Excerpt from "The Worlds Work at Play"
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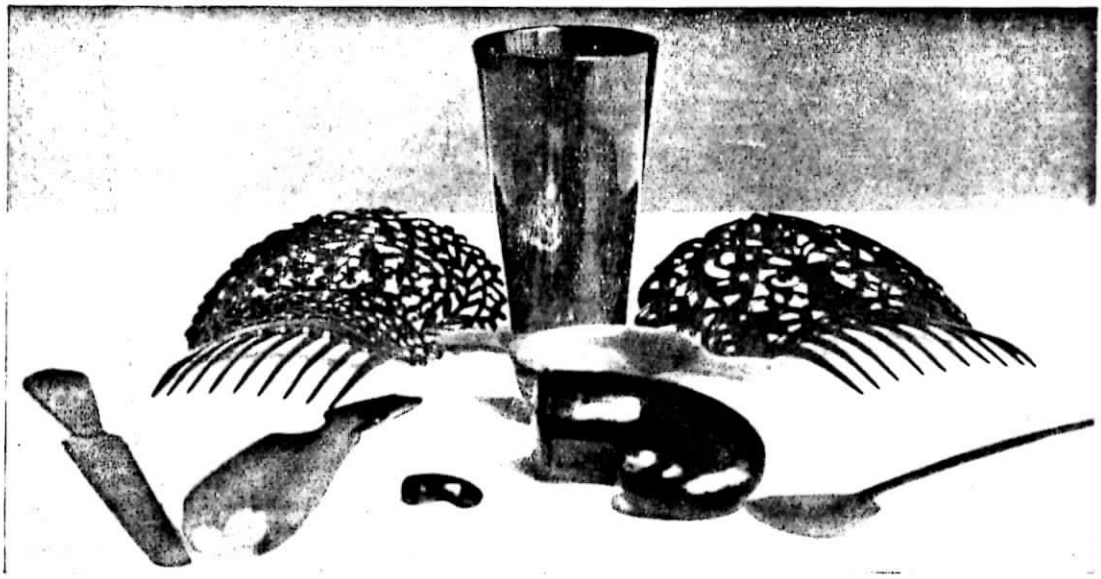
THE PRODUCTS OF A COMB FACTORY

' The photograph shows two large braids (carved fretwork), tumbler, snuff-mull, vinaigrette, spoon, shoe-horn, paper-cutter, and quaich



THE MAKING OF COMBS

TWENTY-FIVE MILLION COMBS A YEAR—ABERDEEN AS THE HOME OF THE INDUSTRY—THE PROCESSES DESCRIBED—WHERE THE HORN COMES FROM—THE SECRET OF SUCCESS

BY

ALEX. INKSON McCONNOCHIE

Illustrated from photographs specially taken for THE WORLD'S WORK AND PLAY

THE origin of combs is one of the many things to which no date dare be fixed. Suffice it to say that the oldest of Egyptian monuments bear testimony to the existence of the comb as an article of everyday use, though the teeth, in their little bit of boxwood, were rude and few compared to the fine horn combs of the present time. One can only imagine a date for the first application of a comb prototype, the place being the Garden of Eden. There, after the first breeze, Eve no doubt fingered her disordered locks, and probably Adam was not above rendering what assistance he could. Alike in shape, size, and material (save horn) some of the modern combs remind us much of the days of the ancient Greeks and Romans. Ladies "in society" were then quite as careful of their personal appearance as those of the present day, their combs indeed reflecting the luxury of the times. Ladies' combs were made of gold, silver, and other metals, but especially of ivory and tortoise-shell. There is a well-known old Scottish ballad where certain ladies are mentioned

"Wi' their gowd kames in their hair;"

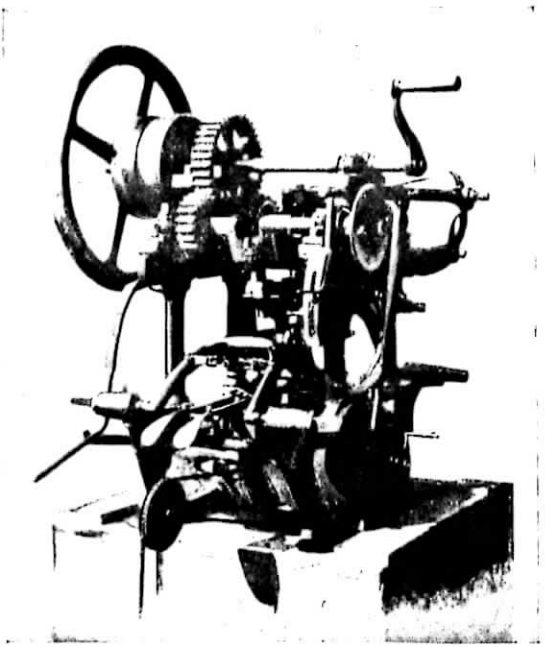
but doubtless gold combs adorned few heads or toilet-tables. It is certain that many women used combs more as articles of adornment than for purposes of cleanliness, and that even in comparatively recent times.

