Serious Eats

The Physiology of Foie: Why Foie Gras is Not Unethical

Posted by J. Kenji Lopez-Alt, December 16, 2010

[Photographs: Robyn Lee and J. Kenji Lopez-Alt]

I haven't always been comfortable with foie gras, though I've spent a good chunk of my life working with it. At first, the discomfort was with the taste. I tried it first as a teenager in the form of a cold terrine that tasted mostly of cat food to me. Then again, I also hated mayonnaise, brussels sprouts, and fish at the time, so my young opinion could hardly be trusted. Later on, as my culinary career expanded, I learned to love it.

I learned to appreciate how it spreads like the world's most decadent and flavorful butter when served cold as a torchon. I learned to appreciate how when it's served hot, it's crisp, sweet, and savory, and melts in your mouth like no other food in the world. And then I learned how it's produced. How in order to get the liver to expand to a good 600% of its natural size, the ducks must be force-fed in a practice known as gavage, wherein a long metal tube (like the one on the right) is forcibly inserted into the duck's mouth up to three times a day and a large amount of food is crammed into its gullet until the liver becomes so large that it takes up the vast majority of the bird's body cavity.

My immediate reaction was a slight gag, followed by revulsion, as I imagined the discomfort of having a tube shoved down my own throat. It's a fair and common reaction, though as I later learned, not the correct one. But we'll get to that.

A Case of Ethics

Even if you haven't eaten foie, pretty much everyone is familiar with

the abhorrent images of mistreated ducks peddled by PETA and sites like nofoiegras.org, and indeed they are truly disturbing. Ducks crammed into wire cages just big enough to stand in with their filth-encrusted heads sticking out a hole in the front. Their feathers are scraggly and wiry (if present at all), there's often blood coming out of their nostrils, and their faces and feathers are caked with vomit and corn meal. A duck drinks scummy water out of a communal trough running in front of it while just upstream one of its less fortuitous bunkmates sits dead with its head lolling sideways, half submerged in the cloudy green water.

I've no doubt that farms like this exist in the world, and it is a terrible, atrocious tragedy. If this is how all foie—or even all meat—is produced, I'd become a vegetarian today. But video or photographic footage of one badly managed farm or even a thousand badly managed farms does not prove that the production of foie gras, as a practice, is necessarily harmful to the health or mental well-being of a duck. Foie gras production should be judged not by the worst farms, but by the best, because those are the ones that I'm going to choose to buy my foie from if at all.

So the real question is: is the production of foie gras torturous under even the best of conditions?

Those on one side would answer yes. How could force feeding an animal ever be considered anything but torture? On the other hand are those who claim that American foie farms are positively idyllic with ducks waddling around spacious pens, even queuing up for their gavage, that for a duck, none of the things we consider uncomfortable stress them out in the least. But who's right?

To answer this question, me and a few fellow Serious Eaters (yes, including Dumpling) set out on a brisk fall morning for La Belle Farms in the idyllic Hudson Valley in what was promised to us as a 100% full-access, bottom to top tour of the operation. We'd be free to see anything we liked, no doors would be locked, and we'd be taking cameras and notebooks with us.

On the Farm

With a production of around 2,500 birds a week, La Belle Farms is the second largest of the three foie gras farms in the country (the others are Hudson Valley Foie Gras located a few miles away in Sullivan County, and Sonoma Artisan Foie in California). Despite its relatively large size, La Belle Farmss is still a vertically integrated farm. Unlike more industrialized chicken, pig, or cattle operations in the US or foie farms in Europe and Canada, every step from breeding the ducklings, raising the chicks, performing the gavage, slaughtering, processing, packaging, and shipping takes place right on site.

Owner Herman Lee, who immigrated from Hong Kong in 1973 to attend the Fashion Institute of Technology before going on to start Bella Poultry, one of the most well-respected chicken operations in the Northeast, began raising Moulard ducks for foie gras in 2000, after spending several years studying the industry both at home and abroad.

In his office, he seems comfortable, almost eager to get started, to show us what his farm does. We waste no time in getting down to the fabrication room, where teams of workers are just beginning to pull ducks out of a walk-in cooler. Freshly killed and plucked the day before, they're now ready to be eviscerated and broken down into their various parts.

With a red-coated USDA inspector watching their every move (the USDA inspector is there every day), the crew gets to work.

"We'll process about 500 ducks today," says Bob Ambrose, Herman's business partner and head of Bella Bella Gourmet, La Belle's value-added line of prepared foods. "The ducks are all stunned in electrified water before we

slaughter them, so they're completely unconscious, then we air-chill them and allow them to dry overnight," he explains. The stunning makes for a quick, painless death, while air-chilling and drying prevents them from taking on any extra water weight, diluting the flavor of their relatively lean meat.

