

ABATTOIR FOR NEW YORK.

The weekly supply of live stock that finds its way from the States of Indiana, Ohio, and other States of the West, to the New York markets, exceeds 6,000 cattle. The slaughter houses for preparing this supply for market, by order of the Board of Health have been removed during the past season to the environs of the city, yet here they have been a constant source of annoyance, and the community must welcome any plan by which this seemingly necessary evil can be dispensed with.

On Wednesday, the 17th inst., we were present at the formal opening of the Abattoir of the New Jersey Stock Yard and Market Co., located in the village of Communipaw, on New York Bay.

Although a new project in this country, such establishments have long been known in Europe. Paris, of all cities, is best provided with these sanitary institutions, yet the pioneer enterprise of this country equals in capacity the six abattoirs of that city combined.

The systematic division of labor, the use of mechanical appliances to supersede manual labor, and the utilization of what has hitherto been considered refuse matter, are advantages which are attained in this immense establishment, and which must exert an influence that will be appreciated by the public, in lowering the present high rates for all animal food.

The buildings of this company are in direct railroad communication with the whole country, and stock can be immediately transferred from the cars to the pens, where it is examined, bought, and sold. The two principal buildings situated at right angles with each other, are known respectively as the storage and slaughter houses—the former being 540 by 100 feet, three stories in height; the latter 360 by 90 feet, and two stories high.

One of the leading features of the establishment is the humane care taken of the animals previous to slaughtering. The feverish state in which they are taken from the cars is allayed by time, and a plentiful supply of food and water, and the evil effects of meat killed in this diseased state are thus overcome. The care taken, also, to thoroughly warm and ventilate the buildings, is an outlay to the company that will benefit the public health.

The store house has pens sufficient to easily contain 45,000 sheep and hogs, the neat cattle being stalled in other buildings. The slaughter house has hanging room for 6,000 hogs. The process of killing and dressing is speedy and efficacious. On the lower floor 1,200 cattle daily can be readily prepared for market, and even this number can be doubled if occasion demanded, affording a supply sufficient for the New York markets for three and a-half days. The hogs are driven up to the second story, struck on the head with a sledge hammer, thrown into a vat of boiling water, the bristles thoroughly removed, cleaned, and swung off on portable gambrels, in the short space of seven minutes each. The time occupied in dispatching neat cattle is nearly twenty minutes per head. Sheep are handled at the rate of 3,000 daily. Means are employed for condensing the poisonous vapors, and preserving the purity of the surrounding atmosphere. A capacious ice house at the end of the slaughter house will keep the meat fresh during the summer months. We heartily congratulate the much-abused citizens of this city upon the prospect of getting rid of the driving and slaughtering of animals within city limits, a very barbarous custom which has too long prevailed.

The Calcium Light in War.

Science is the servant of war, as well as the handmaid of peace. Brute force in modern wars occupies but a secondary position as an agency in determining results, science and mechanical appliances taking the initiative and leading the hosts. This is finely illustrated in some statements made by Prof. Henry Morton, before the Franklin Institute, of which he is secretary. He says on page 280 of the *Journal*:—

The front of Fort Wagner, toward which the advances of the United States forces were made, was about 700 yards in length, while the approaching saps were confined to a narrow strip of solid land about 50 yards across, the rest of the fort being covered by a swamp on one side and the ocean on

the other. For this reason, when the head of the sap had been pushed to within 250 yards of the fort, further advance was rendered impossible, because the zig-zags would be enfiladed from one side or another by the guns at the extremities of the fort.

It was under these conditions, no advance having been made for several days, and the loss in the trenches being very heavy, that the calcium lights were first tried. Two of these, with jets 1-18th of an inch in diameter, burning about 14 cubic feet of gas per hour, were set up at the extreme left of the second parallel, about 750 yards distant from the fort. These jets were supplied from large reservoirs 15 inches by 8 feet, each capable of holding 250 cubic feet. Both the gases were made on the island in a laboratory established for the purpose, where a detail of 20 soldiers and 12 negroes was constantly employed in the manufacture and compression of the gases for use in various ways connected with the military operations at this point, such as the prevention of blockade running at night, of sending supplies and troops to Fort Sumter, etc.

The two lights above mentioned were so arranged with parabolic mirrors as to throw sectors of light, one over one-half of the fort and the other over the remainder, the field of light being sharply cut by a diaphragm so as not to reach below the edge of the parapet. The effect of this was to make every motion, and each figure on the rebel works, perfectly clear to those in the trenches, while the space below, from the ditch of the fort to the saps and parallels, was hid in impenetrable darkness.

The Union riflemen and sharpshooters, in fact, were able to leave the protection of their works with impunity, while, on the contrary, all the gunners in the fort were exposed to a deadly fire. The consequence was, that, within twenty minutes after starting the lights, the fort, from which a constant fusillade had been kept up ever since the darkness set in, was absolutely silenced, and remained so during the night.

