THROUGH THE CHICAGO STOCK YARDS

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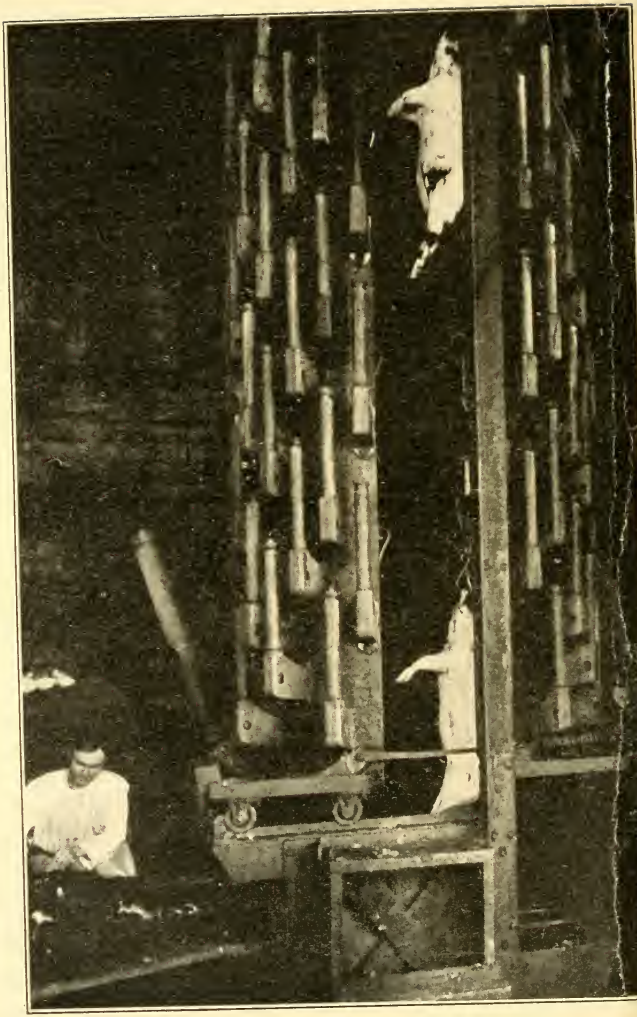

Hog-scraping machine, open. As the hogs pass through on an endless chain, the machine removes the hair.

THROUGH THE CHICAGO STOCK YARDS

A HANDY GUIDE TO THE GREAT PACKING INDUSTRY

BY JOHN O'BRIEN

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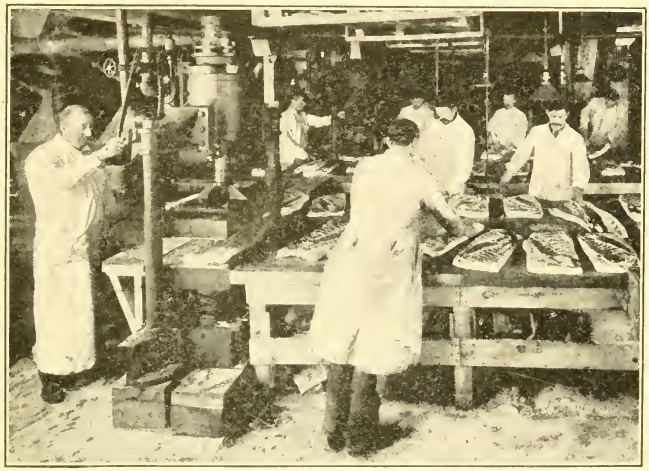

Cutting and shaping the pork sides.

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A busy alley—Daily scene in the stock pens. The sheep houses may be seen in the background.

Through the Chicago Stock Yards

I

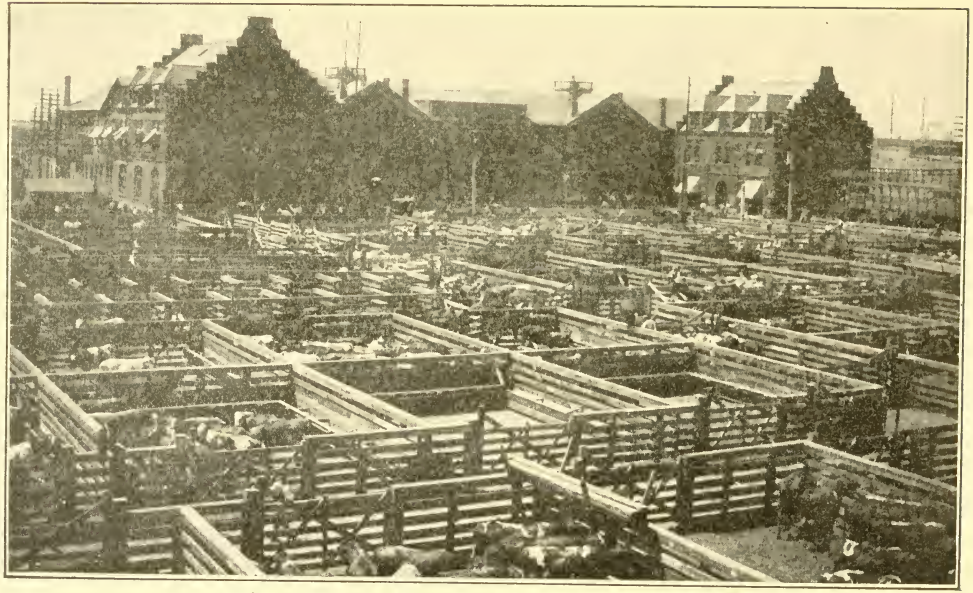
Importance of the Chicago Market

Cosmopolitan, indeed, is the sight-seeing throng that surges through the entrances of the Chicago Stock Yards. Ruddy-faced Germans jostle globe-trotting Englishmen, and the Japanese tourist, invariably armed with a camera, is a familiar figure. Every state in the Union, as well as almost every country on the globe, contributes its quota to the tide of humanity that ebbs and flows here with unfailing regularity, for the world-famed live-stock market enjoys unique distinction.

There are other waterfalls than Niagara, mountains innumerable rear their crags amid the clouds, but the Chicago Stock Yards is incomparable. Wherever civilization has reached, Chicago food products are standard, and that interest should be manifested in the source of supply is inevitable. Chicago has other sights on which to feast the stranger within her gates, but from among them the stock yards and its allied industries, the packing houses, stand out as the chief center of interest. As an exposition of modern mechanical ingenuity, nothing more can be desired. In this sphere the superlative degree of achievement is everywhere in evidence. Not only

is the most perfect system of marketing presented to the investigator, but the choicest beeves, the fattest hogs, and sheep that approach close to the English standard are on view in immense droves that are not to be seen elsewhere. As the spectacle develops from the panorama spread before one viewing the vast area of the stock yards into the devious passages and intricate processes of Packingtown, full realization of the magnitude of the greatest market the world has ever boasted dawns on the imagination. On this premier bourse raw material averaging in value more than a million dollars every business day of the year passes from the hands of the producer to those of the manufacturer, who converts it into many more million dollars' worth of finished product.

Devoid of all semblance of speculation, it is an industry founded on a rock. Pessimists for a decade past have predicted the decadence of Chicago's boasted supremacy as a live-stock market, but such prophecy stands sadly discredited by a constantly increasing volume of business, the inevitable sequence of the location of the western metropolis. To the east is the area of rapidly congesting population; to the west, the fat lands of the North American continent. Statistics show that nearly two-thirds, or 64 per cent, of the population of the United States, is located east of Chicago, while 70 per cent of the live-stock of the country is west of that point. But for the beef and pork furnished by the corn-growing area of the Mississippi and Missouri valleys, the East would subsist mainly on a vegetarian diet. At



A section of stock pens—The exchange building in the background.

Chicago are brought together the corn-fat cattle of Illinois, Iowa, Missouri, Kansas, and Nebraska and the "grassers" of Montana, Wyoming, the Dakotas, and Texas. From the great ranges of the Northwest come in summer vast herds of sheep, either ready for slaughter or available for the purposes of the feeder, assuring an all-the-year-round supply of mutton. And every farm in the corn belt contributes its quota of the hog crop, a source of meat supply without which not only America but Europe would be in sorry plight.

The Chicago packer has been credited with using every part of the hog but its dying squeal, but this hardly describes his achievement. He has made pork, in its many manufactured forms, the most palatable and popular of meats, the evolution of the trade from the mess pork stage being a story in itself.

And in this great mart man's best friend, the horse, has no inconspicuous place, $20,000,000 worth of equine property changing hands every year.

Since 1900 a yearly average of more than 16,000,000 animals has found a cash market at Chicago, the aggregate value exceeding $300,000,000. Since 1865, when the present market was opened, about 82,000,000 cattle, 4,500,000 calves, 245,000,000 hogs, 78,000,000 sheep, and 2,500,000 horses have been handled. In forty-one years, from 1866 to 1906, the value of all live-stock sold in these yards is conservatively put at $7,500,000,000. In forty-one years the total number of horses, cattle, hogs, sheep, and calves handled in and out is approximately 525,000,000 head.

II

Development of the Stock Yards

Rome was not built in a day, nor was this great market the development of a few seasons. History records that Chicago's live-stock trade had its inception in the sale of a few hundred cattle driven in from the surrounding country to supply the garrison at old Fort Dearborn.

Not until railroad development began was the trade put on a broad foundation. The completion of railroad communication with the Atlantic seaboard and the spreading of pioneer lines from Lake Michigan toward the Mississippi brought about a revolution. Prior to that time the beef crop of central Illinois was driven by easy stages eastward to Buffalo, Pittsburg, and Philadelphia. After this Chicago became the western entrepôt of the live-stock trade. Early market facilities were crude, and those available in the manufacturing process even more so. Half a dozen stock yards were located in various sections of the city, and cattle for which there was temporarily no market were grazed on the surrounding prairie. Mess pork and barreled beef were staple articles, and were known in trade vernacular as "sow belly" and "salt horse." As food products they presented a striking contrast to the appetizing meat preparations of to-day.

But out of chaos came order. John B. Sherman popularly known as the "Father of the Stock Yards," acquired, first, the Bulls Head Stock Yards at West

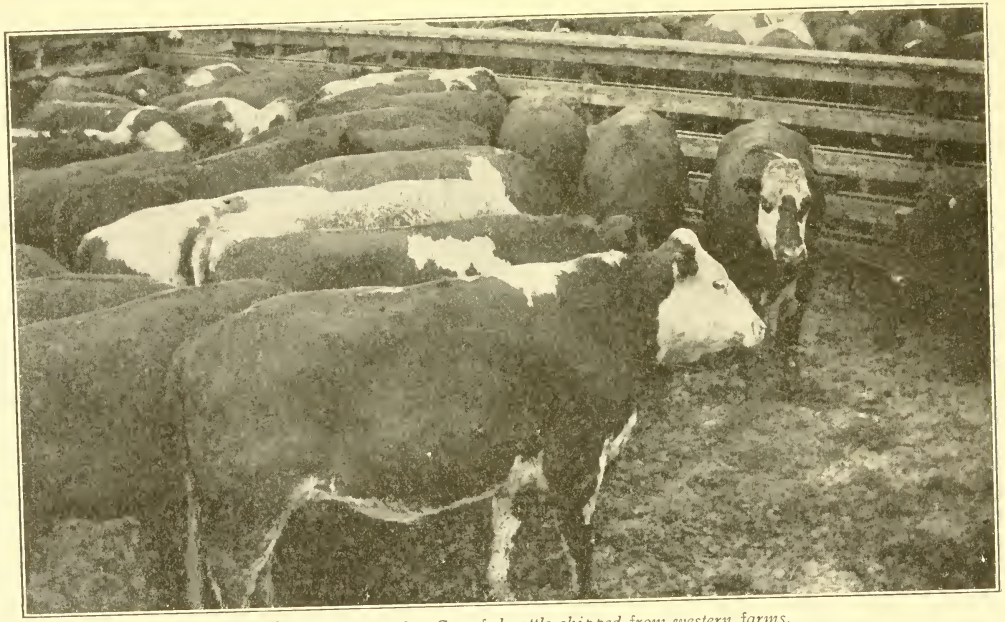
Madison Street and Ogden Avenue, and later the Myrick Yards at Thirtieth Street and Cottage Grove Avenue, preliminary to abandonment of the old system and inauguration of the new. This made possible the present Union Stock Yards constructed by The Union Stock Yard and Transit Company in 1865, and the placing of the live-stock trade of Chicago on an enduring basis.

From that time the live-stock trade of Chicago steadily gained in volume until the original area of the yards became too small to accommodate the business, and double decking was resorted to. It is a counterpart of the process by which the down town business section has been artificially expanded by utilization of the sky-scraper.

With a daily capacity of 75,000 cattle, 300,000 hogs, 125,000 sheep, and 6,000 horses, the stock yards presents some amazing facts as to area and construction. Some comprehensive figures follow:

Yard area	500 acres
Area bricked	450 acres
Length of railroad track	300 miles
Length of streets	25 miles
Number of pens	13,000
Number of double-decked pens	8,500
Number of chutes	725
Number of gates	25,000
Number of commission and other offices	450

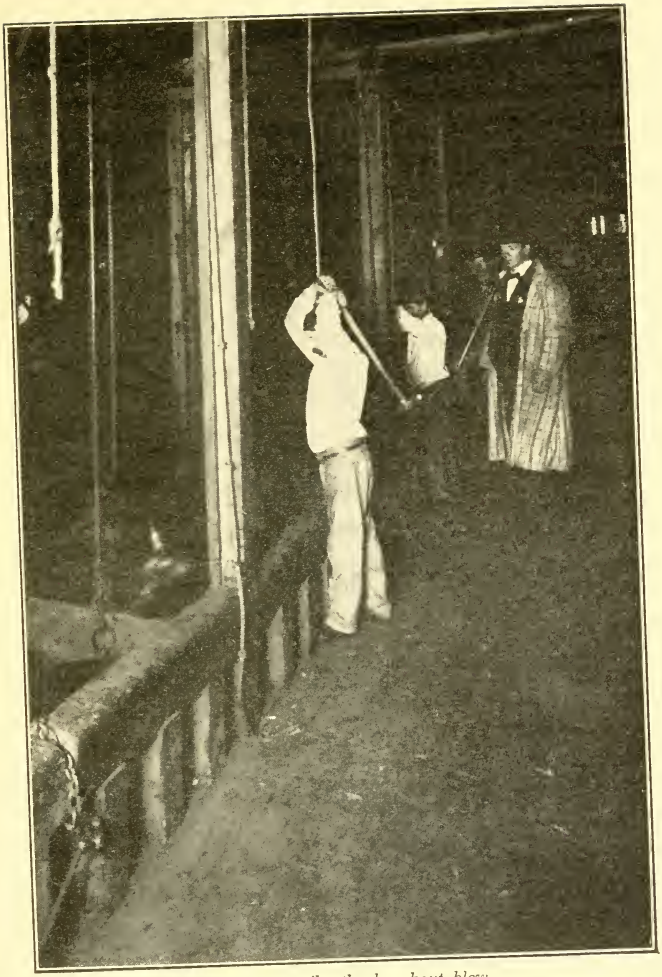
It is a city in itself, as the following facts relative to the water, sewer, and lighting systems indicate:



First day at the yards—Corn-fed cattle shipped from western farms.

