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The Canadian Society of Civil Engineers.

INCORPORATED 1887

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RECENT ADVANCES IN TOOL CONSTRUCTION.

By COL. ALEX. BERTRAM.

(Read before the Mechanical Section, 2nd March, 1911.)

In this paper it is the author's intention to speak more particularly of the early history of machine tool building as it has come under his personal observation, from his schooldays until the present time.

In 1861 there was in operation in the town of Dundas, Ontario, a small jobbing shop conducted by Robert McKechnie, a young patternmaker, who graduated from the Dundas foundry of John Gartshore, and who had struck out for himself in a small way, to carve out an existence in the then growing Province of Ontario. In the following year (1862) he was joined by a young Scotchman in the person of John Bertram, who had received a thorough training as a machinist, and these two founded the Canada Tool Works, or what is now known as The John Bertram & Sons Co., and started as builders of wood machinery, at the same time doing a jobbing trade with the local mills and factories. During 1863 the late John Bertram designed and built in that small shop what was perhaps the first engine lathe ever made in Canada, and from that date the designing and building of machine tools has been continuously carried on at the same place, but, of course, in much better fitted shops than the first small wooden building of those days. This first and somewhat primitive lathe had a swing of 12" over the shears, and, with a 6' bed, weighed about 600 lbs. The difficulties under which the lathe was built were greater because of the fact that the small shops had nothing in the way of means of planing the bed. This difficulty, however, was overcome at the Gartshore Foundry, where, also, the