

Breeds of Cattle

Updated & Revised 2nd Edition



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Written by Herman R. Purdy, R. John Dawes and Dr. Robert Hough

Revisions by Don Hutzel

Breeds of Cattle

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Graphic Art: Ruth Ann Cutter Briggs

Design: R. John Dawes, Terry A. Gray and Ruth Ann Cutter Briggs

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The Best Fouryear Old Aberdeenshire Horned Ox, which obtained the Premium of 10 Sov^{rs} at the Highland Society's Show, held at Aberdeen 1840, the Property of M^r William M^r Combie, of Tillyfour.

This painting has been like an old friend. I first encountered it 30 years ago at Meander Farm in Locust Dale, Virginia, at the home of F. Julia and Judith R. Shearer.

That "Old Ox" was once the property of William McCombie of Tillyfour, the master builder of the Angus breed, was interesting enough. The prominent horns were astounding, and the lack of quality in such a beast was downright funny. One admires those men who developed our modern breeds all the more when one gets a glimpse of what they had to start with.

Herman R. Purdy



Herman R. Purdy and
President Dwight D. Eisenhower at
Gettysburg Farms.



President Dwight D. Eisenhower and Herman R. Purdy.
President Eisenhower visits Penn State University.



Harry T. Peters and Herman R. Purdy.

"Old Jock (1)."
By Gourlay Steele,
Aberdeen-Angus Cattle Society,
Perth, Scotland.

Foreword



The subject of breeds of cattle is as deep and interesting as the people who have an appreciation of fine cattle. Purebred cattle are the world's strongest symbol of agriculture. The economic impact of purebred cattle the world over is enormous.

From a societal perspective, breeders of purebred cattle are excellent stewards of animal husbandry and the land their cattle live on. Those who work with cattle and allow them to develop to their fullest potential enjoy the camaraderie and friendships of other people who appreciate the art of breeding.

I am fortunate to have been involved with purebred cattle all my life. My passion for the registered industry was inspired by my late father, Eugene, who was editor of Hoard's Dairyman magazine, "the dairymen's bible." Over the years, I spent a lot of time with him at the Hoard's Dairyman registered Guernsey farm in Wisconsin where I learned about pedigrees, corrective matings, and the proper way to work with and around cows, the foster mother of the human race.

During my childhood, I spent a good portion of my summers at my grandparents' farm, Mallory and Mallory Registered Angus in Iowa. This experience gave me good first-hand knowledge on the differences and similarities there are in managing and working with beef and dairy animals. However, the basic laws of breeding are the same.

Professionally, I have had the pleasure of working with cattle breeders and their animals through my work as Executive Secretary of the Brown Swiss Cattle Breeders Association of the USA from 1996 through 2001, and as Chief Executive Officer and Executive Secretary of the Holstein Association USA, Inc. since 2001. The Holstein Association USA, Inc. is comprised of over 30,000 members from across the United States and registers over 300,000 animals annually.

Breed associations are considered the oldest of farm organizations in this country. Members of these associations have contributed greatly to the genetic progress of the cattle described in this book.

R. John Dawes and the late Herman R. Purdy had an excellent idea when they came up with the prospect of writing the first edition of Breeds of Cattle which was published in 1987. The book was the first of its kind and the most accurate, comprehensive document ever published on different breeds of cattle.

Co-author of the first edition of Breeds of Cattle and of this one, R. John

Dawes has owned cattle for 40 years. A prolific writer, Mr. Dawes was educated at Penn State University where he later counseled students in the Division of Undergraduate Studies. The first cow he ever purchased, a Georgina heifer, was acquired from Penn State.

Today Mr. Dawes resides at Huntingdon Farm in Alexandria, Pennsylvania which he and Mr. Purdy purchased in 1970. The farm has been the home of many championship animals. The herd at Huntingdon originated with both purebred Angus and Polled Hereford cattle and was improved by the use of Angus Herd Improvement Records and Polled Hereford Guideline Programs. Currently, Mr. Dawes is Administrator of the Western Pennsylvania



John M. Meyer receives Outstanding Leadership Award from Dairy Shrine Director Dr. Duane Norman.

