

Genesis and Growth of the Meat Packing Industry

THE action of the executive committee of the national labor organization known as the Amalgamated Meat Cutters and Butcher Workmen of America in ordering a strike among the employees of all the meat packing establishments in the country, brought with it an enforced realization of the magnitude of the industry. The fact was demonstrated primarily by the widespread discussion which immediately arose upon the food supply.

At the bare mention of stockyards and packing houses the ever ready mental apparatus hastens to suggest the material and its subsequent conversion into food products, and the extensive in many other localities, Chicago is the center of the nation's producing activity of the country. Its Union stockyards are still entitled to a prominent place on a revised list of the seven wonders of the modern world.

The designation "stockyards" conveys little idea of what this enormous aggregation of structures devoted to the preparation of the meat supply actually means. The district includes immense packing houses, an exchange building, banks, two daily newspapers, and the business offices of hundreds of firms, a horse exchange and a hundred and one other interdependent businesses.

Altogether the stockyards proper cover more than 400 acres. Of this space more than 100 are reserved for yardage. The remainder is occupied by the various packing houses and their business satellites.

These stockyards are entered through a massive stone gateway, over the portal of which is inscribed the legend, "Union Stockyards—Chartered 1865."

The entering, the visitor is impressed by the orderly arrangement. Streets intersect at right angles through the blocks of pens, and each one of them has its separate gate entrance. At convenient distances feed and store houses are located, and at suitable intervals immense scales are placed, with little offices beside them. The pens themselves are substantially built, and every detail that can in any way contribute to the expeditious handling of the thousands of animals received daily is carefully provided.

This is the part of the stockyards controlled by the Union Stockyards company, a combination which represents an enormous capital, and around this central inclosure, which is the original foundation of the present overgrown bovine suburb, are the buildings occupied by about forty packing houses. They have been arranged in rather close proximity for the sake of convenience, and they cover at least 320 acres.

Among these vast packing establishments the Armour plant alone covers more than forty acres. This single inclosure furnishes a suggestion of the floor space devoted to a particular branch of the business.

The Armour plant alone has a floor capacity of 125 acres, of which fully three-quarters of area are given to cold storage. At all of the packing houses there are also extensive pens for stock, from which they are removed as required to the main buildings. At Armour's

the pens, which are somewhat elevated, are filled, in a most ingenious manner, with a large, fine looking steel specially trained for the service as a decoy to entice the tired and terrified cattle just unloaded from the cars to

far more profitable to prepare the product in the west, thus paying freight on the finished product only.

Having rid themselves of the necessity of paying freight on nonedible portions of their stock and thereby

the byproducts. In the earlier days of the industry the hide, tallow and grease were used, but the blood, head, feet and offal were destroyed. Finally a moderately profitable way of disposing of the horns was found; they were shipped to Europe and returned to America as buttons and ornaments. No attempt was made to use them for manufacture in this country until about twenty years ago.

A Chicago packer discovered one day

been made. The Armour was pioneer in the manufacture of animal fertilizers. As the soil became exhausted there arose a strong demand for fertilizers, and the supply of Peruvian guano was insufficient and the article itself costly. The Armour imported potash from Germany and mixed it with the dried blood and residue from his rendering kettles. This branch of the packing business has grown very rapidly, and the Armour now have

At the present time the live stock raiser knows that he may feed any number of animals of any grade and ship them with the absolute certainty that he will receive the market price for his product in hard cash. In the old days he often had to wait several days before a market could be found. The demand was limited, and the waste and expense of getting to market were as likely to mean loss as profit.

Though the packing and dressed meat business is commonly regarded as a monopoly, it is not so in every sense of the term. There are actually more than a thousand different firms in the United States engaged in the industry, and the capital now invested is considerably over \$200,000,000. According to reliable estimates, the abattoirs and farmers slaughter annually about 10,000,000 cattle and calves, 40,000,000 hogs and 40,000,000 sheep. That means about 7,000,000 pounds of beef, 5,000,000,000 pounds of pork and 2,000,000,000 pounds of mutton. This makes an annual total of 14,000,000,000 pounds of meat. This estimate, of course, is exclusive of by-products.

