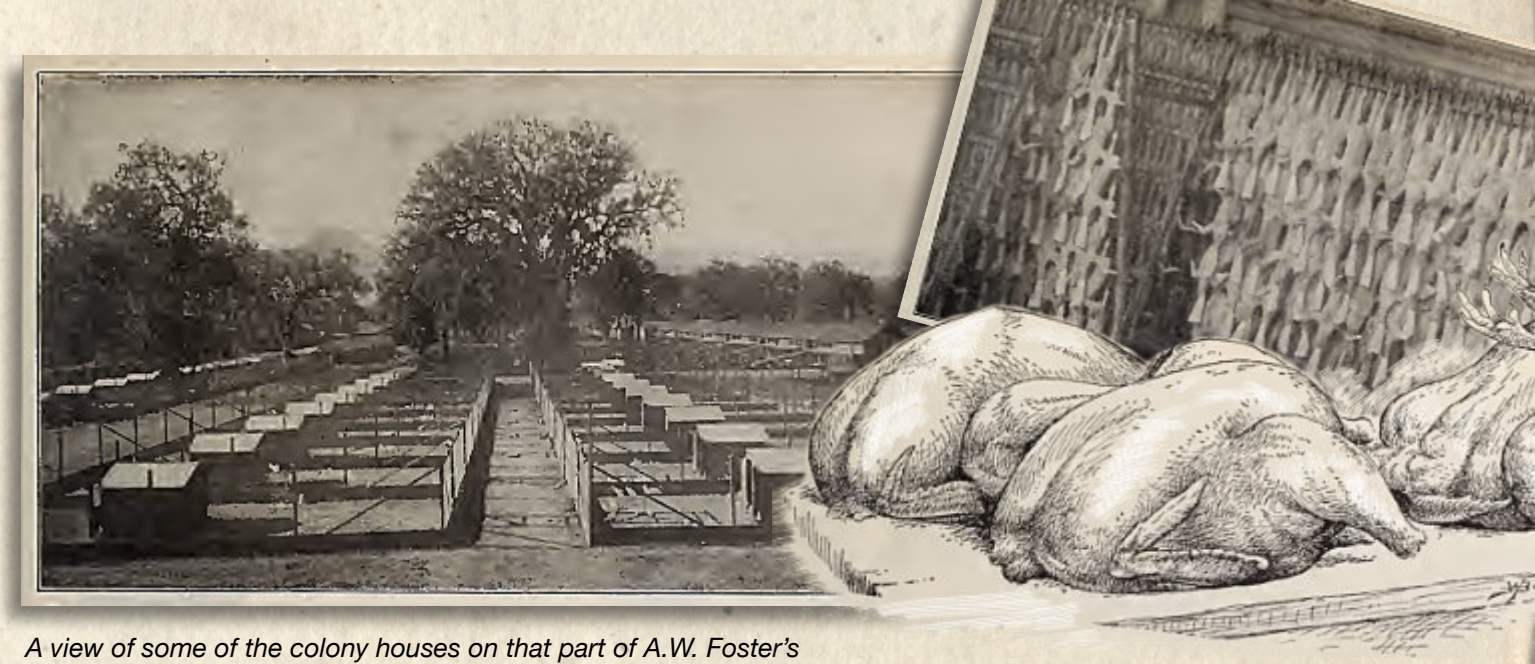


A view of some of the colony houses on that part of A.W. Foster's California ranch that is devoted to poulty.

COOL CHICKENS

FROM SHOW CHICKEN TO ROASTER

Nov 2022
Text: Sigrid van Dort

The early poultry industry before differentiation in meat and eggs after WW2, did you think about it ever? This transition took years because it was largely driven by technical innovations.

It was a hybrid occupation for a long time: you were a chicken lover and went to shows with your chickens only to get a picture from Schilling and see it printed in your favourite chicken magazine, and at the same time you were trying not to go bankrupt with it. So your chickens had to finance themselves. Even then, everything was expensive. In America, though, there was an advantage: plenty of space and a government that kept a reasonable distance. Although income tax on all income was introduced in 1913, though. Oh well, who checked that? A chicken more or less is not something to crow about...