Watershed Program. He acted as alternate Commissioner on Pennsylvania Governor Ridge's 21st Century Commission on the Environment and was part of the policy team for the Heinz Endowments Environmental Program. He serves as President of the Board of POWR, the Pennsylvania Organization for Watersheds and Rivers. Visitors to the Huntingdon Farm appreciate the life-long commitment to cattle, land, and watershed management.

Herman R. Purdy was a Professor at Ohio State University and Penn State University where he was in charge of pedigreed livestock and served as coach of the livestock judging team. The late author was recognized as the world's most renowned beef cattle judge.

After retiring from Penn State University in 1972 as Professor Emeritus, he spent much of his time consulting others on cattle breeding and managing his beloved Huntingdon Farm. The respect others had of the Professor is evidenced by the fact that he was asked to pass judgment on beef cattle at over

1,200 shows around the world.

The friendships developed through one's work with pedigreed cattle last a lifetime. As President of the National Pedigreed Livestock Council Board of Directors, I have had the distinction of working with Dr. Bob Hough, the co-author of this masterpiece and former Executive Secretary of the Red Angus Association of America. Dr. Bob is the consummate innovator and visionary in beef circles. Starting with the Red Angus Association in 1994, he designed and launched the Feeder Calf Certification Program and implemented a program for Red Angus' first carcass EPD (expected progeny difference). Additionally, in order to further advance the value of Red Angus feeder calves, Bob negotiated the first breed pricing grid with a major packer.

Under Bob's outstanding leadership, in January of 2002, Red Angus had the seed stock industry's first complete genetic predictions for reproduction in beef cattle. This was followed in January 2004 with the unveiling of the first mature cow maintenance EPD (expected progeny difference).

Under Dr. Hough's guidance, the Red Angus Association was recognized for its breed leading performance programs, a respected commercial marketing program, and an excellent, professional office. His leadership directed the Red Angus Association through its period of most significant growth. In 2004, I had the pleasure of joining Bob on the program of the Red Angus Association of America's 50th Anniversary Celebration in Denton, Texas. At that event Bob was introduced as one of the 50 most influential people in the history of the Red Angus breed.

This book provides an excellent historical overview of breeds of cattle raised in the United States, along with information on each association's breed registry. The beautiful predominantly 19th Century artwork provides readers with an idea of what these animals may have looked like in the past. The excellent descriptive essays on phenotype and modern photographs provide outstanding visuals reflecting on what has changed and the changelessness.

This keepsake deserves a special place in the library of every college, university, and high school in the United States, and in the homes and offices of everyone who has ever owned purebred cattle or has an interest in them.

Foreword

To The First Edition



When John Dawes and I decided to take on this project, our intention was to provide a documentation of the organized breeds of cattle in the United States. An art-book format was chosen, and selecting the illustrations was John's responsibility. We chose the Durhams, or Shorthorns, painted by W. H. Davis in 1853, for the book jacket because of their prominence in the pedigrees of so many breeds.

We decided to represent or suggest the breeds by reproducing historic paintings as well as photographs of ideal types. The idea of linking modern breeds to their ancestors through old paintings had been with me for some time. I credit my friend Harry Peters of Windholme Farm with helping me develop a critical eye for hunting and sporting pictures.

No one person can pretend to be an expert on all breeds of cattle, and I have relied heavily on materials from the various breeders' associations and the good books listed in the bibliography. I am particularly indebted to Hilton and Dinus Briggs, Les Stephen and Ward Sullivan, Jr., Chilly Peery, and Orville Sweet for their works, which provided inspiration.

The discussion of phenotype is exactly what I taught in my years at Ohio State University and Pennsylvania State University. It is the ability to visualize an animal in one's mind's eye through the use of reasons. The manner in which this skill is taught is as old as the paintings presented. I found examples of phenotype discussion 200 years old that sound perfectly contemporary. Animals representing ideal type do not presume to dictate how the breeds should look for all time. They are simply representative of what is considered "good type" - based on individuality and the performance of these animals or their offspring - at this point in time. By "performance," I mean that in the show ring as well as in the field, as that has been my realm of experience.

