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A New Species of the Devonian Lungfish *Dipnorhynchus* from Wee Jasper, New South Wales

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ABSTRACT. A new large mandible of *Dipnorhynchus* from the Early Devonian *serotinus* Zone (late Emsian) at Wee Jasper, is given the status of a new species, *D. cathlesae* n.sp. This fossil characterised by its size; relative depth with respect to its length; short anterior furrow, deeply bordered by a raised broad rim of dentary between itself and the labial pit; large foramen for a nerve in the posteromedial end of the labial furrow; a strong furrow from the adductor pit to the posterior end of the labial pit; thick dentary; lack of tubercles (blisters) on the prearticular plate; and an adductor pit wide posteriorly and narrowing gradually anteriorly. The surface of the tooth plate is not made of dentine, but of bone formed on the surface of the prearticular. This species represents the youngest known occurrence of *Dipnorhynchus* in the Murrumbidgee sequence.

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Early Devonian dipnoans were beginning a period of rapid evolution. The number of species is limited at present, but many of them are beautifully preserved in limestone, and can be extracted as three dimensional fossils with acetic acid. The specimens from Wee Jasper on the Burrinjuck Dam, New South Wales, are among those that have produced the best information on undistorted material. *Dipnorhynchus* is the most abundant of these genera. Herein we describe a new species of *Dipnorhynchus, D. cathlesae*.

The limestone-shale sequence at Wee Jasper and Taemas covers a range from the *dehiscens* Zone to the *serotinus* Zone of the Emsian. The rocks are more or less continuously fossiliferous and include many marine invertebrate fossils including corals and brachiopods. Remains of the dipnoan *Dipnorhynchus* have been previously described from several levels at both Taemas and Wee Jasper, but a recent discovery of a mandible of this genus towards the top of the sequence provides information on its subsequent evolution. The specimen was discovered by Ian and Helen Cathles of Cookmundoon Station, Wee Jasper.

Most of the rocks were deposited in shallow subtidal environments, but occasional supratidal deposits are also found. All the specimens of *Dipnorhynchus* were found in the subtidal limestones.

The specimen herein described shows large neural openings into a labial pit, the outer edge is formed by a high margin of the surangular; reduced dental structure (tubercles) on the prearticular; and the great height of the