Here are just a few subjects in which hobbyists started to professionalise. Whether it was the chicken farmer who scaled up, or the suppliers, because a few broody chickens were no longer enough. Feed also innovated, which is another topic. Scaling up out of control hobbyism meant that the rest of the chain had to grow with it. Here some impressions of innovations.

Interior view of a poultry fattening house at Morristown, Tenn.

Milk-Fed Chickens

The process of special feeding before killing consists of buying the chickens, cooping them in batteries and feeding them a mash of ground meals mixed with buttermilk.
For this feeding the "Barred and White Rocks are the best. The Barred is the best farm chicken; it has more stamina and runs heavier; but the White has no dark pin feathers," said Prof. Pierce. "We like all the American breeds and the Orpingtons, however. The Buff breeds are good. The pickers insist that the yellow chickens pick easiest."

For milk-fed broilers the chickens should weigh 1 pound to 1 3/4 pounds when put up for fattening. There is no market for broilers that weigh over 2,5 pounds, so the plant does not want the lean chickens to weigh over 1 3/4 pounds when put up for fattening. The larger cockerels,

ON REFRIGERATION

Commercial refrigeration started in **1856** by the American Alexander C. Twinning. Shortly afterward, an Australian, James Harrison introduced vapour-compression refrigeration to the brewing and meat-packing industries.

A more complex system was developed in **1859** by the French Ferdinand Carré. Unlike earlier vapour-compression machines, which used air as a coolant, Carré's equipment contained rapidly expanding **ammonia.** Ammonia liquefies at a much lower temperature than water and is thus able to absorb more heat.

Carré's refrigerators were widely used. Vapour-compression refrigeration became, and still is the most widely used method of cooling. In spite of the successful use of ammonia, it had a severe disadvantage: if it leaked, it was stinky as well as toxic.

This system was used till the **1920s**, when synthetic refrigeration liquids were developed.

The new stuff you might know: freon.

A study of this picture of the first prize New York Barred Plymouth Rock cock bird gives a fair idea of the great qualities in shape that Haldie Nicholson's splendid old bird displayed. His rare depth of breast and body can be easily recognized from this photographic study, and his breadth was in harmony with his other generous proportions. That these points are given full value is an assurance that economic qualities are not being overlooked in America's leading practical breed. In color points photographic reproduction gives scant justice to such a fine arrangement of markings. It takes a good bird to win both at New York and Boston in the strong classes that are assembled there so near the strongholds (so to speak) of the veteran fanciers.—F. L. Sewell.