Daily capacity of great pumps	8,000,000	gallons
Capacity of reservoirs	10,000,000	gallons
Capacity of water tower	30,000	gallons
Water consumed on hot days	7,000,000	gallons
Length of water pipe lines	90	miles
Length of sewer lines	50	miles
Length of water troughs	25	miles
Number of hydrants	10,000	
Number of artesian wells	6	
Average depth of artesian wells	2,250	feet
Length of electric light wire in service	50	miles
Number of arc lamps in service	450	
Number of incandescent lamps in service	10,000	
Horse power of engines in lighting and power plant	2,250	

It is estimated that 45,000 people earn a livelihood at the stock yards and in Packingtown, and that 250,000 of Chicago's population are more or less dependent on the live-stock industry. As a manufacturing interest it stands head and shoulders above every other in the metropolis. It is the rock on which Chicago's commercial supremacy is built. As it exists to-day Packingtown had no place in the plans of those who laid out the Union Stock Yards. Dressed beef was then unknown to commerce; artificial refrigeration had not reached even the theoretical stage; and the making of the can as a receptacle for food products had not been dignified even as an infant industry. Neither Armour nor Swift were prominent names and



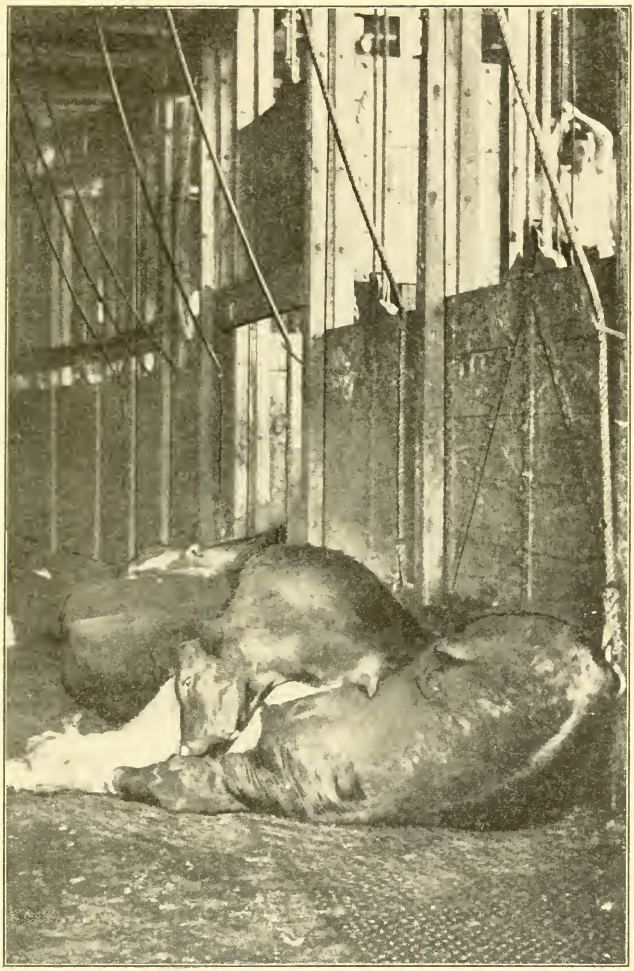
Ready to strike the knockout blow.

nearly every concern then engaged in meat manufacture has since gone out of business.

But the stock yards soon became the nucleus of an ever-expanding group of packing houses, and with the invention of artificial refrigeration and the substitution of the tin can for the oak barrel, the trade was revolutionized in short order. The late Arthur Libby introduced that old standby, canned corned beef, the forerunner of a myriad of palatable preparations; and when the ice machine was installed packing operations were no longer confined to the season of low temperatures.

Gradually the slaughtering interests centered in the environs of the new stock yards and in what is now known as Packingtown, where is employed every known means of working animal by-products into articles of commercial value. Packingtown is commonly regarded as a gigantic abattoir. It is more. Its internal economy exhibits the refinement of human ingenuity. It is here that the interest of the sight-seer is riveted. Lying immediately to the west of the stock yards proper, Packingtown is reached by crossing the yards, every foot of the route being of interest; or by the new elevated railroad, a branch of the south side system.

Opportunities for inspecting their plants are freely offered by the packing concerns. Inspection of the various processes is courted, and the visitor may, under congenial conditions and convoyed by a well-posted guide, examine every phase of packing-house activity, from the felling of the steer or the sticking of the hog to the dainty wrapping of the package of beef extract.



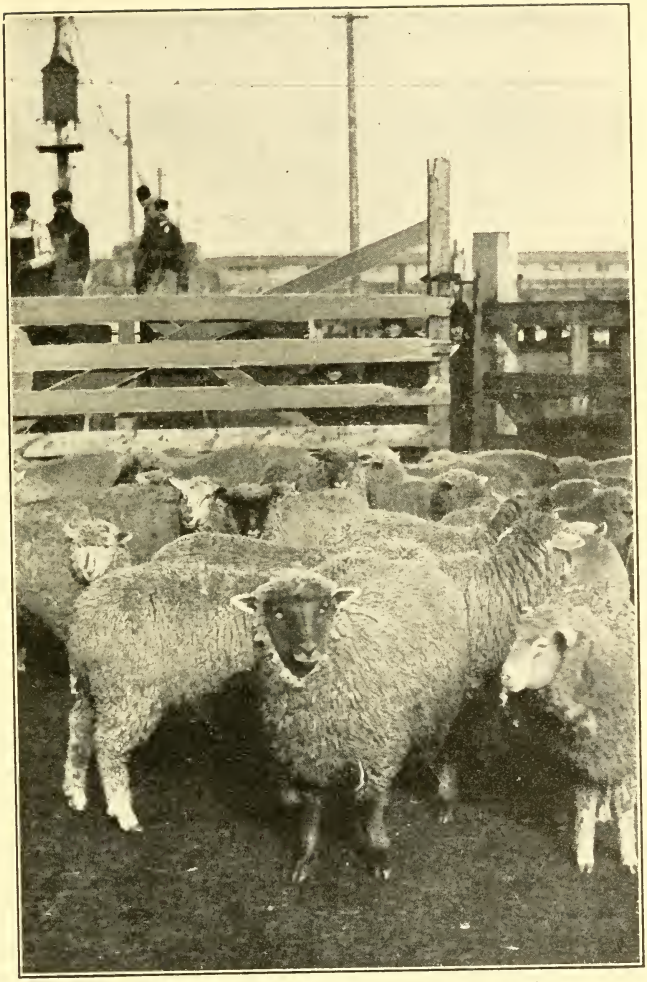
After the knockout.

The various plants in Packingtown are owned and operated by:

Armour & Co.
Swift & Co.
Nelson Morris & Co.
Libby, McNeill & Libby.
Anglo-American Packing Co.
Roberts & Oake.
Hammond Packing Co.
Western Packing Co.
Louis Pfaelzer & Co.
S. & S. Packing Co.
Boyd-Lunham Packing Co.
Harry Boore Packing Co.
Darling & Co.

Important Changes

Radical changes have been made in Packingtown methods in recent years, and there is much to interest the visitor apart from cattle felling and pig sticking, sanguinary scenes that have little attraction for the fastidious. There is machinery of marvelous design, acres of coolers wherein dressed beef is tempered for shipment, and ice machines of capacity not to be found elsewhere. In the vast canneries many an interesting hour may be spent. Here mechanical ingenuity has reached the highest stage of development. Steel arms and fingers convert sheets of metal into cans of various sizes and shapes, fill them with meats, seal, and even label without human intervention. And every stage of the process is under the watchful eye of an agent of the Department of Agriculture, insuring absolute purity.



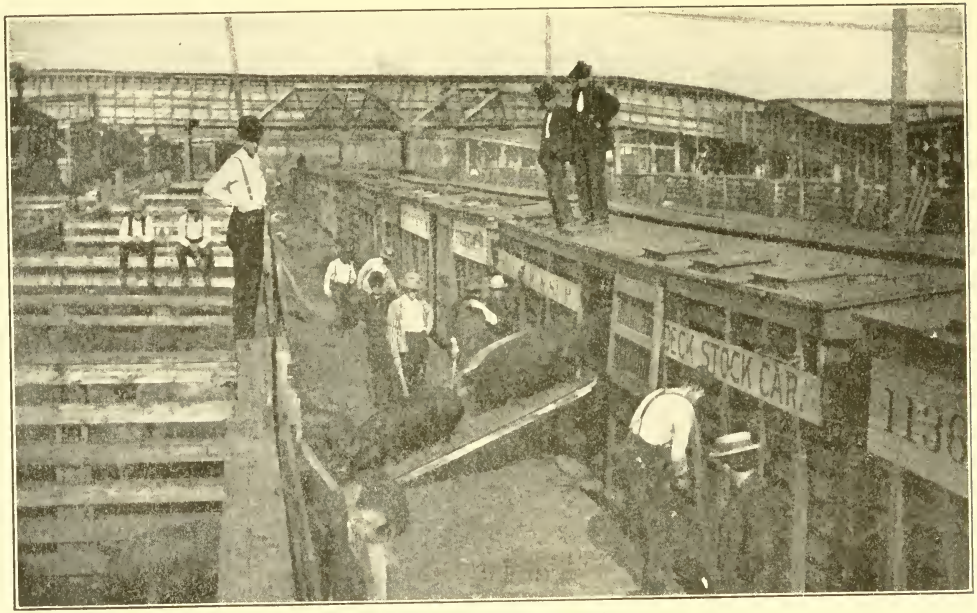
In the sheep section—A flock of prize native lambs.

III

Business Methods

At the stock yards exists a business community as unique in its methods as it is great in numbers. A business often aggregating $3,000,000 in a single day and averaging more than a million dollars for every business day of the year is done by mere word of mouth and without the stroke of a pen. It is no unusual thing for 2,000 carloads of live stock to be unloaded at the stock yards on Monday or Wednesday, the principal market days. Once deposited on the unloading platforms by the railroad company, it becomes the charge of some one of the hundred or more commission firms having offices in the Exchange building, and on these commission men devolves responsibility for selling to packer, exporter, or shipper, as the case may be, and remitting the proceeds to the consignor.

On arrival of live stock, the commission firm to which it is consigned is notified by the Stock Yard Company; the stock is promptly yarded, fed, and watered, and then offered for sale. The bargaining process is often watched with keen interest by spectators. The object of the buyer is to get possession of the stock at the smallest possible cost, while the commission man is animated by a determination to remit as much money as possible to his customer in the country. Usually it is a case of Greek meeting Greek, and current conditions of supply and demand decide which party to the transaction has the advantage. Little time is wasted. A buyer rides up to a



Just arrived—Unloading live hogs.

pen of cattle, for instance, and inquires, "How much?"

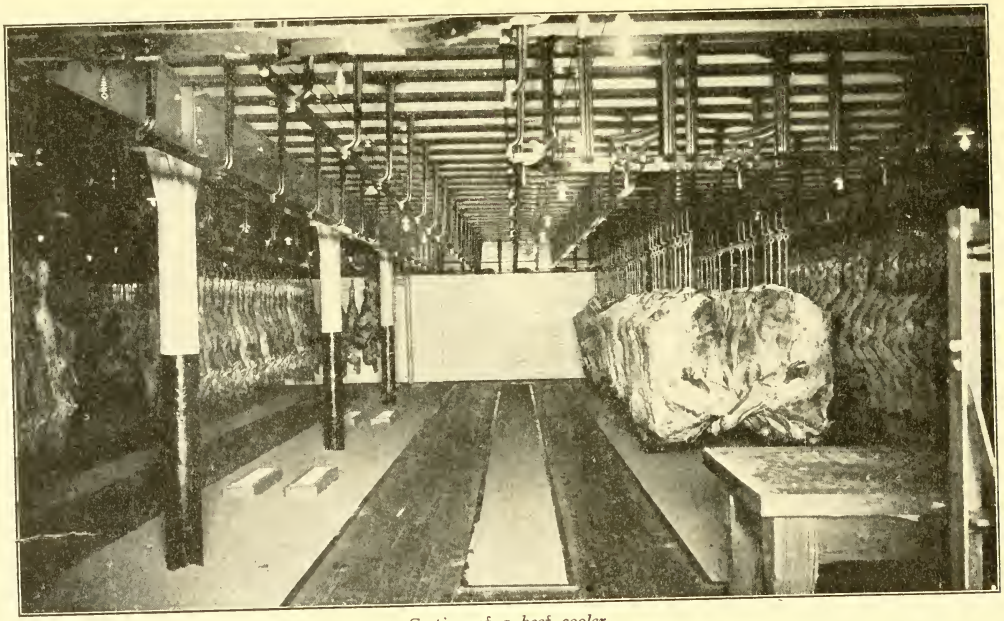
"Ninety cents."

"Give you half a dollar."

"Got a bid of eighty cents on 'em now."

"Weigh 'em at ninety then."

In this case the buyer had an urgent order to fill and lost no time in riding off in search of more cattle. No pencil was used in the transaction nor was the dollar figure in the price mentioned, long experience having taught buyers and sellers whether cattle are of the $4 or the $7 class. When the cattle had been weighed, the salesman marked the price on the back of the scale ticket, and on that notation the buyer settled the account at the close of the day's business, for nothing is done on time or credit at the stock yards. A sale made during any session is closed, by check usually, before 3 o'clock in the afternoon, when trading ceases, or as soon thereafter as possible. Messenger boys carry checks, by the armful, for amounts aggregating many thousand dollars, around the Exchange building, depositing them with the firms indicated. An Iowa shipper consigns a carload of hogs or cattle to Chicago to-day, by 9 o'clock to-morrow morning he will be advised by wire of the sale and the money will be lying to his credit at his home bank. Chicago sends more than a million dollars every day to the country in liquidation of its live-stock bill, and it is a remarkable fact that this seemingly loose method of doing business has never resulted in a single complication. When a buyer rides away after buying a load of stock at "half a



Section of a beef cooler.

dollar," he knows the ticket will be "marked" honestly and the experience of both buyer and seller renders disputes as to the dollar price impossible. The country shipper in turn consigns his stock to the commission man with full assurance of prompt settlement, and, what is equally essential, that he will get every cent his property realizes.