The animals are unloaded one at a time onto a conveyer belt where the skilled workers go at them, each one making a few vital cuts, assembly line-style. As the first liver is removed, Robyn, our intrepid photographer, gives an audible gasp. "Whoah, that's big!"

Indeed, if you've never seen a whole lobe of foie gras before, the size of it can be a bit shocking. Weighing in at around a pound, each liver is roughly the size of a small football. That's close to 10% of the duck's total body weight, and it takes up the vast majority of the lower half of its body. The livers are passed to a woman who sorts them into two different grades, depending on the amount of bruises and blemishes they have. Large, clean livers get the "A" designation, while the rest are sorted into "B" and "Petite" trays.

Bob is quick to point out that "any mishandling of the ducks—rough treatment, that kind of thing—will cause bruising, reducing its price," he explains. "So we've got a strong incentive to be gentle with the birds." Duck handlers, who are mostly female (apparently ducks take better to women) work on an bonus-based program where their pay is bumped for every "A" grade lobe one of their charge produces. It's the first time I've heard of a farm that offers workers a monetary incentive to be gentler with the animals. Bob insists that it works, and that the most experienced feeders can increase the number of A lobes from the normal 55% up to over 70%.

At a wholesale price of around $30 a pound for A's, the liver is the most prized part of the duck, but it's hardly enough to sustain the business.

"We use and sell every part of the duck except the heads and feet," explains Bob. The breasts, known as magret are removed and individually packaged to be sold fresh to chefs and gourmet butchers. Some of them are cured and dried into duck prosciutto, or smoked to a sweet, ham-like flavor. The excess fat (of which there is plenty) gets rendered down and sold to restaurants. The legs are cooked in the traditional french confit style, while the wings are smoked and slow-cooked.

The entire processing room gets sprayed down and disinfected every day. Next door is the killing room, where the ducks are zipped assembly-line style from the stunning station to the killing/bleeding station to the machines that pluck their feathers, which resemble industrial-sized washing machines lined with rubber fingers. The room is absolutely spotless, the countertops and conveyor belts a gleaming stainless steel.

So far, so good. It's about as clean and organized an operation as I've ever seen in a farm. We put on full-length disposable jumpsuits to protect our street clothes along with face masks, hair nets, and rubber boots to protect the ducks from outside germs, and head towards the sheds where the ducks spend the bulk of their 3 1/2 month

lives.*

*That's significantly longer than the 4 1/2 weeks a normal chicken spends on this earth before slaughter.

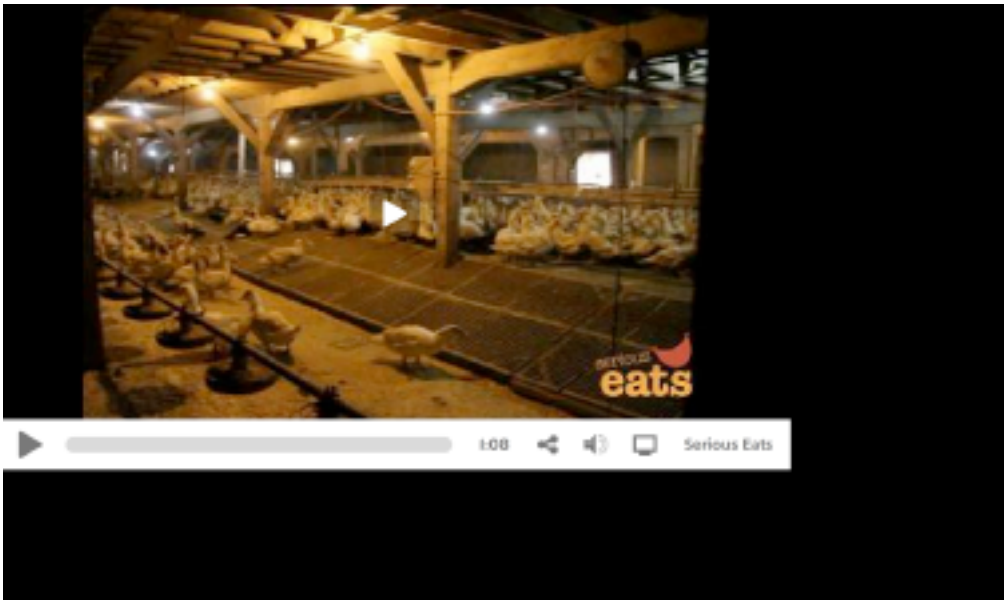
In the Sheds

The real questions would be answered within the walls of these long, corrugated aluminum boxes. I'd consulted with a veterinarian and done some reading on the subject of illnesses in waterfowl, so even before we entered the shed, I had a good idea of what to look for to recognize sick or distressed birds. I wanted to be sure that I could judge for myself how well-off these ducks were.

