

CONTRIBUTIONS TO THE GEOLOGY OF BRISBANE

NO. 1.—LOCAL APPLICATIONS OF THE STANDARD STRATIGRAPHICAL NOMENCLATURE.*

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In the following proposals an attempt has been made to conform to the Australian Stratigraphical Nomenclature suggested recently by Glaessner and others (1948). In accordance with rule III f of the Code as there set out the new names now introduced are explicitly defined, the geographical features from which the names were taken are stated and the specific type localities cited. Where changes are proposed the reasons are concisely stated.

ROCKSBERG GREENSTONES.—A formational name introduced to replace the term "Greenstone Series" of Denmead (1928). The formation consists almost entirely of metamorphosed andesitic and basaltic lavas and tuffs. The name is taken from the village of Rocksberg, near Caboolture, where Mr. R. T. Mathews, who is working on the formation, reports it is typically developed.

The reason for the proposed change in name is the absence of certain knowledge of its age and range in time, which precludes it from any more precise category than that of a formation. It is now ranked as such and named accordingly.

BUNYA PHYLLITES.—A formational name introduced to replace the term "Bunya Series" of Denmead (1928). The formation consists essentially of pelitic rocks such as mica phyllites with some quartz-mica schists ; psammitic rock types are well represented only in the eastern part of the area, and even there they are restricted to the uppermost part of the formation. As here redefined, the formation excludes certain cherts and quartzites (which were included in the uppermost part of Denmead's Bunya Series) and places the top of the formation immediately below the lowest of these, the Kenmore Quartzite, which outcrops near the mine at Gold Creek and can be followed in a direction S. 30° E. to Fig Tree Pocket and thence in a more easterly direction to the Carrington Rocks at Corinda. The formation conformably succeeds the Rocksberg Greenstones, and is conformably overlain by the Neranleigh-Fernvale Group. The name is based on Bunyaville, an outer suburb within the area of Greater Brisbane, where the formation is well developed.

The reason for the proposed change in name is the absence of certain knowledge of its age and range in time.

*For several years the authors have been collecting material for use in a book to be published under the title of "The Geology of Brisbane." Following a study of the relevant literature and after considerable work in the field they have come to a number of conclusions that differ importantly from those now generally accepted. These conclusions will be set out as such in the book, but it would seem that the arguments on which they are based would be more appropriately stated in the Proceedings of this Society.

NERANLEIGH-FERNVALE GROUP.—A new composite name which incorporates in the one term both the "Neranleigh Series" and the "Fernvale Series" of Denmead (1928) and at the same time changes the category from series to group. As here redefined the Group includes certain cherts and quartzites which were originally included in Denmead's Bunya Series and the lowest of which, the Kenmore Quartzite, is regarded as the base of the group. The name Neranleigh was originally taken in part from the village of Neranwood and in part from the town of Beenleigh, both to the south of Brisbane, while the name Fernvale was derived from a township in the Brisbane Valley to the west of Brisbane. The type locality for the Group as such, now selected by the authors, is the valley of Moggill Creek, within the area of Greater Brisbane.

The reasons for the amalgamation of these two "Series" are: The absence of any structural break within the group and the recurrence of similar lithological types throughout the group. For many years greywackes had been regarded as characteristic of the lower (Neranleigh) part of the group and radiolarian jaspers as equally typical of the upper (Fernvale) part, but the Moggill Creek section shows some of the jaspers occurring at relatively low horizons within the group and some of the greywackes at relatively high levels. The group is highly variable lithologically and includes, in addition to the greywackes and jaspers (which have been over-emphasised in the past), such rocks as phyllites, quartzites, both thin-bedded and massive, impure limestones and calc-epidote rocks.

The Group conformably succeeds the Bunya Phyllites.

Neither the age nor the range of the Group is known sufficiently accurately to enable the use of a more precise term than "group."

BRISBANE METAMORPHICS.—A name introduced to replace the term "Brisbane Schists." Although of uncertain origin the latter designation has been widely used for many years as a comprehensive name covering the immense thickness of metamorphosed marine sediments, tuffs and lavas made up of the Rocksberg Greenstones, the Bunya Phyllites and the Neranleigh-Fernvale Group as defined in the preceding paragraphs. (See Bryan and Jones 1944, p. 13.)

The geographical portion of the proposed name is taken from the city of Brisbane within and near which the Metamorphics are typically developed.

The reason for changing the second part of the name from "Schists" to "Metamorphics" is that although schistose rocks of several types are present they are by no means as dominant as the original name would suggest.

The term "Brisbane Metamorphics" is not in strict accordance with the Stratigraphical Code, but the authors feel that some additional and more comprehensive designation is warranted to indicate the unity in general characters which distinguishes the Brisbane Metamorphics from all later stratigraphical units and which overrides those less fundamental differences which have led to the recognition within the Metamorphics of two distinct formations and one group. The term "Brisbane Complex" was considered as an alternative, but was rejected as being at odds with this essential unity and, moreover, as likely to lead to confusion.

BROOKFIELD VOLCANICS.—A name proposed for a succession of flows, tuffs and agglomerates of varied character but predominantly rhyolitic. The name is taken from the village of Upper Brookfield in the western part of Greater Brisbane. The Volcanics are typically developed near this locality on top of the divide between Moggill and Pullen Vale Creeks.

The age of the Brookfield Volcanics has not been determined but they rest unconformably upon steeply dipping beds of the Neranleigh-Fernvale Group.