The experience of centuries has shown that there is nothing so suitable as horn for combs,

but the arts and manufactures had made much progress before a now forgotten genius saw for the first time a comb in a cow's horn. Certainly Great Britain can lay no claim to being pioneers in comb-making. By slow steps the art passed from Egypt to Greece, thence to Italy, France, and finally across the Channel to England, and a considerable time elapsed ere it made its way over the Border to Aberdeen, where it by-and-by found a permanent home.

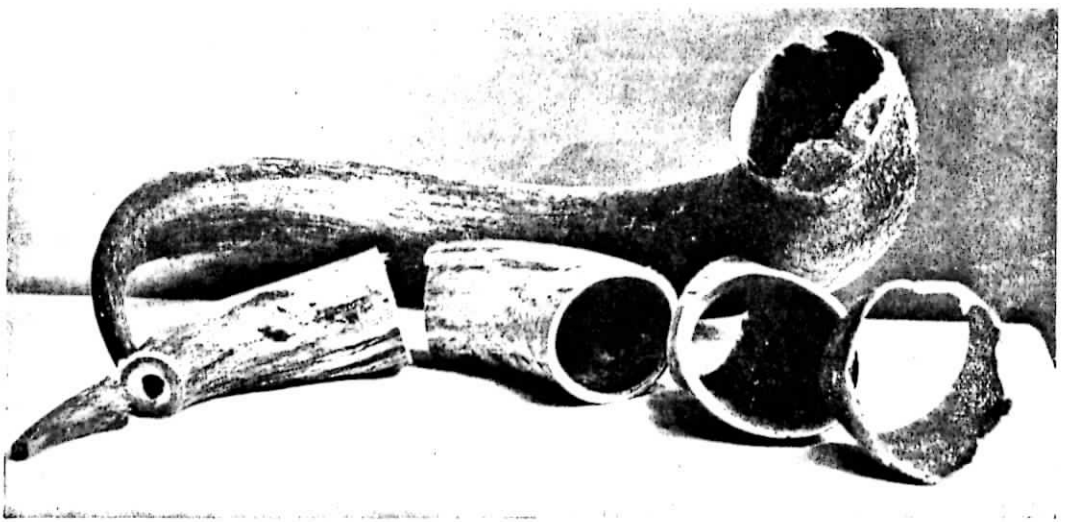
Some time and much energy were required before Aberdeen could successfully boast of being the provider of combs for the uttermost parts of the earth. But in 1878 and 1889 the only medals awarded to the trade came to Aberdeen from Paris, and in 1900 came the Grand Prix itself when the decision of the judges, one of whom was a French manufacturer of combs, was unanimous. The first Aberdeen international success was at London in 1862: then followed Vienna in 1873, Philadelphia in 1876, Amsterdam in 1883, Antwerp in 1885, Edinburgh in 1886, Chicago in 1893, and the Grand Prize at St. Louis in 1904—besides medals at other exhibitions.

Comb-making was revolutionised about 1828. There are no manufactures of the present day more indebted to genius and machinery than that of comb-making. The most ingenious machine invented by Lynn in that year at once displaced the simple saws which till then cut out the interstices between the teeth—that and nothing more. Lynn's machine saved much loss in material, for it made an end of wasteful sawing by cutting combs singly. The new process was aptly called twinning—

