

CHAPTER 4—EGGS

Jim Avery.**They liked chickens.****Jim's income.**

Born and raised on a farm, Jim Avery had gone to work in one of northern Oregon's big lumber mills when he was a young man; but farming was in his blood and he always had a hankering to get back to it. His chance came when he was almost 50 years old. An accident at the mill left him with a bad leg and a small pension, not enough to live on. The children were grown by then and had their own families to take care of. It took Jim and Martha no time at all to decide what they were going to do—buy a farm with their small savings and some borrowed money and raise chickens. (It is an interesting fact, incidentally, that nearly half the poultrymen in that region are past the age of 55, and about a fourth of them are over 65.)

That was ten years ago. They never regretted it. They made very little money, but they liked the life, they liked the country, they liked chickens, and they produced enough fruit, berries, vegetables, and milk on the place, plus the eggs and poultry, to eat, as Jim put it, like royalty. For this was a beneficent land they lived in, this valley area between the Cascades and the Coast Range—mild winters, cool summers, plenty of rain, magnificent trees and mountains, a climate and soil admirable for the production of fruits and nuts and dairy products and poultry, good neighbors, and booming towns and cities to provide nearby markets.

Jim's income from the farm in 1954 was about \$3,600, so he was in what the Census Bureau calls Economic Class IV. The place had 35 acres, which is very small as farms go but not as small as many highly specialized poultry farms. With that much land he could devote 14 or 15 acres to pasture and 9 or 10 acres to growing a little hay, oats, wheat, barley, fruits, nuts, and vegetables. There was enough to sell about \$170 worth of crop products in 1954, besides what he fed and used in the house. In addition Jim and Martha kept a couple of milk cows and usually had a calf or two and a pig. The cows were in production practically only during the long grazing season, but they produced enough milk to bring a return of some \$140 from a local factory making Oregon's excellent cheddar cheese. The sale of other livestock products aside from eggs and poultry brought in about the same amount.

Around \$3,100 of the \$3,600 farm income came from poultry products—\$2,300 from eggs, \$440 from broilers, \$310 from other chickens sold for meat, and \$60 from minor items. Essentially, then, Jim and Martha were in the egg business, which contributed two-thirds of their farm income while other poultry products brought in another 20 percent or so.

Small-scale producer in a squeeze.

Not much of the \$3,600 was left after meeting expenses. The ratio of costs to returns is exceptionally high in the poultry business, and it squeezes especially hard on the small-scale producer. Jim Avery, with a flock of 500 chickens (excluding those under 4 months old) of the egg-meat breed highly favored in Oregon, was on the small side as poultry farms go, and the year's work he and Martha put in did not net them more than a few hundred dollars at best. Farther down the scale, the Economic Class VI producer is more than likely to lose money. Altogether, in specialized poultry production the pressure is particularly heavy to operate on a bigger and bigger scale to make any reasonable profit. In 1954 there were almost 32,300 fewer small poultry farms (Economic Classes IV, V, and VI) in the United States than there were in 1950, but there were 11,000 more large ones (Classes I, II, and III); and the number of the biggest farms (Class I) increased by half. (This does not mean more acreage; the trend is toward less land but larger flocks.) The net decrease in the total number of poultry farms, therefore, was around 21,000 in the five-year period. One out of five in Jim Avery's economic group either went out of the poultry business or enlarged to a bigger size.

How much profit?

In fact it is questionable whether Jim Avery actually made a profit from farming in 1954. According to Census figures, poultrymen in his economic group in that particular area spent an average of \$2,660 for feed, \$114 for gas and oil, \$12 for lime and fertilizer, \$64 for hired labor, and \$43 for machine hire. These cash expenses total \$2,893, leaving a return of \$707. Jim did not spend anything for hired labor or machine hire that year, which increases the return by about \$100. But he did have other expenses. These the Census does not pinpoint specifically for Oregon poultrymen in his economic group but does estimate for poultry farms in the United States as a whole. They include purchase of chicks and other stock, machinery repair and maintenance, marketing cost, miscellaneous expenses (vaccines, veterinary services, etc.), real estate tax, interest, construction and land improvement, and purchase of machinery and equipment. The average of these expenses for the smaller-scale operations (Economic Classes IV, V, and VI) is about \$1,800. Assuming that Jim Avery did not have all of them in 1954, he did have to buy baby chicks (a sizeable item—500 at 40 cents would cost \$200), get machinery repaired, pay the veterinarian, and meet the cost of taxes and interest, all of which might well add up to enough to eliminate any profit. Certainly if you consider the poultry operation alone, with gross sales of \$3,100, it could hardly be considered remunerative.

