

Dr Coupland 4 May 1901 – 12 May 1936

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Key points

Discusses the instruments invented by Dr Coupland for use in oral surgery in the early twentieth century.

Highlights Dr Coupland's publications and academic contribution.

Reflects on the impact Dr Coupland has had on dentistry.

Little is known about Dr Coupland, despite the use of his instruments in everyday dental practice. The aim of this article is to inform the reader about the life, works and inventions of Dr Coupland.

Previous literature has provided a fascinating insight into the lives of William Warwick James and Matthew Henry Cryer, and an appeal has been made for further information about Dr Coupland, inventor of Coupland's elevators.¹ Subsequently, information came to light about Dr Coupland's life and the manufacturers of his chisels.² This article aims to further answer that call for information by enhancing the knowledge base with respect to Dr Coupland's life, by emphasising his valuable contribution to oral surgery with respect to his inventions, and by reporting his academic work.

Dr Douglas Charles William Coupland's birth certificate states that he was born on 4 May 1901, in St. Mary's Hospital, Perth, Ontario. His father was Charles Wilkin Coupland of Canada, born on 17 September 1876, and died in 1942. His mother, Catherine Smith, (1877–1947) was born in Ireland. He had a younger sister, Amy Elizabeth, who sadly died at three years of age following complications of encephalitis that arose following a middle ear infection of just two days duration (1904–1907). Coupland had a second sister, Margaret, born in 1914, who survived until 1997.

Coupland attended St Mary's School, Ottawa, before commencing his dental education. He graduated in 1922, at the top of his class, from

The Royal College of Dental Surgeons (RCDS) of Ontario, now known as the University of Toronto, Faculty of Dentistry. As a student, he was known by his peers as 'Coupie'. He was described in his class yearbook as 'a man who knows what he wants and gets it, and that he 'roamed the north in quest of gold, at home on the trail or in the saddle'.

Following his graduation, at the age of 24 years, Coupland practised in Sudbury, Ontario for 18 months before relocating to

Ottawa, where he practised exodontia as a speciality. He married Jean Elizabeth Young, on the 11 May 1925, within the Church of England in Sudbury. They had two children, Douglas (1926–2016) and James (1929–2013), both of whom became dental surgeons.

During his career, Coupland held many positions of responsibility as a respected member of the dental community, including that of Member of the Board of RCDS of Ontario, Past Member of the Board of



Fig. 1 Coupland's Chisels 1,2,3

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Refereed Paper. Accepted 23 March 2018
DOI: 10.1038/sj.bdj.2018.447

Box 1 A Summary of Coupland's Dental Publications

Oral surgery of interest to the general practitioner, 1925³

The primary aim of Coupland's first paper was to provide practical advice for oral surgery for general dental practitioners. He advises the following: 'The teeth alone should not be the horizon of the dentist', indicating a trend towards whole patient care. He also provides sage advice; 'If the dentist asks himself the question "if this were my own mouth and my physical condition were similar to this patient's, what would I do?" this will simplify many puzzling cases'. For post-operative advice, he suggests the use of a hot footbath at bedtime but discourages rinsing the mouth with water.

Exodontia and after-pain, 1928⁴

Coupland summarises problems that may arise following tooth extraction. Of note, he discusses the possibility of 'anaesthesia of the lip following the simple removal of long-rooted molars or bicuspid [...]. where the x ray shows this condition it is wise to advise a patient that if numbness does result, it is not the operator's fault'. He also commends the aid of x rays as the 'greatest aid in extraction'. He provides advice on the management of dry socket: 'Patients suffering with this condition are not in the most agreeable frame of mind, and appreciate gentleness and kindness [...] the socket is gently irrigated with saline, and a light-dressing of iodoform gauze moistened with aspirin and glycerine is inserted'. Of note, it was in 1928, the year of publication of this article, that Alexander Fleming (1881–1955) accidentally discovered penicillin whilst studying influenza.

The science of teeth extraction, 1930⁵

Coupland further discusses problems that might arise during tooth extraction, as well as choice of anaesthetic. When treating patients suffering from systemic disease, he recommends 'first performing the simplest extraction using a diluted local anaesthetic solution, waiting for a number of days and noting any reaction'. He discourages the use of general anaesthetic for a range of patients, including athletes, diabetics, and those suffering from endocarditis.

Questions and answers, 1935⁶

This paper was in a Q&A format, answering a question about the extraction of upper cuspids (canines) submitted by a general dental practitioner for Coupland to answer. In this paper, Coupland appears to refer to his chisel elevators. He admits that 'cuspids give difficulty to many operators' and that 'years ago we found that light forceps did not give satisfaction with the majority of these teeth'. He continues to describe the extraction procedure and, for the first time within his literature, appears to reference the use of his chisel elevators. 'A number No.9 chisel elevator is used to raise the soft tissue and periosteum from the bone. No.3 bone chisel is applied on the distal of the tooth with the cutting edge parallel with the long axis of the cuspid. Access to the area permits the application of No. 8 chisel elevator inserting the sharp blade between the root and the lingual bone which readily dislodges the fractured portion'.