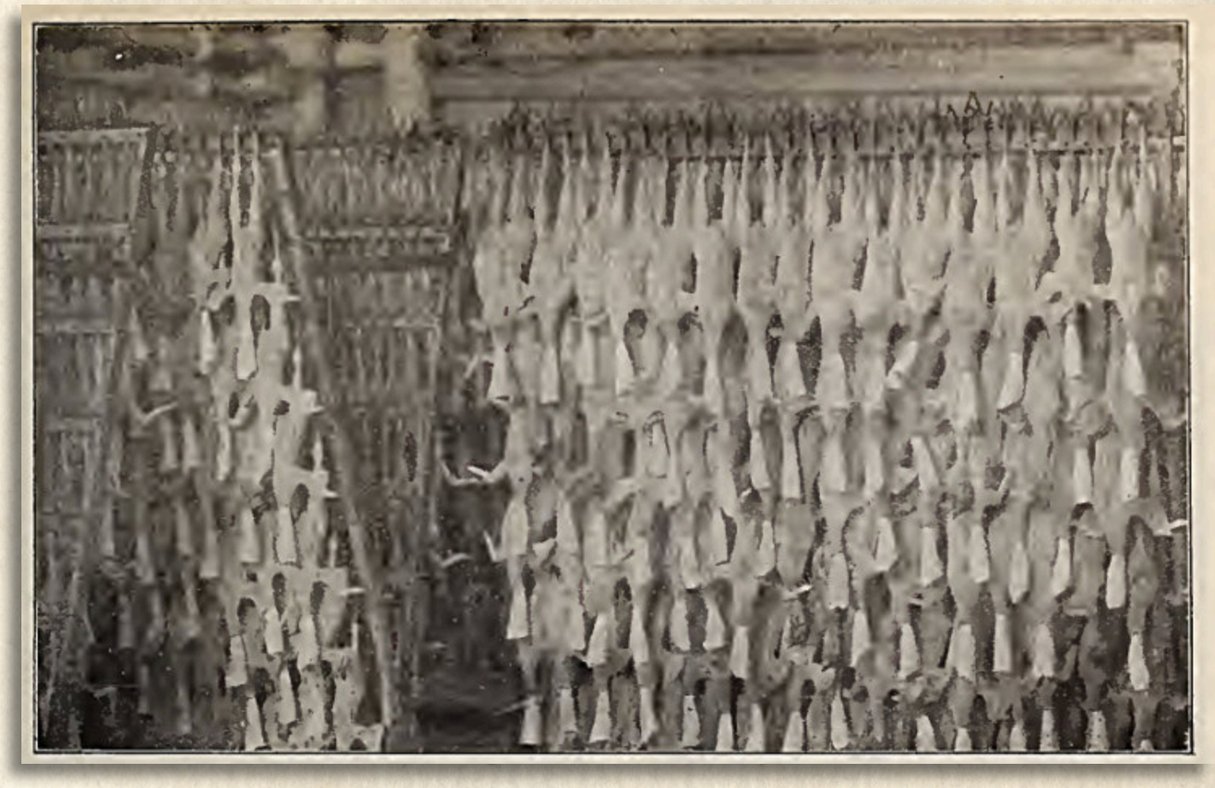
Fig. 6 —The box shown above contained one dozen 3½-pound "Empress" milk-fed chickens at the Naive-Spillers Company's plant, Nashville, Tenn. These birds had been specially fed and carefully killed, dressed and chilled. The veriest novice in marketing would have no difficulty in deciding to select these, if offered in competition with ordinary market stock. We believe the economical housewife would not hesitate to pay a premium above market price for such birds.

those weighing 314 pounds and over, are fed. The larger pullets are seldom sent to market, hence do not reach the feeding batteries. Cocks are not milk-fed; hens are often fed.

The gain in weight and profit on them is not great, but the increased merit of their carcass, its fullness, softness of flesh and whiteness, makes a better product."

"The ration fed at the Naive-Spillers plant, Nashville, in the summer, is as follows: Cornmeal, 7 parts, by weight; low-grade flour, 3 parts, by weight; middlings, 2 parts, by weight; beef scraps, 1 part, by weight.

About two pounds of milk are mixed with every pound of feed. The mash should be mixed to the proper consistency, which is like batter, or so it



Above: View of dressed chickens on racks in the freezing room of the Naive-Spillers Company's plant, Nashville Tenn. The ammonia pipes covered with frost can be seen just above the racks. These birds were dry picked (plucked) and put in a refrigerator room as quickly as possible As the birds are thoroughly chilled, they are packed in boxes, see other pics and shipped in refrigerator cars. We talk 1913 here and all is set

Advertisement below: If you were serious about your Plymouth Rocks, whether they made any money or not, you had to advertise to get rid of your animals. No, not eggs or chicks, just young chickens that you know have been given a good start and made it through transport. You don't want to have dissatisfied customers if they mess up. Smart Latham only sold young chickens. And look he won a lot of awards too!

FIRST PRIZE SILVER GREY DORKING COCK
MADISON SQUARE GARDEN N.Y. 1912-13
SKYLAND FARMS · STERLINGTON N.Y.

