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Gamebird History

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1.1 Origins of Gamebird Terminology

Before discussing the origin of the terminology of gamebirds, the term *gamebird* must be defined. This term has been written in many forms, from gamebird to game bird to "game" bird. The original term *gamebird* referred to a bird which was hunted and thus was the "game." In the broadest sense, gamebirds were those birds that were free living and were hunted primarily for food, and then later for sport. Hence, the collective term *gamebird* includes a variety of bird orders including the landfowl (primarily Galliformes), which mostly lived on the ground, and waterfowl (primarily Anseriformes), which spend their time associated with water bodies. There were also perching birds like the Columbiformes and Passerines which, while they also lived on land, could also roost above ground in trees. Because these birds were associated with different habitats, the hunting method used to capture this game varied.

Even before the use of the term *gamebird*, the term *fowl*, derived from the Old English *fugel*, was used to refer to a bird. The term was of Germanic origin from *fluglaz*, the general term for bird. The term *fowl* was replaced with the term *bird*. The first documented record of the use of the term *fowl* was in 1570. In recent times, the word *fowl* is more associated with the domesticated chicken and turkey. The terminology in the United States was also expanded to include domestic ducks and geese in this category. The word *fowl* can also be used as a verb, originated from the Old English *fuglian*, which means "to catch birds" as in the term *fowling*. The individual who caught birds for a living was known as a fowler and the fowling piece was the gun used to shoot wild fowl, as early as 1570s [1].

The interchangeable use of the terms *fowl* and *bird* led to many combinations such as gamebird/gamebird and game fowl/gamefowl. While we utilize the term *gamebird* to refer to those that were once hunted as game, the terms *gamebird* and *game fowl* have totally different uses and connotation. The term *game fowl* currently refers to roosters, known as "game cocks," trained for cockfighting. While cockfighting is illegal in many countries, its origins can be traced back to Greece where it was to stimulate warriors preparing for battle [2]. It was likely adopted from ancient Persia but many believe that its origins are rather from South-East Asia [2]. This pastime spread to Europe and England during the Middle Ages. It was brought to America by the English colonists. A Spanish variant of cockfighting was also introduced by Spanish settlers in the south-western United States. This Latino variant of cockfighting spread along migration routes from recent immigrants from Mexico and Central America [2].

Gamebird Medicine and Management, First Edition. Edited by Teresa Y. Morishita and Robert E. Porter, Jr.
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Because cockfighting is illegal, it is unfortunate that the term *gamebird* has a connotation with the illegal activity of game fowl and/or game cocks. Hence, it is extremely important to use the correct terminology. Many gamebird breeders want to ensure that the gamebird industry is not affiliated with illegal cockfighting activity so it is important to use the correct terminology.

While humans primarily hunted gamebirds, other closely related species that were hunted for game initially were also easily domesticated, including landfowl (chickens and turkeys) and waterfowl (ducks and geese). These birds were easily domesticated due to their docile nature, and they could be raised in large numbers to provide a constant supply of food for the home. Domestic fowl (birds) raised for meat and/or eggs are often referred to the collective term *poultry* [3]. The definition of *poultry* is any domesticated bird raised in captivity for meat, eggs, and feathers [3]. The word *poultry* originated in the late fourteenth century from *pultry*, a place where poultry is sold, from the thirteenth century Old French term *pouletrie* or "domestic fowl" [3]. In the broadest sense, gamebirds such as quail and pheasants that are commercially raised for meat and/or eggs can also be seen as part of the poultry industry but many such producers prefer to be called gamebird producers rather than poultry producers.

As humans depended less on subsistence hunting for food and agricultural farming became the predominant way of life, the domestication of poultry took place. The chicken and turkey, because of their docile nature, were now kept in larger numbers. As advances were made in raising birds in captivity, some gamebirds could also now be raised in captivity in large numbers, leading to the development of the modern gamebird industry.