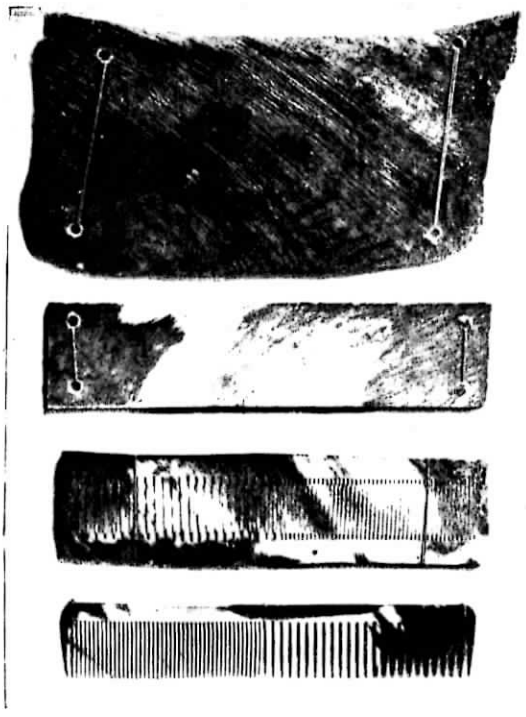


THE MACHINE FOR TWIN-CUTTING

two combs being cut from the same piece of horn, the teeth in the first stage being interlocked. A new era had dawned in comb-making, and among the few who at once realised the momentous change was an Aberdonian, the late Mr. John Stewart, the father of Sir David Stewart, whom many citizens of Aberdeen still remember as a man of singular energy and vigour of character, not only as the founder of the Comb Works, but largely engaged in



A HORN UNCUT AND ONE CUT



LATER STAGES IN THE PROCESS

First is shown a horn plate, cut and flattened from the round. Then a piece of the same – half of the plate. The third item is a pair of combs made from this piece, and the fourth is one only of the pair

developing north-eastern traffic both by rail and sea. He commenced business in Edinburgh in 1825, but five years later Mr. Stewart came to Aberdeen, establishing a manufactory there "with all the latest improvements." Step by step the business developed till in 1899 the Aberdeen Comb Works Company, Limited, was incorporated with a capital of £300,000, swallowing up several smaller concerns. The chairman of the board is Sir David Stewart of Banchory, whose fellow citizens honoured themselves by electing him Lord Provost of Aberdeen; thereafter, Queen Victoria created him a knight, and the University of Aberdeen conferred the honorary degree of LL.D. Aberdeen presented him with his portrait, life size, painted by Mr. Orchardson; competent authorities have pronounced it such an artistic success that it is as often to be seen in English and Continental galleries as in the Town Hall of Aberdeen. Its last peregrination was to St. Louis, where it got the Grand Prix, and, according to the Journal of the Society of Arts, created a sensation. It has also been to Venice and Paris, where Mr. Orchardson again got the Grand Prix for it. A year or two ago, also, the board of directors of the Great North of Scotland Railway appointed Sir David Stewart their chairman. His two sons, Mr. Douglas Stewart and Mr. William Stewart, are the managing directors of the company.

One of the secrets of the marvellous success of the Aberdeen firm lies in the fact that their machinery has never been allowed to become antiquated; indeed, many of their finer machines are their personal invention, and some of them are not to be seen outside their own works. The great Aberdeen firm has effectually demonstrated that the day of small comb-making companies is now almost at an end, but foreign competition, especially from France, Germany, and America is exceedingly keen. As economy in production must never be lost sight of, many labour-saving machines have been introduced from time to time, some of them so human-like in their action that they appear endowed with the power of thinking. Yet the staff of forty hands which found employment in 1830 is now represented by about a thousand. That great increase does not, of course, represent the growth in production for by the improvements in machinery the efficiency of each worker is more than quadrupled. The works cover an area of several acres, the main portion of the manufactory being a four-storey building with a frontage of 325 ft. to Hutcheon Street. While combs are, of course, the staple production, not a few other articles are turned out, including cups, tumblers, spatulas, spoons, tobacco- and snuff-boxes, &c. Varieties and qualities of combs are almost endless; at the present moment one can have choice of about 20,000. The annual output of combs is about 25,000,000.

The home supply of raw material, in the shape of horns, is absolutely insufficient for the demands of the Aberdeen Comb Works. America, both North and South, is much drawn on, as well as Australia; then follow, to some small extent, India, Siam, and the Cape. Combs made from tortoise-shell are practically now a negligible quantity. The price of horn fluctuates very much; new circumstances are continually arising whereby prices are affected. Fashions in ladies' combs are, of course, never constant; sizes vary, and so, therefore, does the quantity of material required. Shorthorn cattle are now being more bred, and so horns bulk less while their value rises. Cattle are also now considered, and made, ready for the butcher at an earlier age than formerly; thus their horns are lighter

and do not go so far in comb-making. Ox horns, being larger than cows', are more valuable; the largest combs are made from them. About 6,000,000 horns are dealt with annually in addition to large quantities of hoofs.

