

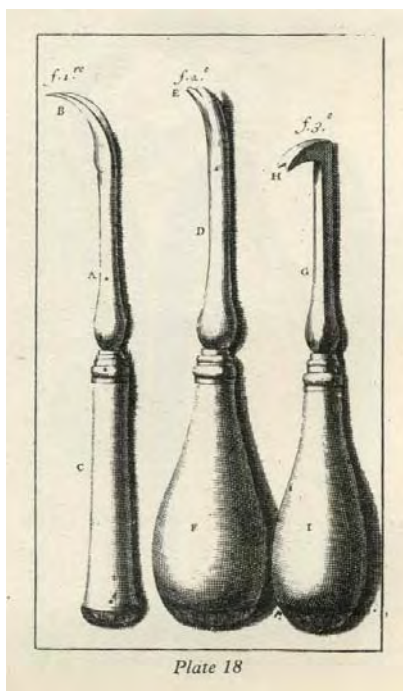
# Dentistry in Australia before the First Fleet

Henry F. Atkinson

The Henry Forman Atkinson Dental Museum has a large collection of instruments for extracting teeth from humans. Amongst these are 'pelicans', keys, pincers, elevators and forceps. The forceps alone number over 250.

The early 'pelicans' were essentially a straight shanked instrument with a hook for passing over the tooth to forcibly lever it from the bone of the jaw. The key was an improvement on the pelican, having a similar hook or claw but with a cross handle for operating from the front of the mouth. In the hands of a trained person it was a most useful instrument.

Pincers were simple hinged instruments for holding or grasping an object but were not designed for the rigours of tooth removal. In the early 1800s they were the forerunners of the forceps, the design of which has changed little from the 1850s to today. Elevators were originally straight shanked, pointed instruments which appeared in a variety of types including straight, curved, left- or right-handed, and as the name indicates were used to tease a root or tooth from the jaw. Finally, the 'punch' was similar to the artisan's tool but in dentistry applied to the role of knocking out teeth. Whilst originally referred to as the punch, this instrument was later, most probably



due to professional sensibilities, graced with the addition of 'elevator', to become known as the 'punch elevator'. Dating early instruments is an inexact science but some examples in the Henry Forman Atkinson Dental Museum are thought to be from the 17th century.

When discussing the use of a punch elevator, a relatively simple instrument generally forged in one piece from steel or, in the more sophisticated types, fitted with a

handle often of wood, it was brought to my notice that certain Australian Aboriginal groups were, in initiation ceremonies, practising methods of tooth removal long before the arrival of the First Fleet.

Historically, the European operator, dentist, barber surgeon or tooth drawer would, when removing an offending tooth, place the pointed end of the instrument on the bone above the tooth and then strike the other end a sharp blow with a heavy object, thus freeing the tooth from the bone. The method was developed in the pre-anaesthetic days when the short sharp pain resulting from a single blow was followed by immediate relief from days of misery. The success of the method depended upon the fact that the roots of the upper central incisors are broadly straight and conical; a blow delivered to the bone over the root of such a tooth acts to compress the socket and thus apply an extruding force to the tooth. The net result is similar to squeezing an orange pip between finger and thumb. Like the slippery pip the tooth is ejected!

A literature search reveals that similar practices were carried out by indigenous Australians in ceremonies which were described, sketched, painted and later photographed by the earliest European explorers,

**Previous page:** Illustration showing (from left to right) two forms of punch and a hook elevator. The Henry Forman Atkinson Dental Museum holds instruments of similar age and appearance. Pierre Fauchard, *The surgeon-dentist; or, treatise on the teeth, in which is seen the means used to keep them clean and healthy, of beautifying them, of repairing their loss and remedies for their diseases and those of the gums ...*, translated from the 2nd edition (1746) by Lillian Lindsay, London: Butterworth and Co., 1946, plate 18.

writers and artists at the time of their first visits to Australia. From this information it is evident that the local procedures mirrored in some detail operations which had been practised in the northern hemisphere for centuries.

David Collins gave an account of an initiation ceremony in which the removal of an upper front tooth played an essential part.<sup>1</sup> The dental component commenced with the subject seated on the shoulders of a selected member of the group who was kneeling on the ground, then a sharpened bone was used to lance the gum over the selected tooth. The pointed end of a stick, often selected with due ceremony from a special tree, was placed in the incision and held firmly. The operator, with a heavy stone in his other hand, then made up to three feints at the stick and with a final blow knocked out or loosened the tooth sufficiently so that it could be removed easily with the fingers.

