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Biogeographic and Biostratigraphic Implications of the *Serratognathus bilobatus* Fauna (Conodonta) from the Emanuel Formation (Early Ordovician) of the Canning Basin, Western Australia

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ABSTRACT. Discovery of *Serratognathus bilobatus* in the Early Ordovician Emanuel Formation of the Canning Basin, Western Australia, has regional biogeographic and biostratigraphic implications. Distribution of *Serratognathus* indicates a close biogeographic link between Australia and adjacent eastern Gondwanan plates and terranes during the latest Tremadocian to early Floian (Early Ordovician), and the formation of the so-called "Australasian Province", a distinctive biogeographic entity that existed throughout most of the Ordovician. The *S. bilobatus* fauna from the Canning Basin is much more diverse in comparison with those assemblages bearing *Serratognathus* from coeval Chinese Lower Ordovician successions and probably represents an assemblage inhabiting relatively deeper water (mid-outer shelf) environments. The Canning Basin fauna contains many pandemic forms, and bridges the gap in the regional correlation of this widely distributed fauna across eastern Gondwana.

This well-preserved, diverse fauna includes *Serratognathus bilobatus* and 23 associated species: *Acodus deltatus?, Acodus? transitans, Bergstroemognathus extensus, Cornuodus* sp., *Drepanodus arcuatus, Drepanoistodus* sp. cf. *D. nowlani, Fahraeusodus adentatus, Lissoepikodus nudus, Nasusgnathus dolonus, Paltodus* sp., *Paracordylodus gracilis, Paroistodus parallelus, Paroistodus proteus, Prioniodus adami, Protopanderodus gradatus, Protoprioniodus simplicissimus, Scolopodus houlianzhaiensis, Semiacontiodus* sp. cf. *S. cornuformis, Stiptognathus borealis, Triangulodus bifidus, Tropodus australis*, gen. et sp. indet. A and gen. et sp. B. A *P. adami-S. bilobatus* Biozone is defined within the middle and upper Emanuel Formation. Correlation of this biozone suggests an early Floian (late *P. proteus* Biozone to possibly earliest *P. elegans* Biozone) age for the middle and upper members of the Emanuel Formation.

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