In writing about the bird illustrated here, Artist A. O. Schilling said: "It is to the Roman conquest of Britain that we are indebted for the splendid Dorking fowl. The many splendid table qualities have made it the favorite fowl among poultry keepers of England, who supply the best and finest market poultry products. The specimen of the Silver Gray variety shown above attracted a great deal of attention at the Madison Square Garden show, and many comments on his massive size were heard. He also possessed rare color and the contrast of his silvery neck and saddle feathers with the deep, rich lustrous black breast and tail was striking indeed. H. J. Fiske, manager Skylands Farm, Sterlington, N. Y., is a staunch admirer of this old fowl and raises many fine specimens each year."

There was a frenzy of promotion against each other; the Plymouth Rock was better than the Dorking or vice versa. Don't forget the Wyandottes! Animals who scored high at a show were proof their breeder had good hatching eggs or chicks with the potential to become all Winners. And if not, they were fattened for the market.

An ideal Silver Gray Dorking hen—a grand, big, long hen, very deep in body, short in shanks, with good toes, a fine head, tail carried at the correct angle and a wealth of plumage, sufficiently hard-surfaced not to appear fluffy. This hen was an English winner—a type of the best produced. She was bred and owned by A. C. Major, Langley, Bucks, England.—F. L. Platt.

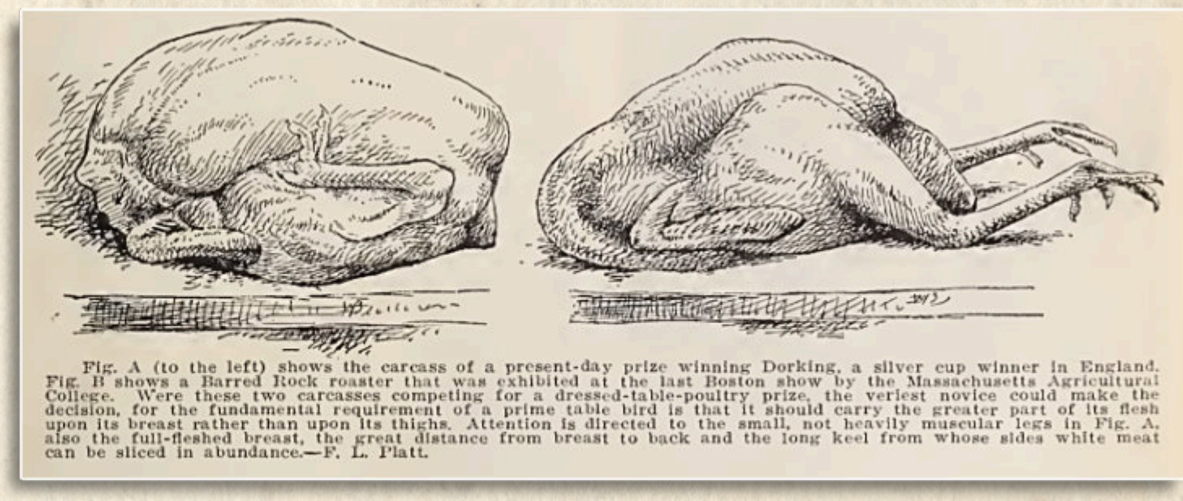
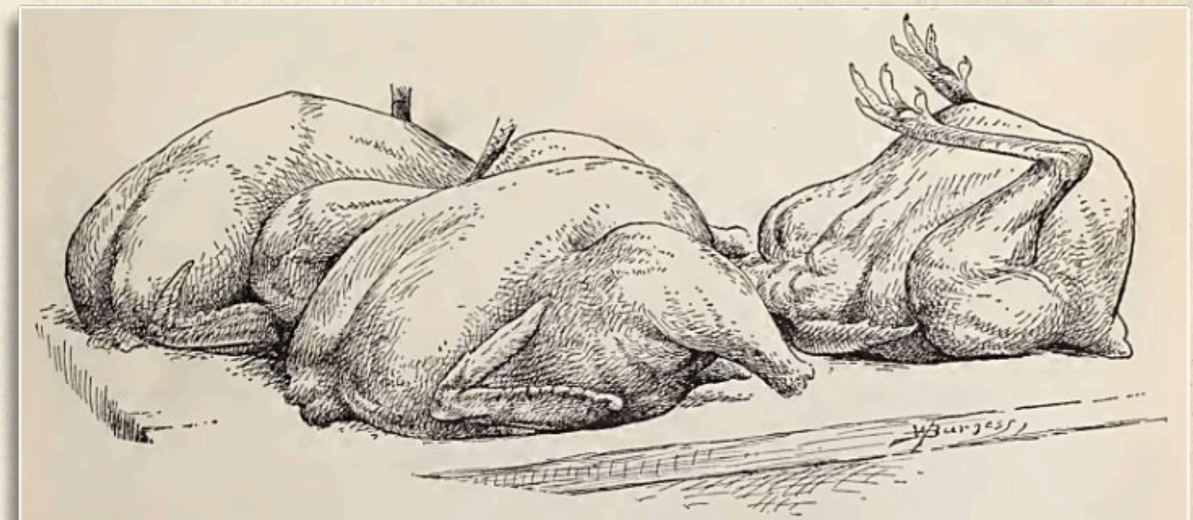


