Genetic Hackle

How selection and breeding have improved hackle quality

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Science has brought fly fishers high-modulus graphite rods, waders that "breathe," and high-carbon hooks stronger and sharper than ever before. But perhaps the most dramatic scientific contribution to the sport is in the realm of fly-tying, where selective breeding has produced "super chickens" with designer hackle specifically suited for different fly-tying needs. Today you can buy wide, webby neck hackle created for bass bugs and saltwater flies; genetically engineered saddle hackle perfect for tiny dry flies; and even hackle bred specifically to produce realistic mayfly tails.

These feathers are a fly-tying marvel, genetic manipulations selected over generations to produce hackle undreamed of by the fly tiers of yesteryear. Tom Whiting of Whiting Farms, Inc., is unquestionably at the forefront of this feather revolution; however, like most developments in our sport, his hi-tech approach began in the backyards of fishermen and fly tiers whose generosity and passion for the sport pioneered the way for modern advancements.

A Short History of Modern Hackle

The most important genetic work of the early period of hackle raising in the United States came from Catskill fly tier Harry Darbee, who produced the best available stock of the day. Though others in both the United States and England had been experimenting with raising birds for their hackle, his efforts in the 1940s and 50s built the foundation for much of the commercial hackle we use today.

Darbee selected his stock based mainly on color, but he was also a commercial fly tier and considered factors like hackle length, barbule stiffness, and the amount of webbing. Harry Darbee started with Thompson Barred Rock roosters (an American breed), and mixed them with Old English Game, Blue Andalusians, and several other breeds. Darbee used what he called a "shotgun approach" for his breeding program, crossing a dozen different colored hens with a single dun-colored rooster to produce colors like blue dun, bronze dun, rusty dun, honey dun, and many others.

Backyard breeder harry Darbee (above) prepared the way for a generation of hackle producers who have bred birds with long, thin, densely hackled feathers ideal for tying dry flies.

Darbee was well known for his generosity and sent eggs to enthusiasts around the country. One recipient, Minnesota lawyer Andy Miner, received stock from both Chip Stauffer (who began raising birds from Englishman Captain John Evans in 1937) and Darbee. Through careful observation, experimentation, and meticulous breeding records, Miner made significant improvements to the breed, though he didn't sell his feathers. His capes--which Darbee called the finest in the world--had a wide range of colors and feather quality beyond what anyone had seen to that date.

Like Darbee, Miner was generous with his eggs, and the Darbee/Miner bloodline was shared with people like, Carey Quarles of Colorado Quality Hackles (purchased by Keough Hackle in 1990); Robert Wetzel of Bob's Hackle Farm; Charlie Collins of Collins Hackle Farm; and Ted Hebert.

Buck Metz of Metz hackles also received a gift of 144 eggs from Andy Miner in 1972. Metz's contributions to genetic hackle paid big dividends for both fly tiers and his company. He was the first major producer of commercial hackle, and the first to meet the demands of the fly-tying public on a large scale.

Before Metz, many fly tiers wished for exotic colors like ginger and badger, but because of haphazard breeding practices, supply was extremely limited. Metz was the first to "purify" his color lines so he could produce predictable supplies of desirable colorsÃ‘and meet that demand. Metz also improved his stock, and his feathers quickly gained a reputation for being relatively web-free.

From those original 144 eggs, Metz created an operation that still produces 100,000 fly-tying pelts per year. Before Whiting Farms, Metz was the biggest commercial producer of fly-tying hackle in the world.

