XV.—A List of Western Australian Fossils.

SUPPLEMENT No. 1.

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BY

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This first supplement to the catalogue of 1910 records some important advances in our knowledge of the palaeontology of Western Australia and in the correlation of our fossiliferous strata with those of other countries.

The Cambrian of East Kimberley, with its *Redlichia* and its *Salterella*, shows remarkable affinities to the Lower Cambrian of China, a resemblance which will, no doubt, be strengthened when the fossil contents of the Negri Beds and their associated strata are better known.

The fossils of the Kimberley Devonian have been critically examined by Dr. Benson in his paper "Materials for the study of the Devonian Palaeontology of Australia" of 1922, where he considers "the Kimberley limestone to be of late Givetian or more probably Frasnian (early Upper Devonian) Age."

The position of the Western Australian Carboniferous, or Permo-Carboniferous, series is not yet satisfactorily determined. On the evidence at present available it appears that in the Napier Range, West Kimberley, there is a gradual transition, without unconformity, from strata with Stromatoporoids, Coccostean fishes and other Devonian, or pre-Carboniferous types into strata containing, according to Dr. Benson (1921) "the survivors of the Lower Carboniferous fauna mingled with (or followed by) members of a littoral Salt Range fauna migrating with increasing specific variation towards Eastern Australia."

The presence of *Sphenopteris lobifolia* among the plant remains at Irwin River is also significant.

Our knowledge of the Mesozoic Life in Western Australia has been considerably extended since 1910. Plant bearing beds of Jurassic age have been discovered at Point Torment, King Sound, near Derby, and have been penetrated in a bore in the vicinity of Moora, about 100 miles North of Perth. The beds near Geraldton have yielded a number of additional forms which, according to

Mr. F. W. Whitehouse indicate a Bajocian Age for the strata, thus confirming the opinion expressed by Mr. F. Chapman after examining the Foraminifera and Ostracoda.

Extensive series of fossils from the Cretaceous Gingin Chalk have been examined by the late R. Etheridge, junr. Mr. T. H. Withers of the British Museum, owing to his discovery of remains of *Uintacrinus* among specimens submitted to him, has definitely stated that the Gingin beds are of Santonian Age, an estimate which is confirmed by the recent discovery by myself of plates of *Marsupites* among material collected at One Tree Hill, Mole Cap Hill and Mooldup Slope by the University Geological party which visited Gingin during Easter last.

In August, 1925, I visited Dandarragan, West of Moora, and on Round Hill, Kayanaba, discovered a fossiliferous exposure of the Gingin Chalk, from which an extensive series of fossils, including remains of *Marsupites* and *Uintacrinus*, was collected.

Little has been added to our knowledge of the Cainozoic fossils of this State, the specimens collected many years ago, which were omitted from the previous list because of their unsatisfactory state of preservation, have now been included, as it seems unlikely that more perfect specimens will be obtained in the near future.

Pleistocene vertebrate remains have been found in many parts of Western Australia, interesting series from West Kimberley and Balladonia Eu. have been presented to the Western Australian Museum, and I have collected them extensively in certain caves near the Margaret River in the extreme South-West of the State. The small series from the valley of the Fitzroy River, West Kimberley, bear a far greater resemblance to the Pleistocene vertebrates of Queensland than to those found near Balladonia and in the Margaret River Caves. An extensive collection from the various post-Pliocene shell beds, etc., of the Swan River district, and a careful study of the contained faunas, should yield some interesting data, which would be of value when considering the recent history of the Coastal Plain.

Most of the localities in the tables are to be found on the last edition of the 50 miles-to-the-inch map of the State published by the Department of Lands and Surveys, Perth.

For purposes of administration the State has been sub-divided into the following divisions :—

Kimberley	K.	Eastern	E.
North-West	N.W.	South-West	S.W.
Eucla	Eu.		

In the following tables each fossil locality is accompanied by the abbreviation for its respective division. The divisions are shown on the Geological Sketch Map which forms the frontispiece of this Bulletin.

PROTEROZOIC.

Algonkian.

Beds which are probably of Algonkian age have been discovered by Mr. T. Blatchford and Dr. Wade at the Osmund Range, Mount John, and at Flora Valley, all in East Kimberley.

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ALGONKIAN.	Osmund Range (Mount John).	Flora Valley.
Trails of Seaweed	×	...
Tracks of Protichnites sp.	×	...
„ Crustaceans	×	...
Remains of Phyllocarids ?	×	...
„ Hymenocarids ?	×	...
Trails of Polychaete	...	×

PALAEOZOIC.

Cambrian.

The search for Oil in the Kimberley District has added much to the previously known distribution of Cambrian rocks in this State, as recorded in the reports of E. T. Hardman and Dr. R. L. Jack. At the same time the fossils collected by Mr. D. J. Mahoney in 1921 have increased our knowledge of the fauna and support the view that in the Cambrian period life in the seas of Western and Eastern Australia possessed a uniformity of type, which disappeared in later times. The Cambrian strata of the Ord River valley pass eastwards without a break into the Northern Territory, where, according to his report on the Petroleum prospects, Dr. Wade collected *Salterella*, *Olenellus Lingula*, *Orthis*, worm tracks, etc., at Mt. Panton about 25 miles East of the Okes-Durack Bore, and 16 miles across the border. The age suggested by the Trilobite *Redlichia* is Lower Cambrian.

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LOWER CAMBRIAN. *Negri River Beds.* PLANTAE. *Algae.*	Elvire River, Kimberley.	Bottle Tree Crossing, Linacre River, Kimberley.	Homestead, Ord River Station, Kimberley.	Kelly's Creek, Ord River, Kimberley.
SCHIZOPHYCEAE.				
Girvanella sp.	...	...	×	×
ANIMALIA.				
PROTOZOA.				
Radiolaria (Spumellaria type) ...	...	...	...	×
?Foraminifera	...	...	×	×
HYDROZOA.				
STROMATOPOROIDEA.				
Undetermined specimens	...	×	...	...

	Elvire River, Kimberley.	Bottle Tree Crossing, Linacre River, Kimberley.	Homestead, Ord River Station, Kimberley.	Kelly's Creek, Ord River, Kimberley.
ANTHOZOA.				
ZOANTHARIA.				
Family *Archaeocyathidae.*				
Undetermined specimens	...	...	...	×
BRACHIOPODA.				
ECARDINES.				
Family *Obolidae.*				
Lingulella sp. ... ... also undetermined specimens.	...	×	...	...
MOLLUSCA.				
PTEROPODA CONULARIDA.				
Family *Torellellidae.*				
Salterella hardmani, Foord	×	×	×	×
Salterella sp. (? same as above) ...	...	×	×	×
CRUSTACEA.				
Ostracoda	...	×	×	×
TRILOBITA.				
Family *Redlichiidae.**				
Redlichia forresti (Eth. fil. M.S.) Foord	×	...	×	×
Redlichia sp.	...	×	...	×
Family *Mesonacidae.*				
c.f. Callavia sp.	...	...	...	×
c.f. Mesonacis sp.	...	...	...	×
c.f. Wanneria sp.	...	...	...	×
Olenellus sp. nov.	...	...	...	×
Family *Olenidae.*				
? Olenus sp.	...	×	...	...
Family *Trinucleidae.*				
? Ampyx sp.	...	×	...	...
Undetermined Trilobites	...	×	×	×

* Characters those of the Genus Crossman, Rev. Critique Paléozool. 1902, p. 52.

DEVONIAN.

Recent geological investigations have added little to our knowledge of the distribution of the Devonian Rocks in Western Australia. As a result of Dr. Basedows' "expedition of exploration" of 1916, a collection of fossils was placed in the hands of Mr. R. Etheridge including a Stromatoporoid from the Napier Range, Napier Downs, which, together with two others previously presented to the Australian Museum by Dr. R. L. Jack, was described in the appendix to Mr. Etheridge's "Observations on Carboniferous and other Fossils." The relationship between these Devonian Beds and the overlying strata does not appear to have been, as yet, accurately determined.