BRISBANE TUFFS.—This name represents a reversion from the term "Brisbane Tuff" now in common use to Dunstan's (1916) original designation for the accumulation of tuffaceous materials of a rhyolitic nature occurring within, but almost at the base of the Ipswich Coal Measures as developed at many points within the city of Brisbane. The Tuffs have been assigned to the Middle Triassic. (See Bryan and Jones 1946, p. 52.)

The use of the plural is advocated as an indication that the tuffaceous material is of several different kinds, including water-laid tuffs, wind-blown tuffs and welded tuffs (Ignimbrites), and that these do not all occur on precisely the same stratigraphical horizon.

IPSWICH COAL MEASURES.—It is recommended that this name be selected from the several synonyms now in common use (see Bryan and Jones, 1944, p. 41) for the freshwater shales and sandstones, some of them coal-bearing, that with conglomerates and some tuffs make up a succession of 4,000 feet of strata, the lower limits of which occur on the right bank of the Brisbane River near Mt. Crosby where they rest unconformably on beds of the Neranleigh-Fernvale Group, and the upper limit of which is immediately beneath the Aberdare Conglomerate at Denmark Hill, Ipswich. They have been assigned to the Middle Triassic (see Jones and de Jersey 1947d, p. 82; Bryan and Jones 1946, p. 54). The place-name is based on Ipswich, and the Measures are typically developed within and to the north, east and south of that city. With rather more precise knowledge of the range of these Measures, it may be possible to promote them to a Series in the sense of the Code.

BUNDAMBA SANDSTONES.—A formational name proposed in place of the Bundamba Series of Cameron (1907), for coarse fresh-water grits and sandstones, often showing cross-bedding with thin interbedded shales which are commoner towards the base, near which one thin coal-seam occurs. The base is marked by the Aberdare Conglomerate which succeeded the Ipswich Coal Measures after a short erosion interval. The Sandstones have been assigned to the Upper Triassic (see Bryan and Jones 1946, p. 54). The place-name is based on an outer suburb of Ipswich, where the Sandstones are typically developed.

The reason for the proposed change is that, in the absence of certain knowledge of their age, these sandstones do not form a "Series" in the sense of the Code.

BRIGHTON BEDS.—A name first proposed by Woods (1947), and supported here, for fresh-water micaceous sandy shales often white in colour, but sometimes biscuit brown, together with red and white sandstones and including a curious and easily recognizable horizon of oolitic character. The beds are horizontal and the base and thickness are as

yet unknown. They have been assigned to Lower Jurassic (*see* Jones and de Jersey 1947b, p. 11), and are unconformably related to the nearby Ipswich Coal Measures.

The place-name is taken from Brighton, near Sandgate, where the Beds are typically developed.

REDBANK PLAINS FORMATION.—A name introduced to replace the term "Redbank Plains Series" of Jones (1927). The formation consists of fresh-water clays, mudstones, shales and soft micaceous sandstones together with interbedded basalts on several horizons. The formation

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COMPARISON OF PROPOSED STRATIGRAPHICAL TERMS WITH THOSE NOW COMMONLY IN USE.

European Record	Names now in use		Names now proposed]
Recent ...	— Lone Pine Gravel		Pinkenba Beds Lone Pine Gravel
Pleistocene ...			
Pliocene ...			
Miocene ...			
Oligocene ...	Petrie Series		Petrie Formation
Eocene ...	Redbank Plains Series		Redbank Plains Formation
Cretaceous			
Jurassic ...	Brighton Beds		Brighton Beds
Triassic ...	Bundamba Series Ipswich Series Brisbane Tuff		Bundamba Sandstones Ipswich Coal Measures Brisbane Tuffs
Permian ...			
Carboniferous			
Devonian ...			
Silurian ...	Fernvale Series	Brisbane Schists	Neranleigh- Fernvale Group
	Neranleigh Series		
Ordovician ...	Bunya Series		Bunya Phyllites
	Greenstone Series		
Cambrian ...			Rocksberg Greenstones

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overlies the Ipswich Coal Measures unconformably and has been assigned to the Eocene (*see* Bryan and Jones 1946, p. 67). The name is taken from and the formation typically developed on the Redbank Plains, near the township of Goodna.

The reason for the proposed change of name is that this succession does not constitute a "Series" in the sense of the Code, the range in time being as yet uncertain.

PETRIE FORMATION.—A name proposed to replace the term Petrie Series of Jones (1927). The formation consists of fresh-water ferruginous quartzite-breccias, fine-grained micaceous white and red sandstones and some oil-bearing shales. The formation rests with a slight unconformity upon the Ipswich Coal Measures and has been assigned to the Oligocene. (*See* Bryan and Jones 1946, p. 67.) The name is taken from the township of Petrie, to the north of Brisbane, where the formation is typically developed.

The reason for the proposed change in name is that the succession does not constitute a "Series" in the sense of the Code, the range in time being as yet undetermined.

THE LONE PINE GRAVEL.—A name first proposed by Bryan (1938) and supported here for semi-consolidated quartzitic conglomerates of fluviatile origin found at relatively high levels on the margins of the lower part of the Brisbane River. The gravel is of late Kainozoic age.

The name is based on a tourist resort on the left bank of the Brisbane River some fifteen miles by water above the city, where the gravel is typically developed.

PINKENBA BEDS.—A name now proposed for semi-consolidated sands, silts and sandy clays of marine and estuarine origin which are well developed under the low-lying flat areas about the mouth of the Brisbane River. The Beds are of late Kainozoic Age.

The name is based on an outer suburb of the City of Brisbane, where the Beds are typically developed.

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