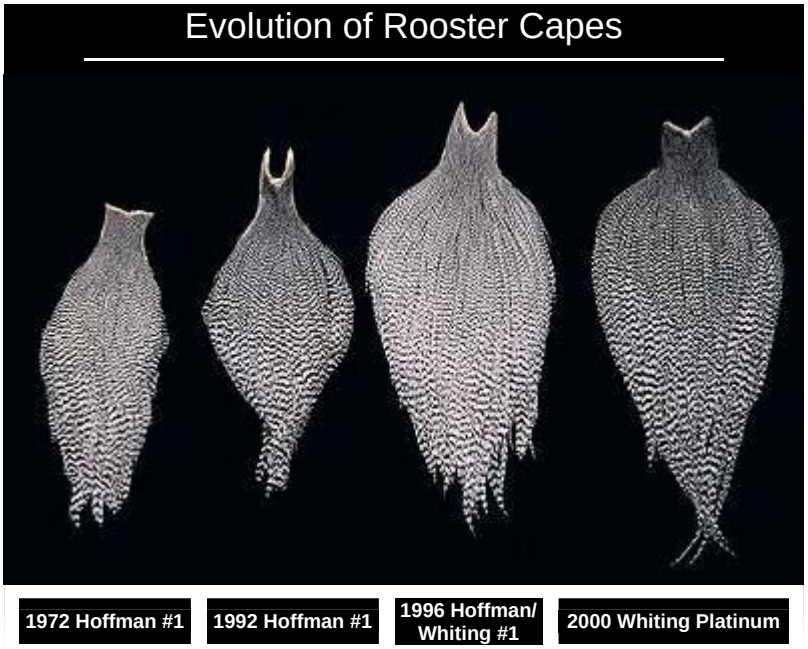
Ted Hebert, of Hebert Hackles in Lainsburg, Michigan, obtained birds from Miner in 1973. Hebert was most interested in raising blue duns, and as a by-product, his operation yielded a wide variety of unusual and very desirable colors like chocolate dun and badger fleck. Hebert's hackle is probably the only bloodline with both the hackle quality we are accustomed to today, and the iridescent dun flecking coveted by the American fly tiers who first bred birds from England.

Most genetic hackle today owes a great deal to Andy Miner, though at about the same time Miner was working to improve the stock, Henry Hoffman of Warrenton, Oregon, was pursuing a parallel but unrelated course in the Pacific Northwest. Hoffman was consumed with a love of fly fishing and fly tying, and fortunately for us, he was raised on a chicken-breeding farm, where he learned the basics of breeder selection and poultry husbandry.

Hoffman was frustrated by a lack of commercially available grizzly (black-and-white barred) hackle, and in 1965 bought two Barred Plymouth Rock bantams from a show stock breeder. Instead of immediately using these fantastic birds at the fly-tying bench, as would most tiers of his day, Hoffman began a careful breeding program based on his own stringent demands for quality fly-tying feathers.

For the first nine years, Hoffman bred only grizzly roosters and concentrated on creating the world's first dry-fly quality saddle hackle. He tied flies with samples taken from his roosters, and the best feathers determined the sires of the following generation. His strict selection techniques eventually produced the most coveted saddle hackle of the day.

By the mid-1980s, Hoffman had made great strides in the progression of dry-fly hackle, but decided to sell his business to someone who would take over his breeding program. In 1989, Hoffman signed a deal with Dr. Tom Whiting, who was just finishing his Ph.D. in poultry genetics at the University of Arkansas, and sent him 23,000 eggs. Dr. Whiting had been raising chickens since he was ten years old and had considerable commercial experience, though Hoffman agreed to consult for a five-year period.