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ANIMALIA.	Barker Gorge, Napier Range, K.	Napier Downs, Napier Range, K.	Mt. Pierre, K.	Minnie Pool, Margaret River, K.	Rough Range, opp. Mt. Krause, K.
COELENTERATA.					
HYDROZOA—STROMATOPORIDEA.					
Actinostroma clathratum, Nich. ...	...	...	...	...	×
Actinostroma subclathratum, Eth. fil. ...	...	...	...	×	...
Stromatoporella eifeliensis, Nich. ...	...	...	...	...	×
Stromatoporella kimberleyensis, Eth. fil.	...	×	...	...	...
Stachyodes dendroidea, Eth. fil ...	...	...	...	×	...
Stromatopora cf. concentrica, Goldf. ...	...	...	...	...	×
c.f. Areopora tuberosa, W. and W. ...	...	...	×	...	...
ACTINOZOA TETRACORALLA.					
Cyathophyllum depressum, Hinde ...	...	...	...	...	×
Cyathophyllum virgatum, Hinde ...	...	...	...	...	×
Phillipsastraea (Smithia) sp.	×	...	...	...	...

	Barker Gorge, Napier Range, K.	Napier Downs, Napier Range, K.	Mt. Pierre, K.	Minnie Pool, Margaret River, K.	Rough Range, opp. Mt. Krause, K.
HEXACORALLA.					
Cystiphyllum, s.p.	...	...	×	...	...
Aulopora repens (Knorr and Walch) ...	...	...	...	...	×
Pachypora tumida, Hinde	...	...	...	...	×
Pachypora sp.	×	...	...	...	...
Pachypora, sp., nov.	...	...	...	...	×
ECHINODERMATA.					
PELMATOZOA CRINOIDEA.					
Crinoid stems and arms	×	...	×	...	...
c.f. Cyathocrinus, sp.	...	...	×	...	...
BRACHIOPODA.					
PROTREMATA.					
Productus sp.	...	...	×	...	...
TELOTREMATA.					
Rhynchonella cuboides (Sowerby) ...	...	...	×	...	×
Rhynchonella (Pugnax) pugnus (Martin)	...	...	×	...	...
Rhynchonella (Uncinulus) c.f. timorensis, Beyr.	×	...	...	...	...
Atrypa reticularis (Linné)	...	...	×	...	...
Spirifer sp.	...	...	×	...	...
MOLLUSCA.					
GASTEROPODA.					
DIOTOCARDIA.					
Euomphalus sp.	×	...	...	...	...
MONOTOCARDIA.					
Loxonema sp.	×	...	...	...	...
CEPHALOPODA.					
NAUTILOIDEA.					
Orthoceras sp.	...	...	×	...	...
Rizoceras sp.	...	...	×	...	...
Geisonoceras sp.	...	...	×	...	...
AMMONOIDEA.					
Aganides sp. nov. ?	...	...	×	...	...
c.f. Gonioclymenia sp.	...	...	×	...	...
Gastrioceras sp.	...	...	×	...	...
TRILOBITA.					
OPISTHOPARIA.					
Proetus sp.	×	...	...	...	...
PISCES.					
Coccosteus gen. and sp. indet. ...	×	...	...	...	...

CARBONIFEROUS AND PERMO-CARBONIFEROUS.

The outstanding feature of recent palæontological investigations has been the discovery of fossiliferous Permo-Carboniferous Beds in localities along the Canning Stock Route, particularly on a low hill near No. 27 Well, North-East of Lake Disappointment, where a small, but interesting series of fossils was collected by Mr. Leo J. Jones, of the Staff of the Geological Survey of New South Wales.

It is a matter of regret that the final determinations of so many of the fossils included in this list are not yet available, for the list loses much of its value because of its provisional nature.

On account of lack of space it has been necessary to reduce the number of localities in the appended table. The collection made during the geological investigations undertaken on behalf of the Freney Oil Company and identified by Mr. F. Chapman of Melbourne, are included in column 7, for further particulars *see* Dr. Wade's Report (1924) p. 19.* The specimens collected by Mr. F. G. Clapp near the Kennedy Range, and in the vicinity of the Lyons and Gascoyne Rivers, identified by Mr. W. S. Dunn are grouped in column 3 under "Gascoyne River." Here also are included specimens from Fossil Hill, Wyndham River and Daurie Creek now in the Geological Survey Office, Perth. The column "Minilya River" includes records of specimens from Barrabiddie Pool and Wandagee Station.

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* These determinations are revised in an anonymous pamphlet, undated, published in Melbourne, December (?) 1925.

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	Irwin River, S.W.	Barrabiddie, Minilya River, N.W.	Mt. Marmion, K.
PLANTAE.			
THALLOPHYA.			
Palaeachlya gigas, Eth. fil.	...	×?	×
PTERIDOPHYTA.			
Equisetales.			
? Phyllotheca sp. or ? Schizoneura sp. ...	×	...	...
? *Filicales.*			
Sphenopteris lobifolia, Morris	×	...	...
? *Cycadofilicales.*			
Glossopteris browniana, Brong.	×	...	...
Glossopteris indica, Schimp.	×	...	...
Glossopteris ampla, Dana.	×	...	...
? Gangamopteris sp.	×	...	...
Cordiatales.			
? Noeggerathiopsis sp.	×	...	...

ANIMALIA.	Irwin River, S.W.	Byro Station, Lr. Murchison, N.W.	Gascoyne River, N.W.	Minilya River, N.W.	27 Well, Canning Stk. Rte., N.E. of Lake Disappointment, E.	Mt. Marmion, Lennard River, K.	Freney Oil Area, K.
PORIFERA.							
SILICISPONGIAE.							
LITHISTIDA.							
Calceolispongia hindei, Eth. fil.	...	...	...	...	...	×	...
Anthracosycon sp.	...	...	...	...	...	×	...
HEXACTINELLIDA.							
? Hyalostelia smithii, Young and Young	...	...	...	...	...	...	×
COELENTERATA.							
ACTINOZOA (ANTHOZOA).							
Amplexus pustulosus, Hudl.	...	...	×	...	...	...	...
Pleurophyllum australe, Hinde	...	...	×	...	...	×	...
,, sp.	...	...	×	...	...	...	...
Cyathophyllum sp.	...	...	...	...	...	...	×
,, sp.	...	...	...	...	...	...	×
Lonsdaleia sp. c.f. L. floriformis, Mart ...	...	...	...	...	...	...	×
HEXACORALLA.							
Favosites marmionensis, Eth. fil. ...	...	...	...	...	...	×	×
Evactinopora crucialis, Hudl.	...	...	...	...	...	×	...
,, dendroidea, Hudl. ...	...	...	...	...	...	...	×
,, spp.	...	...	...	...	...	×	...
Stenpora sp. "a"	...	...	...	...	...	×	...
,, sp. "b"	...	...	...	×	...	...	...
,, sp. "c"	...	...	...	...	...	×	...
,, spp.	...	...	×	...	...	...	...
Monilipora nicholsoni, Eth. fil.	...	...	×	...	...	×	...
ECHINODERMATA.							
CRINOIDEA.							
? Platycrinus sp.	...	...	...	...	...	...	×
Fragments indet	...	...	×	...	...	×	×
POLYZOA.							
GYMNOLAEMATA.—CYCLOSTOMATA.							
Lyropora (?) erkosoides, (Eth. fil. m.s.) Bretnall	...	...	×	...	...	...	...
Fenestella horologia, Bretnall	...	...	×	...	...	...	...
,, fossula, Lonsdale	...	...	...	...	...	...	×
,, affluensa, Bretnall	...	...	×	...	...	...	...
,, spp. undescribed	...	...	×	...	...	...	...

