

Copy 2
COMMONWEALTH OF AUSTRALIA.

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

RECORDS.

1955/22

THE GEOLOGY OF THE KING EDWARD-DRYSDALE AREA, NORTH KIMBERLEY, W.A.

by

D. M. TRAVES

This record is written at the request of L.R.R.S., C.S.I.R.O., to serve as a brief introduction of the geology of the North Kimberleys to be included in their general report on the King Edward-Drysdale area.

The information has been gained from a knowledge of the surrounding areas and a brief study of mosaics of the area.

THE GEOLOGY OF THE KING EDWARD-DRYSDALE AREA, NORTH KIMBERLEY, W.A.

by

D. M. Traves

Records 1955/22

The dissected North Kimberley Plateau consists mainly of old sedimentary and volcanic rocks which have suffered very little deformation and in many places are still sub-horizontal or gently folded.

The sequence in the Kimberley Block is:

CAMBRIAN

Lower Cambrian Volcanics? - Basic volcanics of the basaltic plateau suite equivalent to the Antrim Plateau Volcanics, which form valley-fills in the older Upper Proterozoic sediments. These have a wide distribution in the East Kimberleys but their presence has not yet been proved in the North Kimberleys.

UPPER PROTEROZOIC

Mt. House Beds - A 2,000 ft. - 3,000 ft. sequence of sandstone, shales and dolomites. In the section south of Mt. Cockburn in the East Kimberleys, the Mt. House Beds commence with 1,000 ft. of medium-bedded sandstone which probably contains some dolomite and shale beds. This is overlain by 1,000 ft. of shale with thin beds of dolomite and siltstone and in turn is overlain by well-bedded and massive sandstones.

The Mt. House Beds have a wide distribution in the East and North Kimberleys. The age of this unit is uncertain because, although it is tentatively placed as the top of Upper Proterozoic, it may well extend into the base of Lower Cambrian. It is separated from the Lower Cambrian Volcanics by a marked erosional unconformity.

Walsh Tillite - A poorly-bedded formation of extremely unsorted sediments ranging from silts to boulders of glacial or fluvioglacial origin. This unit has a very limited distribution and in places is conformably overlain by the Mt. House Beds.

Warton Beds - These are mainly a sequence of medium to coarse, well-bedded, jointed, friable to silicified sandstones, although towards the centre they contain a 300 ft. shale member. This member is very conspicuous on air-photos, generally forming the lower portion of a scarp. In most places the Warton Beds appear conformable with the Mt. House Beds although there was probably a slight orogeny during the interval of non-deposition.

Mornington Volcanics - An andesitic suite of volcanics which unconformably overlies the King Leopold Formation and conformably overlain by the Warton Beds. Indurated shale and quartzite are interbedded in the sequence.

King Leopold Formation - The basal formation of the Upper Proterozoic sediments in the Kimberley Plateau, consists of medium to coarse, strongly jointed, friable to silicified sandstone. In places the basal beds are conglomeratic.

In the King Edward-Drysdale area the full sequence, as given above, has not yet been proved and possibly only the King Leopold Formation, Warton Beds, Mornington Volcanics, and Mt. House Beds crop out. The general distribution in this area is Mt. House Beds on the eastern and south-eastern side, Warton Beds and Mornington Volcanics in the central portion and King Leopold Formation on the western side.