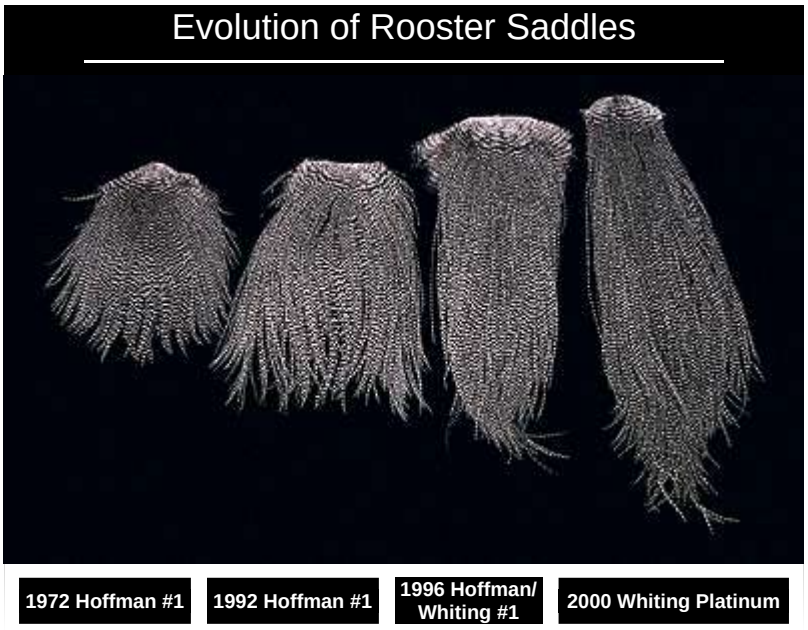
Dr. Whiting chose western Colorado to set up his new operation (Whiting Farms), and in spring 1989 hatched approximately 5,000 chickens from the Hoffman eggs. The first year was nearly disastrous. The roosters fought so badly that many of the skins produced were useless. The next year, Dr. Whiting moved his operation to the site of a former mink farm in Delta, Colorado, where there were facilities to keep a large number of small animals in individual cages.

In Delta, Dr. Whiting was able to overcome his start-up difficulties and concentrate on improving the Hoffman breed. His first objective was to improve the feather count and the potential length of the saddleÃ‘both limited by the small physical size of the stock. Hoffman's stock was a miniature breed with a small pelt size and short legs. In order to create his "dream" hackle, Whiting knew he would need a chicken with more feather potential and longer legs so the saddle feathers didn't drag on the ground.

The Hoffman breed was also suffering from inbreeding, so Whiting introduced some outside blood to stir up the genes and induce variability. Within a few generations, Dr. Whiting had created larger, more densely feathered birds and taller, longer-legged birds. At the same time, he improved the feather quality already apparent in the Hoffman stock, and was soon raising eyebrows around the country with his super-long, symmetrical saddle hackles perfect for dry flies and the range of hackle sizes on his capes.

Whiting's Product Today. Whiting Farms produces more than 125,000 chickens per year from four different farm sites and has become the most dominant brand name in the hackle market. Every major commercial fly manufacturer except one uses Whiting hackle (companies like McKenzie Flies, Spirit River, Frontier Flies, and others), and although Whiting dry-fly hackle is more highly priced than its competitors, many commercial tiers believe it is also the most economical, because you get more useable feathers per bird, higher quality flies, and more use out of each feather.

Today, Whiting saddle hackles are so long, and the feather quality is so superior to what was available five years ago, his company has replaced its old #1-#3 grading system with Olympic-style ratings of gold, silver, and bronze capes and saddles.



Whiting has advanced hackle quality so greatly that a "bronze" Whiting cape or saddle today is superior to a #1 Hoffman of just a few years ago. His roosters are improving so quickly from one generation to the next that less than a year after introducing gold, silver, and bronze hackles, Whiting now offers platinum-grade capes and saddles. Platinum skins come from roosters other breeders would give their left arm to possess--"super" chickens Harry Darbee and Henry Hoffman would have thought impossible to produce.

Whiting Farms Product Lines. In 1997, Whiting Farms purchased Ted Hebert's stock, a breed Dr. Whiting feels has more development potential than Hoffman and will provide the greatest genetic advancements in the coming years. Whiting is keeping this bloodline "pure" and selling it as Hebert-Miner Dry Fly Hackle. While Whiting Dry Fly Hackle is derived from the Hoffman bloodline, this product connects Whiting with the Catskill bloodlines of Darbee and Miner. This product comes in a fantastic variety of natural colors and is highly regarded by tiers and collectors alike.