	Irwin River, S.W.	Byro Station, Lr. Murchison, N.W.	Gascoyne River, N.W.	Minilya River, N.W.	27 Well, Canning Stk. Rte., N.E. of Lake Disappointment, E.	Mt. Marmion, Lennard River, K.	Freney Oil Area, K.
Sulcoretepora meridianus (Eth. fil. m.s.) Bretnall	...	...	×	...	...	...	...
Aetomacladia ambrosoides, Bretnall ...	...	...	×	...	...	...	...
Streblotryba marmionensis (Eth. fil. m.s.) Bretnall	...	...	×	...	...	×	...
„ etheridgei, Bretnall ...	...	...	...	...	...	×	...
Rhombopora tenuis, Hinde	...	...	×	...	...	×	...
„ mammillata, Bretnall ...	...	...	×	...	...	...	...
„ multigranulata, Bretnall ...	...	...	×	...	...	...	...
Costinum (?) australis, Bretnall ...	...	...	×	...	...	...	...
Polypora australis, Hinde	...	...	...	...	...	...	×
BRACHIOPODA.							
PROTREMATA.							
Leptaena analoga (Phill.)	...	...	...	...	...	...	×
Orthotetes crenistria (Phill.)	...	...	...	×	...	×	×
„ sp.	...	...	...	...	×	...	...
Derbyia sp. *c.f.* senilis (Phill.)	...	...	...	...	...	×	×
Chonetes pratti, Davidson	×	×	×	...	×	×	×
Chonetes *c.f.* pratti., Dav.	...	...	...	...	...	...	×
Strophalosia complectus, Eth. fil. ...	...	...	...	...	...	×	...
„ clarkei, R. Eth.	...	...	...	...	...	...	×
„ sp.	...	...	...	...	...	...	×
„ sp.	...	...	...	×	...	...	×
„ sp.	...	...	...	...	...	×	...
Atrypa reticularis (Linne)	...	...	...	...	...	...	×
Aulosteges baracoodensis, Eth. fil. ...	...	...	×	×	...	×	...
Productus subquadratus (Morris) ...	...	...	...	...	×	...	×
„ *c.f.* subquadratus (Morris) ...	...	...	...	...	...	...	×
„ tenuistriatus, var. foordi, Eth. fil.	...	...	...	...	...	...	×
„ brachythaerus, Sowerby ...	...	...	...	...	...	...	×
„ *c.f.* brachythaerus, Sby. ...	...	...	...	...	...	...	×
„ semireticulatus (Martin) ...	...	...	...	...	...	..	×
„ cora. D'Orb.	...	...	...	...	×	...	×
„ bellus Eth. fil.	...	...	×	...	...	×	×
„ sp. c.f. brachythaerus, Sby. ...	×	...	...	...	...	...	...
„ sp.	...	...	...	...	...	×	...
„ spp.	...	...	×	...	...	...	×
„ sp.	...	...	...	...	×	...	...
Orthis (Schizophoria) resupinata (Mart)	...	...	...	...	...	...	×

	Irwin River, S.W.	Byro Station, Lr. Murchison, N.W.	Gascoyne River, N.W.	Minilya River, N.W.	27 Well, Canning Stk. Rte., N.E. of Lake Disappointment, E.	Mt. Marmion, Lennard River, K.	Freney Oil Area, K.
TELOTREMATA.							
Rhynchonella (Pugnax) pleurodon (Phil.)	...	...	...	...	...	...	×
Rhynchopora basedowi, Eth. fil. ...	...	...	...	...	...	×	...
Dielasma hastata (Sowerby)	...	...	...	...	×	...	...
Spiriferella (?) australasica (Eth. fil.) ...	...	...	×	...	...	×	...
Spirifer (Martiniopsis) *c.f.* darwinii, Morris	...	...	...	...	...	...	×
„ hardmani, Foord	...	...	...	...	...	...	×
„ *c.f.* hardmani, Foord	...	...	...	...	...	...	×
„ musakheylensis, Davidson ...	...	...	...	×	...	...	...
„ musakheylensis, Dav. var. australis, Foord	...	×	×	×	...	...	×
„ latus, McCoy	...	...	×	...	...	...	×
„ *c.f.* latus, McCoy	...	...	×	...	...	×	...
„ marcoui, Waagen	...	...	×	×	...	×	×
„ *c.f.* marcoui, Waagen	...	...	...	...	...	...	×
„ tasmaniensis, Morris	...	...	...	...	...	...	×
„ *c.f.* lineatus (Martin)	...	...	...	...	...	...	×
„ avicula, Sowerby	...	...	...	...	...	...	×
„ byroensis, Glauert	...	×	...	...	×	×	×
„ *c.f.* byroensis, Glauert	...	...	...	...	...	...	×
„ convolutus, Phill.	...	×	...	...	...	...	...
„ spp.	×	×	×	...	×	×	×
„ sp.	...	×	...	...	...	...	...
„ sp.	...	×	...	...	...	...	...
„ sp.	...	×	...	...	...	...	...
Reticularia sp.	...	...	...	...	...	×	...
Cleiothyris, *c.f.* roysii (L'Ev.)	...	...	...	...	...	...	×
„ *c.f.* lamellosa (L'Ev.) ...	...	...	...	...	...	...	×
„ macleayana (Eth. fil.) ...	...	...	×	...	...	×	×
Seminula sp. nov. (near S. subtilita Hall)	...	...	...	...	...	...	×
„ sp.	...	...	...	...	...	...	×
MOLLUSCA.							
PELECYPODA.							
PRIONODESMACEA.							
Sanguinolites *c.f.* striato lamellosus De Kon	...	...	...	...	...	...	×
„ sp.	...	...	...	...	...	...	×
? Edmondia sp.	...	...	...	...	...	...	×
Palaearca sp.	...	...	...	...	...	...	×

	Irwin River, S.W.	Byro Station, Lr. Murchison, N.W.	Gascoyne River, N.W.	Minilya River, N.W.	27 Well, Canning Stk. Rte., N.E. of Lake Disappointment, E.	Mt. Marmion, Lennard River, K.	Freney Oil Area, K.
Parallelodon sp.	...	...	...	...	...	...	×
? Ambonychia sp.	...	...	...	...	...	...	×
Deltopecten subquinquelineatus (McCoy)	...	×	...	...	...	×	...
Aviculopecten sprenti, Johnston	...	×	...	...	...	...	...
„ tenuicollis (Dana) ...	...	...	...	...	...	...	×
Aviculopecten hardmani, Eth. fil. ...	...	...	...	...	...	...	×
Lima sp.	...	...	...	...	...	...	×
Modiola sp.	...	...	...	...	...	...	×
TELEODESMACEA.							
Astartella sp.	...	...	...	...	...	...	×
Protoschizodus sp.	...	...	...	...	...	...	×
Pachydomus *c.f.* ovalis McCoy	...	...	...	...	...	...	×
? „ sp.	...	...	...	...	...	...	×
GASTEROPODOA.							
ASPIDOBRANCHIA.							
DIOTOCARDIA.							
Pleurotomaria sp.	...	...	...	...	...	...	×
c.f. Ptychompholina, sp.	...	...	...	...	...	...	×
Ptychomphalina maitlandi. Eth. fil. ...	...	...	...	×	...	...	×
Murchisonia sp.	...	...	...	...	...	...	×
Bellerophon costatus J. deC. Sowerby ...	×	...	...	...	...	...	...
Euomphalus sp.	...	...	...	...	...	...	×
? „ sp.	...	...	...	...	...	...	×
OPISTHOBRANCHIA.							
CONULARIDA.							
Conularia sp. nov. *c.f.* warthi, Waagen ...	...	×	...	...	...	...	...
CEPHALOPODA.							
TETRABRANCHIATA.							
NAUTILOIDEA.							
Coelonautilus sp. nov.	...	...	...	...	×	...	...
Actinoceras hardmani Eth. fil.	...	...	...	...	...	...	×
AMMONOIDEA.							
Agathiceras micromphalum (Morris) ...	...	...	...	...	...	...	×

MESOZOIC.

JURASSIC.

The additions to our knowledge of the Jurassic Rocks of Western Australia and their distribution made since the publication of the list in Bulletin 36 of 1910, though not extensive, are of considerable interest.

The discovery of Plant Remains of Jurassic Age near Derby and Point Torment on King's Sound, West Kimberley, are the earliest authentic records of Jurassic strata in the Kimberley Division. The presence of Jurassic strata in West Kimberley indicated on the geological map of Australia in the Commonwealth Year Book, No. 2, 1909, Map, page 102, being due to an error which has been criticised and corrected by Mr. A. Gibb Maitland (1919, p. 41.)

The fossils mentioned by Neumayr from Glenelg, are:—*Stephanoceras blagdeni*, Sow.*; *Stephanoceras leichardti*, Suess, *Perisphinctes* (?) sp. *Trigonia moorei*, Lycett. *Myacites* sp., *Lima* (*Ctenostreon*) *proboscidea*, Sow. (Maitland, 1919, p. 41.)