Stock is usually sold on the day it arrives, the earlier the better from the standpoint of the owner, as cattle especially shrink in weight when lying around the yards. Sometimes, when markets are demoralized, it is necessary to carry stuff over, but stale stock is always handicapped.

As indicative of the magnitude of the business transacted, the following figures will be of interest:

LARGEST RECEIPTS OF STOCK IN ONE DAY

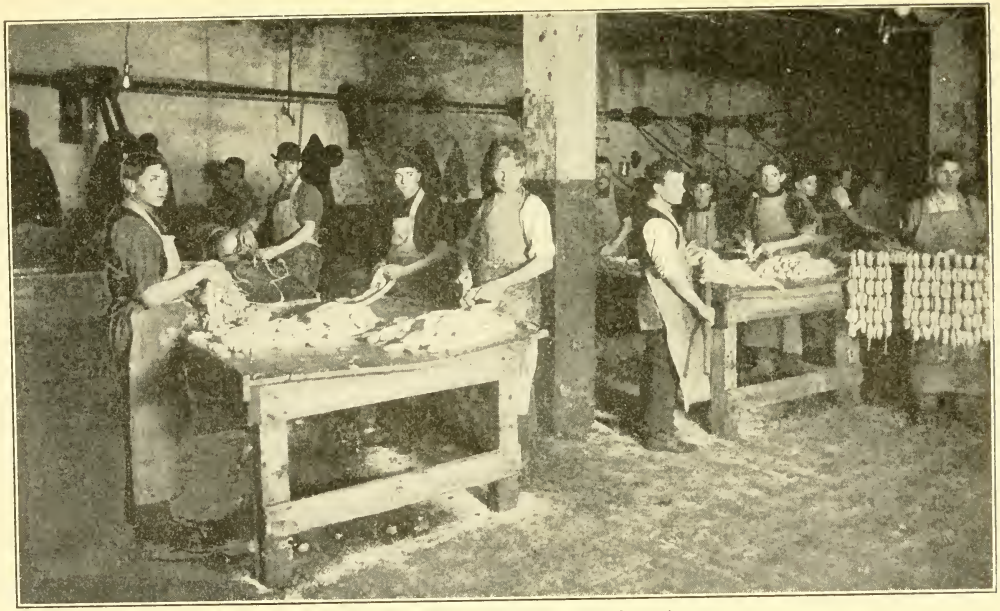
Cattle, Sept. 28, 1903	44,445
Calves, May 1, 1906	9,284
Hogs, Feb. 11, 1895	74,551
Sheep, Sept. 29, 1902	59,362
Horses, March 6, 1905	2,177
Cars, Jan. 11, 1904	3,228

LARGEST RECEIPTS OF STOCK IN ONE WEEK

Cattle, week ending Sept. 19, 1891	95,524
Calves, week ending May 21, 1905	15,910
Hogs, week ending Nov. 20, 1880	300,488
Sheep, week ending Oct. 6, 1906	179,490
Horses, week ending March 11, 1905	4,768
Cars, week ending Dec. 13, 1902	8,474

LARGEST RECEIPTS OF STOCK IN ONE MONTH

Cattle, September, 1892	385,466
Calves, May, 1905	62,742
Hogs, November, 1880	1,111,997
Sheep, October, 1905	690,956
Horses, March, 1905	18,448
Cars, December, 1891	31,910



In the sausage department—Stuffing the casings.

LARGEST RECEIPTS OF STOCK IN ONE YEAR

Cattle, 1892	3,571,796
Calves, 1906	413,269
Hogs, 1898	8,817,114
Sheep, 1906	4,805,449
Horses, 1905	127,250
Cars, 1890	311,557

Four banks, two national and two state, afford financial facilities. Two daily newspapers devoted to market reporting, the *Live-stock World* and the *Drovers' Journal*, keep country operators posted on conditions from day to day.

IV

International Live-stock Exposition

The International Live-stock Exposition, established in 1900, is a series of great annual live-stock shows held in the International Amphitheater and about twenty adjoining buildings at the Union Stock Yards of Chicago, every year during the first week of December. It was established by the live-stock and agricultural interests of the United States in conjunction with the correlated live-stock interests of Chicago for the purpose of encouraging the expansion of the animal industry and the improvement in quality and value of the live stock of the whole country.

There are on exhibition annually at these shows from 6,000 to 10,000 of the finest animals of the United States and from other countries, competing for some 2,600 regular premiums, amounting to over $75,000, besides special prizes, trophies, and badges of honor, which are viewed by 300,000 to 500,000 visitors each year.

"Old Foxy," one of the trained goats that lead the sheep to the slaughtering pen.

This exposition has the hearty endorsement and cooperation of the secretaries of agriculture of the United States and Canada, and of all the agricultural colleges, the agricultural press, and the pure-bred live-stock record associations of both countries. No such object lesson in everything that pertains to excellence in the breeding, feeding, marketing, manufacturing, and distributing of animals and animal products has ever been placed before producers in this or any other country.

The Exposition embraces among its main features the following:

1. A grand breeders' prize exhibition of pure-bred cattle, horses, sheep, and swine, with daily sales of all breeds.

2. A great fat-stock show, surpassing even the renowned annual Smithfield shows of England, in which the royalty and aristocracy of that country take such pride as exhibitors and highly interested visitors.

3. A fine display of draft, coach, and saddle horses, and horses for general use; not as a society show, but as a utility show.

4. A magnificent prize-carload exhibit of fat cattle, sheep, and swine; also a comprehensive feeder and range cattle exhibit, classified by districts.

5. A special agricultural college exhibit, and an inter-collegiate stock-judging contest.

6. An annual corn-judging contest, together with an exhibition of feeding appliances, materials, and methods, sheep clipping, etc.

Government retaining room, where final inspection is made.

7. Slaughter tests to determine the results of different methods of preparing animals for market, and effects of different feeds.

8. An exhibition of dressed meats and meat-food products of all kinds, and refrigerator appliances for preserving and transporting the same.

9. Animal by-products, showing the complete utilization of all parts of the slaughtered animals not directly used as meat foods.

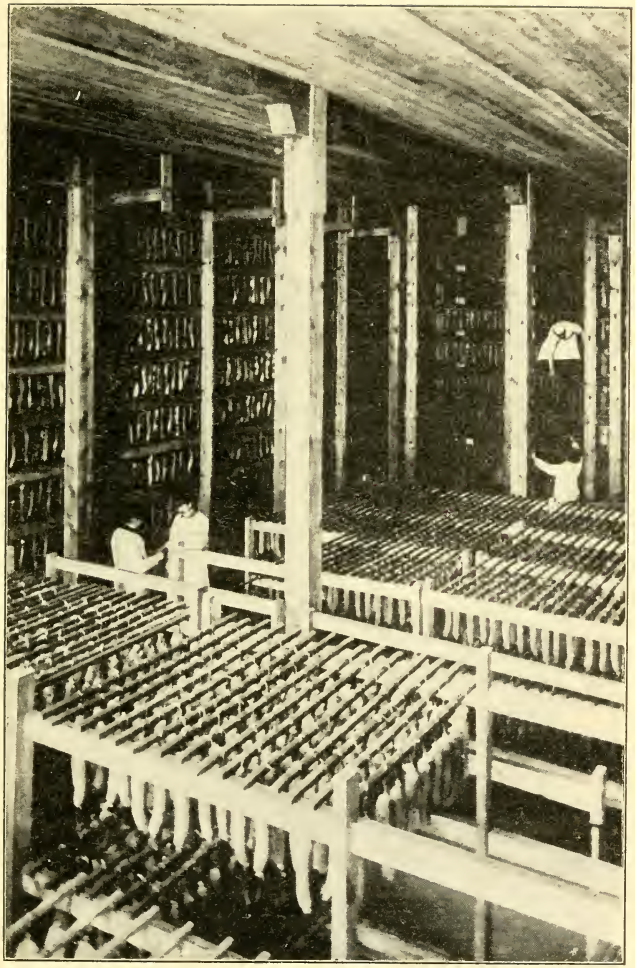
10. An exhibition of packing-house methods and appliances, and Government inspection of meats.

11. Meetings of breeders and stockmen's associations, with able papers and discussions by the foremost representatives of the live-stock interests of the world.

12. A series of brilliant evening entertainments and horse fairs, with music, artistic evolutions, and intricate driving and riding contests in the great arena, and a grand pageant composed of the leading prize winners of the day from both cattle and horse rings.

New International Amphitheater

In 1905, having outgrown the quarters and facilities so liberally provided in the first place by the Union Stock Yard and Transit Company, a magnificent new home was built for the International Live-stock Exposition by the same company on a splendid site extending from 42d to 43d streets on South Halsted Street, at the famous Dexter Park Horse Market, Union Stock Yards, Chicago.

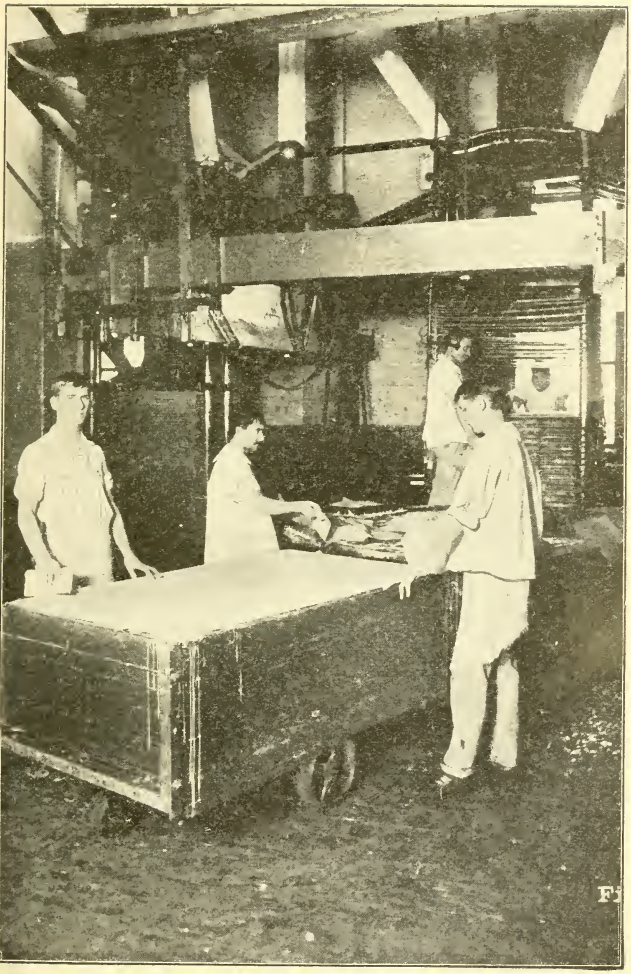


Summer sausage dry rooms. The sausage remains in the dry rooms from 65 to 125 days before it is ready for market.

This great exposition building, officially known as "The International Amphitheater," is the largest structure in the world devoted to such uses. The size of the building is 600x310 feet; its auditorium, 310x200 feet; its arena, 260x100 feet; capacity of auditorium, 10,000 people; total floor space, 243,000 square feet; cost of building, $326,000. It is built of cement, brick, steel, and glass, and is absolutely fireproof. It is warmed by steam pipes at the feet of every visitor seated in the auditorium, and brilliantly illuminated by incandescent, regular arc, and the new beautifully-scintillating blazing arc lights that lend such lively effects to the scene in the arena. The arrangement of every detail is most convenient and admirable for display of the animals, both in their stalls and in the judging and exhibition rings, and no matter what may be the outside weather, comfort always reigns here for man and beast.

Benefits General Agriculture

It is easily demonstrated that these great annual shows of the International Live-stock Exposition are vastly beneficial to agriculture in general; that by encouraging expansion and improvement in live-stock production they contribute directly to increased and improved crop-growing. The reason is plain. The raising and feeding of live stock on the farm enhances soil fertility. Soil fertility is the foundation of agricultural prosperity, and agricultural prosperity is the basis of general prosperity. Live stock on the farm consumes farm waste and converts it into money, and at the same time throws



Filling presses—Oleo department.

back upon the farm added elements of soil fertility which increase its productive powers and its value, while well-bred live stock brings a quicker and larger return for the feed consumed. Hence those farmers who have made first-class stock growing a considerable part of their business are to-day the most thrifty and prosperous portion of the population of the mighty and prosperous United States.

V

The Chicago Horse Market

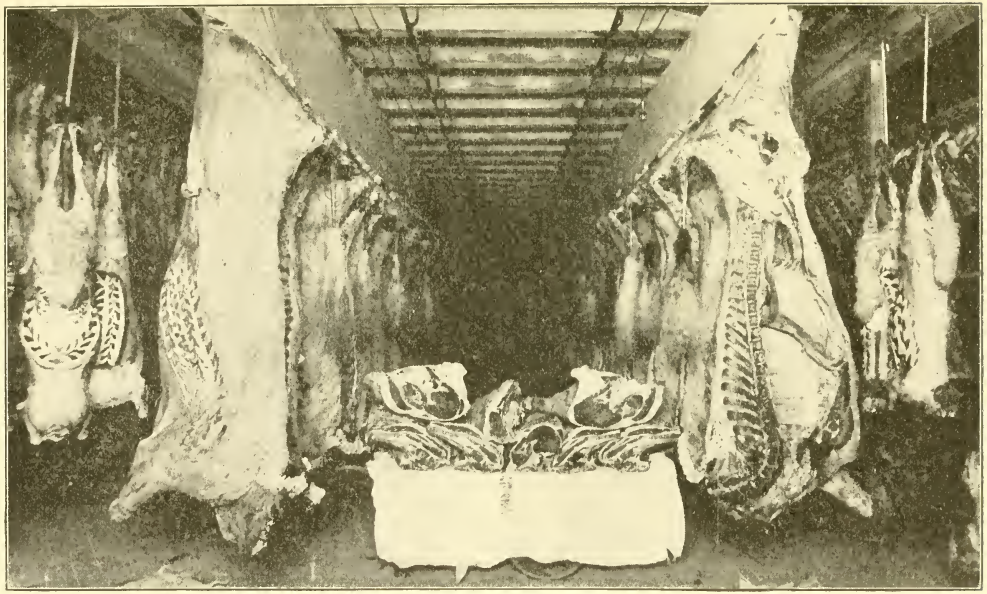
Other interests center in the Stock Yards. Near the main entrance is the Record Building, wherein are housed most of the record live-stock associations of the United States, principal among them being the American Shorthorn Association, the American Galloway Association, the American Poland-China Record, the American Shropshire Association, the American Aberdeen-Angus Association, the American Percheron Association, and the American Clydesdale Association. This building also contains the luxurious home of the Saddle and Sirloin Club.