A sense of accomplishment.

That is why Jim's small pension comes in handy, and also why, being a good mechanic and in demand, he occasionally puts in a few days working at the mill during rush periods. Considering all the food he and Martha get from the farm and the house, which is old but comfortable to live in, and the work to keep a vigorous man like himself busy and interested, he considers that farming pays; but he would admit that a good deal of the return is not in the form of hard cash but in the psychological sense of accomplishment and healthful living. He is one of the cases, increasing in number, where the city meshes directly with the country in the sense that it provides part of the farmer's livelihood, though in his case not very much.

POPULAR REPORT

In 1954 well over a third of the poultrymen in Jim's economic group in that area earned more money from outside work than the value of the farm products they sold, and a fourth of them worked at least 200 days off the farm.

How much capital invested?

Capital investment per poultry farm, United States :
1954

Land and buildings.....	\$13, 646
Equipment.....	2, 496
Livestock.....	1, 536
Total.....	17, 678

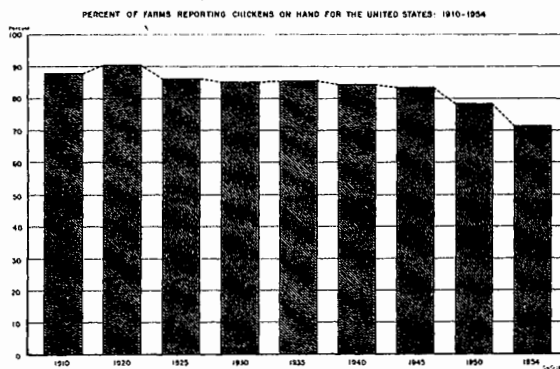
Although it is not possible from the 1954 Census figures to determine just how much capital an Oregon poultryman in Jim Avery's position has invested in his place, the figures are available for the United States as a whole. The average for a poultry farm in Economic Class IV in 1954 was a little over \$14,000—almost \$11,000 in land and buildings, about \$1,200 in poultry and other livestock, and about \$2,000 in machinery and equipment. In the case of Economic Class I poultry farms the average investment in 1954 was three times as much, close to \$45,000.

A business of paradoxes.

Jim Avery is in a business that rather bristles with paradoxes. It has about the highest sales return yet the smallest margin of profit of any type of farming. It accounts for 28 percent of all the returns from livestock production—more than half as much as dairying does; yet it adds the least value over and above costs.

Since a large share of the cost of production goes for feed, poultry producers contribute materially to the income of other farmers and of feed dealers. In particular, poultry use a lot of grain. They consume about a billion bushels a year to produce the same number of calories in the form of eggs and meat that people could get (if they had to) from one-eighth that number of bushels consumed directly.

Almost everybody used to keep chickens.



Almost everybody used to keep chickens—9 out of 10 farmers and a great many villagers and townspeople as well. On the farms they were commonly a sideline, often a source of "pin money" for the womenfolk; in the villages, a backyard companion of the vegetable garden, fed mainly on scraps. Today only one farm in 3 sells eggs (though 7 out of 10 still keep chickens, most of them for the home table), and 5 percent or less of commercial farms specialize in poultry production.

The big and little flocks.

