MAKING HEAVY PAPER.

FROM SORTING, THROUGH PURIFYING VATS, TO ROLLERS.

How the Rags Are Cleaned—Many Baths Are Necessary to Prepare the Pulp for the Sheep Rollers That Bend the Bile of Cloth, Called Stock.

"What's that peculiar smell?" is the first question usually asked by strangers on visiting the East Side when the wind is blowing from up the river. No wonder they ask, for the odor is some one between overpowering, and becomes thicker as one approaches Fifth avenue on Main street. There may be found the source from which the smell emanates—the Lowell paper mills.

Inside the once is not so bad, and a person clad in garments not particularly valuable can spend a very pleasant half an hour looking over the machinery and following the wisps of straw and rags, of which the paper is made, from the hopper into which it is first poured until it comes out in the shape of paper—tough brown paper on the other end of the mill. Here three grades of paper are made, the finest being wrapping paper. Next comes a coarser grade that is used for building purposes, while the last and coarsest of all is the tarred paper.

The first step in the careful sorting of the rags and straw. This is all done by hand by women or girls, on tables with coarse wire bottoms, which allow much of the dust and dirt to fall through.

It is necessary to remove from the mass all pieces, however small, of metal, bone, rubber and leather, and also to dredge as much of the dirt as can be got rid of. When the sorting is finished the mass is taken to a gigantic hopper and dumped in. It falls down a long chute into the boiler room, where it is given its first washing and cutting.

THROUGH THE BEATING MACHINES.

This beating machine looks like a tank, oblong in form, through which water is constantly running. In the center of this tank is a huge knife, through which the pulp must pass several times before it is drawn off into the second beater, where the knives are finer and the water cleaner.

Through the wires of the beater the mass, looking more like thick mud, is forced, being torn, cut and macerated more thoroughly until it would be hard telling what the original parts of it were. Through five of these machines the stock, as it is called, goes, being chopped finer and finer all the time and getting cleaner and cleaner as it nears its journey's end.

After leaving the last beating machine, where clean water is forced upon it as fast as the dirty water is drained off, the soft, slushy mass is drawn off into large vats in the adjoining room to allow the chlorine to bleach and soaking. When it comes from these vats it is of a light gray, readily soft to the touch. Now a handful of it thrown against the wall it would stick there until scraped off.

It is now what is known as "half stuff" ready for the paper machines, and is generally emptied into "stuff chests" and more clean water added. Now it is kept in constant agitation, in order that it may be thoroughly mixed with the water.

From these chests the pulp passes through a series of boxes and vats, all the time being more and more diluted. Then it passes through a ten foot cylinder, the bottom of which is a wire cylinder covered with fine wire. This cylinder is hollow, and a pump inside pulls the water in, while the pulp remains spread upon the surface of the cylinder, which is rapidly revolving.

THE PULPING PROCESS.

It passes under a heavy roller, which flattens the pulp out into the shape of paper. But when the sheet—if sheet it may be called—is next seen, issuing from this cylinder as so an endless blanket, it is too fragile to handle.

After going over a felt roller on the blanket it passes to another roller, where it leaves the blanket and then starts out upon its trip alone. In and out through dryers and hot rollers it goes, becoming tough and dryer. The strips are so yet very ragged, but this is remedied at the end of the rollers, some twenty-five in number, where the paper, now hard and dry, passes between knives which trim it to the proper width.

From these knives the paper passes to a large upright machine, where it is subjected to immense pressure and wound into rolls, ready for delivery to the hand saws or builders. The tarred paper is prepared in the same way up to the time it leaves the first roller. Then, instead of going to the upright machine, or presses, it passes down through a tar bath. After being well dipped it is put through the pressure and then winds into rolls.

The earliest known attempts at the production of an article similar to the paper of modern times was made in Egypt many centuries before the Christian era—some writers affirm 2500 years B. C. The oldest manuscript in existence is on papyrus, and is supposed to bear date 2200 B. C.

HISTORY OF PAPER MAKING.

The lower part of the stem of papyrus plant is, under the reach skin, composed of thin layers of great tobacco paper. These be layers are placed side by side, with edges overlapping, and on being subjected to pressure become a sheet of considerable strength and tenacity. This rude kind of paper was used by the Egyptians for many centuries, and seems to have met the wants of the consumers until about 450 B. C., when parchment was used for books and valuable documents.

Toward the end of the First century the Chinese had, it is believed, begun to manufacture paper from rags and other fibrous stuff, by what process is unknown. Two or three centuries later they were using cotton fibers for the purpose, and the art was either introduced or discovered by others, and in 705 A. D. paper was made from cotton at Mecca.