Dexter Park

Three decades back Dexter Park became the location of the principal race track in the West. It was but natural, therefore, that Dexter Park in the course of time should have developed into the greatest horse market in the world. About 100,000 horses change hands here annually, the majority of them under the hammer of the auctioneer in the "bull ring," as the arena wherein the sales occur is known in

Uniformed guides, who conduct visitors through Swift & Company's plant.

market parlance. As in other branches of the live-stock market, strict probity on the part of dealers is insisted on, and none of the "ways that are dark," commonly attributed to the horse trader and the "Heathen Chinee," are tolerated. A score of commission firms represent several hundred country buyers on the market, and on the local buying side of the trade are found some three hundred buyers. Europe and Mexico buy many horses on the Chicago market, thousands are sent to the cotton fields of the South, and seventy per cent are consigned to eastern cities. Iowa and Illinois furnish the bulk of supply, but South Dakota, Wisconsin, Minnesota, Montana, Nebraska, and Wyoming are liberal contributors. Five days of every week the atmosphere of Dexter Park is agitated by what appears to the uninitiated as the jargon of the auctioneer, but the "bull ring" is a magnet that attracts many visitors. Here life is seen in its most strenuous phase, an attendant necessity where several hundred animals are sold daily. All horses are sold on a specific guarantee, which is printed on a placard displayed beside the auctioneer. When an animal is driven into the ring and sold, if unable to meet that guarantee it is subsequently resold as a reject. Formerly horses were all sold on commission, but in these days of scarcity and despite the aggressive competition of the motor car few animals are now consigned by owners and the trade is under the necessity of going into the country to purchase. Large capital is needed to carry on this business, as a load of horses, at current values, represents an investment of $3,000 to $5,000, and the attendant expense is heavy.



Christmas display in beef cooler.

On arrival horses are carefully groomed and fitted for the ring; manes and tails are braided and other "slicking up" devices resorted to, as appearance has no little influence in eliciting bids. Special rolling stock is used for the transportation of equine stock, and the trade gives employment to a small army of men, including grooms, shoers, and harness makers.

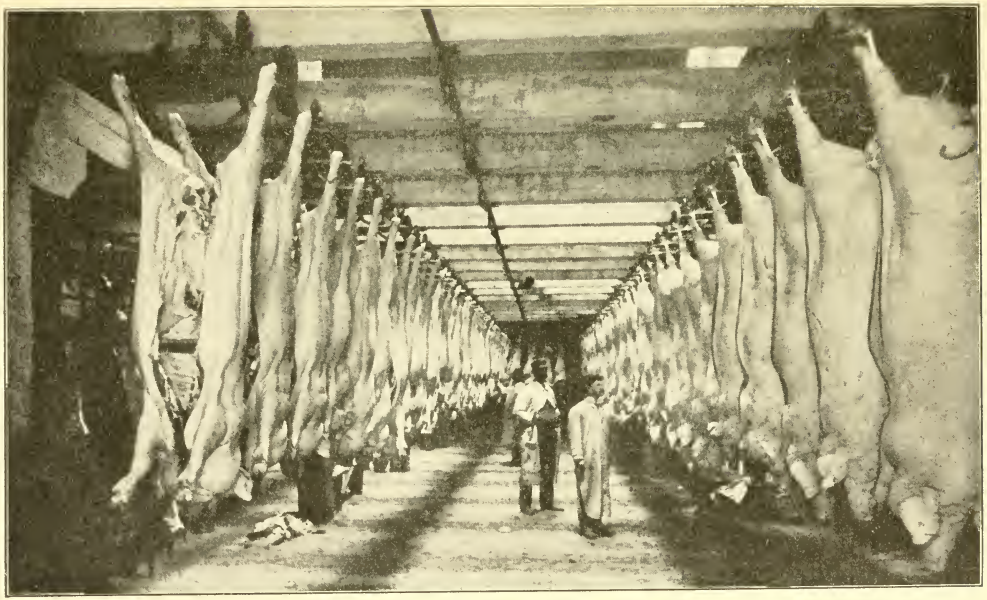
The Stock Yard Company maintains what is probably the best designed and equipped horse hospital in the world, with a staff of "vets" in charge. Thousands of western-bred horses pass through the Chicago market annually, en route to Pennsylvania and Ohio to be finished for eastern trade.

In connection with Dexter Park is an extensive establishment devoted to the purpose of fitting and training coach and saddle horses.

VI

Government Inspection

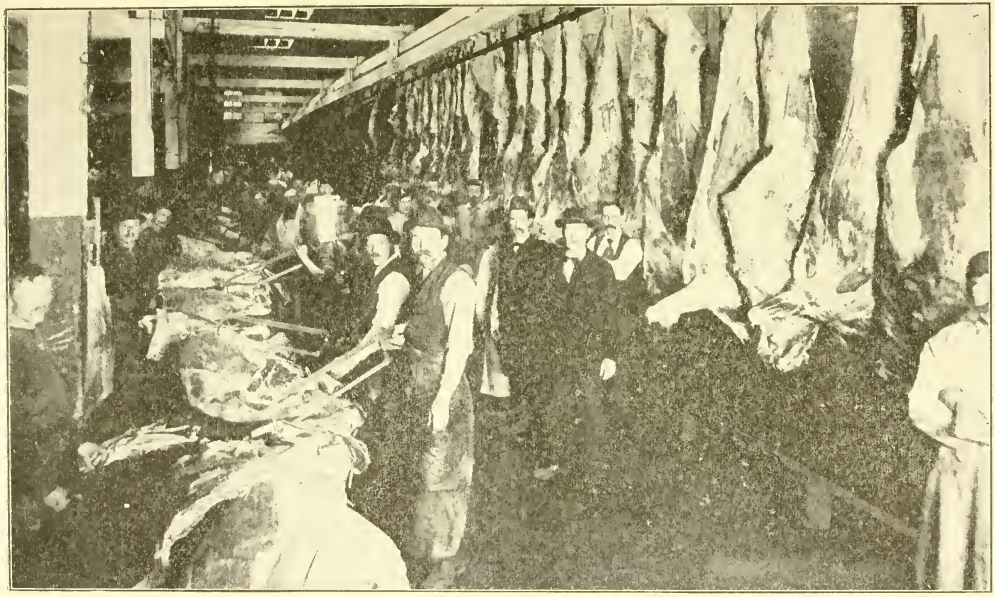
Extensive almost to the limit of comprehension are the ramifications of the trade that centers at the Chicago Stock Yards. Here is a pen of steers exposed for sale that were born on the staked plains of Texas, matured in the Yellowstone Valley of Montana, and finished in an Iowa feed lot. Sheep that were lambs in Oregon, yearlings in Montana, and graduated as aged mutton on a farm in southern Michigan may be seen. The hog, less nomadic in its habits than either the steer or the sheep, usually comes direct from the farm on which it was born; and, interwoven through the whole trade fabric,



Finishing touches—Ready for the pork cooler.

is a mesh of speculation involving countless individuals, banks, and pools. From the breeding ground to the slaughter house organization is encountered at every stage. The Texas cattlemen are effectively organized to suppress crime—"rustling" is the range term for it; the commission men are organized to repress trade trickery; and the Chicago Live-stock Exchange enjoys the confidence of producers everywhere. Should he visit the western division during the summer and fall months, the visitor may be mystified somewhat, over the apparently objectless cavorting of numerous men, of cowboy type, on horseback. These are brand inspectors, representatives of numerous cattle organizations in the West. Their duty is the prompt inspection of brands when range cattle are yarded, and until that is accomplished the stock is not offered for sale. So effectually is this work performed that cattle thieving on the western ranges now is practically impossible. The presence of stolen stock is detected immediately, and the proceeds of the sale are remitted to the actual owner as indicated by the brand. To the uninitiated these marks are unintelligible; but a brand inspector carries the outlines of many thousands of hide-seared inscriptions in the storehouse of his memory.

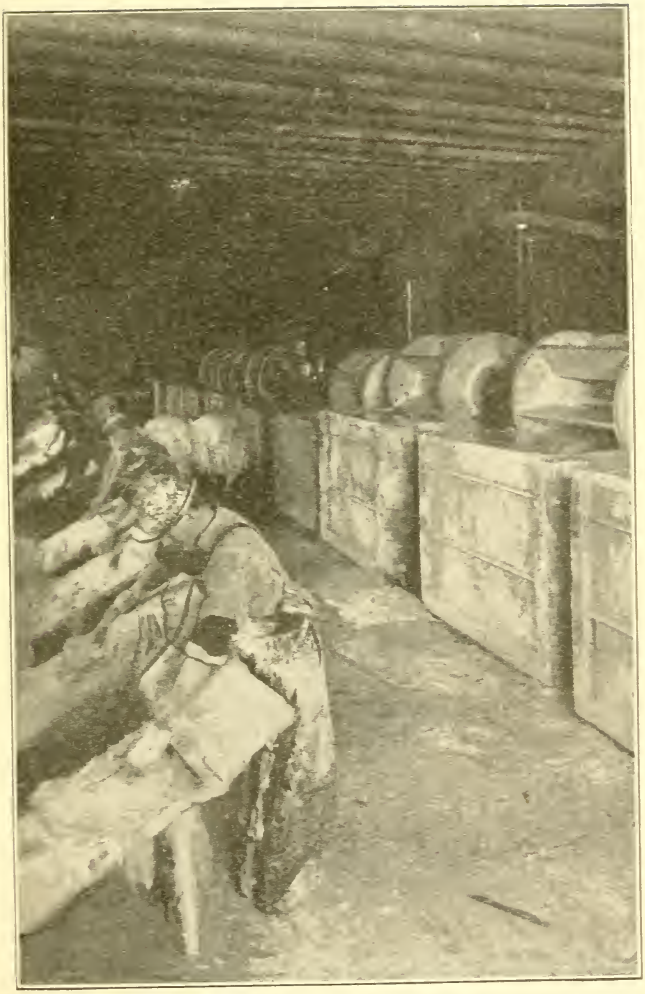
In vain does the visitor search stock-yard landscapes for the picturesque cowboy of other days. In its transition process the trade has all but obliterated him. There is neither shooting up nor roping. Occasionally a fractious steer gains the brief liberty of an adjacent street, but this spectacle is rarely witnessed. The Stock Yard Company maintains a corps



Beef-cutting room.

of riders always in readiness to pursue and lariat such bovine vagrants. However, when a steer does go on a rampage, the excitement and damage he causes often exceed those of the proverbial "bull in a china shop."

There are other features of this vast trade not calculated to interest the average visitor. Everywhere, but not conspicuously in evidence, is the eagle eye of the Federal Government, reinforced by the strong arm of the state. From the moment a load of cattle, hogs, or sheep reaches a stock-yards unloading platform, the vigilance of Uncle Sam's myrmidons is never relaxed until the product leaves the packing house in finished form. This precaution for the public welfare is the result of a recent agitation necessitating intervention by Congress, which passed a meat inspection law of such rigidity that evasion of its provisions, even if desired by packers, would be impossible. Railroads are prohibited even from handling meat products intended for interstate commerce that do not bear the certificate of healthfulness of the Department of Agriculture, and the new system has not only restored the confidence of the whole world but has proved a valuable advertisement for the goods packers send to domestic and foreign markets. Packers' losses are frequently heavy on account of this inspection, mainly owing to tuberculosis, at present the most serious menace to the otherwise general healthfulness of the live stock of the United States. Before the sales there is a culling out of suspects by a state inspector, and from the moment of slaughter the representative of the



Beam house and pickling room, where the pelts are washed and the wool removed.

Department of Agriculture gets busy. When a subordinate inspector condemns a carcass under conditions regarded as unjustifiable by the owner, an appeal is had to the chief inspector. All product is conspicuously stamped after passing muster so that "he who runs may read," and the consumer has merely to demand of the retailer to see the inspection stamp as an assurance of purity.

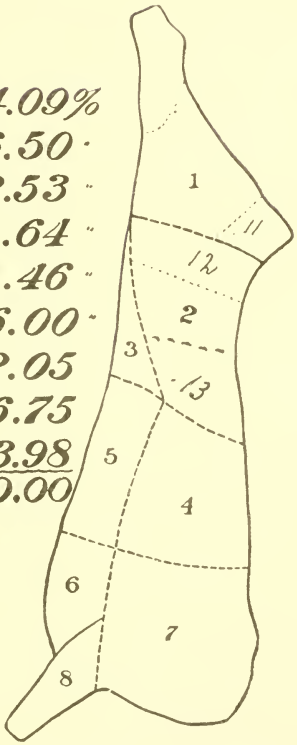
In the handling of such an animal army, those falling by the wayside, either as cripples or "dead ones," form an unfailing percentage of the whole. Cripples go into the food supply, but dead animals, minus the hide, are consigned to the rendering tank, for in these days of economy every pound of animal by-product has commercial value. Grease of many grades and glue are the principal products of the rendering works, but the residue is always available for fertilizers. But for the Chicago packing houses many a southern cotton field would of necessity be abandoned. Packing-house refuse is rich in nitrogen, the most costly of fertilizers, and this is combined, by the packer, with acid phosphate and potash salts in proportions to suit the needs of any crop, though the bulk of it goes into the South to be used as a tonic for King Cotton. Thus, the fertility of the fat lands of the West is transported to do service on the deteriorated acres of the South.