Percent of chickens in big flocks (1,600 or more chickens)

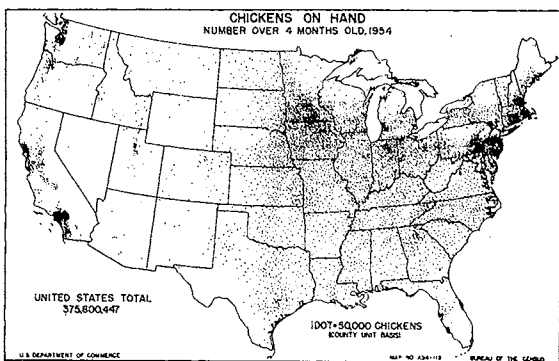
	Percent
1954.....	18.7
1950.....	9.4
1940.....	3.8
1935.....	2.9

Chickens are scattered all over the country, but the hens in 5 States—California, Iowa, Minnesota, Pennsylvania, and New Jersey—laid two-fifths of the eggs sold in 1954. In three geographic regions (of the 9 designated by Census) the small percentage of farms with big flocks of 1,600 or more had a large share of the chickens. Two-thirds of the chickens in New England were on 11 percent of the farms; over half of those in the Middle Atlantic and the Pacific regions were on less than 7 percent of the farms. On the other hand, in the East North Central and West North Central regions, which account for a little less than half of the eggs sold, over 80 percent of the chickens are in small flocks of less than 400 and one-third in flocks of 200 or less; very few farms have as many as 1,600 birds.

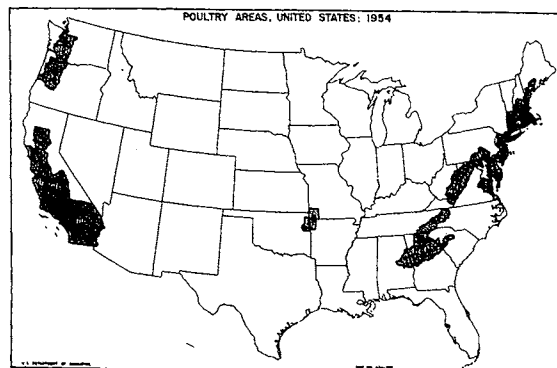
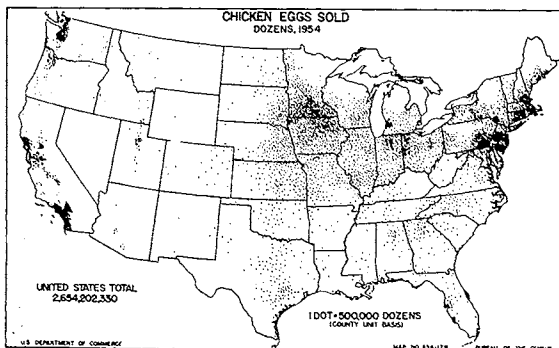
Obviously, in this huge area, egg production is seldom the main farm business. But the region produces most of the country's grain, and farmers there can feed chickens a good deal more cheaply than the specialized poultry producers in the East and West who have to import feed. Egg prices are generally higher in the East and West than they are in the Midwest.

How can the Atlantic Coast and the Pacific Coast producers compete with this situation? Partly because, devoting practically all their time to poultry, they are extremely efficient. The 15 States where laying hens averaged more than 200 eggs per bird in 1955 included all three on the Pacific Coast, where the averages were very high, around 210 eggs or more; 7 of the 9 States in the North Atlantic and Middle Atlantic regions, on the East Coast; but only 5 of the 36 States in all the other regions. The lowest egg production per bird is in some of the Southern States. But—another paradox—the South does an extraordinary job with broilers; the 16 South Atlantic and South Central States accounted for two-thirds of the 3.3 billion pounds produced in the United States in 1955, and Georgia alone contributed more than a sixth of the total United States production.

Where the chickens are located.



The first of the three maps shows where the chickens are located. Notice the intense concentrations in a relatively few coastal areas and the diffuse scattering in the Midwest. The second shows where the eggs are sold; again there are intense coastal concentrations and diffusion in the center. Finally, the third map shows the main strictly commercial poultry areas.



Gigantic setting hen.

A hatchery is a gigantic artificial setting hen much bigger than any Paul Bunyan ever had. At intervals it turns out hundreds of thousands of fuzzy baby chicks, which are shipped a day after hatching either in cartons by mail or in special trucks or vans. Artificial hatching on a large scale is not new; the Egyptians and Chinese were experts at it probably thousands of years ago, with no way to judge temperature except by touch. The modern hatchery with automatic temperature and moisture control, mechanical turning of the eggs, and so on, is new, and so is mail shipment of chicks, which began in the United States in 1918.

Progress in control of disease.

