

CHICAGO.

When one visits New York, he thinks that the bustle in the streets and the activity that every one displays in business during the day cannot be surpassed; yet Chicago offers a still more extraordinary

over which pass the workmen and over which runs the railway. Without a guide, one could never find his way in these immense structures. Mr. Cudahy, the superintendent, was good enough to give me the necessary permission, and have me accompanied by a young

the less rapidly. The chain from which the victim is suspended rolls along a horizontal rail through the intermedium of a pulley. The hog thus slides into the hands of his butcher, who, almost naked, and covered with blood, plunges a large knife into his throat. The blood flows in a long stream, and the animal no longer cries, but one sees the last convulsions of his agony. The butcher, with a slight motion, then slides the slaughtered hog along the rail and seizes another beast, and so on. He can kill about seven a minute, or five hundred an hour. One cannot gaze upon this scene of butchery without a certain feeling of horror. The cries of the animals and the streams of blood make one experience a sensation of disgust and an undefinable un-comfortableness. Yet, when I returned the next day to sketch at leisure, I was surprised to find that this feeling had already diminished. The butcher came to talk with me during a resting spell, and I was astonished to see this man, still covered with the blood of his victims, and with scarcely any clothing on, had a genteel and mild face. He reservedly asked me a few questions, and when he found that my sketches were for a French scientific journal, he spoke to me absolutely as would have done a well-informed and intelligent gentleman. His assistants appeared to be like him; they surrounded me, and asked for some details concerning the abattoirs of Paris, and then concerning our great city itself. These American workmen are decidedly not like ours; their education is superior, and they made me forget that I was in blood and in the midst of unfortunate victims.

The hogs, with cut throats, and suspended as I have just described, afterward disappear under a wooden compartment and enter a trough of boiling water (Fig. 2). Here, men provided with long pikes submit them to a preliminary washing. A sort of curved grating of the width of the trough next receives each animal, and, making a half-revolution, deposits it upon a marble slab. The hog is now again hooked to a chain, which carries him to the machine for scraping his skin (Fig. 3). Here, wheels placed in every direction scrape and scratch the animal's hide until all the bristles are removed. After this operation, the absolutely naked hog is carried by the chain to other marble slabs, where workmen wash him a second time under a heavy stream of water.

After undergoing these different operations, the hog is hung again by one foot and run along a rail to a hall where his head is cut off, and the entrails, tripe, etc., are removed. These parts of the animal's body are carried to rooms set apart for pork-butcher's meat. Next, the hog is washed for a third time, and is finally carried into an enormous hall, where he is suspended from the ceiling. In this vast depot there is room for 10,000 animals. The hogs are finally placed in refrigerators, where they remain for two or three days without corrupting, being under the action of a constant

temperature of 38 degrees Fahrenheit. The hogs are next taken from the refrigerators in order to be cut up by the butchers. The work done by these men is interesting, and in the hall in which they operate wonderful activity reigns. These men cut the animal up

spectacle. In the principal streets, State Street among others, the number of vehicles of all kinds is wonderful. The trainway cars, always filled with people, follow each other in close file. To one observing them, it seems as if they were attached to an endless chain, that was taking up and throwing out a crowd of busy passengers at every moment. Pedestrians move about amid all this, and complete the interesting spectacle of a city that appears to exist for work only. On going toward Chicago River, on whose banks stand the grain elevators, the spectacle becomes still more remarkable. The steam boats mingling their smoke with that of the gigantic establishments, the number of small boats crossing the river at every moment among the merchant ships, and the crowd walking over the bridges give one a sort of vertigo.

After seeing the streets, the most interesting visits to make in the city are to the stock yards or cattle markets and the abattoirs annexed to them. A few figures will give a real idea of this immense market. In the different pens of which it is composed, there is room for 25,000 beeves, 100,000 hogs, and 22,000 sheep. There are special compartments, besides, capable of holding 500 horses. To form the sides of these wooden pens, it took 29,520 feet of joists and boards. The total area occupied is one square mile. Each pen is separated by avenues designed for the traffic of the public and the owners of the cattle. Numerous inclined planes are raised on all sides, in order to allow of the easy descent of the animals from the cars to the pens, or to give them access to the abattoirs where they are to be killed. The animals are brought by rail from Texas, Pennsylvania, Ohio, and other States. The spectacle offered by this host of nearly 150,000 animals, bellowing and lowing in all keys, and the moving about of the people, who seem lost in the numerous detours formed by the sides of the pens, is one that can be found only in a city of the United States.