Finally, a word about the format of this book. After having resisted 20 years of requests to write a textbook, and after 30 years of teaching from textbooks, it is my contention that too few people read them. Books should be a pleasure visually, and I hope this one is.

As a farm consultant and cattle judge (the only things at which I consider myself good), I have often wanted an attractive reference book about the merit of individual breeds to help clients choose a breed according to their likes, farm needs, and location.

Incidentally, the reasons people go into the cattle business are noble and varied, including making a contribution to a breed, improving efficiency in beef or milk production, or helping to revitalize a breed that may be in a slump due to lackluster leadership of the association or general poor quality of its gene pool. But I have found that people also get into the cattle business for a variety of other, less rational reasons. Perhaps they have seen a herd of white cattle from a train in France, or maybe they had good childhood experiences on a family farm raising a certain breed. One client of mine bought her first animal at public auction because it was born on her birthday! This client has had much success as an Angus breeder. Over the years, I have been called upon to provide consulting services to the owners of some of the leading herds of cattle in the world. Among them are Stonylonesome, Falklands, Royal, Sherwood, Crowfields, Summitcrest, Heckmere Highlands, Sayre, Windholme, Sir William, Dawn Acres, Waterhouse Ranch, Dunwalke, Kiata, and Paint Creek. I have found that the principles of breeding cattle are universal. Problems and long-range goals are pretty much the same. I have experienced conflicts not in working among various breeds - only in working among breeders.

It is the financial remuneration of consulting work that has given me the time and encouragement to pursue this book project. The good hospitality I enjoyed on my farm visits gave me the desire to own my own farm.

Two experiences in my consulting work stick out in my mind: one with then President Dwight D. Eisenhower at his Gettysburg Farm; the other at Royal Charolais in Greensburg, Pennsylvania.

I came to be a consultant for President Eisenhower and his Angus herd through Dr. W. L. Henning, my supervisor at Penn State and Pennsylvania's former Secretary of Agriculture. Dr. Milton Eisenhower, the President's brother, then president of Penn State University, was also instrumental.

Ellis Slater had recommended that the President contact me at Ohio State, but by the time we made contact, I was employed at Penn State. After making several vain attempts to meet me at the farm, the President invited me to the White House for dinner. I was only slightly unnerved - I forgot to pay the cab driver and had to backtrack. When I finally got inside the door, before introductions were made, Eisenhower shook my hand and said,



Herman R. Purdy's Championship Judging Team 1966.

"Herman, we've had a hell of a time getting together," and I was perfectly at ease.

During one of my visits to Gettysburg, the President instructed Bob Hartley to run his cows out of a paddock, one at a time, in front of us. He then drew out a pen and pad and took notes on the reasons I gave as to their merits and faults. He was very interested in cow families and in identifying related individuals. No one could have been more serious about breeding cattle.

In 1972, Logan Dickerson, a structural engineer from western Pennsylvania, hired me to assemble a herd of Charolais cattle for his Royal Charolais herd, then at Uniontown and Greensburg, Pennsylvania. We sat down in his office, where he gave me a complete presentation on topography, land quality, long-term land use, and building facilities. He discussed the proximity of towns to his farm and problems that might be encountered. Long-range goals were set, some of which were to improve Charolais cattle by making them smoother-muscled, breeding-quality polled animals. His scope was broad. I looked at cattle from New Jersey to California, and with an open pocket book I was able to help assemble a great herd of cows. I have continued to enjoy this personal and working relationship. These are just two of many encounters that have enriched my life and career.

It is with great fondness that I dedicate this volume to those who used me as a consultant.

Herman R. Purdy

Beef Breeds







Angus



Origins and History

Angus cattle, naturally polled and black as we know them, come from the counties or "shires" of Aberdeen and Angus (formerly Forfarshire) in northern Scotland. This area of Scotland is damp but mild, with a median temperature of 54 degrees. Surely polled cattle existed in Britain in Roman times, as excavations at Roman forts have revealed cattle skulls without horns. References to black cattle that were hornless and native to Aberdeenshire date back to 1523. The cattle of Aberdeen were affectionately called "hummlies" and those of Angus, "doddies."

