THE MANUFACTURE OF OSTRICH FEATHERS.

The chief source of supply of ostrich feathers, the manufacture of which into "plumes," "boas," "tips,"

1. STRINGING THE FEATHERS TOGETHER FOR THE DYE.

"pompons," "trimmings," and the other odds and ends of decoration so dear to the feminine heart, affords employment to many thousands of operatives in this city, is the ostrich farms of Cape Colony. A few of the very finest feathers are brought from Egypt; and of late years the ostrich farms of Southern California and Arizona have contributed a small share to the general market. Ostrich farming, introduced into this country by Edwin Cawston, of South Pasadena, Cal., is a comparatively new industry in California, and

3. SIZING AND TRIMMING.

at first the feathers supplied to the market from this source were below the average. Of late years careful breeding and a more careful selection and care of the birds have produced a marked improvement, and to-day the feathers received from California are fully up to the standard.

The feathers are received by the manufacturers in New York in bundles of one hundred. The first step is to open the bundles, separate the feathers and tie them by their stems on strings, three in a piquet, ready for dyeing, Fig. 1. In the dye-house the strings of feathers are first washed in soapsuds made from common washing soap. They are then thoroughly scrubbed on an ordinary scrubbing-board, such as is used by washerwomen. Next they are put in a vat of red dye, Fig. 2, in which they are allowed to remain for four hours. After they have been taken from the vat, they are placed in a bath of black dye, in which the feathers are left usually for twenty-four hours, though the time may vary somewhat according to the quality of the goods. The dye vats, it should be mentioned, are heated by steam to a temperature of 150 degrees to 180 degrees Fah. After the black dye, the feathers are given a finishing brushing and scrubbing. They are then taken to a drying-room where the strings of feathers are hung up and exposed to a drying temperature of about 150 degrees for a period of six hours. As soon as they are dried, and before they are taken from the drying-room, the feathers are thoroughly thrashed out upon a board, the object being to thoroughly open up the flues and reproduce the feathery effect which is natural to the ostrich feather. It will be seen that the process of black dyeing is tedious and costly. Color dyeing, as it is known, in which the various tints such as light blue, pink, cardinal, etc., are given to the feathers, is much more quickly done, the whole process taking less than one hour.

Plumes and Tips.—After they have been dried and thrashed out, the feathers are cut off the strings and laid loosely in boxes and carried to a number of girls, before each of whom there is a wooden board graduated in inches, Fig. 3. The feathers are laid on these boards and sorted according to their size. They are then trimmed, the stems being shortened by taking off the rough, undesirable portion, and the head of the feather trimmed off.

As the feathers are finished they are laid in little piles between vertical sticks according to their size. After sizing the feathers are graded according to their excellence, and put together ready for sewing.

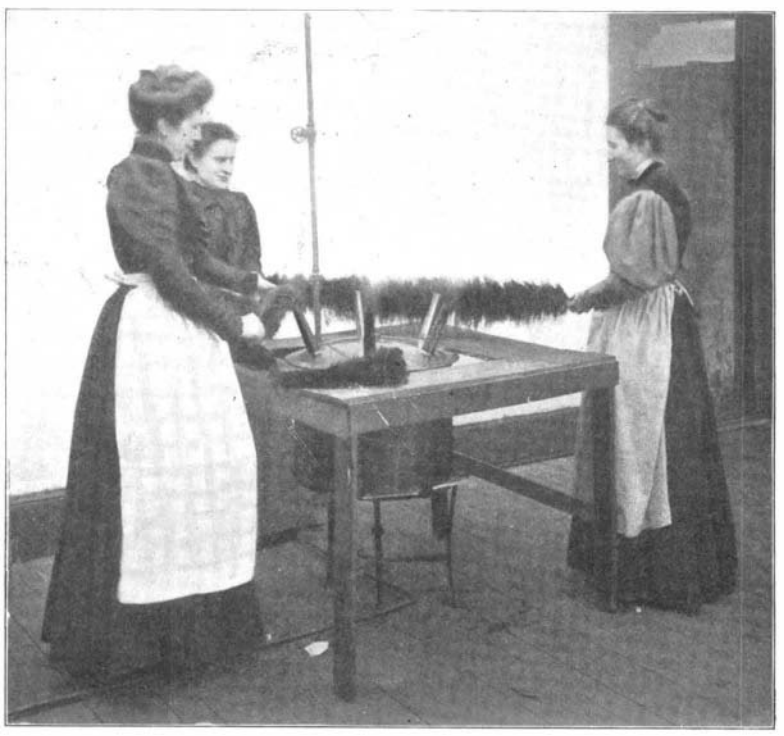
A single ostrich feather, unless it be of very exceptional quality, does not have a sufficient number of flues to give it the mass which constitutes one of the beauties of a good feather. Hence, it is customary to place several feathers above one another and sew them together into one. To do this, however, it is necessary to remove the greater portion of the quill. The first sewer splits the feather in two, a process which is known as "parrying;" although in some cases, instead of splitting the feather, it is customary to slice off the quill. The ordinary grades of plumes contain three or four ostrich feathers, while the finest have five or six feathers. After they are assembled one above the other the feathers are stitched along the stems at intervals of an inch, the outer feather of all having the stem left intact and the others being sewed down upon it. The feather is now "stemmed," that is to say, an artificial stem of wire is sewn to it, and then it undergoes the important process of curling, as described below in connection with the manufacture of boas. The last work to be done upon the plumes is that of "bending," which consists of turning over the head of the feather so that the flues are heavily massed.

2. DYEING THE FEATHERS.

Feather Boas.—In the manufacture of feather boas the process is practically the same, with the exception that instead of the feathers being sewn down upon one another, they are sewn into continuous lengths of from one up to three yards, Fig. 4. The string of sewn feathers is then twisted above a steam kettle, as shown in our illustration No. 5, the object of the steaming being to render the flues flexible for the next process, which is that of curling. The curling

4. SEWING A BOA.

is done by gathering up a few flues at a time and drawing them over the blunt edge of a curling tool, whose blade is shaped something like a gardener's pruning knife; the flues as they are drawn over the blade are pressed down by the thumb, and although the



5. STEAMING A FEATHER AND TWISTING A BOA.

process looks very simple, as a matter of fact great skill is necessary to secure the desired curl. This is really the most expert work in the whole process of the manufacture of ostrich feathers, and the girls who are engaged in it, working on piece work, make in the dull season from $15 to $20, and in the busy season from $40 to $50 a week. The plumes are curled in the same way as the boas, some of them being curled over the stem, and others curled plain, or in the ordinary way.

Tips are manufactured in the same way as plumes, with the difference that the ends are more completely bent over, and the feathers are wired three in a bunch.

Pompons.—In the manufacture of pompons the feather is split so as to render it very pliable. It is then curled into a deep French curl, put together into a circle and tied with silk, an aigrette being placed in the center.

The feathers as they come to the manufacturers in the raw state are worth from $1.50 to $125 per pound, according to the quality. In the finished state they are worth from $7.50 to $144 per dozen. The cost of the finest feathers has been considerably reduced during late years, for only ten years ago they used to cost as much as $150 to $200 a dozen. At that time, however, feathers were not sewn or bent, and a single plume of the same mass and size as a high-priced sewn feather was very costly. The illustrations accompanying this article show the manufacture of feathers as carried out at the establishment of J. A. Stein, of 54 to 58 East 9th Street, New York city, to whom we are indebted for courtesies in the preparation of this article.

The Municipal Council of Paris has asked the Prefect of the Seine to forbid the throwing of paper streamers in the coming carnival, on the ground that they injure the trees as well as dirty the streets.