Fig. A (to the left) shows the carcass of a present-day prize winning Dorking, a silver cup winner in England. Fig. B shows a Barred Rock roaster that was exhibited at the last Boston show by the Massachusetts Agricultural College. Were these two carcasses competing for a dressed-table-poultry prize, the veriest novice could make the decision, for the fundamental requirement of a prime table bird is that it should carry the greater part of its flesh upon its breast rather than upon its thighs. Attention is directed to the small, not heavily muscular legs in Fig. A, also the full-fleshed breast, the great distance from breast to back and the long keel from whose sides white meat can be sliced in abundance.—F. L. Platt.



The Dorking has been aptly termed "the bred-to-be-eaten fowl." It is always in good flesh. Fig. C (in the left foreground) shows the carcass of a thoroughbred Red Dorking, and Fig. E (to the right), the carcass of a mongrel. Fig. D is the large carcass of an Azeel Game. It makes a nice appearing picture, but with the poulterer it does not compare favorable with the Dorking. Not merely the weight of a carcass, but the relative weight of the bone to the flesh and the relation of the offal to the edible parts are considered in prime table poultry. In the Dorking the bone is of relatively small size in proportion to the size of the bird; it is nearly a fourth lighter than the bone of the Azeel when the live specimens of both breeds weigh the same.—F. L. Platt.

will run easier than thick cream. More milk is added in hot weather than in cold weather. No water is given, except that some water is mixed with the milk and a little ice water is occasionally put" in the troughs in the summer. Sometimes a pinch of salt is added to the ration, but too much salt is dangerous, for it creates a thirst and evidently destroys the digestive juices and makes the skin dry and harsh and the feathers ruffled.

Another mash ration—one suited to cooler weather—is as follows: Cornmeal, 9 parts, by weight; low-grade flour, 3 parts, by weight; beef scraps, 2 parts, by weight; bran,

Feeding 'battery'. This is one of the 16-compartment, four-story crates, with troughs to hold the batter-like food, that are in use at Naive-Spillers company's plant. It is on wheels so that it can be easily moved about when necessary. The troughs are galvanised and the floors are wire, under which are sliding wooden platforms to facilitate cleaning. This style of feeding coop is giving good satisfaction.

1 part, by weight; cut alfalfa, ⅝ part, by weight. In this ration the beef scrap is increased as well as the cornmeal, for protein must always be added to balance the carbohydrates. In this, as in the first ration, the same amount of milk should be used.

The milk used should always be sour. The milk-feeders, not only In this country, but in Sussex, England, and Londerzeel, Belg-ium, have long relied on sour milk in preference to fresh milk, and Prof. Pierce clearly explained its greater food value to us as follows: "A chicken has no enzymes to digest sweet milk. An enzyme brings things together and digests them, but remains unchanged Itself. Human beings have enzymes that can work on either sweet or sour milk, but a chicken's can work only on sour milk." Buttermilk is better than skim milk for feeding, although skim milk would certainly be second choice.