Labored breathing, discharge from the nostrils, infected or cloudy eyes are all signs of sickness or stress. Bleeding beaks or feet and missing feathers would indicate rough treatment or fighting amongst themselves. I walked into the shed prepared for the worst, and instead was quite stunned.

Far from the cramped, cruel conditions shown in the videos and photographs I'd seen, here was an enormous shed, full of birds free to roam as they pleased. They congregated in groups, quietly quacking at each other, roamed freely over the sawdust-strewn floor, even stretched their wings for a flap now and then. Granted, it did smell—a distinct barnyard aroma with a hint of ammonia (the chicken shed we visited afterwards had a much stronger ammonia smell to it), but as anyone who's worked on an animal farm will tell you, all farms smell, just as before the introduction of modern plumbing, all cities smelled as well.

Incidentally, all the birds here are male. The female Moulards don't grow livers as well as males, and are therefore not as profitable. Like the other foie farms in this country, La Belle sends their female ducklings to Trinidad within weeks of hatching where they are raised for meat.



It's true, there could have been more natural sunlight (a few large screened windows with fans in them were spaced along each side of the structure), and the air could have been fresher, but all in all, asides from the truly free-range chickens I've seen in backyards and a few small farms in New England and New York, and some of the boutique chef-run "education center" style farms, these were probably the most well-accommodated farm animals I'd ever seen. When asked about the light and air situation, Herman explained that "the animals are kept off of antibiotics, so we have to keep them minimally exposed to the outdoors." They'd let them out if they could, but wild bird populations can easily introduce deadly bacteria to domestic flocks, he says.

The birds seemed to show a mild aversion to us, flocking together and giving us a wide berth as we walked through the shed. Chichi quickly spotted a single dead bird, which we inquired about. La Belle shows a mortality rate of around 1% in their ducks, which may seem large, but it's less than 1/5th the mortality of regular chicken or duck farms, and about 10 times lower than the mortality and injury rate of the backyard chickens I'm acquainted with.

Eventually the ducks became a little less edgy, and I was able to move in for a closer look. All signs pointed to completely healthy animals. Their beaks were clean, their eyes were bright, they had no trouble vocalizing, and

their feathers were for the most part completely intact. They seemed to waddle around with a positive swagger, congregating at the water dripper and feeding stations.

Gavage

The facts so far: for at least the first 12 weeks of their lives, these ducks are sitting pretty in a stress-free, spacious environment. The next shed is where the ducks spend their last 25 days—where the gavage takes place.

Before we went inside, we were told that this was the only part of the tour where we would not be allowed to take photographs or video. Ah, I thought—a sure sign that what we are about to see is going to put us off our lunches (or tasting menus, as the case may be). But Bob explains: It's not that they have anything to hide with the procedure itself, it's that they've recently began employing a new custom-designed piece of technology that they don't want the two competing farms to get their hands on. We'd see it in action in a moment.

We entered another long shed, this one filled from end to end with 5-foot by 7-foot pens, each one holding about 10 ducks. Again, the ducks tended to congregate together, leaving more than half of the space in their pen empty. Occasionally, one would waddle out of the group for a stretch. Just as in the other sheds, these ducks seemed healthy, albeit much larger (these guys were on their third week of gavage, just a few days away from slaughter).

We walked down row after row of pens until we got to one where a worker was just about to start feeding. At La Belle, the ducks are fed three times a day for a total of up to 240 grams of their custom-designed feed. As we watched, the worker—a petit woman—climbed into the pen and sat on an overturned box. One at a time, she pulled a duck towards her and held it between her legs with its neck arched upwards. She gently squeezed the base of the duck's neck ("checking to make sure that he's finished all his food from the last feeding," says Bob), then eases a flexible plastic tube down the ducks throat. A machine whirls, a small bulge forms where the food is deposited, and the duck walks off, giving its head one shake, but otherwise seemingly unaffected.

While most other farms in the world still use metal tubes to feed their duck, La Belle has recently switched to a custom-made flexible plastic version. This is the piece of technology that they didn't want us filming.