According to the Agricultural Marketing Resource Center [4], gamebirds are either native or nonnative birds that were historically either wild game or decorative fowl. Most of these birds are now raised commercially for their meat or eggs. Others are known as "flight-ready" which means that they are released on hunting preserves or by state wildlife agencies. In this book, only gamebirds of the Galliformes order will be discussed, including guinea fowl, partridge, peacocks, pheasants, and quail. While the wild turkey is a gamebird and belongs to the Galliformes order, it is not raised commercially, and diseases of turkeys are discussed in books covering the common domesticated turkey. Other orders that can be considered gamebirds are pigeons, including squabs, and doves (Columbiformes), and swans, geese, and ducks (Anseriformes).

Galliformes gamebirds are unique as some are raised as flight ready, such as pheasants, partridges, and quail, while the majority are ornamental and raised for the exhibition or hobby market [5].

1.2 Birds as Game

The concept of hunting birds is as old as the history of humankind [5, 6]. Hunting involved the seeking, pursuing, and killing of game. Hunting for birds and other animals was a means of survival to provide food for self, family, and the community. Throughout the world, different trapping methods were developed to capture birds, utilizing their entire bodies for meat for food, feathers for clothing, decorations and bedding material, and bones for tools. Every part of the bird was fully utilized.

Not only have humans hunted birds for food, but some Galliformes were eventually captured and domesticated, including the chicken and turkey. Those that were not as easily domesticated remained in the free-living state of forests and grasslands where they continued to be hunted. However, with increasing habitat destruction due to deforestation for farming and other agricultural purposes, the numbers of gamebirds have dwindled with resultant population declines. With these

declines came conservation programs, some of the most successful being the greater prairie chicken of the great plains of the United States. Throughout history, gamebirds have been present [5].

Early documentation of hunting birds is found in all continents. The initial tools of hunting included sticks and stones, which later developed into specifically shaped clubs and throwing sticks [6]. Later, sharpened stone, bone, or metal were added to improve killing efficiency and effectiveness, as seen with the use of bows and arrows. Blowpipes or blow guns with poison darts were efficient for mammals as targets were larger. Because birds were smaller, such methods were only effective for the highly skilled hunter. Other techniques used during the hunt included camouflage to get the hunter as close to the prey as possible.

As agricultural production increased and the hunter mode of living decreased, the idea of hunting continued for different reasons. These reasons included the social activity aspect which gained prestige since land was only owned by individuals of power [6]. Hence, hunting became a sport for the wealthy and those who had time for leisure activity. Hunting has been documented in ancient Egypt with the hunter being a separate social class in society [6]. The use of hawks and falcons for hunting was first documented by the Assyrians before 700 BCE but it may have been established earlier in India and China. The horse was also used for the hunting of larger game but not for gamebirds. The sport of hunting became less popular during the time of the Romans where it was maintained only in the upper class and professionals. However, to the Franks and others of Germanic origin, hunting, especially falconry, and the thrill of the chase remained a popular activity [6].

From the earliest times, a distinction was made between hunting for food and hunting for sport. When hunting for food, the important factor was obtaining the most kills for the least effort [5, 6]. However, hunting for sport had a strict code of conduct based on the standard used by royalty and nobles [6]. For example, a noble taking gamebirds for sport used a falcon but a fowler who earned a living by selling gamebirds was able to use a net. Those who hunted for sport had a code to allow their quarry a fair chance to escape, which lead to the establishment of European game laws. In the sixteenth century, the use of guns in hunting was initiated and this allowed the hunter to kill from farther distances [6].

In North America, European settlers and explorers found a multitude of game, including gamebirds such as the wild turkey and waterfowl. Unfortunately, this was associated with uncontrolled hunting, as in the extermination of the passenger pigeon, and laws establishing kill limits and licensures were required for hunters. Hunting fees could then be used to provide revenue to promote the replenishment of stock. It should be noted that it was hunting that motivated the initiation of wildlife conservation [5, 6].