It is not only the increased size, but the plumpness of body and succulence of flesh that are to be considered. A milk-fed chicken is worth five cents a pound more because of its better quality. The cost of increasing the weight of the chickens is from 9 to 10 cents a pound. This cost is based on the following figures:

Cornmeal	$27 a ton
Low-grade flour	$37 a ton
Middlings	$27 a ton
Beef scrap	$60 a ton
Alfalfa	$34 a ton
Wheat bran	$25 to 28 a ton
Buttermilk	$3 a ton

One man cares for each 3,000 chickens. He cleans the troughs daily, feeds the stock, white-washes the batteries and does all the work incidental to the process of feeding. Much depends on the feeder. The birds should be cooped in a quiet, airy building. When the room is moderately shaded, the birds are inclined to be less restless, and comfort is essential to fattening.

Good ventilation is very important, not only that the rooms containing so many chickens may smell sweet and the odors be carried off, but also because the oxygen contained in fresh air is necessary to perfect digestion and assimilation.
The birds are fed in troughs twice daily. Charcoal and grit are fed twice a week, coarse grit being used.

Most feeders prefer fine grit for ground feed, but there, grit as big around as a lead pencil is preferred. "What trouble do you have with the chickens going off their feed?" we asked Prof. Pierce. "None, if they are not fed too much," was the reply. At the Naive-Spillers plant the chickens always "eat the troughs dry"—getting all the feed that they will eat, but no more than they will eat up clean.

The droppings should be soft and not hard. If too loose, charcoal will correct the looseness, and if too hard, more bran is put in the ration. When the birds go back on their feed from over-feeding, straight buttermilk is used as a corrective. Serious trouble is certain to follow feeding meal that is not sweet or that is musty. Aspergillus, caused by the aspergllua is usually fatal. The chicken becomes thin and dies, and upon examination the lungs show congestion.

One danger that goes with crate feeding and confinement is that chickens are apt to eat each others' feathers. This trouble is only occasional, but when the feathers are full of sap and the birds get the taste of blood from feather pulling, they are apt to eat into each other. Attempt is made to overcome this by feeding more animal protein or meat solids, as it may be the ash or phosphates and not the protein that is needed to overcome it.

Confinement, however, is half the process of fattening. Then the feed is given in as easily assimilated a form as possible. On a good specimen the shanks fatten and round out and he becomes clumsy on his feet. There is a great difference in specimens.
The chicken should not be too rangy. A snaky, or elongated skull, is bad. The head of a good feeder is large, round, full and wide; the beak strong; mouth, big; eyes, bright and bold; shanks, stout, and toes, firm. A good feeder always has a firm and bright plumage.

Good breeding stock is a funda-mental necessity. Then the chicks are prime to coop for fattening when their pelvic bones have straightened out. With good stock ready to feed and a good ration, quietness in the feeding battery, an ever-watchful feeder and cleanliness will surely bring good results. On yellow skinned and yellow legged poultry the milk feeding will whiten the skin and leave the shanks yellow, and white flesh and soft, plump bodies are the marks of the skillful craftsman.

Killing, Packing and Shipping
The Naive-Spillers plant has a killing capacity of 5,000 chickens a day, and a fattening capacity of 10,000 Chickens every two weeks. Two years ago this concern was counted an "ice packing house." Today its improved methods are resulting in an increase in quality that is enabling its Stuff in the eastern markets, not only to bring a higher i.rice than other Southern produce, but a higher price than is quoted for "western" products. Naturally, the firm is enabled to pay more to the producer, thus encouraging him and making poultry culture in Tennessee more profitable.
The loss of quality in dressed poultry starts with improper killing. Packers have long understood that the crop must be empty, so that the carcass will not show a blue crop under the skin. They have come to appreciate the difference between a staggy cockerel and a roaster, the latter being a soft cockerel, whose spurs have not started, while the former is approaching the cock class. But it was left to Dr. Mary E. Pennington, of the Bureau of Chemistry, and the field men, like Prof. Pierce, to point out the loss and danger of improper bleeding, of not thorough bleeding. Bacteria or germs live on blood—the standard laboratory culture for their growth is composed largely of beef bouillon - and a carcass deteriorates rapidly when blood remains in the avenues of its system for the nourishment of swarming colonies of decomposing bacteria.