The polled native cattle of northern Scotland were too small for draft. Scottish farmers learned that they could earn more by finishing their own cattle, and this brought about the specialized production of native polled stock as meat animals. Angus is known as the world's most prominent breed that has been bred exclusively for beef since its beginning.

There is history not only in the breed itself, but in the inherent Scottish love of livestock which, combined with the owner-tenancy custom of the area, built the traditions of competition that exist in our present-day livestock shows. Lord Panmure (1771-1852) of Brechin Castle bred polled black cattle and required his tenants to exhibit one steer for the first 50 acres of tenancy and two heifers for the first 100 acres. This type of competition surely led to breed continuity, as well as show traditions.

Hugh Watson of Keillor, born on October 4, 1789, in the County of Angus, is recognized by all historians as the first great improver of Aberdeen Angus cattle. In 1808, at the age of 18, Watson began his tenancy at Keillor with six of his father's best and blackest cows and a bull known as Bannantyne Sandy. That same year he purchased a bull called Tarinty Jock. After some additional early purchases of females, it appears that the herd was "closed," meaning no other stock was introduced from outside herds until late in his career when Mr. Watson purchased one other bull, President 3rd 202. Hugh Watson's most famous contribution was a cow called Old Grannie 125. She lived to be 36 years of age and died in 1859 during a thunderstorm. One story credits her as having had 29 calves, but only 11 were officially recorded. One daughter of Old Granny was exhibited at the Highland Show at the age of 22 years, nursing a calf! She was awarded a gold medal and certainly added to the reputation for

"Aberdeenshire Horned Ox," 1840
Courtesy of Dr. Robert Hough,
Denton, Texas.

longevity, which is still an Angus trait. Old Granny herself was exhibited continuously during her lifetime and in 1858, at age 34, she was awarded a medal at the Highland Show at Aberdeen for her astonishing record of reproduction and longevity. Old Granny was assigned number 1 in the Scottish Herd Book. A bull called Grey-Breasted Jock 113, assigned number 2 in the Scottish Herd Book, did much to enhance the Watson herd. Mated to his own daughter, he sired a bull called Old Jock 126. According to Watson's son William, this was the best bull his father ever owned. Some of the most famous cow families of the breed can be traced back to foundation cows at Hugh Watson's Keillor. William McCombie of Tillyfour (1805-1880) was considered to be the master builder of the breed. He recorded every mating and wrote the book *Cattle and Cattle Breeders*. The herd at Tillyfour was started in 1830 and continued until McCombie's death. Although McCombie made concentrated use of a bull called Panmure, he noticed the limitations of close breeding, a common practice of the times. As he maintained, "in-and-inbreeding has some advantages and many disadvantages: my experience has not been in favor of the system. By adhering to it, I found that quality was maintained and even improved; but size was reduced and symptoms of delicacy of constitution were manifested. It may be pursued for a time until type is developed; but to continue for any length of time to breed in-and-in is not only against my experience but, I believe, against nature." McCombie assembled "Aberdeens" from St. John's Wells, Wester Fintray, and the Williamson and Walker herds. His "Angus" came from Keillor, Balwyllo, Ardovie, and Dalgairns. It was at Tillyfour that both strains were best blended into one improved breed, superior to either original strain. Another famous herd in Scotland is the Ballindalloch herd, founded by Sir John Macpherson Grant (1839-1907). The Ballindalloch Ericas are an important part of Angus pedigrees around the world.

The show winnings of Tillyfour and Keillor marked the beginning of world recognition of the Aberdeen Angus breed. At the Smithfield Stock Show in London in 1868, Black Prince from Tillyfour won all honors and was presented to Queen Victoria. After the event she visited Tillyfour and viewed a parade of 400 head. Soon after, she established a herd of Aberdeen Angus at Abergeldie Mains. The Queen Mother, who died at 101 years of age, was patron of the breed and had

her own herd of Angus cattle at Castle of Mey on the Cathness coast in Scotland.

The Scottish Herd Book was first established in 1862. In 1879, Sir George Macpherson Grant established the Polled Cattle Society and acquired the Herd Book. The organization is now called The Aberdeen Angus Cattle Society, with its headquarters in Perth, Scotland.



