

The Paleoproterozoic Trans-Hudson Orogen (Canada): Crustal Growth and Continental Collisions

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The Paleoproterozoic Trans-Hudson Orogen (THO) extends from South Dakota, through the exposed Shield in Saskatchewan and Manitoba, across Hudson Bay to northern Quebec. The exposed "Manitoba-Saskatchewan" segment of the Trans-Hudson Orogen incorporates both accreted juvenile Paleoproterozoic intra-oceanic terranes and variably reworked portions of two bounding Archean cratons and their Paleoproterozoic cover. The internal Reindeer Zone is a 400 km-wide collage of Paleoproterozoic (1.92-1.83 Ga) arc and oceanic volcanic rocks, plutons and younger molasse and turbiditic sedimentary rocks. The Reindeer Zone overlies Archean basement of the Sask craton, as exposed in structural windows. The southeast portion of the Reindeer Zone is marked by a northeast-dipping, crustal-scale stack characterized by three principal elements juxtaposed during 1.84-1.80 Ga collisional deformation: (1) the lowest structural level, metaplutonic rocks and paragneisses (3.20–2.40 Ga) of the Sask craton; (2) at intermediate structural levels, 1.92-1.87 Ga juvenile arc and oceanic rocks, 1.88-1.84 Ga plutons, 1.87-1.85 Ga volcano-sedimentary packages and 1.85-1.84 Ga alluvial-fluvial sandstones (Flin Flon-Glennie Complex); and (3) at the highest structural levels, marine turbidites (1.85–1.84 Ga) and partly coeval distal facies of alluvial-fluvial sandstones.