It cost \$3,000,000 to erect the stock yards buildings, and new additions are being made to them every day. It takes 300 watchmen to look after this truly prodigious establishment. Of the abattoirs, the most extensive is that of Armour & Co. The size of this establishment can scarcely be realized at first. Built entirely of wood, and doubtless gradually, no one has ever thought of making a general plan of it. All has been constructed in haste, and according to the needs of the moment. It is a true labyrinth of sheds and enormous halls that communicate in various ways by passages, staircases, elevators, and suspension bridges,

employe into every recess of his wonderful establishment. It would have been impossible to be more agreeable and obliging to a stranger than he was.

On entering the abattoirs, one goes first to visit the hall where the hogs are slaughtered. The animals,

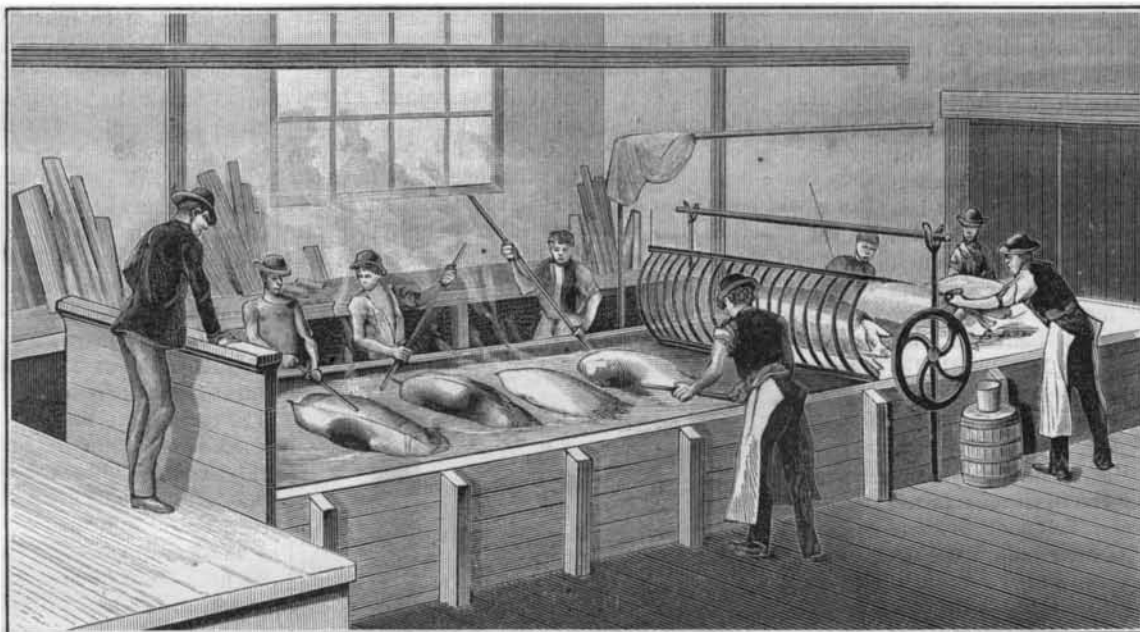


Fig. 2.—HOGS UNDER TREATMENT IN A TROUGH OF BOILING WATER.

one by one, enter the compartments shown in Fig. 1, through passageways made of planks. One man seizes them by the hind legs, and fastens to one of the latter a hook attached to a chain, and another man standing in a gallery above, draws the chain and hog