The most reliable estimate of the world's flocks and herds indicates that there are 310,000,000 cattle, 600,000,000 sheep, 100,000,000 hogs and possibly 70,000,000 goats. That furnishes 1,050,000,000 edible animals of these four classes to the 1,500,000,000 people in the

genius fertile in expedient made the discovery that the oil extracted from beef suet could be used as a substitute for butter. That resulted in the launching of oleomargarine as an article of commerce. The substance is chemically a butter fat. The animal substance is washed in milk and salted and colored until it may easily be mistaken for the genuine article.

The causes which have contributed to the very marked increase in the prices of meats and meat products in the last few years have been numerous and to some extent unavoidable. It is convenient to make an end of the matter by dividing the responsibility between the cattle barons and the packers, but that expedient falls short of the facts in the case. Various other agencies have been at work to remove meat from the rapidly diminishing list of cheap foods for the people. One of the most potent of them all is the increase in population.

At first suggestion it would seem that the only thing necessary to meet that problem would be increased live stock production. It is a matter of record, however, at least in this country, that with the increase in population there is a corresponding decrease in the raising of live stock. The pastures and ranges are being gradually converted into tillable fields, and the old time methods and prodigality must give place to more intensive systems. The expense of preparing animals for the market is thus greatly increased, and the consumer must suffer in consequence. The principal part contributed by the organized producers of meat products to the modern readjustment of prices was effected by making it impossible for the single individual who could not command large capital to continue in the business.

As it stands, the business as it is conducted in America is among the largest and most important industries in the world. In no other country is there so much hard work done, so much machinery used, so much risk taken. In no other country are so many workmen employed and in no other country is so much capital required to conduct the business.

CHANNING A. BARTOW.

AN ILLUMINATING CRAB.

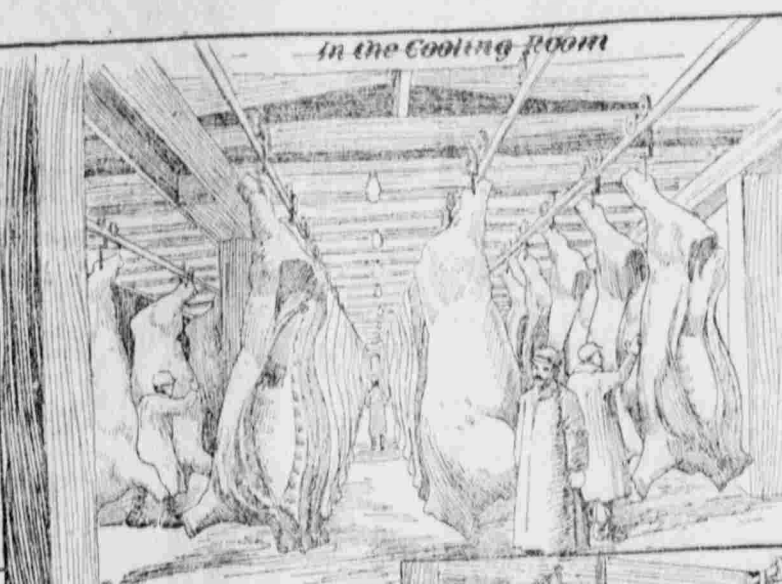
One of the marine curiosities fished some time ago from the bottom of the Indian ocean was a mammoth sea crab which continually emitted a bright white light similar to that seen in the spasmodic flashes of phosphorescent luminosity emitted by the common glow-worm. The crab was captured in the daytime and placed in a large tank containing specimens of fish, nothing peculiar except its immense size being noticeable in the broad glare of the tropical sun. At night, however, when all was pitchy darkness, the crab lit up the tank so that the other creatures in it could be plainly seen.

CAN ANIMALS COUNT?

