

HAIR MANUFACTURES.

HAIR MANUFACTURES. These consist of fabrics woven or felted of various kinds of hair; brushes made of particular kinds of hair; and ornamental hair-work.

Woven Fabrics.—The most important in this country is the horse-hair cloth so extensively used for covering the seats of chairs, couches, and other articles of furniture; this is made of the long hair of horses' tails. As the hair is of such various colours, it is necessary to dye all the darker shades so as to produce a uniform glossy black; this is done by logwood and sulphate of iron (copperas) in the following manner. The hair must first be cleansed and deprived of its grease by soaking it in lime-water for a day; it is then transferred to the dye-vat, which is thus prepared for a hundredweight of hair. Sufficient water to fill a boiler large enough to receive the hair, is boiled with 60 lbs. of cut logwood for three hours, after which it is suffered to cool, when 2 lbs. of copperas are added. This constitutes the bath, as it is called; and the hair, after being removed from the lime-water, and well washed in soft-water, either rain or river, is immersed in it for 24 hours; it is then removed, and again washed, to free it from the superfluous dye, dried, and shaken out ready for use. Perfectly white horse-hair can be dyed various colours, and is well adapted to receive the brighter ones, hence it has been much used of late years to produce ornamental hair-cloths, which are in great request abroad, especially in South America. The weaving of horse-hair cloth is different from that of other tissues, in consequence of the shortness of the hair, which, for the same reason, can only be used for the weft, except in the open or sieve cloth which is only made in small squares for the sieve-makers. Each hair has to be worked singly, and the loom requires two persons to work it. The warp used is either

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worsted, cotton, or linen yarn, generally the last. The hairs for the web are kept wet by the side of the weaver, and are handed to him one by one. He receives them on a kind of hook at the end of his shuttle, the hook catching a knot tied by the attendant child who hands the hair. In other respects, the weaving differs little in its general character from that ordinarily employed for other fabrics. When the web is completed, it is dressed by calendering, which gives it a smooth and glossy surface. It is to be regretted that the popular taste in Great Britain does not turn to the ornamental kinds, which are not only very beautiful, but are durable and easily cleaned. The true crinoline cloth, for ladies' dresses, &c., was at first made of horse-hair, usually the white kind; but the immense demand led to the introduction of Agave or Aloe fibre, which soon supplanted it for most purposes, except the manufacture of bonnets, for which it is largely employed both as a material for the body of the bonnet and also as a trimming. The trade in crinoline trimming in Switzerland and France is large, and considerable quantities are imported into Britain. Horse-hair is twisted into thick yarn, and woven into sacking in the ordinary way, in Anatolia and Roumelia; and cow-hair is worked up into a rough yarn, and is woven into carpets in Germany; and in Norway is made into socks by the peasants. Pig's hair is similarly employed in China; and amongst the natives of the Hudson's Bay territories, dog's hair is used for the same purpose. The goat's hair of Tibet and Persia, and the camel's hair used in weaving, belong rather to the true wools, and will be treated of under Wool.

The difference between hair and wool depends chiefly upon the greater or less smoothness of the surface of each fibre, hence the hairs which are smoothest cannot easily be felted, for if brought into contact, they have no projections of the surface to keep them from slipping away from each other; but some of the hairs proper, by a little preparation, may be so roughened as to fit them for felting. Thus, coney wool, or the hair of rabbits and hares, if properly moistened with a solution of nitrate of mercury, loses its straight and smooth character in drying, and is then readily felted.

The shorter kinds of horse-hair from the manes and tails, also cow-hair and the softer kinds of pig-hair, are twisted into ropes, which, after being boiled and then thoroughly dried in an oven, are pulled to pieces. The hair retains the twist given it, and is then used for stuffing seats of chairs, &c.

