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To Eliminate Patronage and Promote Efficiency

Scientific Proposals for the Efficient and Non-Political Conduct of Public Business.

(Prize essay by Charles A. Bowman, late of the Dept. of Railways and Canals.)

Emerging from the Central Station in the city of Ottawa to proceed in the direction of Parliament Buildings it is necessary to cross a wide highway bridge spanning the Rideau Canal. The canal and the site of the bridge are enduring monuments to a corps of men whose work may be encountered in every quarter of the globe. Men whose motto is *Ubique*: as Kipling says, "The men who do something all 'round". . . . the Corps of Royal Engineers.

The canal, built almost a century ago for purposes of defence, is still in the year 1912 a commercial asset to Canada.

To build the new highway bridge at Ottawa, known as the Plaza, it was found necessary to pull down the arch of the existing Sapper's Bridge, built under the direction of Colonel By in 1828. Before the old bridge could be torn down much labour and dynamite had to be employed. After the arch had been materially weakened, a boulder weighing almost a ton, hoisted and dropped from a height of fifty feet, failed to complete the process of demolition. Only after repeated assaults and hours of battering did fall the works of those pioneer engineers; works built to endure, without thought of profit, works built for the common weal.

Thus it is wherever the works of the earliest engineers are found. The Great Wall of China, the Roman roads of Europe . . . how many engineers remember those schoolboy (sometimes painful!) efforts to render a faithful translation of the chapter on Bridgebuilding in Caesar's Gallic Wars?

Some of the most enduring of the world's historic records are the works of the engineer, almost invariably of the military engineer. It would almost appear that engineering originated as a branch of the art of war, cultivated and developed as a department of state.

The passing of the feudal system witnessed the limitation of military government. But while war has declined, engineering has advanced into vast new fields: evolved from the art of war to the science of industrial civilization. And though some of the most remarkable modern achievements of the engineer, the appalling "Dreadnought" fighting machines and to some extent the Panama Canal, owe their existence to the new artillery method of preserving peace, nevertheless the civil engineer has outgrown his military parent. So that in modern states such as the Dominion of Canada even the military colleges are concerned in educating civil engineers.

Although an offspring may outgrow a parent it does not follow that the larger body necessarily must be the more efficient. There is much to be learned from the past. It would be well if every civil engineer could make a pilgrimage to Ottawa and read, mark, learn and inwardly digest