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THE AGE OF THE MARINE FAUNAS OF THE WEABER GROUP, BONAPARTE GULF BASIN, NORTHERN AUSTRALIA

by

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The Weaber Group - (Traves, 1956) embraces extensive outcrops of Upper Palaeozoic sediments in the south-western part of the Bonaparte Gulf Basin. These beds have been reported previously as Permian in age - (Noakes, Opik, and Crespin, 1952, and Opik, 1950). The group unconformably overlies the Lower Carboniferous-Septimus Limestone and older rocks. The Septimus Limestone faunas have not been further studied in detail but appear on the whole to be not younger than Tournasian.

Recent collections made by geologists of Mines Administration Pty. Ltd. and the writer and further study of the faunas have resulted in a reinterpretation of the age to Upper Carboniferous. The previously suggested correlation of the main beds now referred to the group with the Artinskian-Noonkanbah Formation of the Fitzroy Basin, cannot now be sustained.

The most important fossil localities are Sandy Creek, Flapper Hills, Spirit Hills and Weaber Range (near Point Spring).

Sandy Creek has the richest fauna. The fossils are superficially well preserved but the internals are often obliterated. They consist of ferruginised and silicified replacements in limestone. Brachiopods predominate in the collections. These include several species of Choristites closely resembling Moscovian species described by Sarytcheva and Sokolskaia, 1952; Cleiothyridina spp. nov.; cf. Composita, other athyrids, a spiriferid cf. Prospira Maxwell, which genus is known from the Visean of Queensland; a tiny productid cf. Dictyoclostus; rugose corals and cf. Syringopora, which genus also occurs in the Septimus Limestone. The Sandy Creek faunas have no close affinities with the Permian and are most probably not younger than the Moscovian. Some elements suggest a slightly older age. It is noteworthy that Dr. C. Teichert, on examining a small collection from this locality made by Reeves and Evans in 1948, tentatively referred the forms to the Carboniferous.

The Flapper Hills beds are of approximately the same age and contain a species of Choristites - the same as one of those from Sandy Creek - and Chonetes sp. This latter has been compared by Dr. Opik with Chonetes pratti Davidson; the species are similar, however the Weaber form has equal affinities with certain Carboniferous species.

The Spirit Hills beds contain cf. Choristites sp., Spirifer sp. aff. occidentalis Girty - a Pennsylvanian species, cf. Neospirifer sp. of primitive type, athyrids, crinoid stems and Syringopora. The fauna is not identical with that of Sandy Creek but not much is yet available. The general aspect suggests it is perhaps slightly older but still probably Moscovian.

At Weaber Range, near Point Spring, plant bearing beds overlie marine fossiliferous beds. The marine fauna is large in variety but not well preserved. Again there is nothing to indicate correlation with the Permian of Western Australia. However there is nothing in this fauna common with the other localities in the Weaber Group. Mollusca form a considerable element in this fauna. Mr. J.M. Dickins has also examined these and confirms the writer's view that the molluscan species are all distinctly different from known Permian forms. The fauna includes a large Bellerophon, a smaller Bucanopsis, a large high-spired gastropod, a large low-spired gastropod, an undetermined nautiloid, a large long productid -

cf. Dictyoctostus sp. nov., a possible Choristites, a large new ovate species of Cleiothyridina, and Syringopora. Also present are brachial valves of an orthotetacean genus. The brachial valves are like Schuchertella, - a genus not present in the Permian of Western Australia. One link with the Permian is suggested in the presence of a species of Pseudosyrinx, a genus known in the Lyons Group (Sakmarian), the Callytharra Formation and the basal Poole Sandstone. However this genus is also known from the Mississippian in North America.

The Weaber Range beds are believed on good grounds to be stratigraphically higher than the Sandy Creek beds. It is most reasonable though not certain to regard them as younger, on palaeontological evidence and therefore a post-Moscovian but pre-Sakmarian age is suggested as a strong possibility. A Permian age can be definitely ruled out.

If a glacial origin for the "rafted conglomerate" of the Weaber Group is accepted, Palaeozoic glaciation commenced in Upper Carboniferous times in the Bonaparte Gulf Basin. The Weaber Group faunas are not closely related to any known Australian faunas.

