



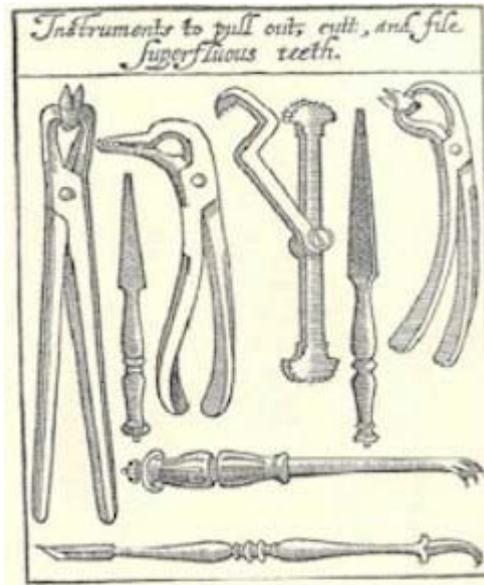
## **Tooth and claw: when pelicans helped the dentist**

### **Carol Parry\* describes the dental instruments in the historical instrument collection at the Royal College of Physicians and Surgeons of Glasgow**

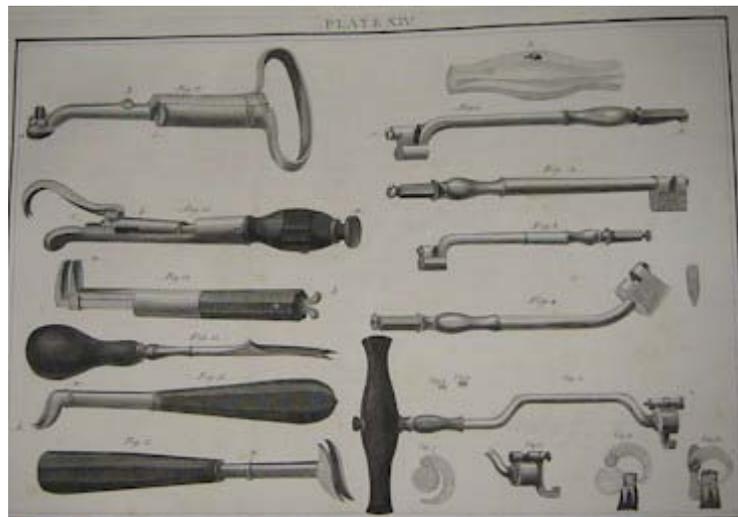
The collection of historical medical instruments at the Royal College has been built up in a very piecemeal fashion over the years. Dependent on gifts, the collection has very few instruments dating from before 1800. Gifts were rarely recorded and so provenance is almost impossible to ascertain. However, one of the strengths of the collection is that many of the items are of Glasgow manufacture, particularly those of the family firm of Norie who made instruments between 1801 and 1841. Initially the firm was based at Hutcheson Street and then moved to Argyle Street before a final move to Glassford Street. The historical instrument collection contains several surgical instruments made by the firm of Hilliard who were cuppers to the Glasgow Royal Infirmary, but unfortunately no dental items although the firm is listed in Bennion's book (1) on dental instruments as making them.

Although the College does not have early instruments it is still possible to gain an idea of what they looked like through the library collection of early printed books. For example Peter Lowe's work, *The Whole Course of Chirurgerie* (2), has an illustration of dental instruments which was lifted directly from the work of the French surgeon Amboise Paré - copyright obviously not being a great issue in the early days of printed books! Lowe writes very little about the teeth in his *Whole Course* as he mentions that this will be extensively dealt with in a further book - unfortunately no copies of this work are known to exist. The instruments illustrated in the *Whole Course* include a pelican, named after its resemblance to the shape of the bird's beak, which was used to prise the tooth out sideways and known to be in use from the fourteenth century. Forceps, probably the oldest of all dental instruments, are also illustrated. Forceps were known by such names as parrot's beak, crow's bill and stork's bill.

Illustrations of eighteenth century instruments can be found in a copy of the London instrument maker J.H. Savigny's catalogue of 1798. This large volume has three pages devoted to dental instruments. The catalogue illustrates several types of forceps used at that time, levers for forcing out stumps and different versions of toothkeys.



**Dental instruments illustrated in Peter Lowe's *Discourse on the Art of Chirurgerie*.**



**Dental instruments from Savigny's catalogue, 1798.**

Later the handles were made from wood, bone or ivory, and were always set at right angles to the instrument. The working end consisted of a bolster with a hinged claw. The bolster was placed against the root of the tooth and the claw over the crown. The key was then turned as in a lock, thereby dislocating the tooth. By c.1765 a slight curve was given to the shaft, which was developed into a distinct bend c.1780 to prevent undue force against adjacent teeth.



