River Sheet. Much of this information is published in the Explanatory Notes (Smith, 1963a) and in Smith, 1972.

SMITH, K.G., 1963a - Hay River, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SF/53-16, 19 pp.

Details the drainage and topography, stratigraphy, structure, and economic geology of the Hay River Sheet area. A list of water bores is given.

SMITH, K.G., 1963b - Huckitta N.T. - 1:250 000 Geological Series. Ibid., SF/53-11, 20 pp.

Details the drainage and topography, stratigraphy, structural geology, geological history, and economic geology of the Huckitta Sheet area.

SMITH, K.G., 1963c - Georgina Basin Parties, in Sedimentary Basins Section - Summary of Activities. Bur. Miner. Resour. Aust. Rec., 1963/141 (unpubl.).

Reports on work progress in the Georgina Basin, noting that the distribution of pellets, intraclasts, and detrital quartz are useful in correlation between unfossiliferous carbonate sequences in drill holes. Records asphalt in

BMR Avon Downs No. 11 [BMR 11 (Cattle Creek)] and globules of oil and gas in BMR Elkedra No. 13

SMITH, K.G., 1964a - Progress report of the geology of the Huckitta 1:250 000 Sheet, N.T. Bur. Miner. Resour. Aust. Rep., 67, 76 pp., 4 pls.

Details the geology of the Huckitta Sheet area, which includes Archaean metamorphic rocks and Precambrian, Cambrian, Ordovician, and Devonian sedimentary rocks. Faulting and folding took place subsequent to the deposition of the Devonian rocks.

SMITH, K.G., 1964b - Frew River, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SF/53-3, 15 pp.

Details the physiography, stratigraphy, structure, and economic geology of the Frew River Sheet area. A list of water bores is included.

SMITH, K.G., 1964c - Explanatory notes to accompany the Frew River 1:250 000 geological sheet, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1964/49 (unpubl.).

Forms the basis for the published explanatory notes. Additional information is the location of a fossiliferous locality in Gum Ridge Formation (Middle Cambrian) 13 km west of Epenarra homestead.

SMITH, K.G., 1965a - The geology of the Georgina Basin. APEA J., 1965, 111-12.

Gives a brief outline of the geology of the basin.

SMITH, K.G., 1965b - Tobermory, N.T. - 1:250 000

Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SF/53-12, 20 pp.

Details the stratigraphy, stratigraphic drilling, structure, tectonic history, and economic geology of the Tobermory Sheet area. A list of water-bores is included.

SMITH, K.G., 1967a - Stratigraphic drilling in the Georgina Basin, N.T. Bur. Miner. Resour. Aust. Rep., 124, 64 pp.

Records the results from three stratigraphic holes: BMR Avon Downs No. 11 [BMR 11 (Cattle Creek)] (T.D. 458 m), BMR Tobermory No. 1 [BMR 12 (Cockroach)] (T.D. 1219.5 m) and BMR Elkedra No. 13 [BMR 13 (Sandover)] (T.D. 1015.5 m). BMR Avon Downs No. 11 was drilled in Camooweal Dolomite, BMR Tobermory No. 1 in Ninmaroo Formation, Arrinthrunga Formation and Marqua Beds, and BMR Elkedra No. 13 in Arrinthrunga Formation, Arthur Creek Beds, Mount Baldwin(?) Formation and Archean gneiss.

SMITH, K.G., 1967b - Stratigraphic drilling in the Georgina Basin, Appendix 3, Hydrology, BMR 11 Cattle Creek. Bur. Miner. Resour. Aust. Rep., 124. 37 pls.

Reports at least five aquifers in Camooweal Dolomite.

SMITH, K.G., 1967c - Stratigraphic drilling in the Georgina Basin. Appendix 6, Hydrology, BMR Cockroach. Bur. Miner. Resour. Aust. Rep., 124.

Lists three aquifers, one in the Ninmaroo Formation, and two in the Arrinthrunga Formation, and lists water geochemistry.

SMITH, K.G., 1967d - The geology of the Georgina Basin. Bur. Miner. Resour. Aust. Rec., 1967/61

(unpubl.).

Published as a Bulletin (Smith, 1972) but includes a Magnetic Basement Contour map (also see Wells et al., 1966).