The marine fauna at Point Spring is overlain by a considerable sequence of sandstones and conglomerates and it is possible that these range into the Permian but no evidence of age is available to the writer.

Listed below are determinations of collections made by the writer and by geologists of Mines Administration Pty. Ltd. The writer is indebted to these gentlemen for guidance in the field.

Sandy Creek: - (Silicified and ferruginised replacements)

Cleiothyridina spp. nov. Two species which are distinct from any of the W. Aust. Permian species and from the Septimus Limestone species. One has some affinities with C.orbicularis McChesney from the Lower Pennsylvanian.

cf. Composita sp. nov.

cf. Athyris sp. nov.

Choristites aff. priscus Eichwald

Choristites aff. mosquensis Fischer

Choristites aff. densicostatus Ivanov.

The above species of Choristites are all Moscovian forms from the Moscow basin. The genus is not known later than the Upper Carboniferous - Gschelian stage.

Spiriferid genus aff. Prospira Maxwell.

?Camarophoria sp., a small indeterminate species.

cf. Dictyoclostus sp. a small productid.

Weaber Range, about 1 mile east of Point Spring:- Shelly material in calcareous sandstone.

Bellerophon sp., a large form.

Bucanopsis sp.

Large high-spired gastropod.

Large low-spired gastropod.

Nautiloid genus, straight, large

Nautiloid genus, coiled, large

Dictyoclostus sp. nov., large long species

cf. Choristites sp., poorly presered

Cleiothyridina sp., large and ovate in outline

?Schuchertella sp., brachial valves only and the genus cannot be determined with certainty. No similar forms known in the Permian of W. Aust.

cf. Pseudosyrinx sp.

Syringopora sp.

Wood fragments.

Flapper Hills:- poorly preserved impressions in sandstone.

Chonetes sp. nov. This species has been compared with Chonetes pratti Davidson, however it may be equally compared with other species such as Chonetes granulifer Owen, of Pennsylvanian age.

Choristites sp.

WA (A) 9, 3.5 miles NNE of Spirit Hill - Spirit Hill Limestone, rather poorly preserved shelly material.

Syringopora sp.

Spirifer aff. occidentalis Girty, an early Pennsylvanian species.

Neospirifer sp. a primitive form of this genus.

Athyrids indet., but probably close to the Sandy Creek forms, Crinoid stems.

Listed below are other collections by Mines Admin Pty. Ltd. from various formations. Comments on the ages are given.

WA (A) 1, photo 5089, 4 miles south of Weaber Range, 2 miles west of border.

cf. Productella sp.

cf. Camarotoechia sp.

? pectinid fragment
Age - Upper Devonian to Early Lower Carboniferous.

WA (A) 2, photo 5043, 7 miles NNW of Milligans Lagoon, 2 miles E of Pre-Cambrian scarp - small inlier of Burt Range Limestone.

Gastropod indet, small, planispiral, in tough limestone.

WA (A) 3, Milligans Lagoon.

Spirifer sp.

Orthotetid indet. possibly Schellwienella
Age - Lower Carboniferous probably.

WA (A) 4, Milligans Lagoon.

Choristites sp.

Dictyoclostus sp. medium sized.
Age - This bed is probably Upper Carboniferous and therefore to be correlated with the Weaber Group.

WA (A) 5, Not present.

WA (A) 6 - Milligans Lagoon - poorly preserved.

cf. Dictyoclostus, small to medium sized species

Spirifer sp.

Athyrid, a large species

?Cleiothyridina sp.

Platyceras

Age - This cannot be determined better than Carboniferous. The faunas are not identical with the Septimus Limestone.

WA (A) 7, 4 miles SSE of Mt. Septimus

Syringopora sp.

cf. Linoproductus sp., small form

brachiopod fragments indet.

gastropod indet.

crinoid stems.

Age - Carboniferous, precise age indet.

WA (A) 8, 3 miles SE of Mt. Septimus.

Lepidodendroid plant fragments, probably Carboniferous, early rather than late.