However, a quick search on YouTube turned up this video, which is not dissimilar from our own experience (this video shows geese in France):

According to Bob, when the feeder feels the duck's esophagus, if there's any food remaining, she'll skip that feeding. So while the ducks are technically force-fed, there is a level of built-in anatomical control so that the

ducks can't take in any more food than they can physically handle. That's more respect than most fast food chains show for their human customers.

La Belle has also started a program to reduce their workers' load. Many farms require that the same feeder work with the same ducks for the entire gavage process to reduce stress on the animal. For a worker, this means three long feeding shifts per day, every day, for 25 days.

A few years ago, they discovered that it's not the actual worker that the ducks grow accustomed to, it's just their sight and smell. They found that by having two different workers wear the same set of clothes, the ducks would respond to the second as if they were still the first. In fact, after starting their workers on this split-shift system, production of A graded foie actually increased.

I wouldn't exactly say that the ducks were lining up to be fed, as has been suggested by some foie advocates, but they certainly didn't seem stressed. By all activists accounts, these ducks should have been so fattened that they could barely stand under their own power. I didn't see one duck vomit, nor did I see any that couldn't stand or walk due to the weight of their livers.

After the walking tour, we stopped back at the office for a tasting of a few of Bella Bella's products, as well as some straight-up fresh foie, seared on a George Foreman griddle, of all things. Of all the foie I've cooked in the world (and it's a lot), La Belle's has the unique property of being able to hold its shape well without rendering off too much fat, making it an ideal candidate for searing.

We finished the day eating our foie, talking to Herman and Bob about their business. Back home, I started doing some more research.

Physiology

We'd seen the process from start to finish, and from all outward appearances, the ducks seem to live perfectly comfortable lives—at least as well as you can expect for any farm animal. Certainly far better lives than the millions of cows and pigs and billions of chickens that are raised every year for our consumption. But the question I had was, why aren't they more uncomfortable? Why doesn't a duck struggle with its large liver or having a tube forced down its throat?

First off, the key to understanding this is to make a very conscious effort not to anthropomorphize the animals. As waterfowl, they are distinctly not human, and their physiology differs from ours in a few key ways. Let's take a look at the foie gras duck, shall we?

In this country, foie gras is produced exclusively from Moulard ducks. The offspring of a male Muscovy and a female Pekin duck, Moulards offer many physiological and temperamental advantages that make them ideal for producing foie, and I believe an understanding of the breed can help clear up a lot of misconceptions.

Muscovies are an incredibly hardy species. Though native to the tropical regions of South America, they are nevertheless able to adapt to temperate climates, and are even comfortable living in sub-zero conditions. As such, they are non-migratory. This is important, because it means that unlike migratory species, they don't ever have the need to gorge themselves to put on extra fat to carry them through long periods with no food. They are an aggressive species; Males attack each other with their bills and sharp claws on their feet. Despite this, they are prized for their well-flavored, lean meat. Their robust nature and tolerance of many climates make them quite easy to farm.

Pekin ducks (also known as Long Island ducks) on the other hand were originally bred in China from wild mallards, and thus have many of the characteristics of that migratory species. They are relatively petite birds who are quite gregarious. They enjoy hanging out in groups and will naturally stand together in very tight quarters, whether or not they have the space to roam around. Years of breeding have shrunk their wings and increased their breast size. Because of their plump stature, they can't jump much higher than your average womp-rat, and thus no longer migrate (which isn't to say they wouldn't waddle south for the winter, given the opportunity), but their inner organs and basic metabolism are still that of a migratory waterfowl.

When you cross a male Muscovy with a female Pekin, you get a Moulard, a hybrid that combines the more desirable behavioral features of the two species. First off, it's larger and more robust than either a Muscovy or Pekin, much in the way that a mule is bigger and stronger than either the horse or donkey it was bred from (Moulards are also sterile, like mules, and are often referred to as "mule ducks"). Like Pekins, they don't fly and are relatively gregarious, making group living and containment quite simple for farmers, and non-stressful and safe for the ducks. Their most important feature, however—and this is important—is that like Muscovies, they don't have the urge to migrate, but like Pekins, they retain all of the interior anatomy necessary for the gorging that migration requires.

This is the real key to the safe and ethical production of foie gras.

The Liver

You see, migration depends upon gorging. The rapid intake and metabolism of large quantities of food in order to store enough energy to fly south for the winter. So while during the warm summer months, a duck may be content paddling around eating weeds, bugs, and the occasional minnow, when the weather starts getting colder, it begins to eat in earnest, stuffing itself more frequently, and with larger prey. Unlike in humans where excess fat builds up mostly in large deposits just under the skin, with migratory birds, this excess fat builds up both under the skin, and in the liver.

