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FOR BEAUTIFYING AND PRESERVING THE TEETH AND GUMS:  
BONE TOOTHBRUSHES AND CERAMIC TOOTHPASTE POTS  
FROM HISTORIC SITES IN THE CROMWELL DISTRICT

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Two of the more novel artefact types uncovered during the excavation of Chinese sites in the Cromwell area are shallow, transfer printed earthenware pots and bone handled toothbrushes. The earthenware pots were used for the retailing of a wide variety of food and cosmetic products such as 'bear's grease' ("for the growth of the hair"), shaving creams, ointments and toothpaste during the 18th, 19th and early 20th centuries. By the end of the 19th century their main use was for packaging toothpastes.

This study concentrates on toothpaste containers because they constitute the main type found in the study sites. Only one other product type is represented: Holloways 'cure-all' ointment. Discussion on bone handled toothbrushes is also included. The paper outlines the history and manufacture of these dental hygiene products and incorporates a discussion on excavated material, along with comment on their relative scarcity and utility for dating.

The assemblages

A total of seven pot lids were excavated, two complete with bases (Table 1). Five were toothpaste pot lids while the other two were Holloways ointment. A further four bases were recovered without lids so it is not possible to state for certain what product they contained. There were twelve toothbrushes in total of three different styles (Table 1). They are depicted in Figure 2.

Except for one toothbrush, which came from a 19th century European house site known as The Ledge (S133/868), all the material comes from Chinese sites, Ah Wees (S115/54, QB 2 (S124/207)), both rural Chinese huts in the Upper Clutha area, Firewood Creek (S133/424), Caliche (S133/223) and Cromwell's Chinatown (S133/48).

Ceramic pots

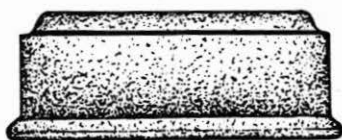
Ceramic pots were first used for packaging products in the 18th century. The earliest pots were decorated with uniform blue rings or stripes and were sold to retailers who

Pot Lids and Bases.	Embossing.	Dimensions.	Comments.
Lid and Base. (intact) (fig.1:A,B,C)	'The Alexandra Cherry Toothpaste Prepared by Alfred Felton Melbourne.'	D=7.4cm, Lid and Base H=4.8cm. Circular.	A multicoloured lid with gold band. Also on the lid is a diamond shaped registration mark, dated Jan. 24th 1865. This mark appeared on a wide range of ceramics between 1842 and 1881.
Lid and Base. (fig.1:E,F.)	'Coralite Toothpaste, Prepared by Mess Gabriel, Dentists, Ludgate Hill, London.'	Lid and Base H=3.1cm, L=8.4cm, W=5.1cm, Rectangular.	Black and white lid. Embossed on base B.E.&Co., (Bates, Elliott & Co, Burslem 1870-75.).
Two Lids (fig.1 identical and intact)	'Cherry Toothpaste, Prepared by John Connell & Co, London, Patronized by the Queen.'	Circular lids. D=8cm, H= 0.2cm.	A multicoloured lid with gold band. World wide distribution. Exoavated in U.S.A. also (Herskovitz 1978.).
Lid (fragment).	'S. Haw, Son and Thompson' (?).		Black and white lid. Fragment only.
Base (intact).		D=6.5cm, H=2.6cm. Circular.	Unidentifiable embossing on base.
Base (fragment).		D=7.8cm, H=2.8cm. Circular.	Embossed on base B.E.&Co. (Bates, Elliott & Co 1870-75.)
Base (intact).		D=7.9cm, H=3.6cm. Circular.	
Base (fragment).		D=6.5cm, H=2.65cm.	
Lid (intact).	'Holloways Ointment 533 Oxford St. L <sup>o</sup> 24; Strand London.'	D=9.6cm, H=1.7cm. Circular.	Single coloured lid (dark green). Thomas Holloway set up his business at 244 The Strand in 1837.
Lid (fragments)	'Holloways Ointment 244 Strand London'.	Circular	It was shifted to 533 Oxford St in 1867.