The art was introduced into Spain by the Moors, and as it was first discovered that fibers and cotton rags were more suitable for the manufacture of paper than the raw material, owing to the hardness of the fiber being partly converted by wear and tear, making the reduction to pulp less difficult. From the Twelfth century Spain appears to have been the principal paper producing country, fully nothing second, in 1690 the first paper mill in England was built at Hertford.

About the end of the Seventeenth century the manufacture in England received an impetus from the immigration of French refugees, who introduced the improvements of the French manufacturers. The art of grinding by kaires owned a cylinder was invented in Holland during the Eighteenth century.—Minneapolis Tribune.

A Story.

"I like that young Hicks," said Ethel's father. "He's the kind of man that doesn't know any more than I do."

"Yes," retorted Ethel's mother. "But do you think a young man who knows as little as that will get on in the world?"—Harper's Bazar.

It was S. S. Cox who declared that if Air force could be utilized which is wasted by the cows of the country in switching their tails we would have power enough to run the world's machinery. Acting on some such thought as this, perhaps, the cow has now come forward who proposes to utilize the electricity in the cats of America, and make them do the electric lighting of this country.

LONDON'S WOMEN REPORTERS.

Some of the English Females Who Have Become Known by Their Pen.

One of the most clever of the article contributors to such papers as the Queen and the Lady's Pictorial is Miss de Grassi Stevens, of New York, whose sister is married to the member for Southampton. Her pictures, together with a three column account of her home in American antiquity, appear in one of the weekly papers. The correspondents in London of some of the largest of provincial papers are also women, and in two instances the wives of members of parliament, whilst an occasional story finds of the heaviest matter in a weekly review is said to be the young daughter of an English nobleman, who can present the men who make her head with an income of £20,000 a year.

Of the actual women reporters, I have so far only some scores about half a dozen. Of these the most conspicuous perhaps is Mrs. Crawford, the heroine of the famous Dilke divorce case. She is a singularly bright and well informed woman, and it is said that she wrote the first interview ever published in The Pall Mall Gazette.

She is a pretty and stylish looking young looking woman, and among the successes of her pen are the instructive conversations which she managed to elicit from Canon Farrar, Cardinal Manning, General Booth and many other men who make it their aim in life to alleviate the troubles of the poor. Mrs. Crawford also receives regular commissions for all sorts of odd work, even to repairing cases in police courts, and she does her work so cheerily and unobtrusively that she has made many friends, and overcome the very strongest prejudices in their persons against the admission of feminine reporters to their circles.

Another hard working female reporter is Frances Low, since of the office of The St. James' Gazette. She does not get any work on her paper, but she supplements her salary by contributing gossip to The Star, The Pall Mall Gazette and some of the smaller women's papers. Although she is a very pretty woman she signs herself so cleverly that in reality of Hungarian birth, to her father is a Hebrew gentleman from Prague of the name of Lowe. The children are only some years old, and she knows how to dress herself by clipping the "e" from their name.

Strange to say, however, one of the most bitter writers against the Hungarian Jew is Miss Low's sister, of The St. James'. She is a young looking woman, with the bluest eyes and soft, fair features of a daughter of Israel, and she must be often seen working out her notes in one of the busy crowded broad stage which abound in London.

The most prominent, however, of London women reporters is Marie Bolton, a second little fat sharpshing of a woman, who has been rattling up Fleet street and the Strand at all hours of the day. She manages to make a good deal of money, particularly as she is Mr. Sand's chief assistant on The Sun, of Sunday. She is not more than twenty-five years of age, but she is full of assurance, and has more than once succeeded in obtaining news where men have failed miserably.

In a general way, however, London's women reporter is either a very loud and obtrusive woman or a very shabby and unfashionable female. She wears her coat cutlasty in the air, and passes a Criterion before the gaudiest animal has time to realize it has been there. Nothing escapes her eye or her eye—now she is female, and if ever the new journalism, or, as it is called here, American journalism, becomes popular in England, it will be the female, not the male, reporter in London who will make or wear it.—London Cor. New York Press.

The Children's Teeth.

It becomes mothers, from the moment that their children begin to eat solid food, that the children begin to eat solid food, that they should be very careful in the matter of meat, eggs, fruit, bread and puddings of the unleavened sorts, and as little pastry, fine flour bread, and confectionery as possible. It cannot be that they may at once begin accusing the material for sound sound teeth—which come under any circumstances, to be lost, but which under healthy circumstances go without long waiting on the order of their going. It is equally necessary to see that the food agrees with the child, and that it is not of a kind easily digested, then the cause of its lamentation will rise and injure the teeth, and the herbal blood vessel and by infliction will make diseases of the gums, also begins to the teeth, and create some sensibility in the nerves to pain and to heat and cold.

Alternations of heat and cold, by the way, have also been blamed for the teeth to fall; particle food, the delicate enamel being destroyed, so every other violence is, to the laws of contraction and expansion, results in the loss of the teeth,