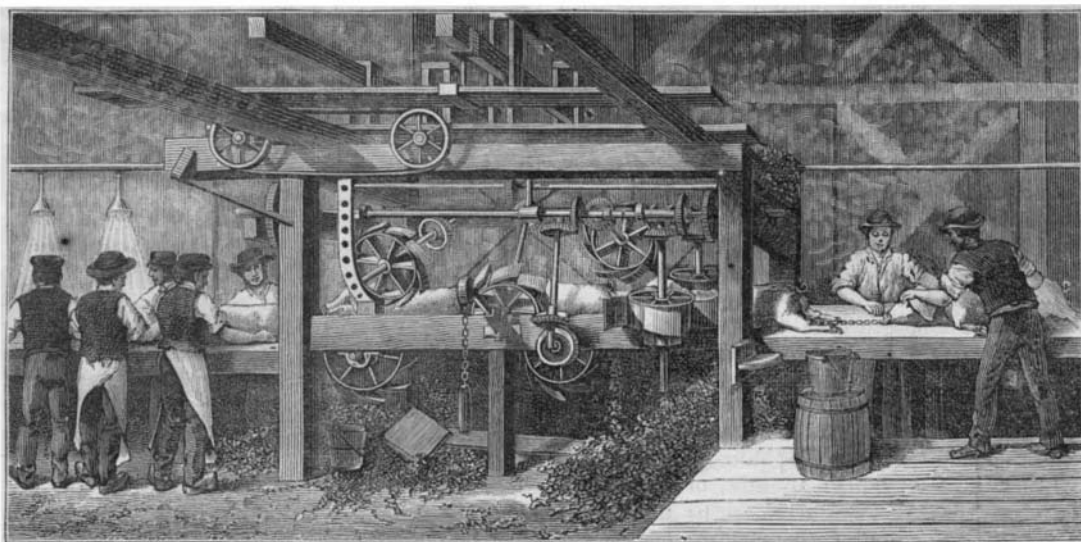


Fig. 3.—MACHINE FOR SCRAPING THE SKIN OF HOGS.

toward him. The animal is thus suspended by one leg, and utters frightful cries. His companions answer with genuine howls, but the business proceeds none

into parts with unequalled skill and celerity. Other workmen carry the cut meat to the different parts of the establishment where it is to be prepared for sale;

the hams to immense smokehouses, other meats to the cellars where they are to be salted, and others to a place where they are to be cooked and packed in tin cans.

My guide afterward took me into all the different shops of the establishment. I thus saw the pork-butcher's hall, wherein steam machines were hashing meat for the manufacture of sausages. The daily production of this sausage meat is 52,000 pounds. Farther along are manufactured the packages into which lard is put. Here thirty young people were sewing bags, and their duty was so pressing that they scarcely had time to see me pass. They make 8,000 packages per day. Then came the shops where the casks are made for packing salt meats. Then there are the kitchens, which are admirable for their cleanness. Here the pots are full of beef, mutton, and pork, which is afterward canned. Small, revolving, ingenious, and delicate machines close the cans and do the hermetical soldering that permits of the preservation of the meat indefinitely after the expulsion of the air. In the rooms, too, where the cans are painted and varnished, the women have to work with activity, and they finish from 35,000 to 40,000 per day.

The beeves do not have their throats cut as do the hogs and sheep. From the provisional pen in which they are placed they are made to walk one by one through a narrow plank passageway. A trap opens, and the animal, goaded by a man standing on a stage outside, enters a compartment in which there is room for but himself.

A skillful marksman, standing upon a stage, aims at the forehead, between the eyes, and with the muzzle pretty close. The animal drops down dead; a second trap is opened, and the victim is dragged to the butchery. From 800 to 900 beeves are killed thus during the day. As for sheep, only about two hundred per day are slaughtered, and these undergo the same treatment as the hogs. Annexed to the establishment there are large structures wherein the skins of these animals are dressed.

In these remarkable abattoirs 3,200 men are employed in summer, and 4,500 in winter; and more than a hundred horses are constantly at work in the various departments. The Armour establishment occupies an area of twenty-four acres. In addition to the large shipments of preserved meats that are daily made to all the States of the Union, meat is sold at retail in a store on the ground floor, organized for the convenience of the inhabitants of the city, who come hither to make their purchases. The establishment sells more than 600,000 hams per year, in addition to the canned meats. From the information that I received, it would appear that the Chicago abattoirs, collectively, export more than 2,500,000 per annum.

It will be seen that the meat trade of this city is immense. The trade in lumber is just as extensive. There are immense yards situated on the shores of Lake Michigan, near the mouth of the Chicago River. There are more than three hundred houses engaged in this business, and these own 150 yards, in which a large force of lumbermen is employed. The fire that destroyed a portion of the city in 1871 ruined many capitalists, but none of them became discouraged.

The sawmills of the neighboring cities of Michigan and Illinois received orders for the material necessary for the rebuilding of the destroyed city, and worked day and night. The ruined individuals set themselves to work again, Chicago rose from her ashes as if by enchantment, and the lumber trade for this reason received an extraordinary impetus. In 1877 there were delivered to the yards more than 1,180,000,000 feet of planks and other timber, and more than 650,000,000 feet were shipped by rail or boat. This trade is increasing in extent, and the circulation of the capital employed exceeds that of all the banks of Chicago, and even that created by the traffic of the grain elevators.

A walk in the lumber yards is very interesting. Here,

one finds himself in long streets skirted by planks piled one upon another, and forming walls 30 or 50 feet in height. Instead of placing the planks in such a way as to form vertical walls, the lumbermen lay them in overhanging courses. Owing to this, the rain can wet only the top planks, which are quickly dried by the wind, and the water drips into the middle of the avenues instead of running down along the wood. On this account, dampness has less action upon the planks located near the earth. The avenues multiply in all directions, and one loses his way between all these walls. One seems to be in a fantastic city, whose houses have neither doors nor windows; while the agreeable odor of the pine wood revivifies him.