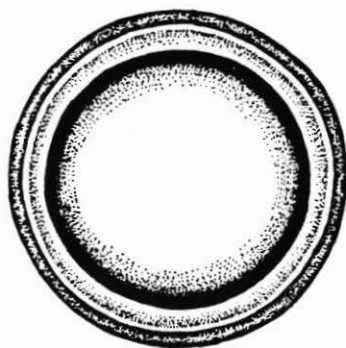
Toothbrushes	No. of Pieces	Dimensions	Shape of Handle.	Provenance	Comments.
1 (fig.2:D)	2	L= 13.4, W. of handle =1.2cm.	pointed end	Ch. Hut 23.	Small size. Three 'Bulls Eyes' embossed on handle.
2	1	L= 13.5, W. of handle =1.4.	Rounded end.	Ch. Hut 18.	Almost intact.
3 (fig.2:B)	1	Width of handle = 1.4cm.	Rounded end.	Ch. Hut 18.	Handle only.
4 (fig.2:G)	3	Width of handle = 1.4cm.	Pointed end.	Ch. Hut 18.	Small piece of wire through hole in handle. Also three 'Bulls Eyes'.
5	2	L= 13.6, W. of handle =1.4.	Pointed end.	Ch. Hut 18.	
6 (fig.2:C)	1	L= 13.6, W. of handle =1.5.	Pointed end.	Ch. Hut 18.	Intact.
7 (fig.2:A)	3	Width of handle = 1.4.	Rounded end.	Ch. Hut 34.	Handle and other fragments.
8	1	L= 13.4, W. of handle =1.5.	Pointed end.	S124/207.	Almost intact.
9	1	Width of handle = 1.4cm.	Pointed end.	S124/207.	Handle only.
10 (fig.2:E)	1	Width of handle = 1.4cm.	Pointed end.	S133/868.	Handle only. Three 'Bulls Eyes' on handle.
11 (fig.2:H)	1			S115/44.	Bristle end of brush only.
12 (fig.2:F)	1		Ornate handle.	Ch Hut 14.	Ornate handle. Three 'Bulls Eyes'.



A.



B.



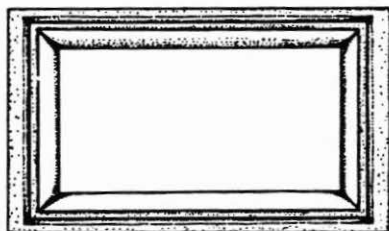
C.



D.



E.



F.

FIGURE 1. Ceramic pots.

0 1 2 cm

then applied their own paper label. From 1750 a few retailers began to have their pots handpainted by potters who would add the trader's name. As time went on addresses and even a short description of the pot's contents were added (Davis, 1967:39).

During the mid 1800s great changes were being made in the methods of industrial production and marketing (Prickett, 1981:581). American manufacturers ushered in a new era of mass production and the standardisation of products and packaging. With these advances came an increasing range of manufactured goods and there was a demand for cheaper, more attractive and sales-stimulating containers.

The establishment of large scale manufacturers and wholesalers created a shift away from small shopkeepers who manufactured packaged and sold locally, to large retailers who traded on a national level. Handpainted pots were totally unsuited to cope with the 19th century boom in sales of packaged household products and their nationwide distribution.

Transfer printing was the answer to quantity production of attractive pot lids and may other earthenware containers. By the beginning of the 19th century underglaze transfer printing in one colour was developed. With this process a single design could be used an almost unlimited number of times.