The careful examination of a small series of Jurassic fossils from a cutting at the "Nineteen Mile," a watering stop on the Geraldton-Cue Railway line, by Mr. F. W. Whitehouse, M.Sc., has enabled him to determine the age of the beds exposed. This particular zone, for which the name Newmarracarra Beds is proposed, is regarded by Mr. Whitehouse to be Middle Bajocian, or Inferior Oolite, thus confirming Mr. F. Chapman's conclusion of 1904.

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* The determination is stated by Whitehouse, p. 9, to be incorrect.

PLANTAE.	Moora Bore, S.W.	Mingenew, S.W.	Mayil's Well, near Derby, K.	Madinganarra, Point Torment, K.
PTERIDOPHYTA.				
(*Filiciales.*)				
Thinnfeldieae.				
Thinnfeldia feistmanteli, Johnston ...	...	...	×	...
,, sp.	×	...	...	...
CYCADOPHYTA.				
Bennettitales.				
Ptilophyllum sp.	...	...	...	×
Incertae sedis.				
Otozamites feistmanteli, Zigno ...	...	×	...	...
,, bechei, Brong.	...	×	...	...
,, bengalensis, Oldham & Morris	...	×	...	...
,, sp.	×	...	...	×
CONIFEROPHYTA.				
Coniferales.				
Pagiophyllum sp.	...	×	...	...
Elatocladus sp.	...	×	...	...
Other intermediate remains	...	×	...	...

NEWMARRACARRA BEDS—MIDDLE BAJOCIAN.

Cutting near "Nineteen Mile." Geraldton-Cue Railway line, S.W. Division.

ANIMALIA.

ECHINODERMATA.

ECHINOIDEA—ENDOCYCLICA.

Family *Cidaridae.*

Cidaris sp.

POLYZOA.

ECTOPROCTA—GYMNOLAEMATA.

Cyclostomata.

Family *Diastoporidae.*

Berenicea c.f. archiaci, Haime.

MOLLUSCA.

PELECYPODA.

Prionodesmacea.

Family *Trigoniidae.*
Trigonia moorei, Lycett.
,, ,, variety.

Family *Pteriidae.*
Pseudomonotis echidna (J. Sow.) (= Avicula echidna of list).
Oxytoma decemcostata, Whitehouse. (= A. munsteri Moore, not of Bronn).

Family *Ostreidae.*
Ostrea sp.

CEPHALOPODA.

TETRABRANCHIATA.

Ammonoidea.

Family *Stepheoceratidae.*
Otoites depressus, Whitehouse.
,, sp.

Family *Phymatoidae.*
Sonninia spp.

DIBRANCHIATA.

Belemnoidea.

Family *Belemnitidae.*
Belemnopsis spp.

CRETACEOUS.

Sedimentary rocks of Cretaceous age are known to occur in coastal Western Australia from the North-West Cape to Eucla. They outcrop in many places at, or near, the eastern margin of the Coastal Plain, north of Gingin, and have been proved by boring as far South as the Metropolitan Area and Rottnest Island. On the South Coast they are associated with the rocks underlying the Miocene Limestone which forms the remarkable Nullarbor Plains.

It is possible that a detailed geological survey of the Kimberley District will reveal the presence there of Cretaceous beds allied to those known to occur in the Northern Territory.

The present state of our knowledge suggests that there are two distinct faunal regions within the boundaries of Western Australia. The beds near Eucla on the south coast have yielded two fossils, *Aucella hughendenensis,* (Eth.) and *Maccoyella corbiensis,* (Moore), which are characteristic of the Rolling Downs Formation (Lower Cretaceous) of Queensland. On the other hand, the fauna of the Gingin chalk is related to the Upper Cretaceous faunas of India, and Europe. The Foraminifera, Ostracoda, and the Echinid *Cidaris comptoni,* Glauert suggest that the Gingin beds are Albian,

but the presence of the remains of *Uintacrinus*, a zone fossil of the Santonian (Upper Emscherian) indicates a Senonian age for the deposit.* The evidence of this Crinoid is confirmed by several specimens of *Marsupites*, another stalkless Crinoid recently collected at Gingin. *Marsupites* and *Uintacrinus* would seem to have an almost world-wide range, although their distribution in Australia is limited to the Gingin Chalk.

Specimens of *Dimitobelus canhami* (Tate) from Remarkable Hill, Cardabia, and Wandagee Station, Minilya River, N.W., are evidence of the presence of Upper Albian deposits in these localities.

The Cretaceous rocks proved to exist in the Metropolitan Area by boring have yielded Bryozoa, Mollusca, including the genera *Amusium*, *Pecten* (*Chlamys*), *Tellina*, *Pinna*, *Dentalium*, *Fusus* or *Triton* ; Crustacea *Callianassa* or *Thalassina* and a shark's tooth ?*Carcharodon*. The glauconitic nature of some of the beds penetrated, suggests an affinity to the glauconitic strata associated with the Gingin Chalk, but the exact relationship has not yet been determined.

The cherty beds of Mt. Elder, East Kimberley, containing the gastropod *Planorbis hardmani* may probably be found to be of Cretaceous age when a more detailed examination of the fossil contents is undertaken.

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* Withers, T. H., 1924, p. 18.

LOWER CRETACEOUS.

ROLLING DOWNS FORMATION.

Bore, Trans-Australian Railway Line, Murina District, Eucla Division.

	Remarkable Hill, Cardabia N.W.	Wandagee Station, Minilya River, N.W.
MOLLUSCA.		
PELECYPODA.		
Prionodesmacea.		
Aucella hughendenensis (Eth.)		
Maccoyella corbiensis (Moore).		
? Fissilunula sp.		
CARDABIA BEDS—UPPER ALBIAN.		
MOLLUSCA.		
CEPHALOPODA.		
DIBRANCHIATA.		
Belemnoidea.		
Dimitobelus canhami (Tate)	×	×

	Gingin, S.W.	Round Hill, Dandarragan, S.W.
UPPER CRETACEOUS.		
GINGIN CHALK.		
= SANTONIAN sub-stage of the SENONIAN.		
ANIMALIA.		
Protozoa.		
FORAMINIFERA.		
Family *Astrorhizidae.*		
Rhizammina indivisa, Brady.	×	...
Family *Lituolidae.*		
Haplophragmium agglutinans (d'Orb).	×	...
Placopsilina vesicularis, Brady	×	...
Placopsilina cenomana, d'Orb.	×	...
Haplostiche soldanii (Jones & Parker)	×	...
Ammodiscus incertus (d'Orb).	×	...
Ammodiscus gaultinus, Berthelin	×	...

	Gingin, S.W.	Round Hill, Dandarragan, S.W.
Family *Textulariidae :*		
Textularia turris, d'Orb.	×	...
,, trochus, d'Orb.	×	...
,, gibbosa, d'Orb.	×	...
,, gramen, d'Orb.	×	...
Verneuilina spinulosa, Reuss	×	...
Bigenerina compressiuscula, Chapm.	×	...
Spiroplecta sagittula (Defr).	×	...
,, anceps (Reuss)	×	...
,, praelonga (Reuss)	×	...
Guembelina globulosa (Ehrenb)	×	...
,, globifera (Reuss)	×	...
,, polystropha (Reuss)	×	...
Gaudryina pupoides, d'Orb	×	...
,, rugosa, d'Orb	×	...
Clavulina communis, d'Orb	×	...
Bulimina variabilis, d'Orb	×	...
Bolivina obsoleta (Eley)	×	...
Family *Lagenidae :*		
Lagena globosa (Montagu)	×	...
,, apiculata (Reuss)	×	...
,, aspera, Reuss	×	...
,, hispida, Reuss	×	...
Nodosaria (Dentalina) pauperata, d'Orb	×	...
,, ,, distincta, Reuss	×	...
,, ,, soluta, Reuss	×	...
,, ,, ,, var. discrepans, Reuss ...	×	...
,, ,, annulata, Reuss	×	...
,, ,, communis, d'Orb	×	...
,, ,, consobrina, d'Orb. var. emaciata, Reuss	×	...
,, ,, legumen, Reuss	×	...
,, ,, lorneiana, d'Orb	×	...
,, ,, filiformis, d'Orb	×	...
,, ,, retrorsa (Reuss)	×	...
,, ,, intercellularis, Brady	×	...
,, ,, costellata Reuss	×	...
,, ,, obliqua (Linne)	×	...
,, ,, sulcata, Nilsson	×	...
,, ,, paupercula, Reuss	×	...
Nodosaria subtertenuata, Schwager	×	...
,, vertebralis (Batsch)	×	...
,, obscura, Reuss	×	...
,, prismatica, Reuss	×	...
,, perpusilla, Chapm.	×	...