Dr. Whiting has also applied his selective breeding techniques to produce hackle perfect for tying saltwater flies, bass bugs, and streamers. Whiting's American Hackle is exceptionally wide, soft, and webbed--very desirable for tying a 10-inch-long baitfish fly or a #1/0 Purple Spey. The feathers are radically different from dry-fly hackle, but the selection strategy and genetics involved are the same.

Whiting Farms also has a full line of specialty products, including Jungle Fowl, an endangered jungle pheasant used for tying Atlantic salmon flies, and Coc-de-Leon, a chicken that produces a speckled feather perfect for tailing dry flies or for wings and collars on wet flies like the Matuka or Comet.

Based on the developmental trend and on samples Tom Whiting had at the 2000 Fly Tying Symposium in Somerset, New Jersey, consumers can look forward to even higher quality hackle available next year.

How He Does It. Dr. Whiting says breeding chickens to produce better hackle than the previous generations is a "numbers game." He produces 125,000 chickens per year, and every bird is inspected and "flagged" if it is considered a potential breeder. Whiting himself sometimes looks at more than 900 flagged chickens per day when the stock matures, and selects only about 11/2 percent of the candidates as potential breeding stock. He writes a 3-page report on each of these birds, collects feather samples, and turns the data over to his head grader for a second opinion. The head grader has a checklist of more than 80 attributes he looks for in a feather sample--qualities like feather length and symmetry, barb density and stiffness, and quill quality, among others. The hackle grader ties flies with every sample and writes an exhaustive evaluation that, with Dr. Whiting's report, determines the next generation of breeders.

This extreme selection pressure--less than .2 percent of the chickens inspected become breeders--results in dramatic improvements to the next generation. Dr. Whiting says there's nothing magical about it. If you look through enough birds and practice extremely critical appraisals, you will eventually end up with better fly-tying hackle. Genetic advancements are always a result of this selection process, coupled with excellent husbandry to allow them to express their genetic potential.

The Other Players

While Dr. Whiting has produced the most dramatic genetic advancements in dry-fly hackle in the world today, there are many other companies out there with attractively priced genetic hackle to fill many needs. As one hackle breeder says, "Whiting hackle is fine hackle, but it's not twice as good as mine, and mine is half the price."

Most hackle producers (including Whiting) claim their product is the most economical on a per-fly basis, but because of the inherent complexity of this claim, and the vagaries of individual tiers, an objective study is beyond the scope of this article.

Metz. Bucky Metz sold his operation to Umpqua Feather Merchants in 1995, and Rick Dailey was entrusted with the care and progression of the flock. Because of what Hoffman and Whiting had accomplished with saddle hackles, Dailey had to play catch-up in the saddle hackle department. Ten years ago, "dry-fly saddle hackle" was an oxymoron at Metz, but today, Dailey is consistently producing Micro-barb saddle hackles as small as #14-#16.

Dailey has also made great strides with the Metz necks, greatly increasing both the feather count and length. The necks also have much smaller hackle sizes on them. Now a premium neck has #26-#32 hackle.

Keough. In 1991, Bill Keough bought the stock of Colorado Quality Hackle, tapping into the Miner/Darbee line, and improved his previous selection of natural colors. Keough now has 14 of Andy Miner's natural colors such as light dun, dun grizzly, and badger.

Over the last 20 years, he has greatly improved his hackle quality and his product has become very popular with tiers looking for less costly capes and saddles. Many consider his feathers the best value in a cape. While other breeders have been chasing the Holy Grail of small saddle hackle, Keough has found a market for saddles with large hackle sizes (#8-#12), perfect for tying big, bushy-looking dry flies.

Keough is also breeding chickens to produce hackle for saltwater and warmwater applications--long, wide, webby neck hackle that can be used to produce baitfish imitations and bass poppers.