SMITH, K.G., 1972 - Stratigraphy of the Georgina Basin. Bur. Miner. Resour. Aust. Bull., 111, 156 pp.

A definitive work on the geology of the Georgina Basin, covering history of investigations, detailed stratigraphy, structure, geological history and economic geology. The rock units are treated in detail as are all stratigraphic bore-holes. The type sections of the Chatsworth Limestone, Kelly Creek Formation and the Dulcie Sandstone are tabulated, as are reference sections for the Marqua Beds, Tomahawk Beds and Cravens Peak Beds.

SMITH, K.G., 1973 - Bonney Well, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SF/53-2, 20 pp.

Details the physiography, stratigraphy, geological history, and economic geology of the Bonney Well Sheet area.

SMITH, K.G., & CONDON, M.A., 1959 - An aerial reconnaissance of portion of the Frew River area, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1959/28 (unpubl.).

Reports on an aerial survey of part of the Frew River Sheet area to try and delineate the Cambrian sediments.

SMITH, K.G., & MILLIGAN, E.N., 1963 - The geology of the Elkedra 1:250 000 Sheet, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1963/46 (unpubl.).

Describes in detail the stratigraphy of the Sandover and Tomahawk Beds and lists the logs of all water-bores on the Elkedra Sheet. Other information is published in the Explanatory Notes (Smith & Milligan, 1966).

SMITH, K.G., & MILLIGAN, E.N., 1964 - Barrow Creek, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. Explan. Notes, SF/53-6, 22 pp.

Details the physiography, stratigraphy, geological history, and economic geology of the Barrow Creek Sheet area.

SMITH, K.G., & MILLIGAN, E.N., 1966 - Elkedra, N.T. - 1:250 000 Geological Series. Bur. Miner. Resour. Aust. explan. Notes, SF/53-7, 15 pp.

Details the physiography, stratigraphy, geological history and economic geology of the Elkedra Sheet area which straddles the margin of the Georgina Basin.

SMITH, K.G., SMITH, J.W., WOOLLEY, D.R., & PULLEY, J.M., 1960 - Progress report on the geology of the Marshall River area, Northern Territory. Bur. Miner. Resour. Aust. Rep., 1960/34 (unpubl.).

Reports on initial results of the mapping of part of the Huckitta 1:250 000 Sheet area. Presents many measured sections of Lower, Middle, and Upper Cambrian units.

SMITH, K.G., STEWART, J.R., & SMITH, J.W., 1961 - The regional geology of the Davenport and Murchison Ranges, Northern Territory. Bur. Miner. Resour. Aust. Rep., 58, 30 pp.

Describes the Cambrian stratigraphy east and southeast of the Davenport and Murchison Ranges.

SMITH, K.G., & VINE, R.R., 1960 - Summary of the geology of the Tobermory 4-mile Geological Sheet. Bur. Miner. Resour. Aust. Rec., 1960/71 (unpubl.).

Information contained in this work is synthesized in Smith (1972). It contains detailed information on each of the units in the Sheet area with comprehensive information on sections. Underground water is discussed and a small occurrence of lead reported.

SMITH, K.G., VINE, R.R., & MILLIGAN, E.N., 1961a - Revisions to stratigraphy of Hay River, Huckitta, and Tobermory 4-Mile Sheets, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1961/65 (unpubl.).

Outlines corrections and additions to previous mapping on the Hay River, Huckitta and Tobermory Sheets. On the Hay River Sheet a 128 m section of sandstone lying above the Mithaka Formation is reported. The lithological change from Ninmaroo Formation to Tomahawk Beds on the Tobermory Sheet is described, as is a measured section of the Arthur Creek Beds on the Huckitta Sheet. Mentions three fossil horizons in the Arrinthrunga Formation. Considerable information on the stratigraphy as ascertained from water bores on Tobermory, Marqua, Manners Creek, Tarlton Downs, Dnieper, Huckitta, Jervois, Jinka, Lucy Creek, McDonald Downs, and Mount Swan stations.

SMITH, K.G., VINE, R.R., & MILLIGAN, E.N., 1961b - Progress report on the Palaeozoic geology of the Elkedra 4-mile Sheet, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1961/50 (unpubl.).