When the horns have been delivered inside the works, the tips and root edges are sawn off. The tips are in much demand for buttons, umbrella and door handles, pipe mouth-pieces, and many other purposes, while all scraps are valuable for fertilisers. The Aberdeen firm obtained a gold medal at the recent exhibition at St. Louis for Keronikon, a valuable fertiliser produced from the waste horns and hoofs.

As in other manufactures, a beautifully finished article cannot be produced without passing through stages which are more or less disagreeable to persons of æsthetic tastes. It is only in the packing and warehouse rooms that the privileged visitor to a comb manufactory can fully appreciate the final result of the various delicate operations to which horn has to be subjected before it is worthy of a place on a fine lady's dressing-table.

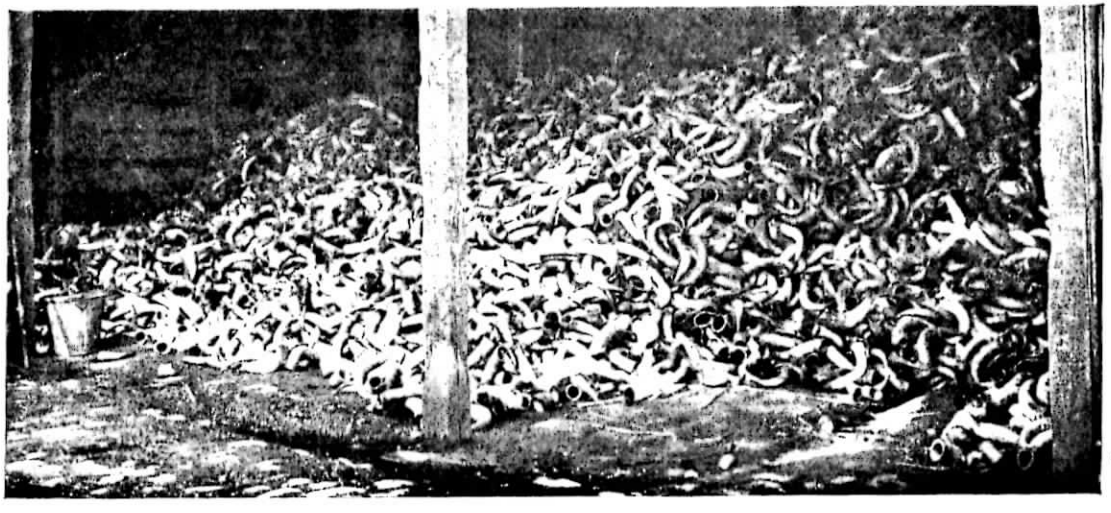
Once the horns have been tipped, they are assorted according to size and quality. The next stage is the opening, a process by which they are flattened and shaped into rectangular plates, and this is carried out in a department with about forty furnaces. These plates are then sent to a large apartment where they are roughly cut into pieces for combs. When sufficiently heated, these pieces are placed on the twinning machines, which are of extremely complex action. Owing to the rapidity and peculiarity of the motion, the process cannot be followed by the visitor's eye, but the result is evident—two pieces of horn (instead of one), each presenting a comb outline. The finest combs, however, where the teeth number sometimes about sixty to the inch, have to be otherwise cut, namely, by little circular saws mounted on spindles which revolve at great speeds, some of them over 1500 revolutions.

The teeth are then pointed, and go through several stages of intricate manufacture according to the quality required. The more expensive dressing-combs are carved according to the fashion of the times, very finely made machines being used for this purpose.

The last stages, previous to packing, are in the scouring- and polishing-rooms. The former operation is performed by numerous wheels revolving at high speeds. In the polishing-room wheels of cloth revolve at a terrific rate, and, with the application of the proper materials, the highest possible polish is obtained. Horn combs are made to imitate tortoise-shell, in which case the horn plates, before being cut into pieces for combs, are subjected to enormous pressure, with the result that a green colour instead of the natural white is produced. After the comb is almost finished in its green state, it is stained with dyes to imitate tortoise-shell.

Some combs are apt to leave the polisher's hands with a bias, and there may be other imperfections; such combs are at once sent back to be dealt with in the proper department, and thereafter the goods are ready to be despatched to all parts of the world, civilised and uncivilised.

MANUFACTURING



HORNS STACKED IN SHED—SIX MILLIONS ARE USED UP EVERY YEAR