By the 1840s multicoloured underglaze transfer printing had been perfected. The best known makers of these pot lids were F. and R. Pratt and Co. of Fenton, Staffordshire, who produced pot lids with elaborate scenes. Other firms used the underglaze colour printing process on pottery too (today all these lids are called 'Pratt-Ware'). Their customers were the retailers who sold products to the upper class markets. These coloured pot lids had a limited period of manufacture and reached the peak of their popularity in the 1860s (Davis, 1967:40). As they were relatively expensive to produce, companies recouped their cost in the price of the luxury items that were sold in the pot e.g., bear's grease or shrimp paste. Quite understandably none of these 'Pratt-Ware' pots have been excavated from early gold mining sites in Central Otago. The three excavated multi-coloured toothpaste pot lids have litho transfers which was a cheaper and later process (Clarke, 1970:299). The demise of the multi-coloured lids was brought about by the combined effects of rising production costs, competition from other packaging materials and changing fashions. Production had virtually ceased by 1900 (Fletcher, 1975:9).

Black and white transfer printed pot lids remained popular well after coloured lids had fallen out of general use because they were cheaper to produce and could compete with other

forms of packaging. Paper labels, no matter how inexpensive printers could make them, were quite useless on pots containing greasy creams and those which came into contact with water as often as toothpaste pots (Fletcher, 1975:10).

The growth of large manufacturing and wholesale chemists who ordered thousands of lids a year to advertise their product also helped sustain the black and white pot lid market (and one or two litho-transferred multi-coloured lids such as the John Gosnell lid Fig. 1D). As public interest in health and hygiene grew so too did the trade in quack medicines, ointments, cosmetics and toothpaste.

During the last twenty years of the 19th century the black and white pot lid market was sustained and even expanded. England exported large quantities to the United States and to all parts of the British Empire.

Transfer-printed pots underwent a number of changes in shape and style through time. The earliest pots were straight sided cylinders with flat lids. From the 1840s the domed lid became the standard shape. Circular lids were by far the most popular although by the 1890s a few wholesale chemists began to favour square and rectangular pots in an attempt to solve the problem of insecure lids (a problem never satisfactorily solved); a flat sided pot could be more easily fastened with string (Fletcher, 1975:27). Printing a transfer on the underside of a lid as well as on the top had brief popularity in the 1890s. Costs of production were kept down by mass producing pots with standardised designs advertising 'toothpastes' or 'cold creams'. These had blank spaces for an individual chemist's name and address.

After 1900 there was increased competition from other packaging materials including greaseproof cardboard, pots made of cork and, most important of all, the collapsible toothpaste tube. Collapsible tubes were invented in 1841 and were first used for artists colours. The first record of toothpaste in tubes is 1892 (Davis, 1967:83).

### Toothbrushes

The first record of a brush designed specifically for cleaning the teeth occurs in a letter written in England in 1651. The brushes at this time were short stiff-haired tools resembling paintbrushes rather than the toothbrushes of today and were referred to as 'teethbrushes' (Beaver, 1980:iv).

In the 1780s an efficient and simple toothbrush was designed (the style is basically unchanged today) by a London