Brushes of hair are of various kinds; some are made of the stiff hairs from the backs of pigs, and others are made of the soft hairs of the camel and other animals. The hairs for the first kind are called bristles (see BRISTLES), which constitute an important trade with foreign countries. They are chiefly used in the manufacture of hair and clothes brushes, tooth and nail brushes, house-sweeping brooms, the larger kinds of painters' brushes, &c. The second kind are chiefly employed in the manufacture of the fine brushes or hair-pencils used by painters and artists. The best bristles come from Russia. Besides the camel, hairs are yielded for this purpose by the badger, sable, goat, dog, &c. In both cases, the sorting of the hairs into lengths is a very important and troublesome matter. Generally, it is done by placing the hairs in small boxes (with the tips upward), sufficiently deep to keep them upright; and the sorter then, with nice eye and hand, selects the sizes, by pulling out all the longest, as they overtop the others; then the next size, and so on. This, in the case of the hairs for artists' pencils, is an extremely difficult operation, as great exactness is necessary. Several attempts

have been made, in Russia and in this country, to sort bristles by machinery, and one person has succeeded in doing so with a rude wooden machine. But the really successful manufacture of a machine which can be made generally available, belongs apparently to Mr W. S. Yates of Leeds, who exhibited in the International Exhibition (1862) a machine of great beauty and simplicity, which sorts into ten sizes, and with great rapidity. Most hair-brushes are required to have the bristles or hairs placed with great evenness, so as to form a flat surface outward; but in the case of those which are called artists' and painters' pencils, their value consists in having a fine point, so that the selection of the hairs so as to insure this, is a work of difficulty. The first step is, after selecting a small quantity, to see that all the tips are in one direction; this is usually done in removing them from the skin, a pair of flat-bladed pincers being employed to hold each cut of hairs, whilst the knife or shears severs them from the skin. They are then placed in small shallow tin boxes, with the tips upward; and the box being carefully shaken, and gently struck on the bottom until the hairs have completely arranged themselves in an upright position, they are then picked out, as before described; each size is placed by itself; and the brushmaker, according to the kind of pencil he is making, takes the proper size, and separating a sufficient number, they are placed upright in another little tin box, but now with the root-end of the hairs uppermost, so as to insure the tips being perfectly even, which is further insured by gently tapping the box as before. Fine thread is then looped round the base of the little bundle of hairs, and securely tied; sometimes more than one ligature is thus made; and the brush, now so far completed, only requires its handle of quill or wood, according to its size and character. Artists' pencils being of various sizes, and many extremely small, several kinds of quills are required. These are obtained from several birds, as the swan, goose, duck, fowl, pigeon, lapwing, and even such small ones as the lark and thrush. Previous to receiving the brush, the quills, besides being cut to the required lengths, have to be further prepared by soaking in water, to prevent them splitting, as the thick end of the brush is being pushed down from the wider to the narrower end. They also contract somewhat in drying, and consequently hold the brush very tightly.

Ornamental Hair-work consists chiefly of the human hair plaited into chains, guards, &c., or worked up into various other fanciful devices, as souvenirs, &c. Under this head we may also mention those manufactures of the human hair which are either required to supply a personal deficiency, or to meet the demands of fashion. To the former class belong the wig, the front, and other imitations of the natural covering of the human head; and to the latter, a variety of contrivances, whose mysterious names are only known to barbers and ladies' maids, for the purpose of giving an appearance of greater abundance to the natural supply.

The wig, like all other portions of human attire, has undergone a great many variations in fashion. In the present day, the great object is, in the first place, as far as possible, to imitate nature, and deceive the eye; and secondly, to produce wigs of extreme lightness—a full-sized peruke rarely being more than two or three ounces in weight. A full head of hair, from a young woman's head, will sometimes weigh five or six ounces. There are two heads of hair in the South Kensington Museum, which are in the raw state as imported, and weigh together 11½ ounces.

The chief portion of the hair used in Great Britain

is received through French dealers, who collect it from Holland and Germany, as well as from the various departments of their own country. The light colours are usually obtained from the former countries, and the dark shades from Brittany. This does not arise from the circumstance that these countries yield the finest heads of hair, but because the poverty of the people causes its sale to be a matter of importance, and the peculiar fashions of the country head-dresses render its loss of less consequence.

The wholesale price of long hair is from 30s. to 400s. per lb., and the peasants of France alone supply 20,000 lbs., of the value of £40,000. The average import, during four years from France, was 14,000 lbs., of the value of £28,000. Besides the imports from France, which chiefly comprise the darker colours, a considerable quantity comes from Germany, usually of light shades.