Discusses the stratigraphy and economic geology of the Palaeozoic strata on the Elkedra Sheet area.

SMITH, K.G., VINE, R.R., & WOOLLEY, D.R.G., 1960 - Geology of the Huckitta area: second progress report. Bur. Miner. Resour. Aust. Rec., 1960/66 (unpubl.).

Presents a detailed geology, with measured sections, of the Huckitta area. Several new rock units are proposed and their stratigraphic relationships discussed. Much of this information is presented in a condensed form in explanatory notes (Smith, 1963) and in Smith (1972).

SPENCE, A.G., 1962 - Tennant Creek area airborne magnetic and radiometric survey, Northern Territory 1960. Bur. Miner. Resour. Aust. Rec., 1962/99 (unpubl.).

Magnetic and radiometric anomalies occur beneath the Georgina sequence within the Warramunga Group.

SPRIGG, R.C., 1958 - Petroleum prospects of western parts of Great Australian Artesian Basin. Bull. Amer. Assoc. Petrol. Geol., 42, 2465-91.

Briefly mentions the Georgina Basin as a possible source area for oil and gas.

SPRIGG, R.C., 1959 - The central Great Artesian Basin of Australia: a bright oil prospect. Aust. Oil Gas J., 5, 19-23.

Records the gas show at Ammaroo and discusses the potential of the Cambro-Ordovician sequence as source rocks.

SPRIGG, R.C., 1963 - Geology and petroleum prospects of the Simpson desert. Trans. R. Soc. S. Aust. 86, 35-65.

Briefly mentions the stratigraphy of the

southern Georgina Basin.

STEWART, G.A., 1954 - Geomorphology of the Barkly Region; in Survey of the Barkly Region, Northern Territory and Queensland, 1947-48. CSIRO Land Res. Ser., 3, 42-58.

Discusses the present land surfaces and the Tertiary and Recent weathering effects which produced them.

SWARBRICK, C.F.J., 1974 - Oil shale resources of Queensland. Geol. Surv. Qld Rep., 83, 3-7.

Oil shale is reported from the ?Current Bush Limestone (Middle Cambrian) in 40-mile Plain Bore in the Undilla Sub-Basin. Estimated oil yield 67 litre/tonne.

SYDNEY GEOLOGICAL & GEOPHYSICAL SERVICES PTY LTD, 1971a - Mississippi Valley type Lead-Zinc ore deposits. Pt III : southern Georgina Basin geology, 1971/18, by J.B. Keene (unpubl.).

Describes the geology and structure of the southern margin of the Georgina Basin. Considers both source and suitably porous host rocks available for deposition of ore, and the presence of unconformities encouraging. Likely targets are porous beds within the Arrinthrunga Formation along anticlines, and where these beds overlap Marqua Beds and lie unconformably on Field River Beds.

SYDNEY GEOLOGICAL & GEOPHYSICAL SERVICES PTY LTD, 1971b - Report on airphoto interpretation, Tarlton Downs and Tobermory areas, 1971/41, by D.G. Morris (unpubl.).

Airphoto interpretation concentrating on the Arrinthrunga and Ninmaroo Formations and Tomahawk Beds, which are regarded as the most likely lithogies for the location of stratiform lead/zinc deposits. Describes stratigraphy of Marqua Beds (3

units recognized), Arrinthrunga Formation (4 units), Ninmaroo Formation (4 members), Tomahawk Beds, Kelly Creek Formation, and the Toko Group.

SYDNEY GEOLOGICAL & GEOPHYSICAL SERVICES PTY LTD, 1971c - Report on a geological field trip to Tobermory-Tarlton Downs area, Northern Territory, 1971/45, by J.B. Keene D.G. Morris (unpubl.).

Describes the stratigraphy of the Marqua Beds, Arrinthrunga and Ninmaroo Formations, Tomahawk Beds,

Kelly Creek and Nora Formations, Carlo Sandstone, and Mithaka Formation between Burnt Well and Tarlton Downs. The occurrence of metaquartzite 1.6 km. SW of Beantree Bore is interpreted as Arunta Complex, and regarded as a draped basement high. The area is highly favoured for the occurrence os stratiform lead/zinc deposits.