	Gingin, S.W.	Round Hill, Dandarragan, S.W.
Frondicularia ornata, d'Orb	×	...
,, archiaciana, d'Orb	×	...
,, chapmani, Perner	×	...
,, lanceolata, Reuss	×	...
,, inversa, Reuss	×	...
,, apiculata, Reuss	×	...
,, sherborni, Perner	×	...
,, marginata, Reuss	×	...
,, decheni, Reuss	×	...
,, gaultina, Reuss	×	...
,, ungeri, Reuss	×	...
,, perovata, Chapm.	×	...
,, guestphalica, Reuss	×	...
,, intermittens, Reuss	×	...
,, cordai, Reuss...	×	...
,, lanceolata, Perner	×	...
,, angusta, Nilsson	×	...
Marginulina costata (Batesh)	×	...
,, glabra, d'Orb	×	...
,, inaequalis, Reuss	×	...
Vaginulina legumen (Linne)	×	...
,, comitina, Berthelin	×	...
,, strigillata (Reuss)	×	...
Cristellaria planiscula, Reuss	×	...
,, trunculata, Berthelin	×	...
,, tripleura, Reuss	×	...
,, lituola, Reuss	×	...
,, grata, Reuss	×	...
,, gladius (Philippi)	×	...
,, acutauricularis (Fichtel and Moll)	×	...
,, ovalis, Reuss	×	...
,, schloenbachi, Reuss	×	...
,, bronni (Roerner)	×	...
,, italica (Defr)	×	...
,, navicula, d'Orb	×	...
,, triangularis, d'Orb	×	...
,, latifrons, Brady	×	...
,, oligostegia, Reuss	×	...
,, gibba, d'Orb	×	...
,, articulata (Reuss)	×	...
,, subalata, Reuss...	×	...
,, gaultina, Berthelin	×	...
,, rotulata (Lamk)	×	...
,, ,, var. microdiscus, Reuss ...	×	...
,, circumcidanea, Berthelin	×	...
,, diademata, Berthelin	×	...

	Gingin, S.W.	Round Hill, Dandarragan, S.W.
Cristellaria orbicularis, d'Orb	×	...
,, cultrata (Montf).	×	...
Flabellina rugosa, d'Orb	×	...
,, interpuctata, v.d. Marck	×	...
Polymorphina sororia, Reuss	×	...
,, angusta, Egger	×	...
,, compressa, d'Orb	×	...
,, communis, d'Orb	×	...
,, lactea (Walker & Jacob)	×	...
Sagraina maitlandiana, Chapm..	×	...
,, asperula, Chapm.	×	...
,, monile, Chapm.	×	...
Ramulina aculeata, Wright	×	...
Vitriwebbina laevis (Sollas)	×	...
Family *Globigerinidae :*		
Globigerina bulloides d'Orb	×	...
,, cretacea, d'Orb	×	...
,, aequilateralis, Brady	×	...
,, marginata, Reuss	×	...
,, linnaeana, d'Orb	×	...
Sphaeroidina bulloides, d'Orb	×	...
Family *Rotaliidae :*		
Discorbina opercularis (d'Orb)	×	...
Truncatulina lobatula (Walker & Jacob)	×	...
,, convexa, Reuss	×	...
,, variabilis, d'Orb	×	...
,, wuellerstorfi (Schwager)	×	...
Anomalina ammonoides (Reuss)	×	...
Pulvinulina elegans (d'Orb)	×	...
,, cordierana (d'Orb)	×	...
,, spinulifera (Reuss)	×	...
Rotalia soldanii, d'Orb. var. nitida, Reuss	×	...
,, beccarii, Linne	×	...
,, broeckiana, Karrer	×	...
Family *Nummulinidae :*		
Nonionina asterizans (Fichtel & Moll)	×	...
Family *Miliolidae :*		
? Spiroloculina grata, Terquem	×	...
,, asperula, Karrer	×	...
Miliolina oblonga (Montagu)	×	...
,, venusta (Karrer)	×	...
Massilina ginginensis, Chapm.	×	...

	Gingin, S.W.	Round Hill, Dandarragan, S.W.
PORIFERA.		
CALCISPONGIAE.		
Pharetronidea :		
Peronidella (?) globosa (Eth. fil.)	×	×
Porosphaera globularis (Phil.)	...	×
COELENTERATA.		
ACTINOZOA—ZOANTHARIA—MADREPORARIA.		
Family *Astraeidae :*		
Coelosmilia (?) ginginensis, Eth. fil.	×	...
ECHINODERMATA.		
ELEUTHEROZOA—ECHINOIDEA.		
Endocyclica.		
Family *Cidaridae :*		
Cidaris comptoni, Glauert	×	...
„ spp.	×	×
PELMATOZOA—CRINOIDEA.		
Family *Pentacrinidae :*		
Isocrinus, sp.	×	...
Family *Uintacrinidae :*		
Uintacrinus sp.	×	×
Family *Marsupitidae :*		
Marsupites sp.	×	×
POLYCHAETA.		
CRYPTOCEPHALA—SABELLIFORMIA.		
Family *Serpulidae :*		
Serpula fluctuata, J. de C. Sowerby	×	...
Serpula ampullacea, Sby.	×	×
Serpula pyramidalis (Eth. fil.)	×	...
BRACHIOPODA.		
Testicardines.		
Family *Terebratulidae :*		
Terebratulina ovata, Eth. fil.	×	×
Magas mesembrinus, Eth. fil.	×	×
Trigonosemus acanthodes, Eth. fil.	×	×
Magadina cretacea (Eth. fil.)	×	×

	Gingin, S.W.	Round Hill, Dandarragan, S.W.
MOLLUSCA.		
PELECYPODA.		
Prionodesmacea.		
Family *Mytilidae :*		
Mytilus piriformis, Eth. fl.	×	×
Family *Aviculidae :*		
Inoceramus c.f. maximus, Lumholtz	×	...
,, c.f. etheridgei, Eth. f l.	×	...
,, sp	×	×
Family *Ostreidae :*		
Ostrea, spp.	×	×
Pycnodonta ginginensis, Eth. f l.	×	...
Gryphaea vesicularis, Lamk	...	×
Family *Pectinidae :*		
Pecten ? sp.	×	×
Camptonectes ellipticus, Eth. f l.	×	×
Chlamys, sp.	×	...
Amusium, sp.	×	...
CEPHALOPODA.*		
Ammonoidea—Leptocampyli.		
Family *Haploceratidae :* ?		
Haploceras (?) daintreei, Eth.	×	...
,, (?) flindersi, McCoy	×	...
CRUSTACEA.		
CIRRIPEDIA THORACICA.		
Lepadomorpha.		
Family *Scalpellidae :*		
Calantica (Scillaelepas) ginginensis (Eth. fil.)	×	×
OSTRACODA.		
Family *Cyprididae :*		
Paracypris siliqua, Jones and Hinde	×	...
Family *Bairdidae :*		
Bairdia arquata (Munster)	×	...
Macrocypris simplex, Chapman var. africana, Chapm. ...	×	...
Bythocypris howchiniana, Chapm.	×	...

* A collection of Gingin ammonites is now in the hands of Dr. I. F. Spath, of the British Museum.