From an artistic point of view, Chicago offers really nothing of interest. It has a few monuments, but the only merit of these is their size, and one could not gaze upon them long. The parks around the city are pleasing, and are very gay on Sunday, when the inhabitants come to pass a portion of the day in them. In the artificial rivers and lakes there is a continuous moving about of boats of all sorts. One often sees a frail rowboat filled with young girls of from twelve to fifteen years, who are alone, and who sing as they row.

A taste prevails for ornamental designs in flowers

their lost strength by exercising in any way that they prefer. The idea of this aquatic structure appeared to me to be an original one. It was a great success last year, and the pale faces of the babies seemed to be regaining their fresh colors on this promenade.—*A. Tisandier, in La Nature.*

THE ZARABATANA OF THE MACOUSHIES.

JOHN R. CORTYLL.

Almost the first exercise of ingenuity and skill by the savage is in the formation of a missile weapon suitable to his peculiar needs. Hence it is we see such a variety of bizarre yet effective weapons in use among the savage tribes of the world. Where the conditions are right, a smooth stone projected from the hand may suffice; but the places are very few where the kind of stones, game, and surroundings harmonize so well that no further effort of ingenuity is needed. The rule is that many difficulties must be overcome before a weapon is produced which fits the needs of the man whose very life is at stake.

It has been said that the boomerang is the most remarkable result of savage ingenuity and skill in the making of a missile weapon; but it seems to me that even that singular instrument must yield first place to

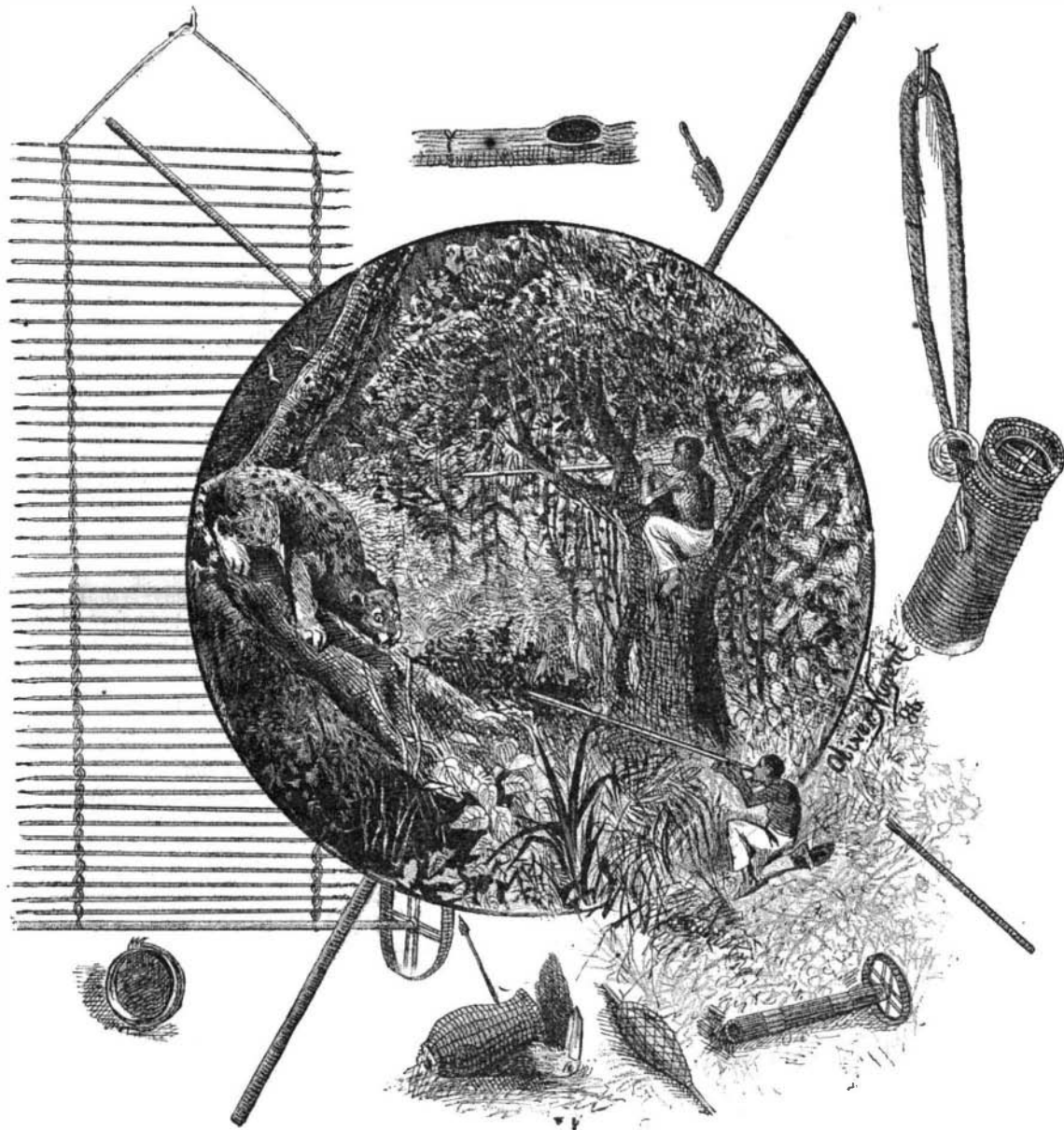
the zarabatana, or blow gun, of the Macoushie Indians of Guiana. The zarabatana and its several accompaniments make a series absolutely unique, in that they so clearly portray the efforts successfully made to overcome a number of seemingly insurmountable obstacles.

