COMBMAKING IN SCOTLAND

PHS Comb expert Jen Cruse explores the development of the Scottish comb-making industry.

Figure 1. Pair of horn twin-cut combs being parted – Jen Cruse collection

Introduction
The craft of fashioning combs changed little over the centuries and never had a high profile in the manufacturing world, being described as ‘one of the most miserable trades’, unexploited and undervalued. But the invention in 1796 by William Bundy, of a machine to cut the teeth of a comb, was regarded as a turning point in the history of comb-making, particularly in Scotland. Mechanical tooth-cutting led to the development, some 30 years later, of a machine that cut the teeth of two combs from one piece of prepared horn or tortoiseshell, by intersecting or parting, the teeth of one comb being formed by the spaces created between the teeth of the other. This machine became known as a twinning machine. The original procedure of preparing a plaque from which one comb was cut, resulted in much wastage of material, off-cuts being of little use. By cutting two combs from each plaque the new machine proved to be more economical in terms of both time and material expenditure (Figure 1). However, as it was only capable of cutting coarse, well-spaced teeth, fine-toothed combs continued to be entirely hand-sawn. Over the years, these machines were improved upon or redesigned, by engineers attached to different comb-making centres throughout Europe.

The Industry in Scotland
Aberdeen, ‘The Granite City’, stands at the mouth of the river Dee on the north-east Scottish coast and is one of Scotland’s most important ports. The city portrays a long history of manufacturing dating back at least to the 13th century, coupled with a reputation as a seat of philosophy and learning.

Sometime between 1825 and 1830 a businessman by the name of John Stewart started a small comb manufacturing industry in the city of Edinburgh. An Aberdeen by birth, John Stewart recognised the implications of newly invented machines, looked at the current situation, and moved his comb company to Aberdeen. He took over a small firm in Hutcheon Street and registered the new company in the name of Stewart, Rowell and Co. – the Aberdeen Combworks. With a nucleus of comb-makers, a total of 40 employees in all, and the new machines, he founded a comb-making factory on a three-acre site which was to rival all competitors in Britain over the following decades and become a world renowned establishment. Steam power had already made a great impact on the craft of comb-making but wastage was high. By the mid nineteenth century the installation of twinning machines enabled around 2,000 grooming combs to be cut per day where previously the comb-maker, with his crude hand-tools, was fortunate to cut 80-100 combs in a day and with twice the quantity of waste material. At first the twinning machines were suitable for cutting horn and tortoiseshell only, but eventually further refinements led to the mechanical cutting of teeth on wood and ivory combs. Fine combs and small toothed combs continued to be cut by means of circular saws, some of which were so fine that it was possible to cut 40 teeth to a linear inch. Subsequently known as S. R. Stewart & Co, the Aberdeen Combworks grew from strength to strength, never allowing machinery or methods to become antiquated. New ideas were continually being adopted and machines redesigned by the Company’s engineers to their own patents.

The Materials
The supply of horn from indigenous British cattle was never enough to meet the Company’s needs and imported supplies were crucial. Prices fluctuated with demand and availability. Horn had always been the predominant raw material for comb-making, although other materials were also used, namely tortoiseshell from the East Indies, vulcanite, and cattle hoofs. Ox and cow horn was imported in great quantity from the South American
continent; Brazil in the mid 19th century had enormous herds of wild black cattle which multiplied so extensively that they were slaughtered only for their horns and hides, the carcasses being left to rot or be devoured by the numerous carnivorous animals that roamed the territory. Cattle horn was also sourced from Eastern Australia and, to a lesser extent, from The Cape of Good Hope area of South Africa. Buffalo horn was imported from the East Indies, the best coming from Siam (now Thailand).

In 1850, it was recorded that 1,250,000 ox horns were imported with an average price of £50 per ton. By the 1880s the annual imports averaged 3,500,000, along with 1,000,000 hoofs (about 600 lbs or just over 1/3 ton) and approximately 20 tons of vulcanite. The hoofs mainly came from Germany and cost about £12 per ton, the cheapest substance used by the Company. ‘Although the least valuable material, it is the subject of the most costly and ingenious mechanical appliances in the process of its manufacture’ (Figure 2). Believing a comb made from cattle hoof was perhaps a rather unattractive description, the name ‘German Shell’ was adopted to improve its cachet on the commercial market (Figure 3). Towards the end of the 19th century, trends in cattle-breeding in Britain had changed radically. Short-horn cattle were being demanded by the meat trade, and horns were not maturing to any great size or weight; the animals were being slaughtered at an earlier age, and the available horns were therefore lighter, both in weight and substance. Hence the continuing importance of acquiring horn from overseas.

Production
The choice and variety of designs available in 1850 were in the region of 2,000, ranging from dressing and pocket combs to ornamental backcombs to horse mane combs. The total annual output of combs by the Company in the early 1880s was approximately 18 million, rising to 25 million in 1906. Those combs that were marked were easily recognisable by the registered trademarks of the ‘bull’s head’ or the ‘bull and tortoise’, together with the monogram AS stamped on the product (Figure 4).

Besides combs, the Company also manufactured small quantities of articles such as cups, tumblers, spoons, spatulas, tobacco and snuff boxes, but combs remained their principal product. Little material was wasted. The tips were sent to Sheffield for cutlery handles and elsewhere for products such as buttons, umbrella and door handles, pipe mouth-pieces. Scraps and off-cuts were pulverised for fertiliser.

Although there was keen competition in comb production from some foreign countries, especially France, Germany and the United States of America, ACW combs were exported world-wide and were outstandingly successful at numerous international exhibitions over the years, with many prize-winning designs and at least nine gold medals to their credit. In the 1882 Horners’ Company’s Exhibition held at the Mansion House in the City of London, one of the three judges was the senior partner of ACW, Mr David Stewart. As a result, the company abstained
from competing for prizes although they were deemed to have one of the best selections of exhibits. At the Chicago Exhibition in 1893 they 'carried off the principal honours' for their various products.