	Gingin, S.W.	Round Hill, Dandarragan, S.W.
Family *Cytheridae:*		
Cythere harrisiana, Jones, var. reticosa, Jones and Hinde	×	...
,, westraliensis, Chapm.	×	...
,, lineatopunctata, Chapm. & Sherborn	×	...
Cythereis ornatissima, (Reuss)	×	...
,, ,, var. nuda, Jones & Hinde	×	...
,, ,, var. reticulata, Jones & Hinde	×	...
,, ,, var. stricta, Jones & Hinde	×	...
,, quadrilatera (Roemer)	×	...
,, rudispinata, Chapm. & Sherb.	×	...
,, tuberosa, Jones & Hinde	×	...
Cytheropteron concentricum (Reuss)	×	...
Family *Cytherellidae:*		
Cytherella muensteri (Roemer)	×	...
,, ovata (Roemer)	×	...
,, williamsoniana, Jones	×	...
,, chapmani, Jones & Hinde	×	...
DECAPODA—MACRURA.		
Family *Glypheidae:*		
Glyphaea (?) sp.	×	...
INSECTA.		
Coleoptera.		
Elytrum of Beetle	×	...
PISCES.		
ELASMOBRANCHII.		
Plagiostomi—Selachii.		
Family *Lamnidae:*		
Lamna sp.	×	...
TELEOSTOMI.		
Teleostei—Malacopterygii.		
Family *Saurodontidae:*		
Portheus (?) sp. scales and fragments of bone	×	...
Cladocyclus (?) sp. scales	×	...
REPTILIA.		
Piece of Bone	×	...

CAINOZOIC.

The state of our knowledge of the Cainozoic or Tertiary strata and their palaeontology is very imperfect. There are reasons for believing that some of the superficial deposits in the North are of this age, and that, here and there, along the coast the later dune formations overlie similar deposits of much greater age ; it is, for instance, most probable that the cave-bearing limestone of the extreme South-West is at least later Cainozoic.

Inland, lacustrine beds, believed to be of Cainozoic age, occur in the valley of the Collie River and elsewhere.

The "Cape Range" series (described by Clapp) extending south from North-West Cape consist of limestones and interstratified chalky beds from which numerous foraminifera considered by Mr. F. Chapman to be Oligocene types of the genera *Lepidocyclina* and *Cycloclypeus* have been obtained.

Beds considered to be Miocene are well represented by the Janjukian *Eucla Limestone* of the Nullarbor Plains, and by the *Plantagenet Beds* which occur further west. The latter form a comparatively thin and irregular covering over the older rocks from Torbay, West of Albany, to the Phillips River, and extend inland as far as the southern slopes of the Stirling Range. Their exact relationship to the deposits with fossil wood occuring North of the Stirling Range and to the fossiliferous *Norseman Limestone* and the *Princess Royal Beds*, an earthy siliceous rock of Princess Royal near Norseman, has not yet been determined.

The Plantagenet Beds are fossiliferous, "siliceous sponges are especially abundant throughout these beds, many complete skeletons of Lithistids being obtainable, whilst isolated spicules of the same and of Tetractinellids form an important proportion of the whole rock. In addition, gasteropods, cephalopods, lamellibranchs and echinids are found, but unfortunately they are, as a rule, too poorly preserved for specific determination, though an extensive collection might enable the species of some forms to be ascertained." The beds consist of silt which is often cemented into a somewhat fine-grained sandstone, with an almost total absence of the carbonates of lime and magnesia.

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MIOCENE. ANIMALIA. PORIFERA.	Albany (and near), S.W.	Cape Riche, S.W.	Bremer River, S.W.	Princess Royal Beds, Eu.	Norseman Limestone, Eu.
SILICISPONGIAE.					
MONACTINELLIDA.					
? Geodia sp.	...	...	...	×	...
Desmacidon (Homoeodictya) c.f. grandis R. & D.	...	...	...	×	...
Petrosia c.f. variabilis, Ridley	...	...	...	×	...
? Halichondria sp.	...	...	...	×	...
? Strongylophora sp.	...	...	...	×	...
c.f. Forcepia sp.	...	...	...	×	...
Latrunculia spp.	...	...	...	×	...
Tethya sp. near T. robusta Bbk. ...	...	...	...	×	...
? Myxilla sp.	...	...	...	×	...
undetermined spicules	×	×	...	...	...
TETRACTINELLIDA.					
Stelletta sp.	...	...	...	×	...
c.f. Erylus sp.	...	...	...	×	...
c.f. Craniella sp.	...	...	...	×	...
c.f. Cydonium sp.	...	...	...	×	...
undetermined spicules	×	×	...	...	...
LITHISTIDA.					
Ragadinia sp.	...	...	...	×	...
Discodermia sp.	...	...	...	×	...
c.f. Cydonium muelleri, Fleming ...	...	...	...	×	...
,, sp.	...	...	...	×	...
Corallistes sp.	...	...	...	×	...
c.f. Theonella swinhoei, Gray	...	...	...	×	...
Rossella sp.	...	...	...	×	...
undetermined spicules	×	×	...	...	...

	Albany (and near), S.W.	Cape Riche, S.W.	Bremer River, S.W.	Princess Royal Beds, Eu.	Norseman Limestone, Eu.
ECHINODERMATA.					
ELEUTHEROZOA—ECHINOIDEA.					
ENDOCYCLICA.					
Family *Spatangidae.*					
Micraster sp.	...	×	...	...	...
Family *Brissidae.*					
Hemiaster sp.	...	×	...	...	...
Linthia sp. or Schizaster sp. ...	×	×	...	...	...
BRACHIOPODA.					
Testicardines.					
Family *Terebratulidae.*					
Magellania sp.	...	...	...	...	×
Waldheimia sp.	...	×	...	...	...
BRYOZOA.					
CHEILOSTOMATA MALACOSTEGA.					
Anasca.					
Family *Electrinidae.*					
? Electra delicatula (Busk)	...	...	...	...	×
PSEUDOSTEGA.					
Family *Cellariidae.*					
? Cellaria rigida McG.	...	...	...	...	×
? Macropora clarkei (Ten. Woods) ...	...	...	...	...	×
Ascophora.					
Family *Escherellidae.*					
? Schizoporella convexa, McG ...	...	...	...	...	×
Family *Celleporidae.*					
? Schismopora modesta, McG. ...	...	...	...	...	×
MOLLUSCA.					
PELECYPODA.					
Prionodesmacea.					
Family *Arcidae.*					
? Pectunculus flabellatus (Ten. Wood)	...	×	...	...	...
Arca reticulata, Gm.	...	×	...	...	...
? Arca sp.	...	×	...	...	...
? Glycymeris laticostatus (Q. & G.) ...	×	...	...	...	...

	Albany (and near), S.W.	Cape Riche, S.W.	Bremer River, S.W.	Princess Royal Beds, Eu.	Norseman Limestone, Eu.
Family *Pectinidae*.					
Pecten sp.	×	...	...	...	×
Amussium sp.	...	×	...	...	...
Family *Limidae*.					
Lima sp.	×	...	...	...	...
TELEODESMACEA.					
Family *Carditidae*.					
Cardita sp.	...	...	...	...	×
Family *Cardiidae*.					
Cardium sp.	...	×	...	...	...
Cardium hemicardium, Linne ...	...	×	...	...	...
Family *Veneridae*.					
? Dosinia johnstoni, Tate	...	...	...	...	×
Venus sp. c.f. V. roseotincta, Baird ...	...	×	...	...	...
Cytherea sp.	...	×	...	...	...
Family *Mactridae*.					
Mactra sp.	×	...	...	...	...
GASTEROPODA.					
Diotocardia.					
Family *Trochidae*.					
Trochus personatus, Phil.	...	×	...	...	...
Monotocardia.					
Family *Turritellidae*.					
? Turritella pagodula, Tak.	...	...	...	...	×
Family *Strombidae*.					
Rostellaria sp.	×	...	...	...	...
Family *Volutidae*.					
Voluta sp.	...	×	...	...	...
CEPHALOPODA.					
Tetrabranchiata.					
NAUTILOIDEA.					
Aturia aturi (Bast.) australis, McCoy ...	×	×	×	...	...

PLEISTOCENE.

Rocks of post Pliocene age are met with in many parts of the State. Along the coast they take the form of more or less compacted dune sands and raised beaches of various types, whilst inland they may be in the nature of aeolian deposits of blown sand, as well as lateritic and other surface formations, or of fresh-water deposits resulting from sediments laid down in ancient river valleys and lakes.