VII

Cattle Butchering and Beef Preparations

The cattle are first driven into knocking pens, where they are dealt a sledge-hammer blow from the

1-Round	24.09%
2-Loin	16.50 "
3-Flank	2.53 "
4-Rib	9.64 "
5-Navel	8.46 "
6-Brisket	6.00 "
7-Chuck	22.05 "
8-Shank	6.75 "
9-Suet	3.98 "
	100.00

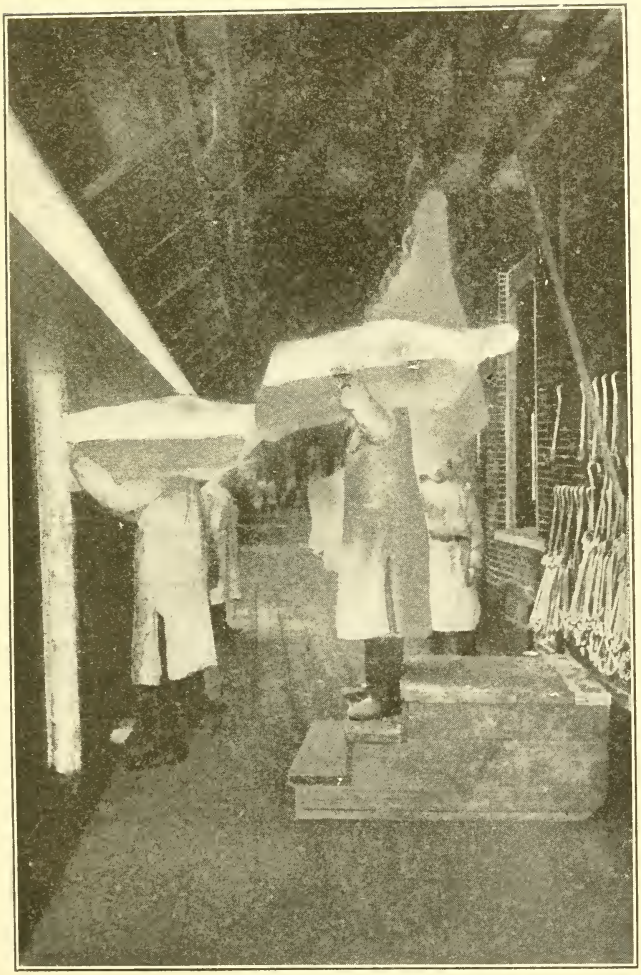


The accompanying illustration shows the general style of cutting the full side of a dressed beef. The choicest porterhouse steaks are cut from the part numbered 2; the popular clubhouse steaks, from the part numbered 13; and the sirloin steaks, from the part numbered 12. Numbers 5 and 6 show the parts generally used for corned beef. The table gives the percentages of the different cuts.

"knocker," who stands on a platform about even with the head of the animal. They are then rolled on to the dressing floor. Here a shackle is placed on one hind leg. The carcass is raised and bled, and the head removed. Again floored, the feet are removed, and floorsmen strip the hide. The carcass is then placed on a spreader, technically known as a "beef tree," where it is disemboweled, the hide removed entirely, and the back split. Then an "endless" chain takes the sides and conveys them through a set of washers to the coolers. The time required for dressing a carcass is about thirty-nine minutes. The beef remains in the coolers from one to two weeks before it is ready for the market, the temperature being kept at about 38 degrees Fahrenheit.

Kosher Meat

Cattle designed to furnish meat for orthodox Jews must be slaughtered according to prescribed rules, and every packing house has its Kosher Department. The animal is raised from the floor by its hind legs and some Rabbi or other learned Jew cuts its throat with a single stroke of a large knife, more than one stroke being cause for rejection. After thorough bleeding it is floored, cut open, and carefully examined by a Jewish inspector. The hide is then removed and the carcass is washed, marked, and run into the cooler, to be sold in due time to some Kosher butcher. Jews eat only the forequarters of an animal and these only after the larger veins have been removed. The forequarter, as Koshered, is cut at the fifth rib. In



Loading for export beef.

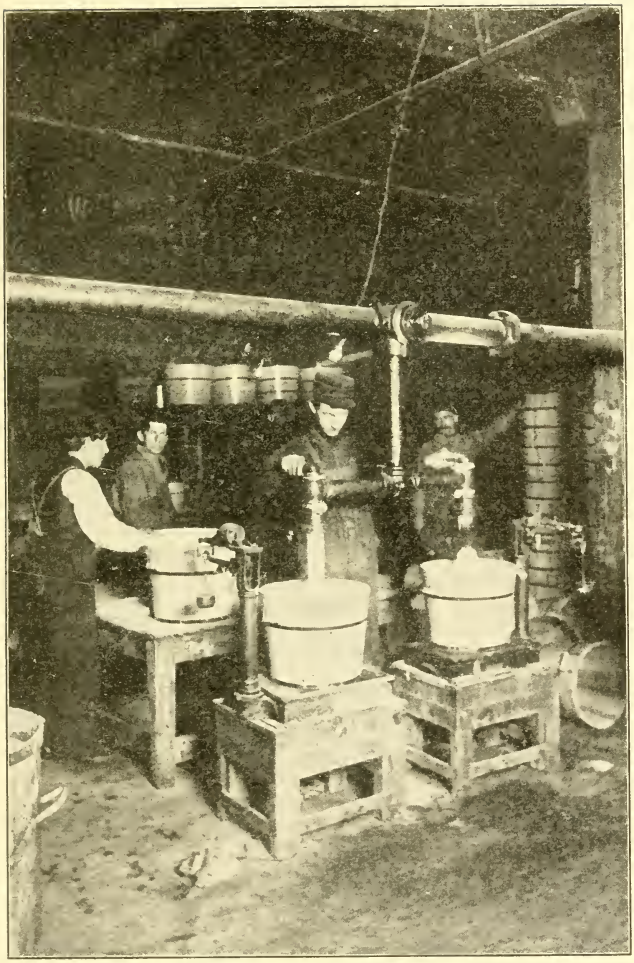
their method of inspection the Jews go upon the theory that all disease exists in the blood only, an idea indorsed by many of the medical profession.

Beef Hides

Hides when taken from the cattle are laid out on the floor and examined for cuts, which seriously affect their value. Then they go to the hide cellar, where, after all waste pieces have been trimmed off, they are salted and kept at least twenty-eight days. They are then taken up, shaken, folded, loaded into cars, and shipped to tanners.

Canned Corned Beef

Meats used for canning purposes are taken from lean cattle, which, though in a healthy condition, are not suitable for dressed beef. The portions sold in a fresh state comprise the hindquarters, loins, and ribs; while the forequarters, the parts that cannot be sold at a profit, constitute most of the canning material. In the boning room of the canning department bones are removed from the forequarters and the meat, cut up into pieces, is put into sweet pickle for about thirty days. Next comes a cold water washing, then thirty minutes of cooking in the boiling vats. Then out of the vats comes the now appetizing meat, to be stuffed by machinery into the cans. Yet before their final appearance on the public market these cans must be made as attractive as possible, so into a washing machine they go, where all grease is removed. The cans are finally painted, la-



Filling tubs in the lard refinery.

beled, and ready to be packed into boxes for shipment. Roast beef is canned in the same manner as the corned beef with the exception that it is cooked while fresh and is not pickled.

Dried Beef

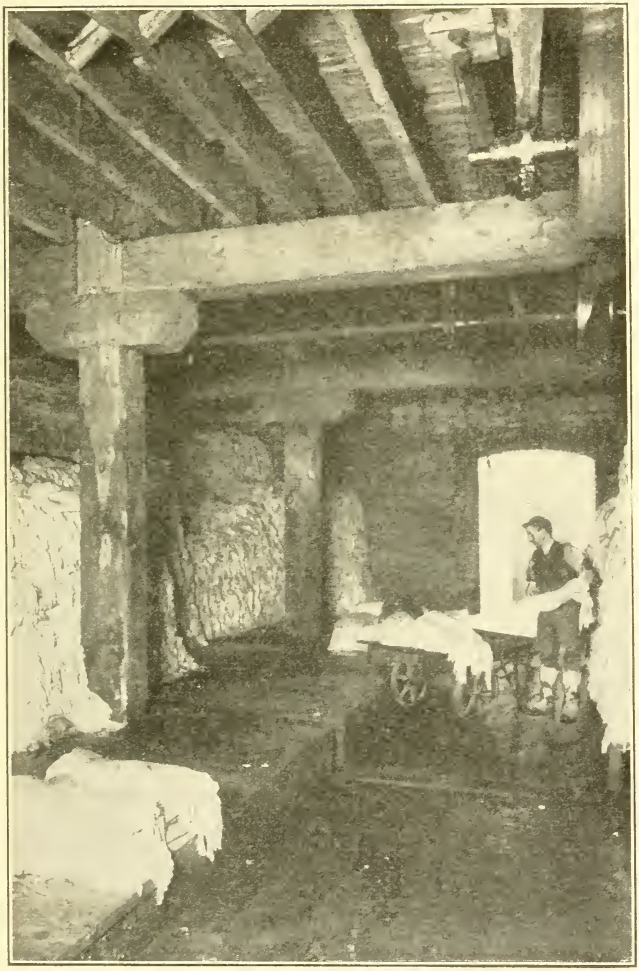
In the preparation of dried beef, beef hams are first pickled, then dried and smoked. Hams remain in pickle from sixty to ninety days and are then taken out and soaked in clear water for about thirty hours. After this they are taken to the dry room and dried by steam for two days; then they are smoked for two days, and again dried for three days. Later they are sliced and packed into cans and glass jars for the market.

Tallow

Tallow is the rendered fat of cattle and of sheep. The raw material is placed in tanks and subjected to the action of steam at twenty-five pounds pressure for about ten hours. The tallow is drawn off into open vats to cool another ten hours or so, and then run into barrels and tierces to be sold to soap manufacturers. The portion to be reduced to tallow oil is chemically analyzed to determine the quantity of acid present. Lye is then added according to the amount of the acid, separating it from the oil, which it leaves almost entirely free. Tallow oil mixed with mineral oil is used for lubricating purposes.

Tripe

Tripe is made from beef stomachs. The stomach is placed in hot water and allowed to remain for



Pickled sheepskin store room.

about one hour. It is then trimmed, cooked, and pickled in vinegar. After being packed in kits and quarter and half barrels it is ready for the market. There are two grades of tripe — honeycombed and plain.

Pickled Beef Tongues

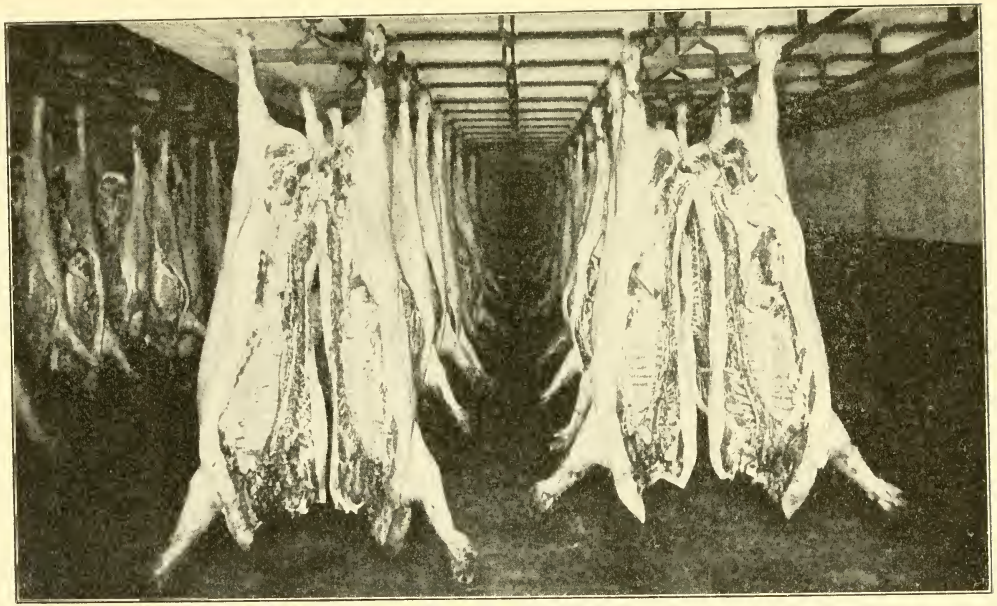
Tongues must first be cured in a plain pickle of salt and water for twelve hours, then in a sweet pickle for about thirty-five or forty days. They should be overhauled once. Many tongues are cooked and put up in tin cans, while some are smoked, and others are sold in a fresh state. The tongue of a steer or a hog will pay the cost of dressing the animal.

Beef Extract

Beef extract is made from lean meat. The meat is chopped and put into a hydraulic press. The extracted liquids are boiled down, seasoned, and put up in bottles and jars. Some people suppose that beef extract is made from the blood of the cattle, but this is not true.

Horns

Horns are used for combs, hair pins, and other articles. Owing to the increasing practice of dehorning, the supply of horns is diminishing and it is now difficult to procure high-grade horns. Despite scarcity the price of horns has not increased, owing to the fact that manufacturers are using celluloid and other substitutes. A good pair of Texas longhorns, mounted, costs about fifty dollars.



Showing section in a pork cooler.

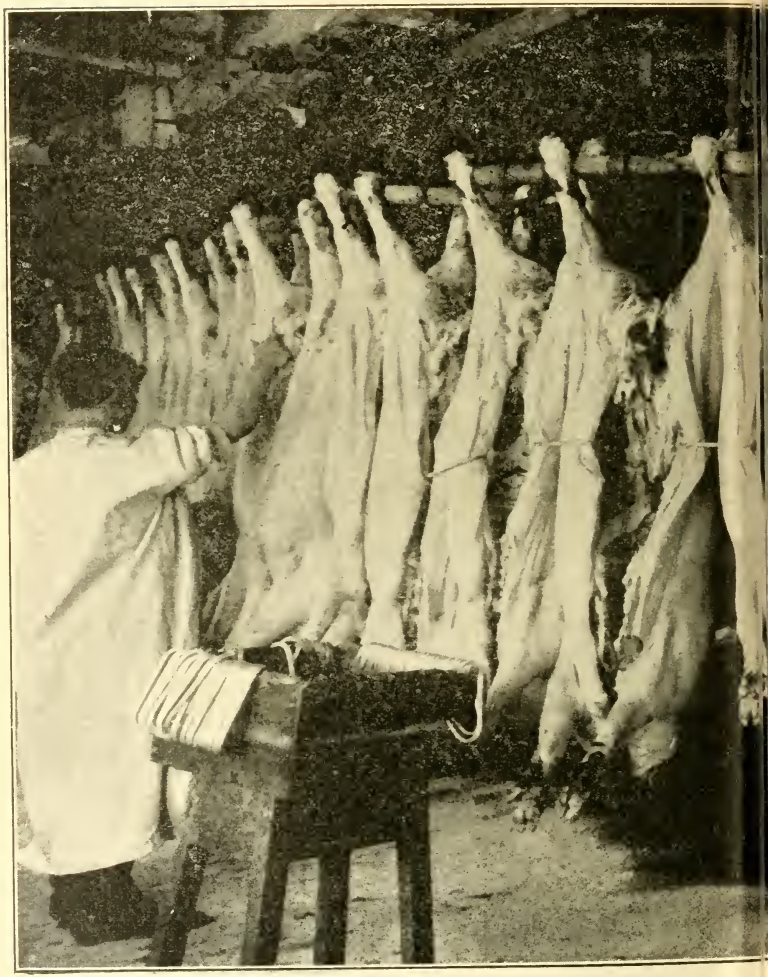
Oleo Oil

Oleo oil is produced from the caul and other portions of the butter fat of the bullock. The fat is taken from the slaughtered animal and immediately placed in vats of cold water of a temperature of 45 to 50 degrees Fahrenheit, where it remains from ten to twelve hours. It is then transferred to another vat of clean water. After it has become thoroughly chilled it is put into kettles and cooked from one to ten hours at about 160 degrees Fahrenheit. Salt is then scattered over the surface to accelerate the settling of the water and the scraps. After fifteen minutes the material is drawn off into cooling trucks and allowed to stand a few days. It is then placed in cloth wrappers and the oil is pressed out, leaving the stearin behind. The oil is drawn off into tierces and placed in coolers to await a market. About seventy-five per cent of the finished product is shipped to Europe and used in the manufacture of butterine. The stearin is used in the manufacture of fine candies and candles, and in the tanning of leather.