The hatchery business is now one of the highly specialized branches of the poultry industry, and it was a major factor in making present-day commercial production possible. The egg or broiler producer no longer breeds his own stock. The hatchery does the breeding or buys eggs from breeders. This end of the industry, then, is a particularly vital one, for the hen's rate of production, viability of the eggs, rate of growth, rate of feathering, size of egg, and other characteristics important to the egg- or meat-producing chicken are inherited. Progress in poultry genetics and breeding, and the specialization in breeding fostered by the development of hatcheries, are foundation stones of the industry today. Control of pullorum disease, which once killed off young chickens like a man blowing out candles on a birthday cake, is also an achievement of the hatchery business. Not that the threat is by any means removed; but the system of blood testing for carriers and accrediting hatcheries as "pullorum clean" or "pullorum passed" under the National Poultry Improvement Plan—initiated in 1935—is a major development.

From cheepers to chickens.

Though Jim Avery does not have to be a poultry genetics expert, he is well aware of the importance of good stock and selects his source of chicks accordingly. The van delivers the little cheepers to him around the first of the year. He uses small movable colony houses, each equipped with a stove to supply heat and a hover to keep the heat confined. The young chickens are kept in these houses until they are 4 months old. This early period is an anxious one. The chicks are let out into a small yard as soon as possible, and later the houses are moved to the range, where good grass and other green plants provide excellent forage and help to reduce the feed bill—high enough in any case. Feed and water must be supplied regularly, temperature and ventilation and humidity watched, overcrowding prevented, and hawks, crows, owls, rats, dogs, and other marauders circumvented.

About the time the pullets mature they are moved to the laying house. Jim converted one end of the big barn, originally built when the farm was much larger, to house chickens—not an easy job but less expensive than putting up a new building. The setup is as conveniently arranged as possible to save time and labor in collecting eggs, feeding, watering, cleaning out litter and manure, spraying and painting for cleanliness and sanitation, and inspecting the birds on the roosts to cull out or separate the sick, the poorly developed, the poor layers, the premature molters; and the building has good ventilation and admits a fair amount of sunlight.

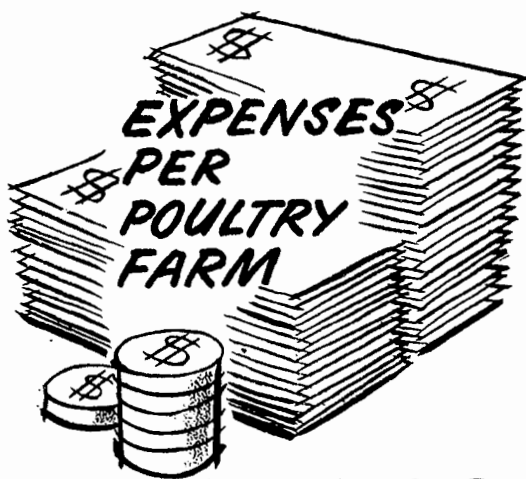
Meanwhile, before moving the pullets, the Averys have sold off their young cockerels as broilers at the age of about 3 months. They buy "straight-run" rather than sexed chicks—sexing being the process of separating males and females at the hatchery. Many specialized egg producers prefer to get only female chicks; but they cost more, and in the case of a large breed such as the Averys use, the cockerels can bring a sizable return which offsets some of the costs of egg production. In 1954 in Oregon broilers brought an average of a little over 25 cents a pound, or about 75 cents a bird, so that the Averys' \$440 broiler income represented around 600 birds. Later on, at the end of the laying season, they begin selling off the hens for meat (at a lower price per pound than broilers) and get ready to house a new batch of pullets.

Same problems, less equipment.

Jim's problems, and the factors that determine success or failure in his poultry business, are the same as those of the big producers except that he operates on a small scale and cannot afford to do many things the big producer does.

The main scientific and technological advances of recent years that have made specialized poultry enterprises possible include breeding for high production; greatly improved feeding; better disease control; the prevention of nutritional diseases; the development of efficient labor-saving practices; and, especially in the case of poultry meat, progress in wholesale and retail handling to reduce spoilage and improve quality and convenience (quick freezing has been especially important).

Feed, the big expense.