SYDNEY GEOLOGICAL & GEOPHYSICAL SERVICES PTY LTD, 1971d - Summary of work carried out on AP 2875 and AP 3262, Tarlton Downs, Northern Territory, 1971/50, by D.G. Morris (unpubl.).

Outlines characteristics of stratiform lead/zinc deposits of Mississippi Valley type. Arrinthrunga Formation, Tomahawk Beds, and Ninmaroo Formation provide the most favourable prospects in the Tarlton Downs area. Geophysical and geochemical investigation methods are described; and geochemical results listed.

THOMSON, L.D., & ROGERS, J.K., in press - The discovery and development of Queensland phosphates by BH South Limited. Aust. Inst. Min. Metal., N.W. Qld brch Regnl mtg 1974.

Gives historical summary of discovery of over 2,000 million tons of phosphate rock at ten deposits in the Georgina Basin. Discusses the

proposed development of the deposits.

THOMSON, L.D., & RUSSELL, R.T., 1971 - Discovery exploration, and investigations of phosphate deposits in Queensland. Proc. Aust. Inst. Min. Metall., 240, 1-14.

Discusses the discovery and relevant geology of ten phosphate deposits in the Queensland portion of the basin.

TINDALE, N.B., 1931 - Geological notes on the Ileaura country north-east of the Macdonnell Range, central Australia. Trans. R. Soc. S. Aust., 55, 32-38.

Describes the geology of the Mopunga Range - Huckitta area.

TOMLINSON, J.G., 1959 - Lower Ordovician fossils in the area of Boulia 4-mile Sheet, Queensland. Bur. Miner. Resour. Aust. Rec., 1959/37 (unpubl.).

Records gastropods, nautiloids, rostroconchs, brachiopods, trilobites, echinoderm ossicles and ostracods from the Ninmaroo Formation. The Swift Beds have yielded brachiopods, gastropods, nautiloids, rostroconchs, trilobites, echinoderm ossicles, and a graptolite which indicates the Didymograptus extensus Zone.

TOWNLEY, K.A., BENNETT, E.M., & GATES, D.J., 1952 - Preliminary report on the Precambrian rocks of the Lawn Hill, Camooweal and Dobbyn Sheets. Bur. Miner. Resour. Aust. Rec., 1952/47 (unpubl.).

Tabulates the occurrence of Cambrian strata in the Lawn Hill-Camooweal area.

TRAVES, D.M., & STEWART, G.A., 1954 - Hydrology of the Barkly Region; in Survey of the Barkly

Region, Northern Territory and Queensland, 1947-48. CSIRO, Land Res. Ser., 3, 59-64.

A brief summary of the water resources, including underground resources, of the Barkly region. Includes chemical analyses of water from two bores on Brunette Downs.

TRUMPY, D., 1961 - Petroleum prospects in Australia - preliminary review, of main sedimentary basins. Inst. Franc. Petrol. Rept, 5414 (unpubl.).

Gives a brief outline of the stratigraphy of the Georgina Basin and notes the occurrence of oil in a water bore 64 km east of Camooweal.

TUCKER, R.M., 1963; Petrological Reports, Canary No. 1, Appendix 3, in PHILLIPS PETROLEUM COMPANY, 1963 - Phillips-Sunray stratigraphic drilling, Boulia area, ATP 54P, Queensland. (unpubl.).

Describes an arkosic sandstone from Canary No. 1 which may be equivalent to the Sylvester Sandstone.

TURNER, S., 1973 - Siluro-Devonian thelodonts from the Welsh Borderland. J. geol. Soc. Lond., 129, 557-84, pls 1, 2.

Reports the occurrence of a thelodont scale from the Lower Cravens Peak Beds.

VAN MOORT, J.C., 1973 - The magnesium and calcium contents of sediments, especially pelites, as a function of age and degree of metamorphism. Chem. Geol., 12, 1-37.

Records Mg and Ca values for four samples of shales from Netting Fence No. 1.

VINE, R.R., 1959 - Sedimentary iron in the Dulcie

Range, N.T. Bur. Miner. Resour. Aust. Rec., 1959/102 (unpubl.).

Reports a total of 3 m of sedimentary iron in recognizable beds in some 10 m of strata in the Nora Formation. Analyses show that FeO content is as high as 39.6%.