Collins Hackle Farm. Charlie Collins started breeding hackle chickens in 1980, using stock from Andy Miner, Harry Darbee, and Dick Bitner. Collins's main genetic emphasis is in breeding birds with thin, flexible quills that wrap true and don't split or twist. "If you can't wrap the feather, all the other hackle traits are worthless," he says. "No trait is more important than quill quality."

Collins has a relatively small operation, hatching from 4,000 to 8,000 chicks annually at his farm in Pine City, New York. He breeds for neck qualities exclusively and doesn't sell his saddles individually--he includes them with his necks. For about $50, you can purchase a top-grade neck and saddle directly from Charlie. He has a wide array of natural colors passed down from the Miner stock (Bitner raised grizzly almost exclusively) and is especially proud of his colored barred stock, which many tiers admire because of its buggy appearance and stiffness.

Collins' avows his approach is nonscientific compared to a large-scale producer such as Whiting or Metz. He approaches his hackle herding in the old-school manner, producing feathers that are very desireable for traditional Catskill tiers. He has walked the fine line between advancing hackle quality and retaining some of the feather characteristics that appeal to traditional Catskill tiers who don't necessarily want densely hackled flies.

While large-scale growers such as Whiting and Metz micro-monitor each chicken's environment, interestingly, Collins takes an almost exact opposite approach. Collins feels that his hearty strain of mountain-bred bird is not only truer to the backyard breeders of the Catskill era, but also makes for a healthy, strong, and relatively disease-free flock.

Spencer Hackle. Hugh Spencer bought 25 chickens at the 1974 New York State Fair, loaded them up, and moved to Montana to raise hackle, and catch big trout. He was 22 years old at the time, and now he is one of the "old-timers" in the hackle business. Spencer sent me one of his "supreme" necks from 1978, and it made me wonder how anybody tied flies back then. A Spencer neck today is much larger (with more feathers); has longer feathers; and has much better feather quality, with stiff, web-free barbules.

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Waterville, IA 52170
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www.ewinghackle.com

Bob's Hackle Farm
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New Park, PA 17352
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Spencer's Hackle
PO Box 805
Plains, MT 59859
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Ewing Hackle. Doug Ewing has been in the hackle business 11 years. He got his original stock of white and grizzly birds from Joe Keough in 1989, and developed a market for economy hackle. He sells necks and saddles like everyone else, but Ewing's most popular product is presized Mini Packs. The feathers come on the skin, about 200 feathers per patch, for $1.97. Ewing's greatest genetic challenge has been developing a line of natural colors that can compete with the Miner/Darby bloodlines already on the market.

His dry fly birds were white and grizzly, and he had no quality colored stock available, so he had to breed his dry fly birds with common stock. It's taken him six years of selection and breeding to bring his colored birds up to the level of his white and grizzly hackle, but he's finally happy with the products, and expects to have several natural colors on the market in 2001. [*Although Joe Keough is Bill Keough's nephew, the stock was not related in any way.* THE EDITORS.]

Bob's Hackle. Jan Pickel met Robert Wetzel while on a fishing trip in Pennsylvania's Cumberland Valley. He showed Wetzel a few of his flies, and Wetzel returned the favor by showing him his small flock of hackle chickens that included genetic stock from Harry Darbee and Bill Tobin's flocks. Pickel was impressed with the thin, flexible stem, and stiff barbs on Wetzel's hackle, and before long, was helping out at Wetzel's farm to keep himself in fly-tying material.

In 1991, Wetzel became ill, and Pickel bought the flock, and continued Bob's Hackle Farm from his own property in New Park, Pennsylvania. Bob's Hackle Farm is a very small operation, producing only 600 pelts per year. Pickel produces 17 natural colors, but specializes in the dun variants descended from Darbee's flock, and the quality grizzly from Tobin's gene pool. He concentrates mainly on improving his necks, and only occasionally has saddle hackle as small as #18. His hackle stems are thin and flexible, and his has improved the barbule density of his hackle greatly since 1991.