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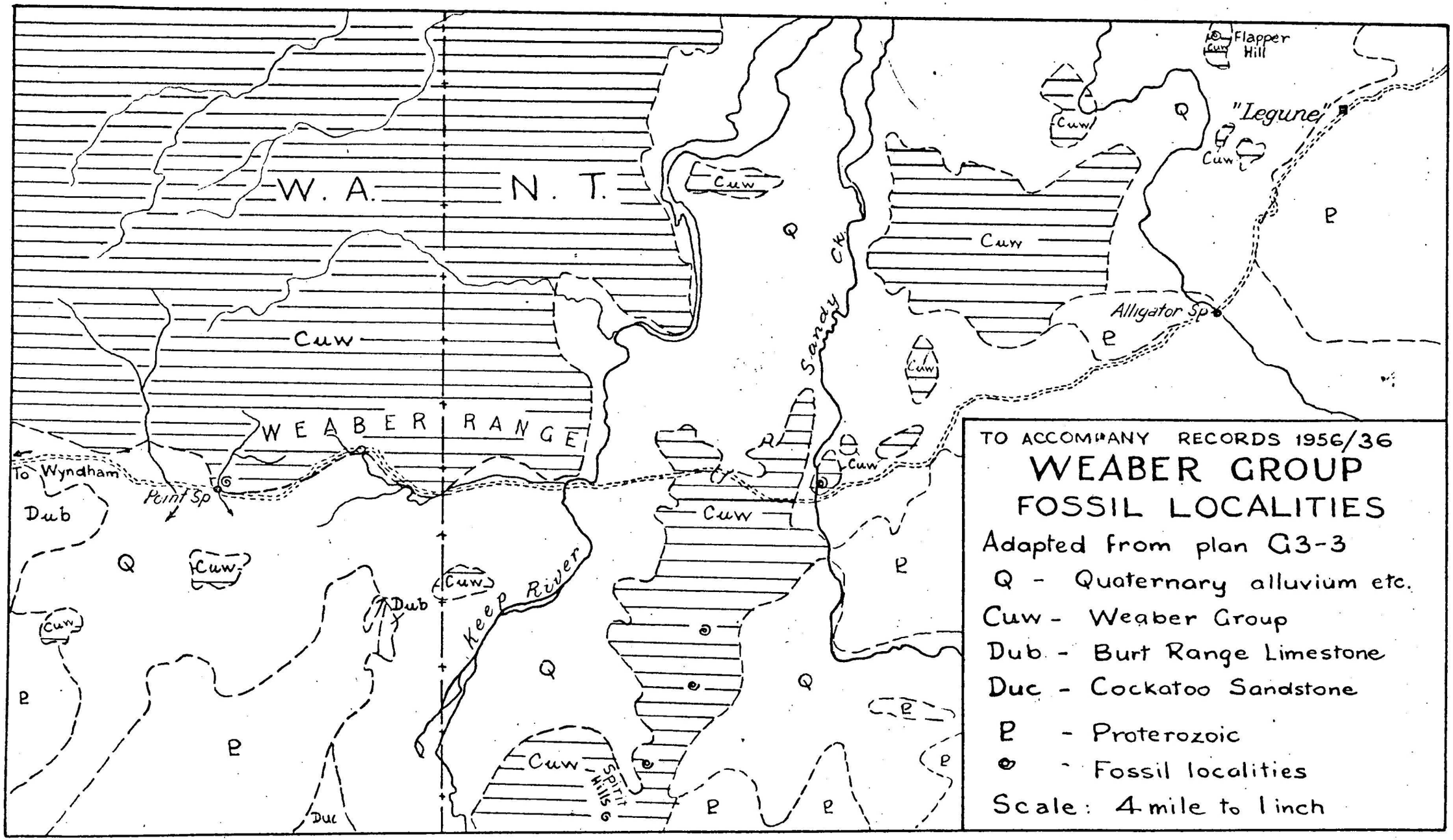
W. A.
N. T.
WEABER RANGE
Cuw
Q
P
Dub
Duc
Flapper Hill
"Legune"
Alligator Sp
Sandy Ck.
Point Sp
To Wyndham
Keep River
Spirit Hills
TO ACCOMPANY RECORDS 1956/36
WEABER GROUP
FOSSIL LOCALITIES
Adapted from plan G3-3
Q - Quaternary alluvium etc.
Cuw - Weaber Group
Dub - Burt Range Limestone
Duc - Cockatoo Sandstone
P - Proterozoic
- Fossil localities
Scale: 4 mile to 1 inch