The basic methods of sport hunting are stalking, still-hunting, tracking, driving, sitting up and calling. While stalking, still-hunting, and tracking are used for large mammalian quarry, gamebirds and other landfowl usually go into cover and must be driven out into the open. Driving, also known as beating, the quarry out into the open can be done with the help of people or dogs [6]. The term *beating about the bush* had its origin in gamebird hunting, meaning to flush birds out of bush cover. This is in contrast to hunting waterfowl, which is performed via the sitting-up method, where a hunter is usually concealed in blinds, and is used for waterfowl with or without calling.

Since the times of the ancient Egyptians, dogs have been used for hunting gamebirds. Spaniels, setters, and pointers, which hunt by scent and sight, were called gun dogs as they retrieved the shot birds but also located birds for the hunters and flushed them out while the hunter was in the shooting position [6]. Shotguns were used for shooting waterfowl and gamebirds due to the possibility to kill multiple small quarry rather than using a single shot. Modern-day reserves try to recreate this type of hunting for sports enthusiasts by stocking birds raised under intensive conditions but still maintain their wild behaviors necessary for survival in the free-living state.

1.3 The "Professionalization" of the United States Gamebird Industry

The modern era of the gamebird industry began in the 1960s and expanded during the 1970s and 1980s. It was during this time that many farms that had been raising pheasants and quail as more of a hobby operation, sideline or small farm scale expanded into businesses with much greater capacities. But what makes this transition interesting is that this expansion did not come at the expense of the one common attribute that ties these farms together – the fact that businesses that make up the gamebird industry remain almost exclusively family farms. The family gamebird farm existed prior to this period of expansion and persisted during the 1990s when much was written about the loss of family farms in the mainstream media. It continues to thrive today, with many multigenerational farms continuing to expand capacity. Advances and developments in technology, equipment, and animal science covering all aspects of the gamebird business have significantly aided this expansion.

The history of the gamebird industry's trade association, the North American Gamebird Association (NAGA), is woven throughout this story as well. The nation's largest and most prominent gamebird farms underwrite the cost of the association which functions as a clearinghouse for vital information, as the tip of the spear in defending the industry before government, the public relations arm for the gamebird business, and finally as a gathering place where like-minded people can share their experiences in this business.

Despite the continued existence of family-owned and -operated gamebird farms, the gamebird industry has evolved into efficient farms that maximize bird production, improve overall bird health, decrease disease and mortality issues, and most importantly produce a high-quality sporting bird that is sought after by America's sporting public.

1.4 Advances in Disease Prevention and Treatment

A major factor in the successful evolution and expansion of gamebird production has been the ongoing partnership with university veterinary programs and extension programs. This partnership is literally nationwide and features some of the nation's most prestigious universities, including Auburn University, Clemson University, North Carolina State University, The Ohio State University, Pennsylvania State University, Texas A&M University, University of California-Davis, University of Georgia, University of Minnesota, and Washington State University.

Dr Thomas Eleazer was one of the early pioneers of gamebird medicine. Long fascinated with birds, he raised gamebirds as a youth. After completing his undergraduate studies at Clemson University, he earned his Doctor of Veterinary Medicine from the University of Georgia in 1958. After a stint in the US Air Force, Eleazer initially worked on swine disease issues for the North Carolina Department of Agriculture, but soon found that veterinary skills were far more in demand in the poultry business. It was then that he heard about a position at Clemson University and began working with gamebird farms. Over the next 31 years, Eleazar worked with gamebird producers, testing products and treatments that would gain USDA approval. He also worked to get gamebird producers interested in drug trials, understanding that there would need to be a large enough market for them to compel pharmaceutical companies to produce and sell them. Eleazer strongly encouraged gamebird producers to become involved in the USDA's National Poultry Improvement Plan (NPIP) to ensure that other poultry producers would recognize that this smaller, but growing, industry was

producing a safe product. Notably, for the first time, gamebird farms now had their own subsection as part of NPIP.

