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RECORDS:

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CONODONTS FROM WATERHOUSE RANGE, CENTRAL AUSTRALIA

by

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Conodonts are teeth-like structures, almost microscopic in size. The origin of these forms is still in doubt. There are two schools of thought, one which assumes that conodonts are related to primitive fishes and the other that they are related to the Annelida. Extensive investigations into assemblages of conodonts in various palaeozoic deposits in America tend to support the view that the zoological relationship is with the Annelida. The teeth are transparent, very polished and amber coloured. It seems that they have been attached to some kind of skeletal material as some such substance is occasionally adhering to the specimens.

In America, conodonts are apparently restricted to certain horizons and Stauffer (1935) states that "Conodonts in paleozoic sediments assume much of the importance of the foraminifera in later sediments. They may be used to identify horizons where megascopic fossils are poor or wanting".

The small series of conodonts herein described was found in the crushings of a hard brownish to yellowish calcareous shale from the South Gorge, Waterhouse Range, Central Australia, 40 miles south-west of Alice Springs. The collection of fossiliferous rocks was made by Dr.C.T.Madigan, on behalf of the Commonwealth Oil Refineries Ltd. and many of the specimens were sent to the writer for micro-palaeontological examination. The rocks are Ordovician in age and belong to the Larapintine Series, which is represented by fossiliferous shales and limestones containing abundant macro-fossils, including brachiopoda, pelecypoda, cephalopoda and trilobita.

Conodonts do not seem to have been previously recorded from the Ordovician rocks in Australia, but Harris and Thomas (1937) noted "what may be an annelid jaw" in the Silurian beds at Heathcote, Victoria.

Twenty three incomplete specimens were secured from the Waterhouse Range material. Two genera are present, Oistodus and Paltodus, both described by Pander in 1856. Both genera are common in conodont assemblages in Ordovician rocks in America. Two new species are herein described - Oistodus larapintinensis and Paltodus madigani. The plates have been prepared by Mr.F.Canavan, of the Mineral Resources Survey, Department of Supply and Shipping, Canberra.

All specimens are in the Commonwealth Palaeontological Collection at Canberra.

Description of Species

Genus OISTODUS Pander 1856

Oistodus larapintinensis sp. nov.

Plate Figs. 1-14.

Holotype -(Comm.Pal.Coll.No.234). Single cusp or blade, transparent, polished, horny and amber-coloured. Cusp - long, straight, tapering to a fine point, rather sharp edged, laterally flattened, with a sharply convex keel running along the centre. Cusp curves broadly to base, which is triangular, broad, flat and flaring laterally. Upper surface slightly convex, under surface somewhat flattened

Paratypes - (Comm.Pal.Coll.Nos.235-246). The thirteen figured specimens are smaller than the type but are similar in essential characters. The curve where the cusp joins the base is narrower and inclined to be angulate. A cavity can be seen extending along the length of the cusp in Fig.4.

Observations - The specimens described as Oistodus larapintinensis vary in shape and size, but there is little doubt that they belong to the same species. This Australian species strongly resembles O.curvatus Branson and Mehl, common in the Decorah shales (Ordovician) of America, but the straightness of the cusp and the presence of the sharply-convex keel distinguish it from that form.

Occurrence - South Gorge, Waterhouse Range, Central Australia.

Age - Ordovician (Larapintine Series).

Genus PALTODUS Pander 1856

Paltodus madigani sp. nov.

Plate . Figs. 15, 16.

Holotype - (Comm.Pal.Coll.No.247). Single cusp or blade, transparent, horny, polished, amber-coloured. Cusp sharply curved throughout length. Base broad, expanded. Upper side of cusp evenly convex with central keel. Under surface sharply keeled with a longitudinal groove along anterior margin near keel.

Paratype - (Comm.Pal.Coll.No.248). Whitish to amber-coloured, horny cusp, which curves sharply just above base and tapers to a fine point. Base broad, keel present but other features poorly preserved.

Observations - Only two specimens in the collection are referable to the genus Paltodus. This genus is also well represented in the Ordovician rocks of America and is usually found associated with Oistodus. P.madigani can be compared with P.cornutus Stauffer and P.arcuatus Stauffer but can be distinguished from them by the position of the keel and rather broader base.

Occurrence - South Gorge, Waterhouse Range, Central Australia.

Age - Ordovician (Larapintine Series).

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Explanation of Plate

OISTODUS LARAPINTINENSIS sp. nov.

Fig.1. Holotype. South Gorge, Waterhouse Range, Central Australia. Comm.Pal. Coll. No.234.

Figs.2-13. Paratypes. South Gorge, Waterhouse Range, Central Australia Comm.Pal. Coll. Nos.235-245.

PALTODUS MADIGANI sp. nov.

Fig.14a. Holotype. South Gorge, Waterhouse Range, Central Australia. Lower Surface. Comm.Pal. Coll. No. 247.

Fig.14b. Holotype. Upper Surface.

Fig. 16. Paratype. Sputh Gorge, Waterhouse Range, Central Australia. Comm.Pal. Coll. No.248.

All specimens X30