Development

"The Aberdeen Comb Works Company Ltd" (ACW Co Ltd) was incorporated in 1899, an amalgamation of the well-known firms of S.R. Stewart & Co, Rosemount Comb Manufacturing Co, and George Stewart & Sons, with the original members of S.R. Stewart & Co maintaining control. By 1906, the factory was efficient and streamlined, with a workforce of about one thousand. Tortoiseshell combs were now rarely made due to the material's scarcity and high costs; vulcanite was out of fashion and went into decline; hoof was no longer a cost-effective material to use. Besides horn, however, celluloid (cellulose nitrate) was becoming an increasingly important substance despite its flammability as it plausibly simulated these former natural materials. But, due to a number of reported accidents in the early years of the 20th century where combs ignited in the coiffure on account of too close a proximity to candle or gaslight, the endeavour to develop a safer product gained momentum. Thus, shortly after World War I they developed a casein material, KERONYX, which was non-inflammable, inexpensive and could be produced in a wide variety of colours. This material was utilised until the introduction of injection moulding methods in 1937 (Figure 5a & b).

Post World War I

From 1921, with improvements in shipping, foreign competition became intensified. This was mainly due to the increased importation of goods from Continental markets which were recommencing their activities following the First World War. From around 1931, Japanese products, including celluloid combs, were imported to Great Britain in ever-increasing quantities and at very low cost, reaching a peak in about 1935. Happily, the Company survived despite such competitive threats and the difficult times resulting from the 1929 Depression.

ACW commenced injection moulding of plastics in 1937, using cellulose acetate moulding powder or pellets and manufacturing a complete range of combs along with other domestic items including eggcups and spoons, bathroom tiles and cutlery trays. They developed another patented material called NUROID for combs in the 1930s, a polystyrene compound, used up to the early 1950s (Figure 5a & b).

Hand cut (hand finished) combs continued to be produced on a small scale, using skills traditional to the days of horn, thus demonstrating that, in an era of moulded mass-production, there was yet a place and a demand for the hand-fashioned article. The ethos of the Company had altered little since its original inception in 1825, always aware of the need to change with the times and to keep abreast of any new technological developments. Horn
combs largely gave way to celluloid and casein, which in turn were superseded by injection moulded plastic combs (Figure 7). In 1956, fabrication of horn combs finally ceased, due principally to increased prices and a declining market in the raw material. In November 1963, a section of the Glasgow firm of Daniel Montgomery & Sons Ltd, having amalgamated with the Aberdeen Company, was likewise forced to enter the plastics field. This company had been producing corks for the wine and spirit trade, and had widened their horizons with injection moulded bottle stoppers, as bottling methods had changed. By 1964, ACW Co. Ltd was the largest injection moulding unit in Scotland. Many other articles were made besides combs and bottle closures, much of which was exported abroad.

The Company’s name was changed to A.C.W. Ltd in 1965, a thriving and successful establishment with an optimistic future. 1961 had seen a minor fire at the comb-works from which they had survived, but a devastating fire in April 1969 virtually destroyed the main production building, due to the combustible nature of the raw materials inside. ‘Despite a grim battle by over 60 firemen, half the buildings of Aberdeen Comb Works Ltd., Hutcheon Street, Aberdeen, were destroyed last night in an inferno of flame.’ Fortunately there were no fatalities among the workforce. Many of the out-buildings were spared and with the loan of some moulding machines from other British companies, production resumed after only ten days, and not a single customer was lost.

In due course, a new factory was built and A.C.W Ltd continued manufacturing with an increasing range of products but phasing out the fashioning of combs. A short time later, they came under the ownership of a Glasgow firm and comb production ceased forever. Although there were plans to redevelop the site of the old comb-works similar to the revived Covent Garden in London this came to nothing and in 1997, the parent company finally closed the workshops in Aberdeen.

A Fresh Beginning
A new company, Albyn of Stonehaven, some 16 miles south of Aberdeen, was established in 1973 by Hugh Smith, the former Managing Director of A.C.W. Ltd, to continue the tradition of comb-making in North-East Scotland. Their manufactured products included a wide range of grooming combs and other articles for the toiletries trade throughout Great Britain and also a small quantity of hand-made horn combs for special purposes (Figure 8). By 2002, however, they ceased the manufacture of combs yet continued to distribute polymer combs that were made elsewhere, possibly Switzerland or India. The company, Albyn Ltd, moved back to Aberdeen in 2004 and continue to trade in products for the toiletries and healthcare industries.

Thus ended the long history and tradition of comb-making in N.E. Scotland.
Bibliography

An account of a visit to the "Aberdeen Combwoks". Chamber's Journal 1851


The Horners' Company's Exhibition. The City Press. 15 October 1882


Trademarks. Taken from the Trade Marks Journal. c1904


Combworks: 53 Workers Redundant. The Aberdeen Evening Express. 2 May 1969


The Horner's Craft on Show. The Herald Scotland. 11 May 1973

Old Comb Works may get a Facelift. The Aberdeen Evening Express. 12 November 1981

Reid, John S. The Aberdeen Combwoks. Mechanical Aberdeen; published by KMP/JSR 1990

McIvor, Jamie. Historic comb firm gives Aberdeen the brush-off. The Aberdeen Press and Journal. 27 March 1997

Comb-making. From the Second Statistical Account of Scotland for Aberdeen on Comb-making. Data unknown.

Aberdeen Combwoks Co Ltd, Aberdeen – incomplete and undated; author unknown