*Top: Ballindalloch Herd, Scotland
Bottom: Ballindalloch Castle, Scotland*

Phenotype

The weights of Angus are as follows:

1. Mature bulls are 1800 to 2400 lbs.
2. Mature cows are 1200 to 1600 lbs., depending on the condition and stage of pregnancy.
3. Steers at harvest weight are 1200 to 1300 lbs.

The Head

The most striking characteristic of the Angus should be a well-defined poll. The Angus female should show no coarseness about her head. It should be chiseled and angular. The face of both sexes should be slightly dished, despite recent tolerance for increased length from poll to muzzle. Eyes should be prominent. Jaws and throat should be free of excess fat and skin. Ears should not droop and should be of medium size. Any evidence of scurs or buttons is a disqualification from registration.

The Neck and Shoulders

The neck of both sexes should be of medium length and blend smoothly at the top of the shoulder. There should be little loose skin down the front. The mature bull should demonstrate masculinity and ruggedness, without coarseness of shoulders.

The Back, Body and Hindquarters

The top line of an Angus should be straight and long. This length of body should be balanced by adequate length of leg. The body should have depth and uniformity. Angus are noted for their smoothness and for their lack of patchy fleshing. The forerib should be well sprung, with fullness below the crops. Width should be carried back through the entire body. The rump should be thick in the lower round, with muscling evident in the stifle area.

Females often demonstrate prominent hook bones, but this is more evident during or after lactation, when the cow's condition changes.

The Hair

The black hair and hide of an Angus is a trademark for breeders and butchers alike. Since the marbling, or dispersion of fat in the lean tissue, is more highly developed in Angus, the black hide is sought after. Breeders have discriminated against cattle showing evidence of white markings along the underline. However, white is allowed behind the navel to a modest extent. Angus bulls are very prepotent and fix their color characteristics usually in one generation. Other than blacks, there are the "black baldies," black cattle with white faces, which are obtained when an Angus and Herefords are crossed. Angus will sire red cattle when bred to breeds that are red, but only when the Angus bull carries the red gene.

Angus cattle produce the best quality beef in the world, judged by the factors of efficiency and quality. They do it better than any other breed.



OLD GRANNIE, the first recorded Aberdeen-Angus cow.

Statistics

The first importation of Aberdeen Angus into the United States was made in 1873. George Grant, a native of Banffshire, Scotland, a retired silk merchant then living in Victoria, Kansas, imported four bulls, two of which he exhibited at the Kansas City Fair that same year. These bulls, pedigrees unknown, were used on native Texas Longhorns. Their offspring, black and hornless, became immediately popular with breeders in the Midwest. The first registered Angus cattle were introduced into the United States by James Anderson and George Findlay, Chicago businessmen residing in Lake Forest, Illinois. Mr. Findlay, a native of Buchan, Scotland, was familiar with Angus, and Mr. Anderson was from Aberdeenshire.

The second importation into the United States was made by F. G. Redfield, from Batavia, New York, who brought in three heifers and one bull. This was the pioneer herd in the East. Having visited Scotland in 1879, he made his purchase from Thomas Ferguson, of Kinochtry, Coupar, Angusshire. The Kinochtry herd was based upon Keillor breeding.

T. A. Simpson, from Missouri, went to Great Britain in 1880, 1881, and 1882 and imported about 500 head of Aberdeen Angus and Hereford cattle. Simpson, along with his partner, Charles Gudgell, made three importations. Mr. Gudgell was one of the organizers of the American Aberdeen Angus Breeders Association and was its first secretary.

The first office was located at the same address as the Hereford association - the home of Charles Gudgell, in Independence, Missouri. At the Kansas City Show in 1886 Gudgell and Simpson won Grand Champion Steer with Sandy, son of Knight of St. Patrick.

W. A. McHenry, of Denison, Iowa, founded McHenry Park, a great seedstock source of its era. He bred a bull called Earl Marshall 183780, who sired five sons and one daughter that were Grand Champions at the International in Chicago. Earl Marshall also sired seven first-place "Get of Sire" groups in the International Livestock Show.

Other legendary Angus herds were those of L. B. Pierce and Son of Creston, Illinois, established in 1883; the J. Garrett Tolan herd of Pleasant Plains, Illinois, established in 1901; and Ankony Farm,



Bred by Sir G. M. Grant, Bart., Ballindalloch, Scotland; owned by A. B. Matthews, Kansas City, Missouri.