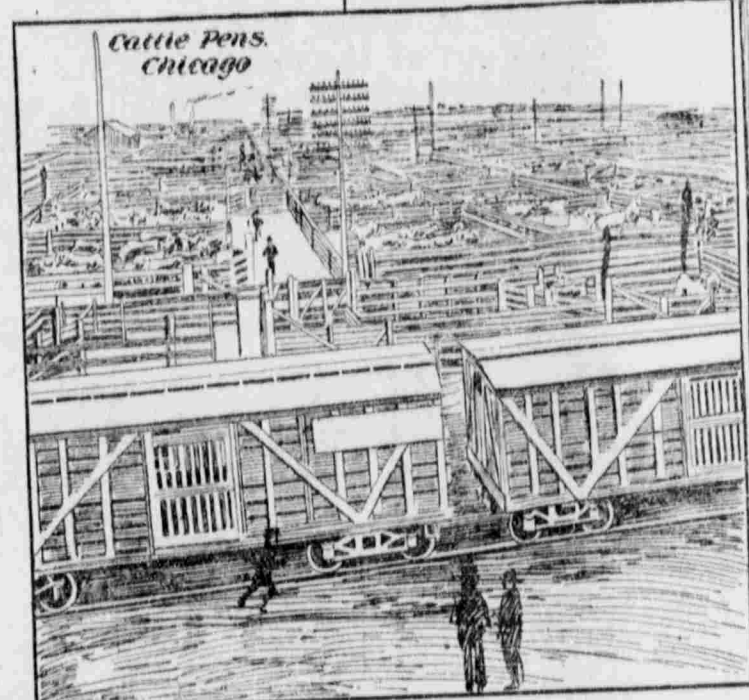
Evidence that animals can count has been collected by Signor Mancini. Horses in the colleries at Hainault have a regular number of daily trips and invariably seek their stables after the thirtieth. A dog remembered the twenty-sixth buried bone a short time after digging up twenty-five. Birds count their eggs; magpies count only to four. The latter is true also of monkeys.



A Packing House Laboratory



In the Cooling Room



FAMILIAR PACKING HOUSE SCENES.



Washing the Beef

enter the inclined passage which leads to the pens. The trained animal walks up the incline as though it were the only proper course to pursue. Disarmed by the example of one of their own kind, the others follow.

It is the universal custom at the stockyards for packers to purchase daily for spot cash only as many animals as are to be converted into meat products on that day. For that reason the buying is done in the early morning, and the score or more of railroad companies that control the belt line which is used in common by them all have established a system whereby all stock consigned to them is delivered into the pens of the stockyards during the night or early morning so that buyers may be on the ground at daylight if they so elect.

Under the old methods of packing meats the entire edible product, with the exception of that sold as fresh meat, was cured and sold in the form of hams, bacon, sides, dried beef, corned beef, etc. The first decided innovation was the general adoption of the process invented by Appert for canning meat. This discovery gave a great impetus to the business and extended the radius of its activity over a vastly increased territory. Then came the refrigerator car. This improvement enabled the packer to ship his product to the most remote parts of the country and to establish depots in all the larger markets, from which the meat might be distributed through the surrounding regions. When refrigeration was extended to ocean going steamers the field widened immensely, and the business assumed huge proportions. For some time after the processes of freezing and refrigeration were perfected it was the custom to ship stock alive to the seaboard and there prepare it for the European market. In time, however, it was made apparent that it was

bringing about an enormous saving, the western packers were able to compete with the world. But although these economies in transportation made the pathway of the western packer a far smoother one than he had ever before traveled, he was not content to abandoning his search for advantage. Some of the leading western packers, notably the Armour, had been experimenting diligently to find a method of utilizing

that a German who lived in the neighborhood of the stockyards was collecting the offal and manufacturing from it an excellent article of glue. From this practical hint sprang the Armour glue plant, which is the largest in the world, not only using all the material furnished by the company's own packing houses, but also buying largely from other concerns. Since then vast quantities of gelatin and isinglass have

commercial fertilizer plants at several points and can hardly supply the demand. All of the cotton growing states depend on this product, and nearly all the winter wheat producing states are now obliged to use it. To illustrate the extent to which this utilization of the formerly discarded byproducts of the meat packing industry has been carried it will be sufficient to state that some of the great companies have established pharmaceutical laboratories, at which many articles of medicinal value are prepared. Peppin is one of the best known of them. The large packing houses have also built up an enviable reputation as manufacturers of standard grades of extracts of beef.

Both the live stock grower and the general consuming public have been greatly benefited by these discoveries.

world. Of this population 800,000,000 are grain eating Asiatics. For the 50,000,000 people in the United States there is an available live stock supply of 192,000,000 animals. That gives an allowance of more than two animals for every man, woman and child in the country. That would be, in round numbers, 500 pounds of fresh beef, 100 pounds of fresh pork and 34 pounds of mutton for each person. This estimate takes no account of edible byproducts, they would increase the per capita allowance with another thirty pounds; so if all the stock in the country were killed and distributed equally each person would be entitled to about 664 pounds.

