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NEW DATA ON THE TRIASSIC-JURASSIC TETRAPOD ASSEMBLAGES IN THE FUNDY GROUP OF THE CANADIAN MARITIMES

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The Fundy Basin in Nova Scotia and New Brunswick is the largest of the exposed rift basins of the Newark Supergroup in eastern North America, which formed during continental rifting related to the breakup of Pangaea. Its up to 4,000 m thick fill of sedimentary and igneous rocks, known as the Fundy Group, can be divided into four tectonostratigraphic sequences (TS). The Permian-age Honeycomb Point Formation and possibly the Lepreau Formation in New Brunswick represent TS I. TS II includes the Wolfville Formation, which comprises the probably Middle Triassic “Economy Member” and the early Late Triassic (Carnian) “Evangeline Member.” Each of these members has yielded distinctive assemblages of continental tetrapods. The assemblage from the “Economy Member” comprises capitosauroid and trematosauroid temnospondyls and several reptiles including a tanystropheid. By contrast, the assemblage from the “Evangeline Member” only includes metoposauroid temnospondyls but numerous taxa of reptiles including procolophonid parareptiles, a rhynchosaur, a trilophosaur, and archosaurs. Archosaurian reptiles include aetosaurs, paracrocodylomorphs, and an ornithomimid. Contrary to published reports, there is no evidence for the presence of dinosaurs in the “Evangeline Member.” TS III comprises most of the Blomidon Formation and is Norian to Rhaetian in age. Strata of this sequence have yielded numerous tetrapod trackways but few skeletal remains. TS IV conformably overlies TS III and includes the late Rhaetian top of the Blomidon Formation, the late Rhaetian North Mountain Basalt, and the late Rhaetian to Hettangian (and possibly younger) McCoy Brook Formation. The latter overlies the North Mountain Basalt and has yielded a diverse assemblage of mostly small tetrapods. Recent work has correlated the Global Boundary Stratotype Section and Point (GSSP) for the base of the Jurassic Period above the North Mountain Basalt and close to the top of the lacustrine Scots Bay Member, with diverse faunal assemblages in both latest Rhaetian and earliest Hettangian strata. Thus, the strata of the Fundy Group preserve the only known stratigraphically tightly constrained record of biotic changes in continental ecosystems across the Triassic-Jurassic transition and are critically important to current debates concerning the tempo and mode of the end-Triassic extinction event.