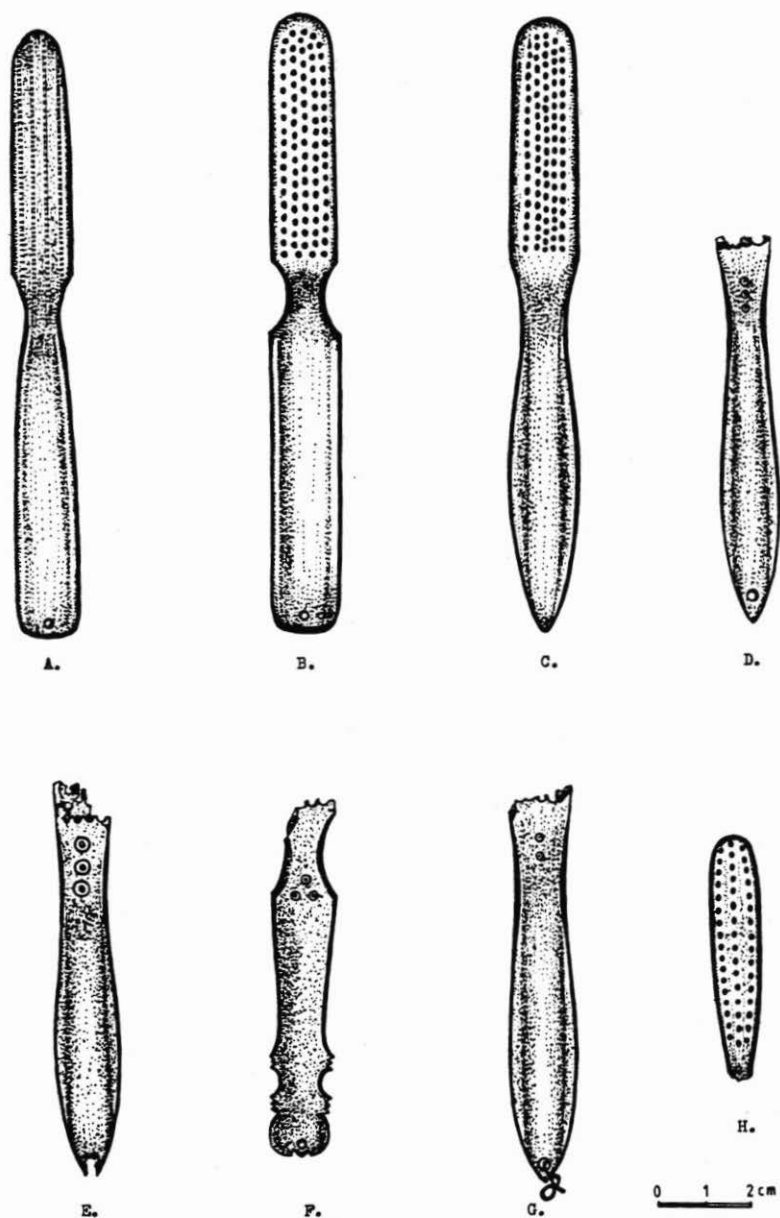


FIGURE 2. Toothbrushes.

tradesman, William Addis. This first toothbrush was made of bone and horse-tail hair. The making of these bone handled brushes was an extremely labour intensive process involving up to fifty-three separate processes, mostly concerned with shaping the handle.

Toothbrush handles were made from ox thigh and buttock bones, the ends of the bones being sawn off and sold to button makers (Beaver, 1980:3). The handles were shaped with planes, files and sharp knives and then drilled to take the tufts of hair. On the back of the brush shallow grooves were cut for wires to secure the tufts in place (Fig. 2). The handles were then tumbled, to give them a smooth matt surface, polished, bleached and degreased.

Early toothbrushes were filled with white horse-tail hair or pigs bristles. Adding the bristles required skill and dexterity as small bunches of hair were drawn into the holes by wires in the back of the brush.

The first plastic-handled (celluloid) toothbrushes appeared in the 1920s and were produced alongside bone handled brushes. Handmade bone handled toothbrushes became obsolete after the Second World War.

### Discussion

The appearance of these artefacts in Chinese sites supports other evidence showing that although the Chinese miners continued to rely on products imported from China, they were quick to adopt European products.

The industrial strength of England in the 19th century, its role in supplying manufactured goods to all areas under the British flag and New Zealand's dependence on this trade is clearly demonstrated with these artefacts. Except for the one pot lid made for the Australian chemist Felton (Fig.1 A,B,C), all of the excavated lids and bases were made in England and used by large British chemical wholesalers. The Australian lid may have been made in Australia (Vader and Murray, 1975:78), but is just as likely to have been made in England. No pot lids advertising a New Zealand chemist were excavated although a number are known, such as Haynes Carbolised toothpaste which was made in Dunedin and widely distributed within New Zealand (refer Appendix 1). All the excavated toothbrushes were made of bone, although the process of manufacture has destroyed possible identification of the bone type. These too were made in England. Although none of the excavated brushes bear makers marks, four have an impressed 'bull's eye' design suggesting they were produced by the same firm.