Neatsfoot Oil

Neatsfoot oil is made from the hoofs of cattle. The feet are cooked in open vats for about ten hours. As the oil comes to the top it is skimmed off, the remaining water being pumped to the glue factory to be used in the manufacture of glue. The residue is placed in barrels for about two weeks, when it is pressed to remove the oil. The process of pressing is the same as that employed in producing oleo oil.

Section in the pork-cutting room showing how the dressed meat is handled.



Nearing the end of the journey.

tion in the pork slaughtering rooms.

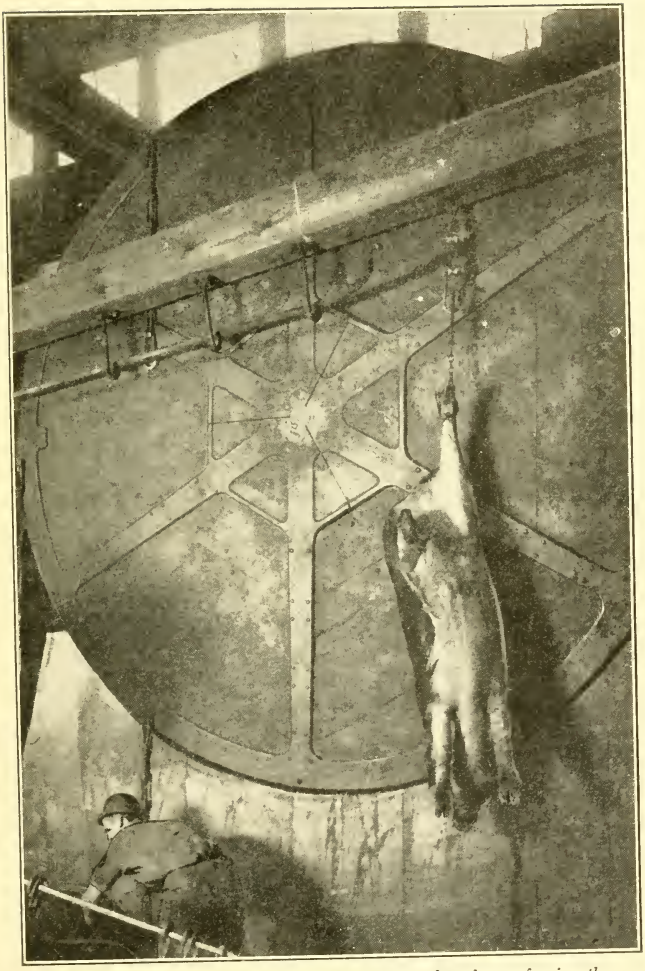
It is often bleached by means of fuller's earth. Neatsfoot oil is used for lubricating beer pumps, fine instruments, etc. Neatsfoot stearin is mixed with tallow oil and used in making soap.

VIII

Hog Slaughtering and Pork Preparations

After hogs are purchased they are driven to the slaughter house and allowed to rest one day. They are then driven into a small shackling pen, where the shackle is placed around the hind leg. One after one, in close succession, the animals are raised by a revolving wheel. The shackle unhooks itself on to an inclined rail down which the animal moves past the "sticker," who, with a single thrust of a double-edged knife, dispatches the hogs in the most speedy, and therefore least painful, manner at the rate of one thousand per hour.

To the average visitor at the yards, the one repellent sight is the pig sticker or the sheep sticker, sticking his knife into the throats of his hundreds of victims every day. He presents a gruesome spectacle and one that remains with the visitor long after other details are forgotten. While, because of its associations, pig sticking is said to blunt the sensibilities, yet in an age when flesh is found on almost every table in the land the poor pig sticker's job must be admitted to be as necessary, and therefore as honorable, as that of the farmer who raises the stock or of the cook who fries the morning bacon.



Revolving wheel—Hoisting pigs from the ground and transferring them to the sliding rail, on which they journey to the "sticker."

Visitors are not allowed to follow the hog through the next stage of its journey, since the arrangements of this department are not such as wholly to insure their protection against the hot water that must be used there. By the time the hog has arrived here it is thoroughly bled, and is ready to be dropped into the vat of scalding water, which loosens the hair. A moving table conveys the hog to the scraping machine, which removes most of the hair and bristles. Now the animal is again caught up, and, by means of an endless chain, passes on its way to the dry room. Again the visitor may see the traveling line of suspended hogs, pink and shining, in pleasing contrast to his last view of them, passing slowly in front of a long line of workmen. Each workman has a special duty to perform; such as disemboweling, removing the leaf fat, scraping off any overlooked hairs, bits of loose fat, and the like, or splitting the back bone with two or three deft strokes. When the hog, completely dressed, enters the dry room, less than half an hour has elapsed. Here its weight is taken and recorded and it is left four hours to allow the heat and the moisture to escape before it is put into the refrigerator. The hog remains in the dry room at its natural temperature for four hours and then is taken to the coolers, where it remains until the meat is thoroughly chilled. After this, it is brought out, cut up into shoulders, hams, loins, spareribs, and bacon. Hams and shoulders are then trimmed and put into pickle, where they remain from thirty-five to ninety days, according to the size, allowing four

Sticking pen—One man handles about 1000 hogs per hour.

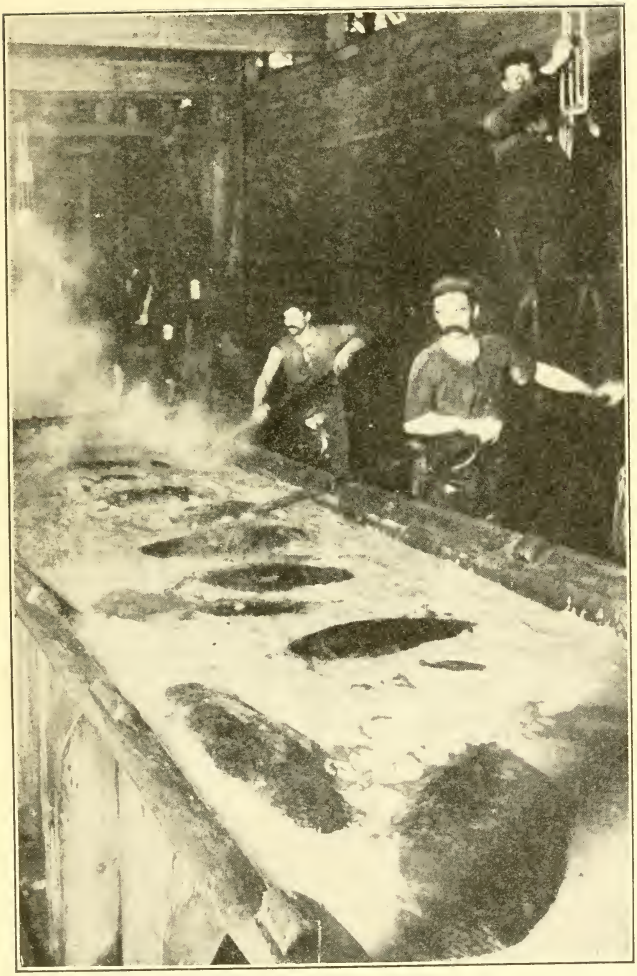
days to every pound of meat. After the meat is cured it goes to the wash room, where it is soaked in water, remaining three minutes for each day the meat was in pickle. Now the meat is placed on trucks and run into the smoke rooms, where it remains from four to five days. The temperature of the smoke room is kept at from 135 to 140 degrees Fahrenheit. Hickory wood and sawdust are used in the smoking of meat. Many visitors at the packing houses believe that the meat is deceptively painted instead of smoked; but before they get through the inspection of meat preparation, they are shown all the evidence that a man "from Missouri" might require to prove to them that the packers haven't "departed from the ways of their fathers" in the preparation of meat.

Preparation for Market

Finally each piece passes before an inspector, who inserts a pointed steel and detects through the odor any imperfection, at the same time grading the meat. All the pieces not rejected are then passed on to ready hands to be branded. Some are wrapped in paper, others for export in canvas sacks, placed in boxes and barrels, and finally shipped to all parts of the globe.

Hog Hair and Bristles

Everything about the stock yards is utilized. The hair that comes from the hog is transferred to a hair house and put into large vats, where it is thoroughly washed and then dried by passing through a drying machine. In due time it reaches the hydraulic presses, where it is baled and prepared for shipment.



On the way to the scraper—Hog scalding vat. The temperature of the water is kept at about 150° Fahr.

This hair is used for various purposes, such as upholstering, plastering, manufacturing of hair ropes, mats, etc. The bristles taken from the back of the hog are washed and tied around sticks to straighten them. Later they are combed and assorted into different grades, and are sold to the manufacturers of brushes.

Steam-rendered Lard

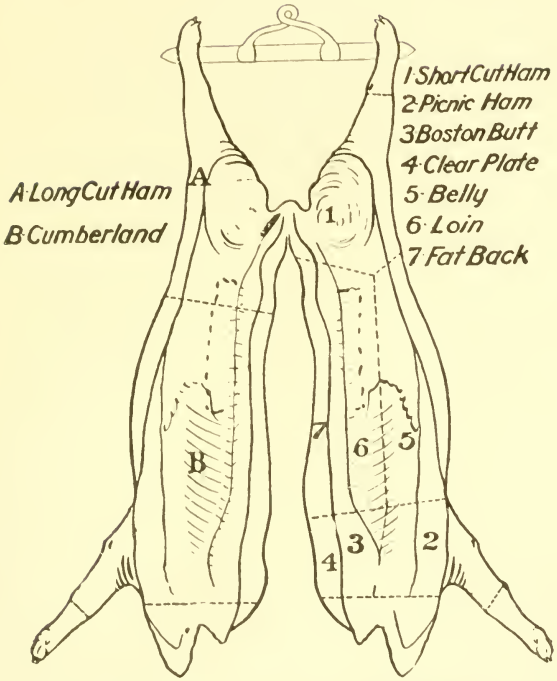
Lard is the rendered fat of the hog. About 80 per cent of it is steam rendered. The fat is placed in tanks and cooked for eight hours with steam pressure at about forty pounds. Then the steam is shut off and the escape valve opened wide. After the pressure has lifted, the head of the tank is removed and about a shovelful of salt thrown in. The salt shortens the time required for the separation of the lard from the water formed by the steam. When the process is completed the lard is drawn off into storage tanks.

Bleaching Lard

The steam-rendered lard is placed in tanks and kept at a temperature of 170 degrees Fahrenheit. One to three per cent of fuller's earth is added. The lard is then pumped through a filter, which bleaches it snow white. On the way to the lard-filling room the oil is passed over a roller filled with ice water and chilled.

Neutral Lard

Neutral lard differs radically from other lards both in nature and in manufacture. It is made from the leaf fat of the hog, and the method is as follows: The



The accompanying illustration shows the different pork cuts, also wherein the American cut differs from the English. Side A B illustrates the manner of cutting all pork used for export trade, the export side always being cut into three pieces, while the side used for American consumption is cut into six pieces, as indicated in the diagram. The dotted line in the center of each side indicates the part of the animal from which the tenderloin is taken.

warm leaf fat, fresh from the slaughtered animal, is put away in the chill room for about forty-eight hours; the temperature of this room is about freezing point. From the chill room it is taken to the hashers, where it is finely ground. From there it is conveyed to the rendering kettles and rendered in the same manner as the oleo oil.

Lard Oil

Lard oil is made from steam lard. The lard is drawn off from the rendering kettles into trucks, where it is allowed to cool for three or four days. When cool the lard is in a grainy condition ready for pressing. The process of pressing is similar to that used in preparing oleo oil.

The lard stearin is used in the manufacture of compound lard. A great deal of the lard oil is used in signal lamps. Some of it is used by the nut and bolt manufacturers to cool the dies while cutting threads.

Renovated Butter

Butter-renovating factories are established at the yards. To these the small dealers throughout the country ship much of their butter. The butter is rendered in open kettles, then hot air is pumped through the oil, thereby driving out the impure gases. In some cases a small per cent of petroleum is added for purifying purposes. The oil is then run off and churned with fresh milk. Then the butter is resalted and put up in tubs. About 60 per cent of it is shipped to Europe in the fall of the year when butter is scarce.

Butterine

Butterine is made from oleo oil, neutral lard, and pure cream. These ingredients are churned together, passed through a mixer, and then into a tank of ice water to harden. The butterine is then placed in a salting machine, where it is thoroughly worked. Later it is made into prints and rolls, or packed into tubs. In some of the cheaper grades of butterine, cotton-seed oil is substituted for neutral lard or oleo oil. (See page 95 for recipe for butterine.)

Casings

The casings, or entrails as they are commonly called, go to the casing room, where they are stretched and cleaned by being passed through a set of brushes. Then they are bleached in ice water for about ten hours. After this they are taken out, salted, packed in barrels, and placed away in reserve until they are needed.

The greater portion of them is exported and used in making sausage.

Sausage

The meat used in the manufacture of sausage is the lean meat taken from various parts of the animal. In giving meats a uniform cut, it is necessary to trim off certain parts. These trimmings are conveyed to the trimming room, where a number of men and women are employed to separate the fat from the lean meat. The fat is rendered into lard, and the lean meat is converted into sausage.

Summer Sausage

Summer sausage is made from beef and pork. The meat passes through a chopper in which it is cut up into fine pieces and seasoned according to the demands of the market. It is then stuffed into casings and hung in the smoke room for about twelve hours. From the smoke room it is taken to the dry room, where it remains from 60 to 125 days. This sausage is air dried. The shrinkage amounts to nearly 50 per cent. (For recipe for summer sausage see page 94.)

Pork-curing Recipe

To one hundred pounds of meat take eight pounds of pure white salt, three ounces of saltpeter, and one pound of granulated sugar. Add enough water to cover the meat. The pickle should be thoroughly chilled before the meat is put in.

Dry Salt Cure

Take twelve and a half pounds of salt to one hundred pounds of meat. Add three to four ounces of saltpeter. A little sugar may be added. The meat may be piled up on a dry floor or in a box. The time required for curing is a day and a half for each pound in the cut. The meat should be twice overhauled.