After killing, it is a question of picking (plucking) - of scalding (hot water) versus dry picking. The Bureau of Chemistry has pointed out that scalding thickens the skin and breaks down the outer layer of skin. It is the outer layer which is a barrier to bacteria. When dry picked, the outer layer of skin continues as a protection. All the poorer markets, however, want scalded stuff.

Scalding gives a better appearance by plumping up the carcass. Chicago prefers scalded poultry. New York and Philadelphia are outlets for all grades, but Boston, which is the best poultry market in the world, is a poor market for poor quality stuff. New England poultry is all dry picked.

Cooling in ice water plumps the body, but it and packing the poultry in barrels, with ice between each layer, robs the poultry of its flavor. When the poultry from Tennessee reaches New York, for instance, the barrels once filled with ice and firm carcasses, are "barrels of chicken soup." While the barrels are in transit the ice melts and the draining away causes a loss of valuable food elements, such as soluable nitrogen or protein.

Prof. Pierce explained the loss from ice packing, by saying that on a car containing 20,000 pounds of dressed poultry, valued at 20 cents a pound, the loss was $480, of which $280 was a loss of food value from wasting away, and $200 was the extra profit the packer made from the poultry absorbing water. Thus- the consumer is cheated out of $280 on food alue, nnd in addition pays the packer $200 to which he is not entitled.

Ice packed poultry takes up water to the extent of about 5 per cent of its own weight. Therefore, the government "of the people, by the people, for the people" is introducing into the packing plants the dry plan of marketing poultry. It consists of preventing water from touching the fowls from the time they are killed until they reach the

Between Buffalo, N. Y. and the following points.	5 lbs. Express Insured		10 lbs. Express Insured		20 lbs. Express Insured	
	New Rates	Old Rates	New Rates	Old Rates	New Rates	Old Rates
Chicago, Ill.	$ .28	$ .50	$ .36	$ .60	$ .52	$ .75
St. Louis, Mo.....	.30	.60	.40	.75	.60	1.00
Denver, Col.	.44	.80	.69	1.25	1.18	2.00
Butte, Mont.	.56	.80	.91	1.40	1.63	2.50
Dallas, Tex.	.42	.75	.64	1.15	1.08	1.65
San Fr'cisco, Cal.	.68	.80	1.16	1.50	2.12	2.85