It would be unfair in this brief account of the growth of meat products to ignore oleomargarine. During the stress of the Prussian siege of Paris a

Cost of War May Be Less Than the Price of Peace

PARADOXICAL as it may seem, it is probably true that the one thing that makes most successfully for peace is the expense of going to war. Diplomacy has been reduced to the dimensions of an exact science on that account, for a campaign of words is vastly cheaper than a campaign of bullets. The sagacious helmsman who steers the ship of state, although he be a man of infinite amor patrie and properly jealous of his government's reputation among the nations, will hesitate when he thinks of the cost of maintaining that prestige by force of arms. If he be a man of deliberate temper and prudent—and every diplomat must be that—he will make a diligent search among the idoms of his native tongue and select therefrom the keenest weapon he can find and be satisfied with that inexpensive form of warfare. But the time comes when words will no longer fight the battles of two disagreeing nations. No matter what may be the cost, nothing short of actual war will suffice.

It is no secret that the finances of neither Japan nor Russia were in a condition at the beginning of their present hostilities to warrant the extravagance of war. Russian fiscal matters were notoriously askew, and Japan had other and better plans for the investment of her savings of so many millions. Whatever may be the outcome, it means long years of struggle and national deprivation. A brief study of the financial history of some famous national struggles will demonstrate that fact.

According to the most accurate figures which can be obtained, the American civil war cost no less than the almost inconceivable sum of \$3,000,000,000. This estimate, of course, is intended to cover more than war expenses. Any attempt to collect and tabulate extraneous losses would be an impossible undertaking. Taking the pension list, compensation for damages, loss of trade and similar items into consideration, the expenditure must easily have amounted to as much as the running expenses of the war, which, according to the late Professor Mulhall, an expert of unquestioned ability, amounted in the campaigns of 1863-65 to \$2,700,000,000. The same indefatigable statistician assessed the cost of the world's wars for the last ninety years at \$15,235,000,000. In this decade less than a century there was an even more stupendous and infinitely more important expenditure than this—the insatiable Moloch of war had demanded the lives of 1,470,000 men.

Although the civil war cost so enormous



THE CAPITULATION OF SEDAN, FROM THE FAMOUS PAINTING BY VON WERNER.

The scene illustrated is one made famous by artists, poets and historians. It marked the collapse of the Napoleonic dynasty, inasmuch as the French people, but a few days after Napoleon III. had surrendered himself and his magnificent army at Sedan, declared the empire at an end and proclaimed the republic. Fighting, some of it quite severe, occurred after the capitulation of Sedan, but the outcome was never in doubt. When the end came and terms of peace were under discussion, Bismarck, the "Iron Chancellor" of Germany, started the world by his demand of a cash indemnity of five milliard (five thousand million) francs, about \$1,000,000,000. In the illustration Von Moltke is shown speaking, while Bismarck is seated at his left.

Crucially in the aggregate, it was not so expensive when the cost per day is considered as the Franco-German campaign and but a trifle more so than the Crimean war. It is only on account of its long duration—extending over a period of four years—that it proved to be the costliest war on record. The civil war lasted 1,500 days and cost \$2,465,000 every twenty-four hours. The

Crimean war, on the other hand, was about 700 days in length, and the total cost is estimated at \$1,700,000,000. The British campaign against the Boers in South Africa has been regarded as one of the most expensive wars on record, but in comparison with the civil war it was a rather cheap affair. From Oct. 11, 1899, to May 31, 1902, the British spent about \$10,000,000 a week

in their effort to subdue their valiant foes. The seven months' war between France and Germany entailed a remarkable expenditure. The French outlay alone amounted to \$7,050,000 every twenty-four hours. That was spending money at the rate of \$50 a second. In addition to this giant outlay, it must not be forgotten, France

was obliged to settle Germany's war bill to the extent of \$1,000,000,000. Besides all that, she lost the disputed territory in Alsace-Lorraine.

The Russo-Turkish war of 1877-78 lasted 322 days and was carried on at a cost of about \$3,000,000 a day. According to the terms of the peace treaty, Turkey should have reimbursed Russia for a greater portion of her war

outlay, but Turkey is a notorious defaulter of her obligations, and it is known that Russia lost at least \$6,000,000 on the transaction. For that by no means insignificant sum, even for a power of Russia's resources, she was permitted to lead her troops to the gates of Constantinople.