Granted, the production of foie gras requires feeding a duck far more than it would naturally consume (though if you are to believe Dan Barber's fantastic TED talk, there are wild geese who would feed themselves to almost the same degree), but this is true of all farm animals. Cows, pigs, chickens, they all get far fatter from the rich feeds we give them than they'd ever get if left to their own devices. Does that make it cruel? I'd say no. As long as the animal shows no sign of stress or discomfort—and the ducks we saw today certainly did not—then what harm is a few extra pounds?

The Esophagus

What about the act of feeding? Surely the duck feels discomfort when a tube is slid down its throat?

Tony Bourdain likes to remind us that we see worse things committed against human beings on late night pay-per-view. And he's right: humans have a gag reflex. But ducks? Not so. I tried hard to find a good video online of a duck eating fish, but they are all too blurry or too annoying to watch. The closest I came is this video of a cormorant, another migratory waterfowl.

Watch closely as it swallows a spiky fish several times wider than its neck.

Incredible, right? And that, folks, is the reason why ducks don't struggle when a feeding tube deposits food in its throat. Its body is built for exactly the same type of stress in the wild.

Humans chew their food in their mouth until it breaks down into pieces small enough to swallow. Ducks, on the other hand, have no teeth in their mouth, and they don't chew. Instead, they swallow their food whole, storing it in the bottom of the esophagus in a stretchy pouch known as the crop. Eventually, the solid food works its way into a stomach and a sac-like organ called the gizzard. Throughout the day, a duck will swallow small rocks and pebbles, which get stored in the gizzard. Once food enters it, the muscular organ uses the pebbles as make-shift teeth, grinding up the food so the duck can digest it.

Because of this, their esophagi are custom-built for stretching. I had Bob send a few of them to the office where I tied off one end and filled it up, water-balloon style in order to see exactly how much a duck can hold in its crop. The four we tested stretched out to a little over a quart of liquid apiece, or around 950 grams—far less than the 200 grams of meal they were fed at each serving.

Surely they'd have difficulty breathing with a tube down their throat though, right? Not so fast. Humans have a single passageway leading from their mouth down into their neck. From there, it divides into the esophagus, which leads to the stomach, and the trachea, which leads to the lungs. Separating these two passages is a little flap of muscle called the epiglottis. Try to force something past the epiglottis, and you trigger a gag reaction. It's intended to make sure that the wrong things don't end up in your stomach.

Ducks, on the other hand, have completely independent tracheas and esophagi. Their esophagus goes straight from the mouth to the crop, while the trachea runs from the lungs and out the end of the tongue. That's right: Ducks breathe through their tongues. The cartilage that surrounds their trachea (called the tracheal ring) is also a complete circle, as opposed to ours, which is C-shaped, making their trachea much sturdier and less prone to collapse. What this means is that you can place a feeding tube in a ducks throat, and it can sit there indefinitely, neither gagging, nor suffocating.

For The Activists

So there it is. The evidence is out there, and from what Bob and Herman tell me, they are more than happy to be transparent with their operations, to let people see what goes on inside their farm. They believe they've got nothing to hide, and so do I. So why is it that activists are so zealous about destroying foie gras operations? I've worked in restaurants that have been picketed by protestors, and they aren't a particularly friendly bunch. Threats have even been made against the lives of chefs and their families for serving it in their restaurants.

In large part, it's because foie gras is an easy target. There are only three foie farms in the country, and none of them have the money or government clout to defend themselves the way that the chicken or beef industry does. It's a food product that is marketed directly at the affluent, and the rich are always an easy target. As an occasional delicacy, it's also a food that's relatively easy for most people to give up.

Personally, I find this kind of protesting abhorrent. If you are going to protest anything, it should be the industrial production of eggs, where chickens are routinely kept in cages so small that they can't even turn around for an

entire year. The problem, of course, is that you tell people to stop eating cheap eggs, and nobody will listen. The leaders of the anti-foie movement know this and use it to their advantage, using video and photographs taken from the worst of the farms (none of the ones in this country, for the record), and making it seem like all foie production is as despicable.

If you are against the confinement, slaughter, and eating of all animals, then that's a different argument to be had at a different time. But to single out foie as the worst of the worst is misguided at best, and downright manipulative at worst. Just as there are good eggs and bad eggs, good beef and bad beef, good chicken and bad chicken, so there is good foie and bad foie. We are especially lucky, because we happen to live in a country where all of the foie produced is good foie.

The only question left for me is whether to serve it hot or cold.