The relatively small number of pots and toothbrushes may be due to several factors. Even in 1900, after 120 years of toothbrush production, products for cleaning teeth were still not widely used, especially amongst the working class (Beaver, 1980:15). Given this situation, the regular brushing of teeth may not have held a great deal of importance for the miners, or, less obvious methods may have been employed, such as cleaning the teeth with a damp piece of cloth dipped in soot (Fletcher, 1975:34). The cost may have been a disincentive too, at a cost of sixpence or more per pot, toothpaste was probably considered a luxury or only purchased when a miner was well off.

The utility of toothpaste pots for dating sites is limited because they are relatively uncommon artefacts. None have been uncovered in the other major historical excavations in New Zealand to date. Pots which have a maker's mark or a company's name on the lid can be dated (particularly those advertising short-lived New Zealand chemists). Toothbrushes have limited utility for dating because of their long production span and lack of differentiation. However those that have a maker's mark of the handle should be datable (Herskovitz, 1978:129).

#### Acknowledgements

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Area	Chemist and Contents.	Comments +	Period of Chemists Operation.+ +
Auckland	Aickin. Aickin's Eucalyptene Ointment. C.Aickin Aromatic Toothpaste. A.Eccles Toothpaste. Eccles Cold Cream. J.Edson. Cold Cream. S.Gilbert Cherry Toothpaste.  S.Gilbert Areca Nut Toothpaste. Hasletts Cherry Toothpaste. Hasletts Cherry Toothpaste. Sharland & Co. Cherry Toothpaste. A.A.White. Toothpowder.	Auckland on top and base. Six sizes Green transfer. Red transfer. Square.  Embossed with Maori Chiefs head  Rectangular. Square. Blue transfer.	1872- post 1920  1897- post 1920 1859- post 1920  1882- post 1920  1882- c.1915
Cambridge	E.B. Hill. Cherry Toothpaste.	Red transfer with gold band.	1900- 1919
Christchurch	Barters Alternative Ointment. Cook & Ross.Otto of Rose Cold Cream. Cook & Ross.Otto of Rose Cold Cream. Gould & Co. Toothpaste. Wallace & Co. Toothpaste.	Small. Large.  Square.	1860's- post 192 1859- post 1920  c.1860's- 1910
Dunedin	S.S.Bannister J.R.Hayne. Carbolised Coral Toothpaste.  J.R.Hayne. Carbolised Coral Toothpaste.  J.R.Hayne. Carbolised Coral Toothpaste. Petit & Hayne. Toothpaste. Seniors. Toothpaste. Jas. Waters. Antiseptic Toothpaste. T.M. Wilkinson. Rose Toothpaste. T.H. Wilkinson. Rose Toothpaste.	Square. Small,rectangular. Glass. Large,rectangular. Glass. Rectangular. Square. Gold band. Pictorial Kivi. Square. Rectangular. Rectangular. Large.	1882- 1909  1898- post 1920  1888-1897  1898- post 1920  1865- 1891
Gisborne.	Harold Kane. Toothpaste. Harold Kane. Toothpaste. T.Hood. Pippo Toothpaste.	Small. Large.	1898- 1911. 1900- 1905
Napier & Hastings	A.Eccles. Toothpaste. A.Eccles. Cold Cream. A.Eccles. Lipsalve. Welsman & White.	Square.  (Napier).	
Timaru.	Gunn & Co. Toothpaste. Gunn & Brien. L.B.James. Toothpaste.	Square. Square. Square. Brown transfer.	1875- 1916 1902- post 1920
Wellington.	R.Ayres. Cherry Toothpaste. Barraud & Son Otto of Rose Cold Cream. R.C.Brien. Toothpaste. W.C.Fitzgerald. Cherry Toothpaste. W.C.Fitzgerald. Otto of Rose Cold Cream. W.C.Fitzgerald. Lipsalve. D.L.Turner. Areca Nut Toothpaste.	Herbalist.  Square.	1880- 1849- post 1920 c.1900-post 1920  c.1885- 1905  1887- 1906

+ Unless described otherwise all lids are circular.

+ + In most instances termination dates are not given after 1920 because pot lids were not used after this time.

APPENDIX 1. New zealand pot lids.