Being at once the wettest and warmest portion of the globe, Guiana is characterized by a vegetation so rank as to defy the utmost efforts even of civilized man to control it. Ordinary missiles are of little use in its tangled forests, for scarcely an animal fit for food lives elsewhere than among the branches of the lofty trees. Even the large animals, as the jaguar and puma, lurk in the trees, and are not only wounded with difficulty, but if wounded can easily drag themselves away to some leafy covert, there to die or, perhaps, recover undiscovered. The missile needed is one that is silent and instantly fatal, no matter what the animal or where it is struck. A vital part can seldom be chosen by the marksman, owing to the opportunities for hiding afforded by the dense foliage, consequently the missile must be fatal though it only puncture the flesh. This, of course, involves the use of poison, but of such a poison as will be harmless when eaten.

The steps by which the Macoushie accomplished

his blow gun, with its instantly fatal poison, are, of course, unknown, but it is safe to say that in all their elaborateness they are the work of years.

The blow gun itself is a tube about three-quarters of an inch in diameter and eleven feet long. It weighs a trifle more than a pound and a half. The tube is made up of two tubes, one within the other, the object of the inner tube being to supply as nearly perfect a cylinder as may be, and that is found in a comparatively frail aquatic reed called *ourah*. The outer tube is made of the stem of a young palm tree of the genus *Ireartea*, and known as *samourah*. The only purpose of the outer tube is to act as a guard for the inner tube, and wonderful skill is displayed in the adjustment of these, one within the other. The mouth end of the outer tube is bound with thread made from the agave, and the outer end is secured by means of a seed of the aquiro palm, through which a hole is bored. The seed acts also as a back sight. The fore sight is made of the two upper incisor teeth of the acouchi. The arrows are made from the midribs of the leaves of the coucou-rite palm, and are peculiar from their hardness and weight. They are not larger than a knitting needle, and are bound at the base with a tuft of cotton procured from the tree *Bombax ceiba*. This makes the missile fit the gun snugly, a prime necessity for correctness and strength of flight. The arrow is pointed by drawing it between the teeth of the pirai fish, one



THE ZARABATANA, OR GUIANA BLOW GUN.

in the gardens, and is much more in fashion here than in France.

Gardeners indulge in the most whimsical eccentricities. The people flocked to South Park, among others, to see a large elephant, a camel, a butterfly, and the American flag formed of matted plants and flowers of various colors planted upon the greensward. The great attraction was a large sun dial made entirely of plants, the hours being formed on the grass with plants having red leaves. This dial had been well oriented by the gardener, and the shadow given indicated the hour of the day quite accurately.

These public gardens of Chicago would somewhat resemble our Bois du Boulogne, as they are laid out in the same way, were it not that South Park and Lincoln Park, ornamented with artificial lakes and rivers, are upon the banks of Lake Michigan. Hence a comparison becomes impossible. Lake Michigan is immense; its opposite shores cannot be seen, so great is its width. Numerous steam and pleasure boats ply upon it, and one might imagine himself at the seaside. Through the instrumentality of the Floating Hospital Society, there has been constructed in the lake, at Lincoln Park, a jetty two or three hundred yards in length, provided with porticoes, where sick children may indulge in various gymnastic amusements. Here, accompanied by their mothers, they can breathe the pure air from the waters of Lake Michigan, and regain