consumer. This method means less infection by bacteria, hence less rapid deterioration, and the conservation, so far as possible, of all food elements.
At the Naive-Spillers plant the birds are put in a refrigerator room immediately after being killed and plucked. They are chilled as soon as possible after killing, for such a food supply as a chicken, together with warmth and moisture, would breed bacteria rapidly. A temperature of 30 degrees F. (-1.1C) in the refrigerator room, however, arrests the development of the germs. By way of explanation, it may be said that all decomposing germs may not be disease bearing to humans. Also, in live poultry or animals, toxins are continually developed which destroy bacteria, but when the bird or animal is dead, the toxins are no longer developed. That is why the germs develop so much more rapidly in a dead or dressed specimen.
When the stock is thoroughly chilled it is packed in boxes and shipped in refrigerator cars. If the packer does not have a carload each week the stock is frozen in the refrigerator rooms at a temperature of zero (-18C) to 5 degrees (-15C). It is frozen at a low temperature, so that it will freeze quickly and thoroughly. At 28 degrees (-2.2C), which is below "freezing," the carcasses would "case," that is, they would freeze on the outside before without the inside and the bird would decompose inside, and when brought out and displayed in the butcher shop, the decomposition would not be long in working through.
If the stock is not to be frozen hard, but is to be loaded Into cars, it is packed at a temperature of 30 degrees (-1.1C). The refrigerator cars are held at 30 degrees. "If you run them at 29 degrees," said Prof. Pierce, "the legs freeze and turn dark." "The best package on the market, as far as preservation of quality is concerned, consists of waxed parafine paper cartons, containing one roaster or two broilers," continued Prof. Pierce. "These cartons are packed 12 birds to the crate.
Of course, you can only put up your very finest pack in this way — it is too costly a way to pack inferior quality." There is no ice in the boxes and the shipment goes right through to the market in refrigerator cars.
New York is planning on a new $5,000,000 market, and the cars will be run right up to it.
In this market there will be refrigerator-refrigeration instead of ice-box refrigeration, and the boxes of poultry coming out of the cars will not have to be opened and the birds hung up in the ice chests, but the boxes of dressed poultry can go into the great refrigerator rooms undisturbed.
This new market is to be prepared to receive 4,000 cars of perishable food products a day.
In summing up the dry marketing methods, Prof. Pierce prophetically

The Naive-Spillers company's plant has a fattening capacity of 10.000 chickens every two weeks. Above is shown a sectrion of the feeding 'batteries' where the purchased chicks are cooped and fed special rations, in which sour milk plays an important part. The feed mixer is on wheels (behind the man with the jug) so that it can be pushed about for convenience. Below: A manure truck at the large milk-feeding plant.

said: ***"I hope to see every county seat in this producing country equipped with a packing plant wherein there shall be means of dressing and cooling poultry and handling and cooling eggs before shipment — and this central plant shall do the marketing for the entire community."***
Between the hatching and the marketing there is the link of growth, and it is welded and fashioned into form by the climate, the soil, drainage and shade, and the abundance of plant and animal life - then the care of the farmer.
In all the former the south is rich and conditions are congenial to a most successful development of chickens, but it is a fact that southern poultry is not properly grown... Oh, well.

Source: Reliable Poultry Journal Jan. 1913 - Jan 1914.

SKETCH OF THE TIME: 1913

16th Amendment USA > income taxes on everything (oops). First women's suffrage demonstration in Washington, UK was earlier, Woodrow Wilson becomes president of the USA. Hitler moves to Vienna. Vienna is the place where also are Trotsky, Tito, Berg, Stalin, Freud, Jung, Wittgenstein. Later Stalin is arrested by the secret police and sent to Siberia, tsar still on throne. Australia builds new federal capital in Canberra, Woolworths opens in New York. Women's suffrage Norway. Aldi opens in Essen. Cook 6th PM Australia, BASF starts fertiliser plant, Ford implements moving assembly line for model T. Woodrow Wilson starts Panama Canal with a Bang, Senghenydd colliery disaster South Wales kills 440, first oil-fired battleship British Royal Navy, Ghandi arrested leading a miners march in S.Africa, Federal Reserve system created in the USA, Camel cigarettes introduced in the USA, Astra from later AstraZeneca founded in Sweden, Richard Nixon, Rosa Parks, Irwin Shaw, Etta Baker, Gerald Ford, Helen Levitt, Jesse Owens, Trevor Howard, Vivian Leigh and others saw the light, were born.

In June 1914 the Great war that would end all wars (WW1) started and everything changed for the poultry men. Women took over while the workers were fighting overseas. The market changed and a couple of years later the Spanish flu would hit the families, missing their sons already.
The chickens strutted on, while on the other side of the ocean the guns roared and the trenches filled with mustard gas.

A two-story, 400-foot long ("No. 2") laying house on the poultry section of the ranch of A. W. Foster, located near San Francisco, Calif. No- doubt many mid-west and eastern readers of R.P.J. were surprised to learn, through Mr. Hunter's articles, what large sized poultry plants exist on our western coast. On this ranch are 8,000 layers are kept.