When the United States was in her recent conflict with Spain the naval board issued an official notice to the effect that when Admiral Sampson's fleet overcame Cervera's flotilla 7,553 shots were fired at a cost of \$100,000. The expense of defeating Admiral Montijo at Manila was given by the same authority as \$45,000. On that occasion 5,681 projectiles were fired, and it may be said that in consideration of the results the expense was not excessive. It must not be supposed, however, that the war was an especially cheap episode.

There are fewer guards to be seen about the Vatican nowadays than when Pope Leo was alive. Nor is every one hustled out of sight when his holiness passes through the corridors or grounds. The other day Pius X. had occasion to go through the Raphael rooms when they were open free to the public. He was accompanied by a couple of guards and his private secretary, the former making a move hurriedly to clear the rooms. The pontiff is said to have touched one guard on the arm, saying, while he looked about him, smiling:

"Do not disturb the people. If they have the same pleasure in looking at an old man that he has in seeing them it would be a pity to curb their satisfaction."

That war is one of the most costly of national diversions will be made apparent to both Japanese and Russian taxpayers before long. No war ever waged, however—except those frightful internecine outbreaks, like the French revolution, that turn their country into a veritable shambles—is as expensive, on the whole, as is the price of peace.

This statement, of course, applies only to those nations which maintain immense standing armies. M. Bloch, the noted Polish publicist, author of the famous work entitled "Is War Now Impossible?"—the book, he it is remembered, which is said to have influenced the czar to advocate his peace conference scheme—estimated that Europe paid a tribute yearly of \$1,125,000,000, or nearly \$3,000,000 a day, to maintain her military and naval establishments. On the principle that a great army and navy are the strongest factors for the preservation of peace, that tremendous outlay may be called the price of the cultivation of the olive branch.

That this sum is well spent so long as it assists in preserving peace no humanitarian will deny. M. Bloch shows that fact conclusively in his estimate of the cost of a war between Russia and France on the one side and the Triple

Alliance—Germany, Austria and Italy—on the other. In the event of such a conflict, M. Bloch points out, the daily expenditure of the five great powers involved would amount to \$20,978,000. That would mean an outlay of over \$275 a second. If the campaign should be prolonged for a year the total would be the value of about one-eighth of the United Kingdom of Great Britain and Ireland.

ADAM TRUMBULL.

THE KINDNESS OF THE POPE.

His holiness the pope is abandoning many of the conventionalities which marked the reign of his predecessor, and, while, of course, fully alive to all the dignities connected with his holy office, he is endeavoring to dispense with the superfluity of stiffness which has hitherto prevailed.

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When a young Jap has made up his mind as to the maiden he desires to wed his next step is to fasten a branch of a certain shrub to the house of the lady's parents. Should he prove a welcome suitor the branch is cut down and taken in, while if unacceptable it is left to wither and die.

The Jap bridegroom, as in duty bound, offers the most costly gifts he can afford to his bride for their wedding day, but she, instead of treasuring them for herself, gives them to her parents as a small acknowledgment of the care and love they have bestowed on her from infancy.

MUSIC BOX IN A RING. A Wesleyan minister in the north of London possesses the most wonderful ring in the world. In appearance it is an ordinary gold signet ring, but it is, in addition, a perfect little musical box. By touching a tiny spring and holding the ring close to the ear one can hear a sweet hymn tune. By placing the ring on a box the charming tones of this unique ring can be heard all over a large room.

loving a series of dry seasons, produced vines much above the average. French is no longer the world language. This fact is recognized in Saxony, where English is to be hereafter an optional subject in all public schools, on the ground that it is "the most widely used civilized language in the world."

Two new battleships of 19,000 tons will be laid down at Trieste, bringing the number of new Austrian warships up to nine.

Great damage has been done in the Valladolid (Spain) district by a terrible severe hailstorm.

There are fifteen states that surpass Kentucky in the number of their horses, while the average value in twenty-three states is higher than the horses of the Blue Grass State. The horses of New Jersey average \$98.25 a head and of New Mexico \$17.52, the ex-

average value of the horses of the United States is \$193,000,000 worth of breadstuffs abroad last year, an increase of \$6,000,000 over the best previous year.

The Kaiser has become an ardent violinist and practices diligently and exuberantly at every opportunity.

While sitting on a wall teasing some

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