Collections of marine mollusca made in the Swan River valley by the late H. P. Woodward, Dr. E. S. Simpson, Mr. M. Aurousseau, and Mr. J. L. Reath, have been tabulated by Reath, whose work forms the basis of the list of mollusca included in this section.

The Pleistocene vertebrate bearing deposits known to occur in Western Australia belong to two distinct types—a *Lake Series* found in many parts of the interior from the Lennard River, in the North to Balladonia in the South, and a *Cave Series* restricted, as far as is known at present, to the Margaret River Caves in the extreme South-West.

The Lake Series, which are presumably the older, have, so far, yielded ten species, and the later or Cave Series about three times that number. Although a vast amount of material collected in the Mammoth Cave has still to be worked out, it is possible to state that but a single species is common to the two series. The recording of *Diprotodon* remains from the Mammoth Cave was due to the imperfect state of our knowledge of the closely related *Nototherium*. The entire absence of *Diprotodon* teeth from a deposit which has yielded scores of jaws, fragments of jaws and teeth of *Nototherium*, suggests that the associated limb bones, etc., belong to the latter species, and not to the former, as was at one time supposed to be the case.

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MOLLUSCA.	Dongara, S.W.	Perth Water, S.W.	Melville Water and Canning Canal, S.W.	Peppermint Grove, S.W.	Minim Cove, Swan River, S.W.	Fremantle, S.W.	Rottnest Island, S.W.
PELECYPODA.							
Prionodesmacea.							
Family *Arcidae.*							
Arca (Barbatia) trapezia, Deshayes ...	...	...	...	×	×	...	...
,, ,, fusca, Bruguiere ...	...	...	...	...	...	×	...
,, (Anomalocardia) scapha, Chemnitz	...	...	...	×	×	...	...
,, ,, granosa, Linne	...	...	...	...	...	×	...
Family *Pinnidae.*							
Pinna virgata, Menke	...	...	...	×	×	...	...
,, philippinensis, Hanley	...	...	...	...	...	×	...
Family *Ostreidae.*							
Ostrea angasi, Sowerby	...	×	×	×	×	×	...
,, c.f. cucullata, Born	...	...	×	×	...	...	...
,, sp.	×	...	...	...	...	...	...
Family *Unionidae.*							
Diplodon sp.	...	...	...	×	×	...	...
Family *Pectinidae.*							
Pecten (Chlamys) asperrimus, Lamk	...	×	×	...	...	...	...
,, ,, dringi, Reeve ...	...	...	...	×	...	...	...
,, medius, Lamk.	...	×	×	...	...	...	...
Family *Mytilidae.*							
Brachydontes erosus, (Lamk)	...	...	...	...	...	...	×
Modiola spp.	...	...	...	×	×	...	...
Mytilus latus, Lamk.	...	...	...	...	×	...	...
,, sp.	...	...	...	...	×	...	...

	Dongara, S.W.	Perth Water, S.W.	Melville Water and Canning Canal, S.W.	Peppermint Grove, S.W.	Minim Cove, Swan River, S.W.	Fremantle, S.W	Rottnest Island, S.W.
TELEODESMACEA.							
Family *Crassatellitidae.*							
Crassatellites kingicola (Lamk) ...	...	...	...	...	×	...	...
Family *Carditidae.*							
Cardita sp.	...	...	...	...	...	...	×
,, sp. (? sp. nov.)	...	...	×	...	...	...	...
,, sp. c.f. C. amabilis, Peshayes	+	...	...	...	...	...	...
Family *Chamidae.*							
Chama limbula, Lamk.	...	×	×	×	×	...	...
,, nivalis	...	...	...	...	×	...	...
,, asperella, Lamk.	...	...	×	...	...	...	...
,, sp.	...	...	...	...	...	×	...
Family *Lucinidae.*							
Divaricella sp.	...	...	...	...	×	...	...
Lucina (Codakia) sp. c.f. C. simplex, Reeve	...	...	...	...	×	...	...
Family *Cryptodontidae.*							
Cryptodon globularis, (Lamk) ...	...	...	...	...	×	...	...
Lasea australis (Lamk)	...	...	...	...	×	...	...
Family *Cardiidae.*							
Cardium rugatum, Reeve	...	×	...	...	...	...	...
,, tenuicostatum, Lamk ...	...	×	...	...	...	...	...
,, (Pectunculus) vertebratum Jonas	...	...	...	...	×	...	...
,, sp. c.f. C. exasperatum Sowerby	...	...	...	...	×	...	...
,, unedo, Linne	...	...	...	...	×	...	...
,, sp.	>	...	...	...	×	...	...
Family *Veneridae.*							
Dosinia lucinalis (Lamk)	...	×	...	×	×	...	×
,, sculpta, (Hanley)	...	×	×	...	...	...	...
,, sp. "a"	...	...	...	×	...	...	...
,, sp. "b" (near D. bruguieri, Gray)	...	...	...	...	×	...	...
,, sp.	×	...	...	...	...	...	...
Katelysia strigosa (Lamk)	...	...	...	×	×	...	...
,, scalarina (Lamk)	...	...	...	×	×	...	...
Gafrarium sulcatum, Gray	...	×	×	×	×	...	...
Marcia peronii Phil. (Lamk)	×	...	...	...	...	...	×
,, sp.	...	...	...	...	×	...	...
Paphia euglypta Phil	...	×	×	...	...	...	...
,, sp.	...	...	...	...	×	...	...
,, sp.	...	...	...	...	×	...	...
,, turgida (Lamk)	×	...	...	...	...	...	...
Antigona laqueata (Sowerby)	...	...	...	...	...	×	...

	Dongarra, S.W.	Perth Water, S.W.	Melville Water and Canning Canal, S.W.	Peppermint Grove, S.W.	Minim Cove, S.W.	Fremantle, S.W.	Rottnest Island, S.W.
Family *Veneridae.*							
Venus sp.	...	...	...	...	×	...	...
Venerupis exotica (Lamk)	...	×	×	...	...	...	...
„ planicosta, Deshayes ...	...	...	...	...	...	...	×
Family *Tellinidae.*							
Macoma deltoidalis (Lamk)	...	...	...	×	×	...	...
„ sp.	...	...	...	×	×	...	...
„ sp. c.f. M. deltoidalis (Lamk)	...	...	...	...	×	...	...
Tellina (Telinella) perna, Spengl. ...	...	...	...	×	×	...	...
„ sp. c.f. T. aldingensis, Tate ...	...	...	...	...	×	...	...
„ spp.	...	...	...	×	×	...	...
Family *Amphidesmatidae.*							
Amphidesma praecisa (Reeve)... ...	...	...	...	...	...	...	×
Family *Saxicavidae.*							
Saxicava australis (Lamk)	...	...	×	...	...	...	...
Family *Teredinidae.*							
Xylotra australis, Calman	...	...	...	...	...	...	×
SCAPHOPODA.							
Dentalium sp.	...	...	×	×	×	...	...
GASTEROPODA.							
Prosobranchiata.							
DIOTOCARDIA.							
Family *Trochidae.*							
Clanculus denticulatus (Gray) ...	...	×	...	...	...	...	...
Cantharidus nitens, Kiener	...	...	...	...	...	...	×
„ pulcherrimus (Wood) ...	...	...	...	×	×	...	...
„ c.f. C. conicus (Gray) ...	...	...	...	×	×	...	...
„ sp.	...	...	...	×	×	...	...
Monilea lentiginosa, A. Adams ...	...	×	×	...	...	...	...
Calliostoma sp.	...	...	×	...	...	...	...
Family *Turbinidae.*							
Turbo pulcher, Reeve	...	...	...	...	×	×	...
„ spp.	...	...	...	×	×	...	...
Collonia modesta (Reeve)	...	...	...	×	...	...	...
Family *Liotiidae.*							
Cyclostrema tatei, Angas	...	...	...	×	×	...	...
Liotina sp.	...	×	×	...	...	...	...
Liotia sp.	...	...	...	×	×	...	...