Acute infection – curettage, 1935⁷

This paper was also in a Q&A format, composed of questions submitted by two general dental practitioners. Coupland answered questions about the management of pericoronitis ('rinse with salt water 2 hourly the higher the temperature of the water the more rapid the results') and provides recommendations for textbooks about bone.

Mouth preparation, 1935⁸

In his final paper, Coupland begins by discussing the need for cooperation between the prosthetist and the exodontist. He advises 'that the maximum tissue change occurs within the first three or four weeks following extraction [...] clinical observation has demonstrated that the greatest factor in producing atrophy and resorption of the alveolar ridge is disuse'. As with his earlier papers, the text consists of advice which is largely relevant today, albeit in the style of expert opinion that was not evidence-based or referenced.



Fig. 2 Coupland Aspirator Handle. with kind permission from Hu-Freidy



Fig. 3 Dr Douglas Charles William Coupland

Governors of Ontario Dental Association, and Past President of the Eastern Ontario Dental Society. He was also a member of the editorial board of the *Journal Oral Health*, and he published on the subjects of exodontia, dental infection and post-operative pain (Box 1).³⁻⁸

Coupland invented his namesake elevators during the 1920s, originally designed as a set of 12, later eight, and then three (Fig. 1). Coupland refers to the instruments he designed in his written work as chisels 3, 8 and 9. It is not known why the remaining chisels are no longer in production, however, it is assumed that Coupland, or subsequent users, determined that the three chisels as we know them were the most applicable for their intended applications. Of note, Coupland does not refer to his instruments as 'Coupland' chisels in his written work.⁶ It has been reported that Coupland arranged for his chisels to be manufactured by the company Hu-Friedy, and that he also designed an aspirator handle (Fig. 2).² To this day, Hu-Friedy continue to supply the dental workforce with Coupland's elevators. Many readers may be unaware,

that Hu-Friedy also continue to manufacture Coupland's aspirator handle, designed as a surgical aspirator used for precision suction.

The only previously published photograph of Coupland appears in a CPD advert published in 1930, promoting his appearance at a conference in the Royal York Hotel, Ontario (Fig. 3).⁹ This photograph was also featured in an obituary published following his death.¹⁰

Coupland worked throughout the roaring twenties and the start of the great depression, until December 1935, at which time he contracted a prolonged spell of illness associated with mitral stenosis. He passed away on 12 May 1936, after practising dentistry for just 14 years.² Coupland's death certificate states cause of death as endocarditis. Notably, his date of birth differs on his death certificate (4 May 1901) from that of his birth registry (5 May 1901). His death was notified by his cousin, James D. Coupland. He is buried in St Mary's Cemetery, Perth, Ontario.

It is astonishing to think that Coupland's obituaries, published in the dental literature a

month after his death, made no mention of the instruments he invented, and which are still used all over the world today, almost 100 years later.^{10,11} It can only be assumed that Coupland was credited with their design posthumously.

Coupland was a dentist who achieved many remarkable things in his tragically short life. We leave you with this quote featured alongside his yearbook photograph: ‘Mark you this man, we shall hear of him again.’

Acknowledgments

Our sincere thanks to Geri Smith (enthusiastic genealogist) and Helen He (University of Toronto Library, Faculty of Dentistry) for their discoveries and help with this article.

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Correction

Research article *Br Dent J* 2018; **224**: 815–820.

When this article was initially published Table 1 was incorrect. ‘Sore gums’, ‘Sensitive teeth’, ‘Bleeding gums’ and ‘Lost filling/crown or bridge on a back tooth’ were in the wrong column. This corrected Table 1 is shown below:

Table 1 Summary of professionals’ responses on timeframe within which dental conditions should be seen

Should be seen within 3 hours	Should be seen between 3–24 hours	Should be seen between 24–48 hours
Lost tooth (knocked out)	Severe toothache (where painkillers do not help with the pain)	Toothache (where the pain is helped by taking painkillers)
Facial swelling	Pain after a tooth has been extracted	Jaw problems (for example, muscular pain/ache)
Injury to the face or teeth	Lost filling/crown or bridge on a front tooth	Loose tooth
Uncontrolled bleeding from the soft tissues (not gums)		Lost filling/crown or bridge on a back tooth Sore gums Sensitive teeth Bleeding gums

We apologise for any confusion caused by this error.