Glue

Glue is manufactured from beef skulls, hide trimmings, and sinews. All of these materials are placed in vats filled with water and boiled for about twelve hours. The grease then comes to the top and is

skimmed off, and the residue is run into settling pans and again boiled. Later the mass is run into molds, placed in a cooler, and allowed to harden. It is next cut into slices and placed on racks to dry. The glue is then broken up and put into barrels for shipment. Of late years the large glue manufacturers are using chemicals in bleaching glues. About one-half per cent sulphate added before cooking will bleach the bones. Zinc salts and peroxide of hydrogen also are used.

Soap

In making soap, tallow is placed in large kettles, where it is cooked for about a week. There is a certain amount of caustic, resin, and lye mixed with the fat. From the cooking kettles the mass passes through a mixing machine, which gives it a uniform color. It is then drawn off into iron molds and allowed to stand about four days to harden. The material is now ready for the cutting machines, so the frame is removed and the soap forced through a wire gate to form it into cakes. These are placed in racks and run into kilns, where they are dried for about ten hours. The cakes are then stamped, wrapped, and placed into boxes ready for the market.

Glycerine

Waste soap lye, or the settling from the soap kettles, is converted into glycerine. The material is conveyed to the mixing tank, where it receives the proper proportions of sulphate dissolved in hot water. After this treatment the lye is filtered and is then ready for the evaporating pans. From the evaporating pans it is taken to the still, where it is refined.

Fertilizer

The Darling Fertilizer Company is located on the grounds, and fertilizer in large quantities is manufactured. Bones, blood, portions of hoofs, and sundry scraps are used in the process. The blood from the animals is collected into large vats in which it is cooked. It is then put into presses, and about 30 per cent of the water is pressed out. After pressing, the cakes, still damp, are broken up and dried by passing through a dryer, from which they come out pulverized. Part of this is used in the manufacture of stock foods; the remainder, with the other material, goes to make fertilizer.

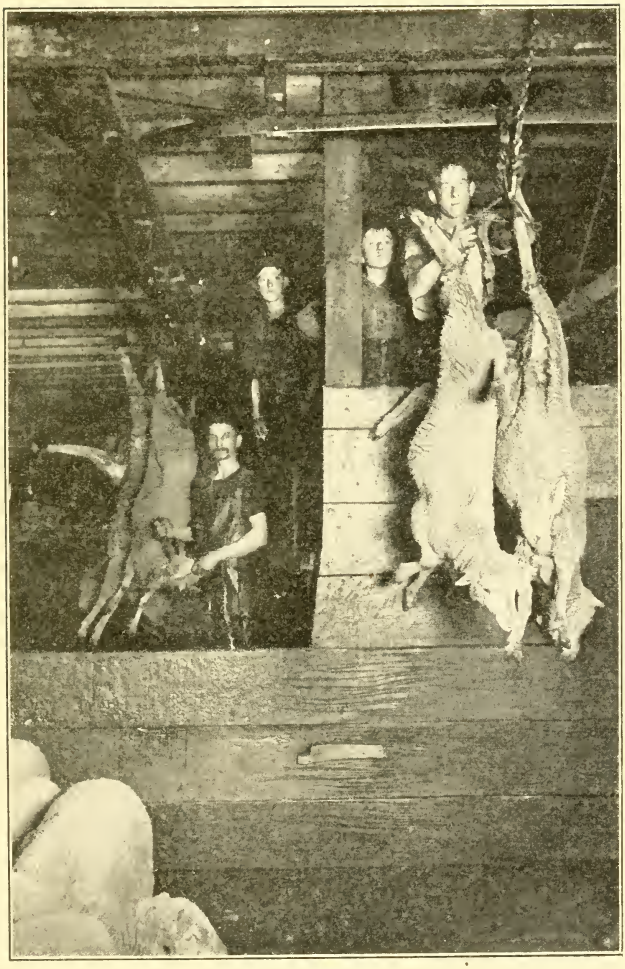
Bones

About 90 per cent of the bone is used in the making of fertilizer. Bones are also manufactured into buttons, toothpicks, knife handles, pipe stems, and some are used by sugar manufacturers in refining sugar.

IX

Sheep, Veal, and Poultry Dressing

The sheep are slaughtered in the same manner as the hogs, with the exception that two animals instead of only one are caught up together by the revolving wheel. They are slaughtered at the rate of about six or seven hundred per hour. The sheep passes through approximately one hundred hands before it reaches the cooler. The dressing of the sheep takes about twenty-six minutes, and is similar



Method of killing sheep.

to the dressing of the hogs, with the exception that the pelts are removed and conveyed from the killing floor to the wool factory. Here they are painted on the flesh side with a solution of acid, which loosens the wool, and after having stood over night the wool can be readily removed from the hide by the wool pullers.

Experienced hands now assort the hides into various grades. They are then washed, dried, and sold to tanners, while the wool is passed through a scouring machine, dried, and sold to wool merchants.

"The dressed sheep are nearly all shipped without being cut. To suit the requirements of various sections of the country, about fifteen different styles are used in dressing sheep."

The thyroid glands, taken from the throat of the sheep, are manufactured into a drug called thymus.

Sheep and steers shrink from 40 to 50 per cent in the dressing, while hogs and calves shrink from 25 to 30 per cent.

Veal Dressing

The dressing of veal is similar to sheep dressing, with the exception that the hide is not removed, to prevent the carcass from drying out.

Poultry

Of late years the packers have gone into the poultry business. Some of them kill as many as 50,000 chickens per day. The chicken is hung up by the legs, and the sticker cuts the artery under the tongue. He then cuts through the roof of the mouth touching

Showing section in a sheep cooler.

the brain, thus rendering the fowl unconscious. The rough feathers are then removed by hand, and the fowl goes to another room, where girls remove the pin feathers. After the chicken is dressed it goes to the cooler and remains there a day or two. It is finally transferred to the freezer, where it remains until marketed.

Milk-fed Chickens

Many of the chickens are cooped for about a fortnight and fed three times daily on mixtures of milk, oatmeal, and white corn meal. When killed and dressed they sell as fine milk-fed stock. (See last page for recipe for feeding chickens.)

Feathers

Feathers taken from chickens are assorted and used for pillows and mattresses. A number of the larger quills are used for feather dusters and writing pens. In recent years the packers have been buying up old feathers throughout the country and renovating them.

Eggs

Packing houses employ a large number of girls whose duty it is to candle eggs. The candling is done in a dark room and consists of holding the egg before a strong light to detect anything abnormal. The fresh eggs are repacked. The spoiled eggs are broken and manufactured into "tanners' yolk," a product used by leather manufacturers for polishing high-grade leathers.

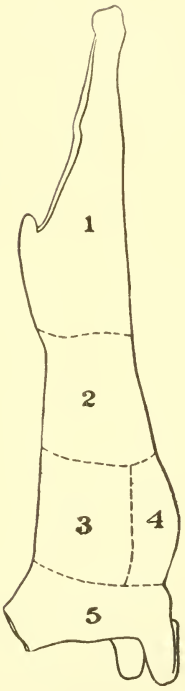
1-Leg · 30.36%

2-Loin 21.43

3 Hotel Rack 14.28
(10 Ribs)

4 Chuck and 5 Breast 33.93

100.00



The accompanying illustration shows the style of cutting dressed lamb most popular among retail market men. Figures 4 and 5 indicate the parts generally used for mutton stews; figures 2 and 3, the parts cut into mutton or lamb chops. The table gives the percentages of the different cuts.

Tin Can Shops

Most of the meat-canning factories operate their own tin shops, fitted out with automatic can-making machinery, some having a capacity of 500,000 to 600,000 cans per day. Last year a single firm paid out $1,000,000 for tin plate and $350,000 for solder. These factories have can-painting departments, where the tops, the bottoms, and the labels covering the sides of the cans are painted by machines that have a capacity of 125 cans a minute.

A large number of girls are employed in these factories.

Wholesale Market

Most of the large packing houses have wholesale markets with coolers in connection, where city retailers buy their supply of meats. The packers set the prices according to the quality of the meat, and the dealer can buy a whole carcass or any portion of it.

Government Inspection of Products

While a goodly number of the diseased animals is detected by the inspectors in the yards, yet the only reliable test is that of the carcass. There are three inspectors working with each slaughtering and dressing force, whose purpose it is to inspect all carcasses and take charge of the diseased ones. These men are trained veterinary surgeons. The first inspection of the carcass is made soon after it leaves the "sticker's" hands. In this examination the submaxillary gland is the only portion inspected. It is said that

A recent innovation at the yards—The lady manicurist, Armour & Company's plant.

98 per cent of all tubercular-infected hogs is discovered by this inspection. If the animal is condemned it is tagged and sent to the retaining room. After the entrails have been removed, another inspection is made, this time of the mesentery gland, and many diseased animals that have escaped the first inspector are caught by the second. The third inspector has charge of the retaining room and makes a final inspection of those condemned by the first two inspectors. Many that have been sent to him on suspicion are declared healthy and sent back to the proper place. If upon the final and third examination of the carcass, it is found to be diseased, it is conveyed to the sealed tank, placed therein, and a high pressure of steam turned on. After about eight hours all parts of it are dissolved, thus precluding the use of any portions for food. The dissolved products go for grease, lubricating oils, and fertilizer.

This inspection has been in operation since 1891. In June, 1906, the legislature authorized the Secretary of Agriculture to appoint a number of men whose essential requirement was a familiarity with the packing industry. These men are to inspect the meats "in all processes of preparation, curing, canning, etc., also to require sanitary equipment, conditions, and methods; to prevent the use of harmful chemicals and preservatives and misleading labels." Until this law, commonly known as the "meat inspection amendment to the agricultural appropriation act," went into effect, this manifestly necessary inspection was unknown in the packing houses.

The most common disease for which animals are condemned is tuberculosis. In the fiscal year 1906, 13,548 of the 21,723 cattle condemned had tuberculosis; 95,396 of the 151,615 hogs failed to pass the inspection, while there were only four of the 8,821 sheep and twenty-five of the 11,992 calves.

Sanitation at the Stock Yards

Nothing is more pleasing to the visitor at the yards than the cleanliness everywhere apparent. That the inexperienced visitor can be shown with so little discomfort, comparatively speaking, through this vast barnyard and these great slaughter houses even in the hottest weather, is possible only because of the vigilant care exercised throughout and the perfecting of a system to such a degree that animals can now be killed and prepared for market as well in the "dog days" as in winter.

The pens are floored with brick practically impervious to water, and are well drained.

In the killing rooms the walls and the floors unavoidably are unsightly during use, but they are daily and thoroughly cleaned with "squeegees," or rubber brushes, and an abundance of scalding water. At the end of every day the trucks in which the meat is carried are "immersed in tanks of boiling lye or thoroughly rinsed with scalding water"; and a strong force of scalding water is poured from a large hose upon all the floors throughout the packing houses, which afterwards are thoroughly scraped. The wooden tables, having been under the same treatment, are sprinkled over with salt.

All waste solid material collected in the drains during the process of cleaning is sent to the "condemned" tank.

The canning rooms are constructed upon sanitary principles, being dry and well lighted. One especially noteworthy building is a model of its kind. The floors are of concrete, the walls of white tiled brick, and the ceiling is covered with enamel, all being "impervious to acids and moisture." There are no square corners for the accumulation of dust and dirt, and the whole is as immaculate and sanitary as a well-kept hospital.

The attention and care given to the matter of the personal cleanliness of the employees is attested by the numerous signs posted throughout the buildings. There are also attendants in many of the lavatories to see that the employees wash their hands before returning to work. Some of these lavatories have shower baths and are furnished with well-ventilated iron lockers.

Aprons and uniforms or frocks and jumpers are washed in the laundries maintained on the grounds, and the inspectors may compel a change of clothing whenever considered necessary.

Practically all meat packing is done by machinery, the hands of the packers not coming in contact with the meat. Where, however, the meat must be put up by hand, as in the case of chipped beef, the hands of the workers are properly cared for by manicurists employed for this purpose.

X

Scale of Wages—Dressing Records

About fifty thousand people are employed at the yards. They are mostly foreigners of all nationalities, although Poles and Bohemians predominate. Of late years negroes in large numbers have been seeking employment there. The majority of the employees live near the yards.

Wages

The following table represents about the average wages received by the stock-yards employees:

Buyers	$100	to	$150	per month
Beef butchers	20	to	50	cents per hour
Pork butchers	17½	to	40	" " "
Sheep butchers	17½	to	45	" " "
Meat handlers	17½	to	25	" " "
Coopers	17½	to	29	" " "
Machinists	20	to	35	" " "
Carpenters	22½	to	27½	" " "
Steamfitters	18½	to	30	" " "
Bricklayers	62½	to	70	" " "
Special police	20	to	22½	" " "
Night watchmen			20	" " "
Girl employees	10	to	15	" " "
Electricians	22½	to	30	" " "
Millwrights	22½	to	30	" " "
Teamsters	20	to	27	" " "
Laborers	16½	to	20	" " "
Guides			20	" " "

Stationary firemen	30 cents per hour
Stationary engineers	30 to 35 " " "
Stock handlers	$59 and over per month
Clerks	12 and over per week
Stenographers	12 to 25 per week
Cellar hands	17½ cents per hour

During the year 1906 the butchers averaged forty-five hours per week.

In July, 1904, Phil Murphy broke all records for dressing a bullock, performing the feat in the remarkably short time of three minutes and thirty-seven seconds. Before him, Mike Mullen held the record for years.

Strikes

There have been three notable strikes at the stock yards during the years 1886, 1894, and 1904 respectively. In July, 1904, about 40,000 employees went out on a strike which lasted more than three months. This strike cost the packers several millions of dollars. It is interesting to note how late inventions have served to insure the packers, and every large combine as well, against the attacks of labor. Were the packing houses compelled to depend on ice from the rivers and the lakes to cool their plants, what havoc could the ice workers or the ice handlers cause them! Under the present arrangement the ice is supplied by means of large ice machines, operated by a few skilled machinists, and the packers can bid defiance to any attempt to thwart the proper handling of the meat.

XI

PRACTICAL RECIPES

Large Bologna Sausage

Hog hearts	45 lbs.
Pork trimmings	20 "
Beef cheek meat	65 "
Sheep cheek meat	20 "
Weasand meat	25 "
Salt	5 "
Flour	7 "
Finely ground black pepper	1 lb. 2 oz.
Allspice	2 "
Coriander	4 "
Saltpeter	4 "
Water	28 lbs.

Knobloch Sausage

Extra lean pork trimmings	35 lbs.
Regular pork trimmings	40 "
Pickled pork trimmings	15 "
Pork cheek meat	50 "
Tripe	10 "
Salt	5 "
White pepper	1 lb. 8 oz.
Mace	3 "
Saltpeter	3 "
Coriander	4 "
Sugar	9 "
Water	28 lbs.