	Doncarra, S.W.	Perth Water, S.W.	Melville Water and Canning Canal, S.W.	Peppermint Grove, S.W.	Minim Cove, S.W.	Fremantle, S.W.	Rottnest Island, S.W.
Family *Acmaeidae.*							
Patelloida conoidea, Q. & G. ...	...	...	...	...	...	...	×
„ alticostata (Angas) ...	...	...	×	...	...	...	×
Family *Patellidae.*							
Patella neglecta, Gray	...	...	...	...	...	×	...
MONOTOCARDIA.							
Family *Littorinidae.*							
Bembicium melanostoma (Gmelin) ...	...	...	...	...	×	...	×
Family *Rissoidae.*							
Rissoina sp.	...	...	...	...	×	...	...
Diala lauta, A. Adams	...	...	...	×	×	...	...
„ translucida, Hedley	...	...	...	...	...	×	...
„ sp.	...	×	×	...	...	...	...
Alaba sp.	...	×	×	...	...	...	...
Obtortio lutosus, Hedley	...	×	×	×	×	...	...
Family *Assemaniidae.*							
Assemania granum (Menke)	...	...	...	×	...	...	...
Family *Truncatellidae.*							
Acmea aculeata (Reeve)	...	...	...	...	...	×	...
„ scalarina (Cox)	...	...	...	×	×	...	...
Family *Hipponicidae.*							
Hipponix antiquata (Linne)	...	...	...	...	...	×	...
Family *Cerithiidae.*							
Clava fasciata (Bruguiere)	...	...	...	×	...	...	...
Cerithium tuberculatum (Linne) ...	...	...	...	...	×	...	...
„ sp.	...	...	...	×	×	×	...
Bittium granarium (Kiener)	...	...	...	×	×	...	...
„ estuarinum Tate	...	...	...	×	×	...	...
„ sp.	...	...	...	×	×	...	...
Pyrazus diemenensis (Q. & G.) ...	...	...	...	×	×	...	...
Family *Strombidae.*							
Strombus australis, Gray	...	...	...	...	×	...	...
„ pacificus, Swains	...	...	...	...	...	×	...
Family *Tonnidae.*							
Tonna variegata (Lamk)	...	...	...	...	...	...	×
Family *Naticidae.*							
Polinices plumbea (Lamk)	...	×	×	×	×	...	...
„ conicus (Lamk)	...	...	...	×	×	...	...
Family *Cypraeidae.*							
Cypraea caput-serpentis, Linne ...	...	...	...	...	...	×	...
Family *Olividae.*							
Olivia australis, Duclos...	...	...	...	...	×	...	...
Family *Marginellidae.*							
Marginella sp.	...	...	...	...	×	...	...

	Dongarra, S.W.	Perth Water, S.W.	Melville Water and Canning Canal, S.W.	Peppermint Grove, S.W.	Minim Cove, S.W.	Fremantle, S.W.	Rottnest Island, S.W.
Family *Conidae.*							
Conus anemone, Lamk	...	...	...	...	×	×	...
,, pontificalis, Lamk	...	...	...	...	×	...	...
Family *Mitridae.*							
Mitra glabra, Swains	...	...	...	...	×	×	...
Family *Buccinidae.*							
Cantharus undosus (Linne)	...	...	...	...	×	...	...
,, sp.	...	...	...	...	×	...	...
Cominella lineolata (Lamk)	...	...	...	...	...	...	×
Family *Arcularidae.*							
Arcularia burchardi (Dunker)	...	×	×	×	×	...	...
,, victoriana, Iredale	...	×	×	...	...	...	×
,, rufula (Kiener)	...	...	...	...	...	...	×
Family *Thaididae.*							
Thais textilosa (Lamk)	...	...	...	...	...	×	...
Purpura sp.	...	...	...	×	...	×	...
OPISTHOBRANCHIATA.							
Tectibranchiata.							
Family *Scaphandridae.*							
Bullinella arachis (Q. & G.)	...	×	×	×	×	...	...
Family *Bullidae.*							
Bullaria botanica, Hedley	...	...	...	×	×	...	...
,, sp.	...	...	...	...	...	×	...
PULMONATA.							
Family *Amphibolidae.*							
Salinator fragilis (Lamk)	...	...	...	...	×	...	...
Family *Auriculidae.*							
Auricula sp.	...	...	...	...	×	...	...
Marinula xanthostoma, H. & A. Adams	...	...	...	×	...	...	...
Plecotrema binneyi, Crosse	...	...	...	...	×	...	..
Family *Siphonariidae.*							
Siphonaria sp.	...	...	...	...	×	...	..

REPTILIA.	West Kimberley, K.	Lake Darlot, E.	Great Victoria Desert, E.	Balladonia, Eu.	Margaret River Caves, S.W.
CROCODILIA.					
Eusuchia.					
Family *Crocodilidae.*					
*Crocodilus sp.	×	...	...	...	...

* The W.A. Museum possesses a tooth of Crocodilus **(No. 4486)** found in "limestone" 12 feet below the surface, on the Gascoyne River.

MAMMALIA.	West Kimberley, K.	Lake Darlot, E.	Gt. Victoria Desert, E.	Balladonia, Eu.	Margaret River Caves, S.W.
ORNITHODELPHIA.					
Montremata.					
Family *Echidnidae.*					
Echidna aculeata inepta, Thos. ...	...	...	...	...	×
„ oweni, Ramsay	...	...	...	...	×
Zaglossus hacketti, Glauert	...	...	...	...	×
DIDELPHIA.					
Marsupialia.					
POLYPRODONTIA.					
Family *Dasyuridae.*					
Sarcophilus laniarius, Owen	...	...	...	×	...
„ harrisi (Boitard) ...	...	...	...	...	×
Dasyurus geoffroyi, Gould	...	...	...	...	×
Family *Thyiacinidae.*					
Thylacinus spelaeus, Owen	...	...	...	×	...
„ cynocephalus (Harris) ...	...	...	...	...	×
Family *Peramelidae.*					
Isoodon obesulus (Shaw)	...	...	...	...	×
Perameles sp.	...	...	...	...	×
Thalacomys lagotis (Reid)	...	...	...	...	×

	West Kimberley, K.	Lake Darlot, E.	Gt. Victoria Desert, E.	Balladonia, Eu.	Margaret River Caves, S.W.
DIPROTODONTIA.					
Family *Phalangeridae.*					
Phascolarctus cinereus (Goldf.) ...	...	...	...	...	×
Pseudochirus occidentalis, Thos. ...	...	...	...	...	×
Trichosurus vulpecula (Kerr.) ...	...	...	...	...	×
Family *Phascolomyidae.*					
Phascolonus gigas, Owen	×	...	...	×	...
Phascolomys hacketti, Glauert ...	...	...	...	...	×
,, latifrons, Owen ...	...	...	...	×	...
,, parvus, Owen	...	...	...	×	...
Family *Nototheriidae.*					
Nototherium mitchelli, Owen ...	...	...	...	...	×
Family *Diprotodontidae.*					
Diprotodon australis, Owen	×	...	...	×	...
Family *Sthenuridae.**					
Sthenurus atlas (Owen)	...	...	...	×	...
,, occidentalis, Glauert ...	...	...	...	...	×
Family *Macropodidae.*					
Bettongia lesueuri (Q. & G.) ...	...	...	...	...	×
,, penicillata, Gray	...	...	...	...	×
Potorous gilberti (Gould)	...	...	...	...	×
Setonyx brachyurus (Q. & G.) ...	...	...	...	...	×
Macropus irma (Jourd.)	...	...	...	...	×
,, giganteus (Zimm.) ...	...	...	...	...	×
,, magister, DeVis	...	...	...	×	...
,, anak (Owen)	×	...	...	×	..
,, titan, Owen	×	...	...	...	...
,, spp.	...	...	...	×	×
Palorchestes azael, Owen	...	...	...	...	×
Family *Thylacoleontidae.*					
Thylacoleo carnifex, Owen	...	...	...	×	×
MONODELPHIA.					
Carnivora Fissipedia.					
Family *Canidae.*					
Canis familiaris, Linne	...	...	...	...	×

* This family is proposed to hold the genera Sthenurus and Procoptodon whose cranial characters distinguish them from all known members of the Macropodidae. The skull is extremely heavy and remarkable for its height and width ; the facial portion is short, reducing the diastema so that it scarcely exceeds the length of the cutting edges of the three incisors.