WADE, M., 1969 - Medusae from uppermost Precambrian or Cambrian sandstones, central Australia. Palaeontology, 12, 351-65, pls 68, 69.

Describes two species of medusae referrable to the new genera Hallidaya and Skinnera from the Central Mount Stuart Beds.

WALTER, M.R., 1972 - Stromatolites and the biostratigraphy of the Australian Precambrian and Cambrian. Spec. Pap. Palaeont. 11, 1-190, pls 1-33.

Records the presence of algae from the Mount Baldwin Formation and mentions other occurrences in the Ninmaroo, Arrinthrunga, and Grant Bluff Formations.

WARREN, R.G., STEWART, A.J. & SHAW, R.D., 1975 - Arunta Block - Mineralization, pp. 443-47 in KNIGHT, C.L., (ed.), ECONOMIC GEOLOGY OF AUSTRALIA AND PAPUA NEW GUINEA, 1, Metals. Aust. Inst. Min. Metall. Monogr. 5.

Gives radiometric dates for granites on southern margin of Georgina basin; and presents map of Jervois-Bonya district showing Palaeozoic and Adelaidean cover.

WELLS, R., & MILSOM, J.S., 1965 - Georgina Basin aeromagnetic survey, Queensland and Northern Territory, 1963. Bur. Miner. Resour. Aust. Rec., 1965/52 (unpubl.).

Interprets the results of a magnetic survey

conducted in the eastern, central and western parts of the basin.

WELLS, R., MILSOM, J.S., & TIPPER, D.B., 1966 - Georgina Basin aeromagnetic survey, Queensland and Northern Territory 1963-1964. Bur. Miner. Resour. Aust. Rec., 1966/142 (unpubl.).

Records total magnetic intensity profiles for nineteen 1:250 000 sheet areas in the Georgina Basin. Also includes Bouguer Anomaly and Depth to Magnetic Basement Maps. Notes the sedimentary rocks are at least 3000 m thick in several places in the Georgina Basin but that much of the succession may be Proterozoic. Intense magnetic disturbances caused by the Davenport and Mount Isa Precambrian belts extend along strike beneath the Lower Palaeozoic cover.

WELLS, R., TIPPER, D.B., & MILSOM, J.S., 1964 - Georgina Basin aeromagnetic survey, Queensland and Northern Territory, 1964. Bur. Miner. Resour. Aust. Rec., 1964/172 (unpubl.).

Interprets the results of a magnetic survey which covered the northern and southern margins of the basin.

WHITE, MARY E., 1961 - Mesozoic plant fossils from the Tarlton Range, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1961/32 (unpubl.).

Describes the flora from a clastic sequence unconformably overlying Ordovician sediments.

WHITE, W.C., 1957 - The geology of the Selwyn area of northwest Queensland. Bur. Miner. Resour. Aust. Rec., 1957/94 (unpubl.).

Notes that Cambrian rocks with halite pseudomorphs occur to the south and west of the area studied.

WHITEHOUSE, F.W., 1928 - Notes accompanying an exhibit of fossils. Proc. roy. Soc. Qld. 1927 39, vii-viii.

Mentions trilobites from the Templeton River and correlates the rocks with beds at Alexandra, Elkedra, and Heathcote, Victoria.

WHITEHOUSE, F.W., 1930 - The geology of Queensland; in Handbook for Queensland. Aust. Assoc. Adv. Sci., Brisbane, 23-29.

Gives a brief summary of the poorly known geology of the Georgina Basin (North-Western Basin of Whitehouse).

WHITEHOUSE, F.W., 1931 - Report of the palaeontologist. Ann. Rep. Dept. Mines Qld, 1930, 141-42.

Records five trilobite stages from the Middle and Upper Cambrian of the Georgina Basin.

WHITEHOUSE, F.W., 1936 - The Cambrian faunas of northeastern Australia. Part 1: Stratigraphical Outline. Part 2: Trilobita. Mem. Qld Mus., 11, 59-112, pls 8-10.

Discusses the stratigraphy of the Queensland portion of the Basin and recognizes three new (Georgina, Pituri, and Ninmaroo) Series. Additionally twelve faunal stages are recognized ranging from Middle Cambrian to Lower Ordovician. New families include Diplagnostidae, Pseudagnostidae and Glyptagnostidae; new genera are Anorina, Aspidagnostus, Cotalagnostus, Enetagnostus, Euagnostus, Glyptagnostus, Hebediscus, Lotagnostus, Oncagnostus, Phoidagnostus, Rhaptagnostus, Solenagnostus, and Xystridura.

