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Th-U age-dating of two spectacular proglacial valley fills of the Riss Glacial: the Bürs-Gamperdona conglomerates, Austria.

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In the lower reaches of two tributaries of the Ill valley (Vorarlberg, Austria), thick successions of proximal pebbly alluvium that accumulated during valley blocking by the advancing Ill ice-stream were age-dated, for the first time, into the Riss Glacial.

Both successions are situated in the lower reaches of left-hand tributary valleys to the Ill valley, a trunk valley shaped mainly by Pleistocene ice streams. The northern tributary (Gamperdona valley) contains a several hundred m thick succession of stacked, bottomset-to-topset packages of Gilbert-type deltas that prograded into proglacial lakes. The southern tributary (Brandner valley) contains a succession of subhorizontally-bedded proximal fluvial conglomerates. The conglomerate successions of both valleys are incised by a fluviatile bedrock gorge. The conglomerates are densely packed and very poor in well-crystallized cements suitable for Th-U age-dating. In a few layers of openwork gravel, however, isopachous fringes of calcite cement were found. Thorium-uranium isochron ages of calcite cements of the conglomerates in the Brandner valley scatter within a wide range and made extensive corrections ("closed system check" diagram - $^{234}U/^{238}U$ AR versus $^{230}Th/^{238}Th$ AR, fit to isochron lines) necessary. They indicate a probable cementation age of 128 $\pm$ 10 ka bp. By contrast, for the Gamperdona valley, Th/U-age dating yielded a fairly precise age of 129 $\pm$ 6.5 ka bp. Thus we consider an age of about 130-125 ka bp (Riss Glacial) the most probable for both successions.

Each of the thick sedimentary valley fills accumulated as a result of damming of steep-

flanked, fluvially-shaped reaches during the Riss advance of the Ill glacial ice stream. The age-data indicate that at least the lower reaches of both tributary valleys, onlapped by fluviatile and proglacial lake successions, were largely shaped before the Riss Glacial. The gorges within both conglomerate successions may already have been cut during the Riss-Würm interglacial, and were shaped further mainly during the Late Glacial to Holocene.