Rhinebeck, New York, established by Allan A. Ryan and Lee Leachman in 1948. The "fabulous fifties" were a prosperous time for Angus breeders, when the association aggressively made gains on the already entrenched breeds of Shorthorn and Hereford.

The American Aberdeen Angus Breeders Association was formed in 1883, and the name was shortened to the American Angus Association in 1956. The first volume of the American Herdbook was published in 1886 with 5200 entries. Of this number 2398 were produced in the United States and 2802 were bred in Scotland or Canada.

Since the 1880s, the association has had only ten secretaries: Charles Gudgell, Thomas McFarlane, Charles Gray, W. H. Tomhave, Frank Richards, Glen Bratcher, Lloyd Miller, C. K. Allen, who became executive vice-president, Richard Spader and John R. Crouch, Executive Vice President.

In 1958 the American Angus Association began the Angus Herd Improvement Record (AHIR) program, a standard for the beef cattle industry. The program records weights of animals at weaning and again as yearlings. In 1967 the Association made a production pedigree available. The Sire Evaluation Program helps breeders to evaluate the ability of a bull to sire cattle that produce above breed average.

The American Angus Association has led the industry in producing genetic predictions for carcass merit. They produced their first carcass expected progeny differences (EPDs) in 1974 from data gathered from structured carcass progeny tests. By 1993, only 729 sires had completed structured progeny tests since the inception of the program. This is when the American Angus Association started producing interim EPDs, so suddenly EPDs became available on yearling cattle and dams. This meant yearling bulls started to be valued on their carcass EPDs and carcass progeny testing grew rapidly. In 1996, a percent retail product EPD was added.

Even with the renewed emphasis on structured carcass progeny testing, this process was expensive, slow to prove bulls, and still brought in an inadequate amount of data. Visionaries Dr. Doyle Wilson of Iowa State University and Angus' John Crouch thought that collecting ultrasound data for body composition (back fat, ribeye area, intramuscular fat) on the vast number of yearling cattle was the way to solve this problem. In 1997, the American Angus Association gave Iowa State University a \$200,000 grant to solve the problem of utilizing ultrasound to produce EPDs. An excellent system of centralized processing of ultrasound images named CUP was designed and implemented to ensure quality control and full contemporary group reporting. In 1998 and 1999, research runs of EPDs were released,

and in 2000, ultrasound EPDs were incorporated into the main evaluation. For the 2000 analysis, 77,000 yearling cattle with ultrasound records were included while only 40,000 carcass records had been collected in the history of carcass progeny testing. By 2006, the American Angus Association was collecting ultrasound records on over 150,000 head per year.

As of this writing nearly 16 million head have been registered by the Association.

American Association:

American Angus Association
3201 Frederick Ave
St. Joseph, Missouri 64506
www.angus.org

The Aberdeen-Angus Cattle Society
Pedigree House
6 King's Place PH2 8AD
Perth, Scotland
www.aberdeen-angus.co.uk

International Associations:

Canadian Angus Association
#214, 6715-8th Street NE
Calgary, Alberta T2E 7H7
Canada
www.cdnangus.ca

Angus Society of Australia
Locked Bag 11
Armidale 2350
Australia
www.angusaustralia.com.au



Angus Bull and Cow, 19th Century



Angus Bull



Angus Cow

Dairy Breeds







Holstein



Origins and History

The chief characteristics of the original Friesian breed of cattle came to be developed in the Netherlands, more specifically in its two northern provinces - North Holland and West Friesland - lying on either side of the Zuider Zee (South Sea). The exact earlier history of the cattle in this area is long lost, but ancestry is in part credited to the cattle of two migrant European tribes - the Friesians and the Batavians - who came from central Europe by way of the Rhine River to the fertile lowlands of the Rhine delta approximately 2000 years ago. Legend has it that one tribe brought with it a white strain of cattle, while the other brought a black strain, resulting in the intermingling of black and white cattle. No doubt this attempt to explain, in a brief and tidy way, the beginnings of the Friesian's characteristic color pattern should be taken with a grain of salt.