WHITEHOUSE, F.W., 1939 - The Cambrian faunas of north-eastern Australia. Part 3: The Polymerid trilobites. Mem. Qld. Mus., 11(3), 179-282, pls. 19-25.

Describes polymerid trilobites from the Middle and Upper Cambrian of the Barkly Tableland, Undilla embayment, Duchess embayment, Burke River Structural Belt and Glenormiston area. Presents an updated account of the trilobite stages for the Middle and Upper Cambrian of the Georgina Basin. Describes one new family, the Nepeidae, two subfamilies, the Xystridurinae and the Papyriaspinae, together with eleven new genera and thirty four new species. New genera include Mesodema, Lyriaspis, Eurostina, Protemnites, Nepea, Asthenopsis, Papyriaspis, Rhodonaspis, and Ceratagnostus.

WHITEHOUSE, F.W., 1940 - Studies in the late geological history of Queensland. Pap. Univ. Qld Dep. Geol. 2(N.S) (1), 1-74.

Discusses the geological evolution of the Barkly Tableland and the deposition of Tertiary limestones in the Barkly and Georgina River areas.

WHITEHOUSE, F.W., 1941 - The Cambrian faunas of north-eastern Australia. Part 4: Early Cambrian echinoderms similar to the larval stages of Recent forms. Mem. Qld Mus., 12, 1-28.

Describes two species from the new subphylum Haplozoa in the phylum Echinodermata.

WHITEHOUSE, F.W., 1945 - The Cambrian faunas of north-eastern Australia. Part 5: the trilobite genus Dorypyge. Mem. Qld Mus., 12, 117-23, pl. 11.

Describes four species of Dorypyge from the Undilla embayment.

WHITEHOUSE, F.W., 1954 - The geology of the Queensland portion of the Great Australian Artesian Basin. Appendix C to Artesian Basin Water Supplies in Queensland, Brisbane, by Authority.

Introduces the term Boulia Shelf for the "extension of shallow bedrock along the western edge of the basin" (the Great Artesian Basin).

WINNECKE, C., 1884 - Diary of Northern Exploration Party. S. Aust. Parl. Pap., 39, 1-16.

An account of early exploration in the southeastern part of the Georgina Basin and surrounding areas with brief mention of rock types: Toko Ranges interpreted as granite tableland.

WOOLLEY, D.R., 1965 - The availability of groundwater at the Utopia Irrigation Area (Sheet SF/53-10) N.T. A preliminary appraisal. Bur. Miner. Resour. Aust. Rec., 1965/9 (unpubl.).

Describes a shallow Tertiary fluviatile basin overlying Archaean, Proterozoic, and Palaeozoic rocks of the Georgina Basin.

WOOLLEY, D.R., 1966 - Proposals for testing of groundwater at Warrabri Native Settlement, Northern Territory. Bur. Miner. Resour. Aust. Rec., 1966/79 (unpubl.).

Briefly discusses the extent of the Lower Palaeozoic sediments beneath the Tertiary cover in the Warrabri area.

WOOLLEY, D.R., & ROCHOW, K.A., 1961 - The occurrence of lead near Box Hole Bore, central Australia. Bur. Miner. Resour. Aust. Rec., 1961/42 (unpubl.).

Discusses the occurrence of galena, cerussite, and barite in two closely associated horizons in the Arrinthrunga Formation, in beds above the Eurowie Sandstone Member.

WOOLNOUGH, W.G., 1912 - Report on the geology of the Northern Territory. Bull. N. Terr. Aust., 4, 1-55.

Briefly mentions the preponderance of limestone and quartzite on the Barkly Tableland.

WOOLNOUGH, W.G., 1933 - Report on aerial survey operations in Australia during 1932. Commonwealth of Australia. By Authority, 1933.

Two legs of the aerial survey covered the Georgina Basin, Mount Isa to Newcastle Waters (via Camooweal) and Camooweal, to the Toko Range and return. Records jointing and structure over the area.