Advantage was, of course, taken of this condition to push forward the sap, and by the end of the second night such progress had been made that the eastern angle of the fort was entered, and the work becoming no longer tenable, was abandoned by its garrison. Of course, every available gun was brought to bear upon the lights from the neighboring batteries, but their dazzling points seem to have been very hard objects to aim at, for though some of the reservoirs were hit by fragments of shell, and still bear the dints so inflicted, the apparatus was never seriously damaged.

A New Method of Generating Gas.

A patent was recently issued to J. H. Connelly, of Wheeling, Va., for the manufacture of illuminating gas by introducing petroleum or its residuum into the retorts, with lime water, when charged with coal, producing thereby more gas with two retorts than can be produced in the same time with three, when coal alone is used in the ordinary way.

By this process, it is claimed, gas can be produced from thirty to forty per cent less than from coal alone. By using one-half coal and one-half residuum and lime water, it requires but one-third the amount of lime for purifying, and the percentage of gas is greatly increased.

This plan can be employed on a small scale for economically generating gas for dwellings or manufactories not reached by the city gas, either in connection with coal, or with residuum and lime water alone, thereby dispensing with lime as a purifier altogether. This plan has been in successful operation for some time in Wheeling, and has been pronounced by practical gas engineers of several cities, as a complete success, on the score of economy, freedom from the possibility of explosion, and superiority of illuminating power.

A New Kind of Gunpowder.

A series of experiments to test the qualities of M. Gustave Neumeyer's new gunpowder have just taken place. The property of this gunpowder consists in its not exploding unless subjected to a strong pressure. Its ingredients are the same as those of the common sort, but the proportions are probably different, a circumstance which, of course, is the inventor's secret. M. Neumeyer makes four kinds of gunpowder, viz: one for ordnance, another for mus-

kets, a third for fowling pieces, and a fourth for mining purposes. The first three are granulated, but the fourth is a very fine powder. A certain quantity of the other sorts were set fire to in the open air; it burnt away with a fizzing noise like that of sulphuric acid dropped on a brick; it emitted a smell of sulphur. Eleven kilogrammes of the compound were introduced into three small wooden barrels, which were then carried with their bung-holes left open into a small house built of stones and roofed with tiles, the door locked and a train fired. A thick smoke first issued from the chimney, and was followed by flames; no real explosion took place, but after a few seconds the roof was thrown down, together with a part of one of the walls, although the three barrels, though somewhat injured, were found entire; so that the above-mentioned effect must be attributed merely to the pressure occasioned by the heat and the gas. In another series of experiments, a cartridge containing 38 decigrams of gunpowder was introduced into a Prussian needle gun. At 150 meters, the olive-shaped bullet went through a target composed of a piece of oak between two pieces of fir, forming an aggregate thickness of about a foot.—*Gabignani.*

The Pneumatic Railway.

One of the four great tubes of the Waterloo and Whitehall Railway is now completed at Messrs. Samuda's yard, Poplar. It is 230 feet long, 12 feet 9 inches in diameter within, and is formed of 4-inch boiler plate, surrounded by four rings of brickwork, which is thoroughly bound by cement, and flanged rings riveted to the plates. Its weight, as it lies, is nearly 1,000 tons. Bulkheads are to be fitted at each end, and its flotation being then about 300 tons, it will be floated up the river a distance of nearly five miles, to its intended destination, above Hungerford Bridge. Here an inner ring of brickwork will be built inside it, and just enough water will be then admitted to sink it upon its piers. Its ends will then be secured in a junction chamber, of which one will be formed at each of the three brickwork piers and at the abutments. In these water-tight joints will be made, and the bulkheads at the ends of the tubes will then be removed. The four tubes will thus form a great sub-aqueous bridge of four spans of 221 feet each, the tubes resting in a channel dredged across the bottom of the river, but being chiefly supported upon massive piers which do not rise even to the river bottom. The coffer dam at the Whitehall end of the line is no less than fifty-three feet deep, probably the deepest ever made.—*Charles Ryland & Sons' Weekly Report on the Iron Trade.*

Postal Money Orders, and Bankers' Drafts.

A clerk of one of the business houses of this city was sent out recently to inquire the price of a draft of \$4,800 on California. He ascertained that it would be three per cent, or \$144. His principal directed him to go to a well-known banker, to see if better rates could not be obtained. The clerk, mistaking the name given him, called on Postmaster Kelley, and was informed that his money could be sent by post-office orders for \$24. This was an unexpected condition of affairs; money orders had not been thought of, but after due consideration the sum it was proposed to send to California was forwarded by these orders. The rate was just one-half of one per cent.

This money-order system is becoming very popular, as it deserves. It is the best and safest way to remit money.

HON. JOHN FORSYTH, writing from New York to the *Mobile Register*, says of a portion of southern Pennsylvania, over which he has recently traveled:—"You ride over a country dotted with farms, groaning under crops, and are surprised at the lack of laborers, and wonder who does all this work. Capital and science have supplied the places of our large gangs of negroes, and the work goes on as if by magic. Thus Pennsylvania, with her three millions of population, enjoys productions equal to the labor of six millions. The same processes would make the South a garden of fruitfulness, the abode of a great population, and the seat of power.

A CORN-STARCH factory at Ottawa, Ill., consumes about one thousand bushels of corn per day.