**Dental key with ivory handle**

By the end of the eighteenth century the handle of the toothkey became more shaped to the fit of the operator's hand, generally having a central cross-hatched section with the remaining part on either side being smoothly waisted. A second, right-angled bend was introduced at about this period which allowed the shaft to cross the mouth to the further jaw. The final development of the toothkey was the forceps principle - part toothkey and part forceps. Despite developments in the design of forceps, the tooth key was still in use in the early twentieth century and did not fully cease being used in rural areas until the 1930s.



**Forceps tooth key.**

By the early nineteenth century, forceps began to be produced with handles curved to the shape of the hand and jaws made to fit exactly the crown and neck of the tooth. As a consequence a whole set of instruments for different teeth became necessary. Thomas Bell in his work *Anatomy, Physiology and Diseases of the Teeth*, 1829 states that "the forceps must be of various forms and dimensions, according to the class of teeth for which they are intended." He invented a method of fixing the forceps on the tooth, described in his book as a rackwork. Although he did much work on developing the forceps, he still used a key for extracting certain teeth.

Sir John Tomes, the first president of the British Dental Association, designed the forceps of the type used today. He expanded on the work of Cyrus Fay who had won a silver medal from the Society of Arts in 1826 for his design of forceps. Tomes produced an extremely influential work on the subject entitled *On the Construction and Application of Forceps for*

*Extracting Teeth*, in 1841. As a consequence of Tomes' work, forceps became dentistry's most important extraction instrument.



**Set of forceps in a leather case made by Baird of Glasgow c.1913.**

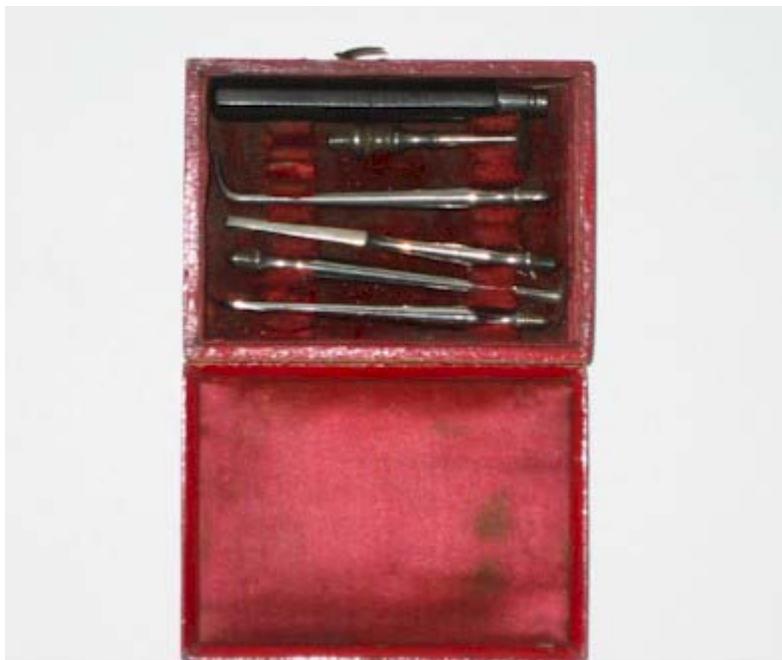
The historical instrument collection at the Royal College also includes several different types of cauteries. These were used for many purposes in dentistry: to stop excessive bleeding, for early root canal treatment, for gumboils, and for toothache. Peter Lowe in his *Whole Art* mentions a gold cautery he reserved for use on the nobility. Dental cauteries were long and slender and seldom had a wooden handle before the seventeenth century. Fauchard, writing in 1746 (3), advocates the use of brass wire knitting needles. He used cauterization for teeth causing great pain and when all other methods had failed. He placed a little metal plate between the cheek and the tooth to be cauterized in order to prevent burning. If a plate was not available a coffee spoon could be used instead.

Scalers are known to have been used in the ancient world and in the Middle Ages but were not again in very general use until the eighteenth century. Small pocket cases were made containing a series of interchangeable scaler heads which screwed on to a common handle. The example here has a red morocco case and five scalers with a common handle made from ebony. Interestingly this case has a label stuck on the back "Dr Mackenzie, Glasgow. Case of instruments uses unknown to sender Dr Finlayson."



**Cautery with wooden handle.**

The twentieth century saw the demise of the local manufacturer and recent accessions to the dental collection reflect this. Our most recent dental acquisition consists of forceps and elevators used by Mr John Houston, FDS RCPS(Glasg) who retired in 1987. The instruments are made by English manufacturers - C. Ash and Son and Coupland - apart from one item stamped 'Foreign'.



**Scaling set c.1800**

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#### References

- (1) Elisabeth Bennion, *Antique Dental Instruments*, Sotheby's Publications, 1986
- (2) Peter Lowe, *The Whole Course of Chirurgerie*, 2nd Edition, 1612.
- (3) Pierre Fauchard, *The Surgeon Dentist*, translated from the 2nd Edition 1746 by Lillian Lindsay, London, 1946.