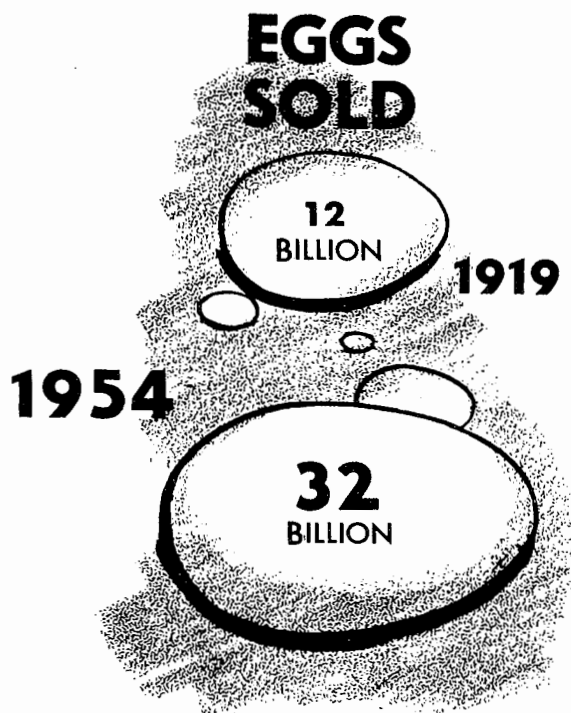


FEED = **\$6300**
 ALL OTHER = **\$3300**

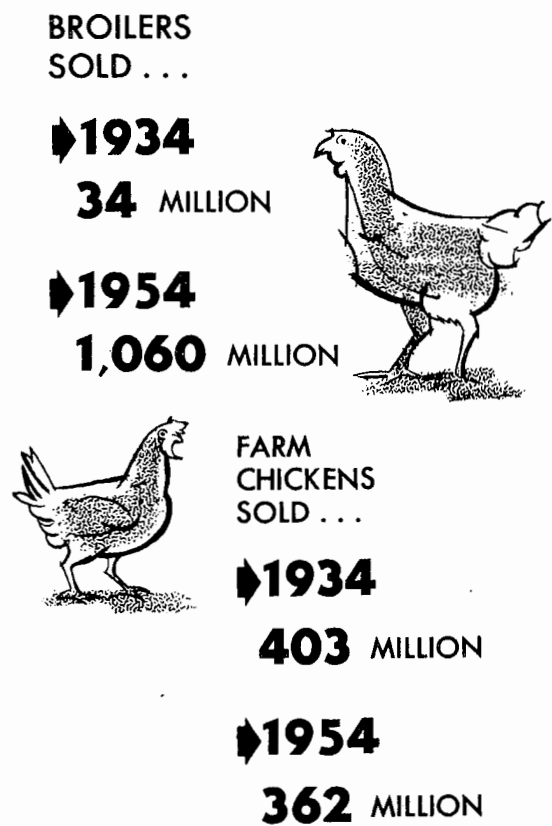
Feed, as we have noted, is the biggest single expense; the heavy breeds consume about 5 pounds for each dozen eggs produced, plus more than four and one-half pounds per pound of body weight up to laying time. Poultry rations have been worked out to a fine point, and the Averys try to do a good job of feeding. It does not involve as much figuring as it might, however, because Jim buys from the feed dealer, a large part of his feed already mixed, either in the mash form or as pellets. This makes up the entire ration to the age of 8 weeks, after which he adds scratch grain, though not all producers feed scratch grain nowadays.

Feed dealers naturally have a large stake in the success of the poultry enterprise—so much so that they give a good deal of help to producers in the form both of printed material and of an extension type of advisory service. In the case of specialized broiler production, feed dealers frequently finance the whole operation. A broiler producer who raises, say, 10,000 chicks a year buys them in four lots 3 months apart and markets the broilers at the same intervals. With no income in between, he faces a problem of short-term credit, since his outlay for chicks and feed alone may be well over \$2,000 for each of the four batches, and he operates on a small margin of profit, in a fluctuating market, with no Government supports. In his case there is an especially high premium on efficient feed use.

Eggs and meat are the products.



A highly segmented industry.