Liver Sausage

Pork snouts	70 lbs.
Neck fat	160 "
Ham fat	30 "

Liver	112 lbs.
Tripe	225 "
Flour	15 "
Onions	12 "
Salt	15 lbs. 7 oz.
White pepper	2 " 4 "
Cloves	9 "
Marjoram	1 lb. 14 "
Water	100 lbs.

Bockwurst Sausage

Pork trimmings	75 lbs.
Cheek meat	75 "
Flour	45 "
Salt	45 "
Shives	1 lb. 8 oz.
Nutmegs	3 "
Mace	2 "
White pepper	1 lb.
Dry onion	4 oz.
Lemons	1
Water	45 lbs.
Fresh eggs	15

Boneless Pigs Feet Sausage

Pickled pigs feet	225 lbs.
Pork cheeks	75 "
Pickled or fresh pork skins	37 "
Pork snouts	88 "
Fresh vinegar	37 "
Water	137 "

Fresh Sausage

Pork trimmings	150 lbs.
Salt	3 lbs. 12 oz.
Sugar	1 " 2 "
Saltpeter	4½ "

Finely ground white pepper	9 lbs.
Leaf sage	6 "
Water	3 "

Frankfurt Sausage

Pork trimmings	35 lbs.
Pickled pork trimmings	40 "
Beef cheek meat	65 "
Flour	9 "
Salt	5 "
White pepper	1 lb. 8 oz.
Mace	3 "
Saltpeter	3 "
Coriander	4 "
Sugar	9 "
Water	35 lbs.

Head Cheese

Pork trimmings	75 lbs.
Cheeks	125 "
Hearts	125 "
Pork snouts	150 "
Pickled pork trimmings	200 "
Flour	15 "
Onions	8 "
Fine white pepper	5 "
Caraway seed	1 "
Ground allspice	8 oz.
Cloves	8 "
Water	40 lbs.

Salt to taste.

Blood Sausage

Pickled pork skins	45 lbs.
Ham fat	110 "
Fresh hog blood	45 "
Onions	2 "

Salt	4 lbs.
Flour	2 "
Finely ground black pepper	1 "
Cloves	1 oz.
Ground marjoram	2 "

Tongue Sausage

Pickled ham fat	119 lbs.
Pickled pork skins	45 "
Pickled hog tongues	125 "
Pickled ox lips	75 "
Fresh hog blood	45 "
Onions	4 "
Salt	8 "
Flour	4 "
Finely ground black pepper	2 "
Ground marjoram	4 oz.
Ground cloves	2 "

Mortadella Sausage

Lean ham trimmings	135 lbs.
Neck fat	15 "
Fine pepper	12 oz.
Mace	2 "
Cardamom	2 "
Salt	5 lbs. 4 oz.
Sugar	2 lbs.
Saltpeter	4 oz.

Essex Summer Sausage

Regular pork trimmings	40 lbs.
Beef trimmings	35 "
Beef or sheep cheek	55 "
Hearts	20 "
Flour	10 lbs. 8 oz.
Pepper	9 "

Salt ..... 5 lbs.
Sugar ..... 9 oz.
Saltpeter ..... 3 "

Curine for Pork Trimmings (dry cure)

Salt ..... 3 lbs. 8 oz.
Saltpeter ..... 3 "
Sugar ..... 8 "

Curine (for 200 to 400 pounds of meat)

Salt ..... 18 lbs.
Saltpeter ..... 12 oz.
Sugar ..... 4 lbs.
One-half gallon 50 test pickle.

Butterine Recipe

Milk or cream 40%
Oleo oil 22%
Neutral lard 38%

In cheaper grades cotton-seed oil is substituted for neutral lard.

Poultry-feeding Recipe

Equal parts of oats and corn mixed with skimmed milk. Add 2 or 3 per cent of beef fat cut up into small pieces.

XII

GENERAL INFORMATION ABOUT CHICAGO

To reach the stock yards from the down-town shopping district, the visitor can take almost any of the South Side cars and transfer to the 39th Street cross-town line. One of the most direct routes is the Halsted Street line, with a down-town terminus at Clark and Randolph streets. The Halsted Street cars pass in front of the entrance gate, making transfers unnecessary. The South Side Elevated Railway has in course of construction a branch road which will run directly to the yards with terminals at different points both in the yards proper and in "Packingtown." The Lake Shore & Michigan Southern Railway also maintains special suburban train service between the La Salle street station, at Van Buren and La Salle streets, and the stock-yards station, which is located at the entrance gate.

Board of Trade

Board of Trade, Jackson Boulevard and La Salle Street. A sight which the visitor should not overlook during his stay in Chicago is the great stock market at the head of La Salle Street on Jackson Boulevard. In the magnificent stone structure which houses the "bulls" and the "bears" there is a gallery set apart for the use of visitors. The trading hours are from 9.30 a. m. to 1. 15 p. m., except on Saturday, when business closes at noon.

The Art Institute

The Art Institute, Lake Front, foot of Adams Street. The art institute, founded in 1879, occupies a beautiful building in the heart of the city. The building, which has cost $1,000,000, was opened to the public in 1893. It ranks among the three leading art museums of the country. It maintains schools for the study of art and designing, and collects paintings, statuary, and other objects of art for exhibition. Instruction in the art school, which is recognized as one of the best in the country, includes painting, sculpture, decorative designing, and architecture. On Wednesdays, Saturdays, Sundays, and holidays the art galleries are free to the public. On other days an admission fee of 25 cents is charged.

Field Museum of Natural History

Field Museum of Natural History, Jackson Park. The museum is an educational institution organized in 1893, at the close of the World's Columbian Exposition. The nucleus was formed by the contributions of rare objects of interest made by prominent exhibitors at the Exposition. Intended originally to bear simply the name of "The Columbian Museum," the splendid gift of $1,000,000 by the late Marshall Field caused the name of the donor to be prefixed to the historic name. In November, 1905, this name was changed to the "Field Museum of Natural History." Mr. Field's magnificent bequest of $8,000,000 is to house, enlarge, and perpetuate this vast undertaking, providing a permanent site

can be secured on the lake front. It is proposed to erect the new building in Grant Park, facing Congress Street. The structure will probably surpass anything of its kind in the world. Admission is free on Saturdays and Sundays. On other days a fee of 25 cents is charged.

The Principal Libraries of Chicago

The Public Library occupies the block bounded by Wabash and Michigan avenues, Randolph and Washington streets. The library was organized in 1872 and is housed in one of the handsomest library structures in the country. From a small beginning the collection of books has grown to about 350,000 volumes. The average daily circulation of books is about 5,000 volumes. The cost of maintaining this institution is about $275,000 a year.

This library is free to residents of the city. Books may be borrowed either at the main building downtown or at any of the delivery stations. The only requirement is that the borrower must furnish a certificate signed by a property owner guaranteeing the library against loss.

Other important libraries are the Newberry Library, on Walton Place, occupying the block between North Clark Street and Dearborn Avenue; the John Crerar Library, on the sixth floor of the Marshall Field building, entrance 87 Wabash Avenue; the Chicago Historical Library, at 142 Dearborn Avenue; and the Chicago Law Institute, which occupies the tenth floor in the County Building.

The University of Chicago

The University of Chicago, 58th Street and Ellis Avenue. The city of Chicago, because of its libraries, museums, and art galleries, and the opportunities that it presents for the study of present social, industrial, and political conditions, affords an ideal environment for a twentieth century university. This the University of Chicago preëminently is. The location on the Midway Plaisance, an avenue a block wide and a mile long, extending from Washington Park to Jackson Park, the two largest South Side parks, is ideal, as it removes the institution from the noise and dust of the city. The campus covers a little more than sixty-six acres, representing a cost of more than $2,750,000. The buildings of the university number thirty-one and are valued at about $4,420,000. The total value of buildings and grounds is more than $7,000,000. The endowment amounts to more than $8,500,000. The entire assets of the university, including buildings, grounds, equipment, and endowment are about $18,000,000. The yearly expenditures exceed $1,000,000.

Chicago Parks

There are within the limits of the city of Chicago nearly eighty public parks. These include small parks and squares, and cover an area of nearly 3,200 acres, exclusive of the miles of boulevard, which are part of the park system.

The principal parks are: Jackson Park (524 acres), on Lake Michigan, South Side, extends along Jackson

Park Ave. from 56th to 67th Sts.; connects by Midway Plaisance (80 acres) with Washington Park (371 acres), lying along Cottage Grove Ave., 51st to 61st St.; Lincoln Park (513 acres) North Side, on lake front from North Clark St. and North Ave. to Diversey Boul.; Humboldt Park (206 acres) Northwest Side, California Ave., Division to Augusta Sts.; Garfield Park (187 acres) West Side, on both sides of West Madison St. between Homan and Hamlin Aves.; Douglas Park (182 acres), Southwest Side, Ogden Ave. from W. 12th St. to W. 19th St.; Grant Park (211 acres), in process of construction, extends along Michigan Ave. from Park Row to Randolph St.

Location of Principal Buildings

Of special interest to the visitor are the many modern and imposing structures, a number of which are denoted in the sky-scrapers class. A list of the principal buildings includes the following:

Principal Buildings

Academy of Sciences, Lincoln Park, opposite Center Street.

Art Institute, Michigan Avenue, at foot of Adams Street.

Auditorium, Congress Street, between Wabash and Michigan avenues.

Board of Trade, Jackson Boulevard, between La Salle and Sherman streets.

Carson, Pirie, Scott and Company, southeast corner State and Madison streets.

Chamber of Commerce, 138 Washington, corner of La Salle Street.

Chicago Historical Society, 142 Dearborn Avenue.

Chicago Stock Exchange, 108 La Salle Street, corner of Washington Street.

City Hall, La Salle Street, northeast corner of Washington Street.

Columbus Memorial, southeast corner State and Washington streets.

Commercial National Bank, corner Adams and Clark streets.

Cook County Jail, Dearborn Avenue, northwest corner of Illinois Street.

County Building, Washington Street, northwest corner of Clark Street.

Custom House, Dearborn Street, between Adams and Jackson.

Fair, The, State and Adams streets.

Field Museum of Natural History, Jackson Park.

Field, Marshall, retail, block bounded by Wabash Avenue, Washington, State, and Randolph streets.

Field, Marshall, wholesale, Adams Street and Fifth Avenue.

First National Bank, 101–119 Monroe Street, northwest corner of Monroe and Dearborn streets.

First Regiment Armory, Michigan Avenue, northwest corner of 16th Street.

Great Northern, The, 77 Jackson Boulevard.

Heyworth, 34–48 Madison Street, southwest corner Wabash Avenue.

Illinois Trust & Savings Bank, northeast corner La Salle Street and Jackson Boulevard.

Majestic Theatre, 73–75 Monroe Street.

Marquette, 204 Dearborn Street, northwest corner of Adams Street.

Masonic Temple, northeast corner of State and Randolph streets.

McClurg, 215–221 Wabash Avenue.

Medinah Temple, Dearborn Avenue, southeast corner of Walton Place.

Merchants' Loan & Trust, northwest corner Clark and Adams streets.

Monadnock, west side Dearborn Street, Jackson Boulevard to Van Buren Street.

New Illinois Athletic Club, 145 Michigan Avenue.

New York Life Insurance, 171 La Salle Street, northeast corner of Monroe Street.

Old Colony Building, 84 Van Buren Street, southeast corner of Dearborn Street.

Railway Exchange, northwest corner Jackson Boulevard and Michigan Avenue.

Rand-McNally, 158–174 Adams Street.

Real Estate Board, 59 Dearborn Street, northeast corner Randolph Street.

Rookery, The, 217 La Salle Street, southeast corner of Adams Street.

Rothschilds, A. M. & Co., State and Van Buren streets.

Siegel, Cooper & Co., State, Congress, and Van Buren streets.

The Temple (Woman's), southwest corner of La Salle and Monroe streets.

Title & Trust, 100 Washington Street.

Tribune, southeast corner of Dearborn and Madison streets.

U. S. Appraisers, 157 Harrison Street, northwest corner of Sherman Street.

Ward, Montgomery & Co., 111–119 Michigan Avenue, northwest corner of Madison Street.

Y. M. C. A., 153–155 La Salle Street, between Madison and Monroe streets.

Young Women's Christian Association, 288 Michigan Avenue.

Principal Railroad Stations and Ticket Offices

Dearborn Station.....*Dearborn and Polk streets*

NAMES OF ROADS	TICKET OFFICES
Atchison, Topeka & Santa Fe	105 Adams Street.
Grand Trunk	249 Clark Street.
Chicago & Erie	234 Clark Street.
Monon Route	182 Clark Strees.
Wabash	109 Adams Street.

Grand Central Station.....*Harrison and Fifth Avenue*

NAMES OF ROADS	TICKET OFFICES
Pere Marquette	206 Clark Street.
Baltimore & Ohio	244 Clark Street.
Northern Pacific	208 Clark Street.
Chicago Great Western	103 Adams Street.

Union Passenger Station.....*Canal and Adams streets*

NAMES OF ROADS	TICKET OFFICES
Chicago, Burlington & Quincy	211 Clark Street
Chicago & Alton	S. E. cor. Clark & Monroe.
Chicago, Milwaukee & St. Paul.	95 Adams Street
Pennsylvania Lines	N. W. cor. Clark & Jackson.

Central Station.....*Lake Front and Twelfth Street*

NAMES OF ROADS	TICKET OFFICES
Illinois Central	117 Adams Street
C. C. C. & St. Louis (Big Four)	238 Clark Street
Michigan Central	236 Clark Street
Wisconsin Central	204 Clark Street

La Salle Street Station.....*Van Buren and La Salle streets*

NAMES OF ROADS	TICKET OFFICES
Chicago & Eastern Illinois	91 Adams Street
Chicago, Rock Island & Pacific.	91 Adams Street
New York, Chicago & St. Louis.	107 Adams Street
Lake Shore & Michigan Southern	180 Clark Street

Chicago and North Western Depot....*Kinzie and Wells streets*

NAME OF ROAD	TICKET OFFICE
Chicago & North Western Ry.	210-212 Clark Street

Steamship Lines

Goodrich Transportation Co., foot of Michigan Avenue.

Graham & Morton Transportation Co., foot of Wabash Avenue.

Manitou Steamship Co., "The Mackinac Line"; general offices and docks Rush and North Water streets. Passenger service exclusively between Chicago Charlevoix, Petoskey, Harbor Springs, Bay View, Mackinac Island and all points east, north, and west; Joseph Berlotzheim, General Passenger Agent.

Northern Michigan Transportation Co., steamers "North-West" and "North Land," dock foot of Michigan Avenue, sailing Wednesdays and Saturdays.