Dr Gary Davis, former Executive Director of the NAGA and the Southeast Gamebird Association, described early breakthroughs for the gamebird industry. Like Eleazer, Davis grew up on a farm and hunted quail at a young age, which led him to the poultry science department at North Carolina State University. Dr Davis became a regular contributor to *Wildlife Harvest*, a trade journal, and often worked with Walter Walker, an extension specialist at Clemson University. Walker had served as the NAGA's Executive Director, and Davis succeeded him in leading the association. During the tenure of Dr Davis, there were marked improvements in disease treatment and prevention as well as gamebird nutrition that helped the industry to grow.

The country's most prominent pheasant and quail producers have long recognized the value of veterinarians and poultry scientists within academia and have relied on them during some of the biggest challenges facing the industry. The value of this collaboration was never more apparent than in 2015 when an outbreak of highly pathogenic avian influenza was spreading across upper midwestern states including Iowa, Missouri, Minnesota, and Wisconsin. The NAGA commissioned its Health Committee to guide the industry's response and recruited some of the nation's top veterinary disease specialists to address the outbreaks. For 3 months, the committee published guidance about disease prevention, identification, reporting, quarantining procedures, and the pathways to receiving compensation and resuming business operations once certified as clean. These published guidelines continue to be refined as the industry faced the avian influenza outbreaks of 2022 which also affected commercial gamebird operations.

1.5 Nutrition Advances Improve Bird Health and Quality

Disease prevention and treatment were not the only focus. Advances in bird nutrition have resulted in improvements in nearly every aspect of the industry. Companies including Star Labs and Dawe's Laboratories have long served as essential partners to farms for these types of products. The nutrition industry itself has greatly evolved, beginning with the post-World War II boom. Over the years, offerings that had previous been produced with naturally occurring vitamin and mineral supplements gave way to synthetically produced products that deliver dependable results. Specific diets are now utilized for different times in bird life cycles, including starter diets, grower diets, finishing or flying diets and maintenance diets for birds that are kept longer. Moreover, the development of breeder diets was a major advance to ensure continued production of hatching eggs for the development for future flocks. These research developments in nutrition now allowed for specific diets for chukar, quail or pheasant, an improvement from the days when all gamebirds were treated the same as chickens or turkeys.

1.6 Equipment Changes Eliminate Losses and Increase Efficiency

During this same period, advances in equipment contributed to make life easier and more profitable for gamebird farms. The industry has long been served by loyal suppliers such as New Jersey's 100+-year-old Kuhl Corporation, which makes everything from large-scale machinery, such as egg washers and feeders, to smaller products such as peepers. The Kuhl family had raised poultry since its beginnings, and Paul R. Kuhl raised gamebirds, which led him to work with the NAGA in the 1950s. In 2007, NAGA members and gamebird producers Troy and Todd Laudenslager created 3T

Products to provide niche equipment for gamebird producers. Drawing on their own needs, the brothers utilized their family gamebird farm as their own research and development laboratory to improve their products which included nets, feeders, crates, and blinders.

All these examples provide yet another area where innovations from NAGA members have improved many aspects of the gamebird industry, including decreasing bird loss, improving bird and egg health and survivability, and preventing predation.

1.7 Gamebird Entrepreneurs

While much emphasis has been devoted to the multigenerational family farms that make up the modern gamebird industry, the other common element of those involved in raising gamebirds is a strong entrepreneurial spirit. These people are problem solvers and risk takers. Gamebird producers have embraced emerging science, such as lighting management to reduce bird injuries and mortality. They learned how to eliminate or mitigate invasive problems such as mold, bacteria, water contamination, and predators. Off the farm, they have learned to navigate the halls of Congress and the labyrinth of government bureaucracies at state and federal levels, working with both agriculture and wildlife agency leaders.

The modern gamebird industry appears to have the best of both worlds. It is a segment of agriculture that remains true to the traditional family farm and remains largely devoid of the corporate atmosphere that permeates much of the agricultural world. Yet at the same time, the industry has evolved to operate as sophisticated businesses capable of meeting the same challenges experienced in the larger livestock industry.

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