On the other hand, the birds must be kept eating as much as they need; eggs and meat are conversion products of feed. So when the days begin to shorten in the fall Jim starts the clock-regulated lighting system in the laying house, with the lights turned on morning or evening so the hens will stay active and eating for a full 13-hour day.

He has to be on the watch for several diseases; some could do a vast amount of damage. Pullorum control is now largely in the hands of the hatcheries. A number of diseases can be controlled more or less effectively by vaccination or immunization—fowl pox, infectious bronchitis, laryngotracheitis (to some extent), Newcastle disease. For a few, medication is useful—coccidiosis and coryza, for example. For some there is no preventive except good management and meticulous sanitation—chronic respiratory disease, fowl cholera, lymphomatosis, which kills as many chickens as all other diseases together. If fowl plague or paratyphoid shows up, the affected birds have to be eradicated.

Plainly the Averys are only one segment in a highly segmented industry which includes the hatcheries, the hatchery egg producers, the market egg producers, the broiler producers, a few producers who specialize in roasting birds or capons, the turkey producers, the duck producers, and even producers of guineafowl and game birds. A large-scale enterprise may resemble a manufacturing plant more than it does a farm, at least in the old sense. Instead of small colony houses, young chicks may occupy a solid permanent brooder house heated by a hot-water system; and the chicks may be bought in batches at intervals to make continuous year-round use of the brooder house, in which there is a fairly heavy investment. Laying houses may be two or three stories high rather than spread out horizontally. There may be automatic self-feeders, automatic watering systems, overhead trolleys to haul manure, electric machines to stir the thick layer of litter on the floor, hydraulic lifts, electric egg washers, and so on. Some of the big farms have metal battery brooders—cages stacked one above the other for young chicks; and even laying hens may be kept separately confined in small metal cages like guinea pigs in a laboratory. But innovations such as cages for layers have disadvantages as well as advantages, and, in any case, they are practical only in large operations.

Modern specialized broiler production is perhaps the most factory-like of all agricultural production. This business has grown spectacularly in recent years. In 1945 the average American ate 21.3 pounds of chicken, of which only 5 pounds was in the form of broilers. In 1956 he ate only a little more chicken, 23.4 pounds, but 16 pounds was in the form of broilers. In the same period turkey consumption expanded greatly—from 3.5 to 5.4 pounds a person. The marked stepping up of broiler and turkey consumption was probably due to a combination of high employment, good wages, increased consumer attractiveness of the product, and economies in production due partly to technical advances.

Eggs were still eggs.

Meanwhile eggs were still eggs, and the competition of other foods seems to have crept up on them a little. Consumption per person averaged 397 in 1945 but dropped to the equivalent of one egg a person a day in 1956. Poundwise, of course, 365 average-size eggs weigh considerably more than the 28.8 pounds of poultry meat consumed per person, but dollarwise somewhat less than half of the \$2 billion farm returns from poultry products came from eggs as compared with meat. A little more than one-fourth of the poultry income came from broilers.

The number of broilers produced in 1954 reached a total of 1.3 billion—97 percent of them coming from 28,000 farms that turned out more than 8,000 apiece and only 3 percent from 22,000 smaller enterprises such as Jim Avery's. The big plants need very little land; practically everything is done indoors. One building may house 20,000 birds. Conversion of feed to meat is highly efficient; in 1955 it took only 8.8 pounds to produce a three-pound broiler compared to 12.3 pounds in 1933. The farmer delivers live birds to the dressing plant, where killing, plucking, singeing, cleaning, dressing, packing, chilling are carried out as a continuous line production process; there are even specialists for different stages of evisceration.

They got what they wanted.

This kind of operation is far beyond Jim Avery's reach, and in fact he is not sure he would want to be in the business on such a large scale even if he could. He prefers to take life a little easier without quite so much drive. On a better equipped place, even with no outside help, he and Martha between them could probably handle well over 2,500 chickens instead of a few hundred, and make more profit; but they tell themselves they have enough worries as it is without taking on more. All in all, they think they have about what they want—an old but liveable house fitted out with much younger conveniences, a good town nearby, a faithful old automobile to get there, a still-usable tractor and small truck, and a better chance to make a little extra money than many men of Jim's age have.