Some few years later George Barrington in 1802 described a similar ceremony, concluding that the tooth comes out 'generally as perfect as if drawn by a dentist'.<sup>2</sup>

Around 1818 the convict artist Joseph Lycett painted *Corroboree at Newcastle* which includes a group initiation ceremony in which two

**Below:** Joseph Lycett, *Corroboree at Newcastle* (detail), c.1818, oil on wood panel, 70.5 x 122.4 cm. Presented by Sir William Dixon, 1938. Reproduced courtesy Dixon Galleries, State Library of New South Wales.



rows of standing men face each other; in one row each member is holding in one hand a short stick that appears to be in the mouth of the initiate and in the other hand a stout cudgel or club poised, it would seem, to dislodge a front tooth (illustrated).

Baldwin Spencer and F.J. Gillen described a similar ceremony. Their accompanying photograph shows a young man lying flat on the ground with arms extended. Another man, kneeling at his side, holds in one hand

a pointed stick placed above a tooth and in the other hand a large stone; what follows in the description is as outlined above.<sup>3</sup> It is also recorded that girls in some groups underwent an initiation ceremony with a similar dental component, but theirs was entirely separate from that of the young men.<sup>4</sup>

Until the early 1700s the dental literature is sparse on details of methods for the removal of teeth, because the art and science of

Coxeter, London, Lancet with curved triangular blade, c.1890, polished steel and xylonite. Reg. no. 437, part of a set comprising reg. nos. 433 to 442, Henry Forman Atkinson Dental Museum, University of Melbourne. Pierre Fauchard advised that the instrument must be kept very sharp as a dull blade caused unnecessary pain for the patient.



dentistry were, although advancing rapidly, still in their infancy. The classical account of the status of dentistry at that time is given by Pierre Fauchard (1678–1764), the leading French dental surgeon of his day, who is often referred to as ‘the father of modern dentistry’. He described, amongst many other procedures, the removal of a tooth using the gum lancet, the punch elevator and a lump of lead to hold in the hand for striking the instrument.<sup>5</sup> All the actions described by Fauchard are similar to those of the Aboriginal ceremonies. His instrument had a narrow steel blade (fitted into a wooden handle), the end of which was sharpened and, in some specimens illustrated, divided into two; it was listed in later makers’ catalogues as a ‘goat’s foot or punch elevator’.

Lead hand weight, c.1990, cast lead, 6.0 x 2.0 cm diameter. Reg. no.2125, Henry Forman Atkinson Dental Museum, University of Melbourne. Made by Professor H.F. Atkinson and weighing approximately 300g, the weight could be used either with an all-steel punch to strike the head directly, or with a wooden handled instrument held tightly in the closed fist and the head struck with the side of the hand.

From a consideration of the above a fundamental question arises: did the method of tooth removal using a punch and heavy object develop independently but in parallel in both the southern and northern hemispheres? If so, then the Aboriginal people of Australia had accumulated a great deal of dental knowledge which in 1788, in relation to tooth removal with a punch elevator, was comparable to that of a surgeon of the First Fleet.

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**Professor Henry F. Atkinson MBE** was appointed to the Chair of Dental Prosthetics, University of Melbourne, in 1953 and on retiring in 1978 was made Professor Emeritus. Professor Atkinson has worked on the dental collection for over 50 years and was made Honorary Curator in the early 1990s. In 2006 the museum was named the Henry Forman Atkinson Dental Museum in appreciation of his many years of work.



Goat’s foot type stump elevator, c.1800, ebony and steel, 14.5 x 2.5 cm diameter. Reg. no. 1119, probably from the original Odontological Society of Victoria Museum, 1884, Henry Forman Atkinson Dental Museum, University of Melbourne. Punch elevator similar to f.2 in plate 18 of Fauchard (see page 21). The end was sharpened and bifurcated so that the instrument could be used on either the bone above the tooth or on the tooth directly.



#### Notes

- 1 David Collins, *An account of the English colony in New South Wales: With remarks on the dispositions, customs, manners, &c. of the native inhabitants of that country.* ... London: Printed for T. Cadell Jun. and W. Davies, 1798, pp. 579–580.
- 2 George Barrington, *The history of New South Wales, including Botany Bay, Port Jackson, Parramatta, Sydney, and all its dependancies, from the original discovery of the island: With the customs and manners of the natives ...*, London: Printed for M. Jones by W. Flint Printer, 1802, pp. 12–15.
- 3 Baldwin Spencer and F.J. Gillen, *The northern tribes of Central Australia*, London: Macmillan and Co., 1904, p. 591.
- 4 Spencer and Gillen, *The northern tribes*, p. 590.
- 5 Pierre Fauchard, *The surgeon-dentist; or, treatise on the teeth, in which is seen the means used to keep them clean and healthy, of beautifying them, of repairing their loss and remedies for their diseases and those of the gums ...*, translated from the 2nd edition (1746) by Lillian Lindsay, London: Butterworth and Co., 1946.