Nevertheless, historical evidence tells us that small black and white cattle had been raised in northern Jutland before the 17th century, and that these animals moved with their people into the northern Netherlands to reinforce the human and cattle populations, both of which were severely decimated during several periods of the Middle Ages by contagious diseases, floods, and wars.

The works of the Dutch Masters of art, who often included cattle in their landscapes, have been studied to help shed light on the color of cattle in the area. Very few black and white cattle were depicted before 1750, whereas they commonly appeared in paintings after this date, helping to strengthen the view that this pattern was brought in by replacement cattle from Denmark and Germany. Before this time, red and fawn-colored cattle were pictured most often.

Breed development occurred mainly after 1750 under climatic, geographic, and economic conditions unique to North Holland and West Friesland. The summers are mild and moist. Ample rainfall on the fertile soil supports luxuriant growth of grass with high nutrient content. The abundance and high quality of grass was probably the most important factor in developing the large size and milk-producing capabilities of Friesian cattle. As grass was almost the exclusive source of feed for the cattle, the breed evolved into one that made the best use of the resource.

"Mable Segis Komdyke"
By Edwin Megargee
Courtesy of Joel Hastings with Holstein World

Geographically, North Holland and West Friesland are small (2300 square miles in area combined) and also quite isolated, so that very little inward cattle migration has occurred in later history. As cattle numbers and quality increased, the export demand grew, at first to other sections of Holland and Europe, later to America. Resulting selection pressures served to increase productivity and uniformity of type.

Much of the land in the Netherlands is below sea level and has been reclaimed from the sea by an elaborate dike system. As a result, land is very costly and must be used efficiently. North Holland contains large areas called "polders," which are the highly fertile drained bottoms of shallow inland lakes. Some of the best herds were developed in these areas. To offset the large capital investment in land, farmers expected their cattle to provide them with their livelihood, as well as pay the rent or interest and taxes on their land. Thus, efficiency and productivity became heavy selection goals. The Dutch farmers enjoyed a steady and reliable market for cattle and cattle products, especially cheese. Management practices were fairly uniform. For the time period, herds were large - 20 to 40 cows handled as a single unit. Cattle were turned out to pasture in



"Mothers in Waiting," 1996. By Bonnie Mohr, courtesy of Bonnie Mohr Studio

early May. Pastures were divided by drainage ditches rather than fences. Milking cows were often protected from the elements in the very early and late pasturing seasons by rugs and blankets. The land being flat and the grass so abundant, the cows needed not travel far for grazing, and milkers often went to the field to do the milking there. The winters were moderately cold, and the cattle were housed in stables, often under a roof contiguous with the farmhouse. Bulls from one or two of the highest producing cows were kept each year and used as sires for one or perhaps two seasons - no more unless proven exceptionally good. The still-young bulls were then fed out to be butchered. Other bull calves were used for veal. Most heifers were raised to production age, with the best being used as herd replacements, the rest going to market. The cow's production was monitored and she was culled if not producing well enough. Almost no animal older than six or seven years was kept unless she was an exceptional milk cow.

The cattle gained a reputation for quality and the breed spread throughout Holland, then eastward into Germany, especially the provinces of East Friesland, Oldenburg, Hanover, and Holstein. The southward spread progressed through South Holland, Belgium, and Flanders into Northeastern France. The cattle of this whole region - sharing a common origin - showed many similar characteristics, such as large and robust frames, prevailing dark colors, short and curving horns, fecundity and, later, great milk-producing ability. By 1865, these were known as "Holland" cattle, the most famous being the strain called Friesian, noted for fine bone, mellow hide, and characteristic coloring described as "white with red, grey, blue-grey, or black spots." At this time, both red and white and black and white cattle existed side by side. Black and white animals became the majority, partly because the bulls selected for use were always of this color, but Dutch farmers didn't discriminate against red females as long as they were good producers. Thus was perpetuated the slight tendency for red and white offspring from black parentage. Selection for black color was largely a result of importers from other lands and their exclusive herd books. For example, America imported only black and white animals. Some red and whites have been selected and bred for in Germany, Denmark, England, and the U.S. in smaller

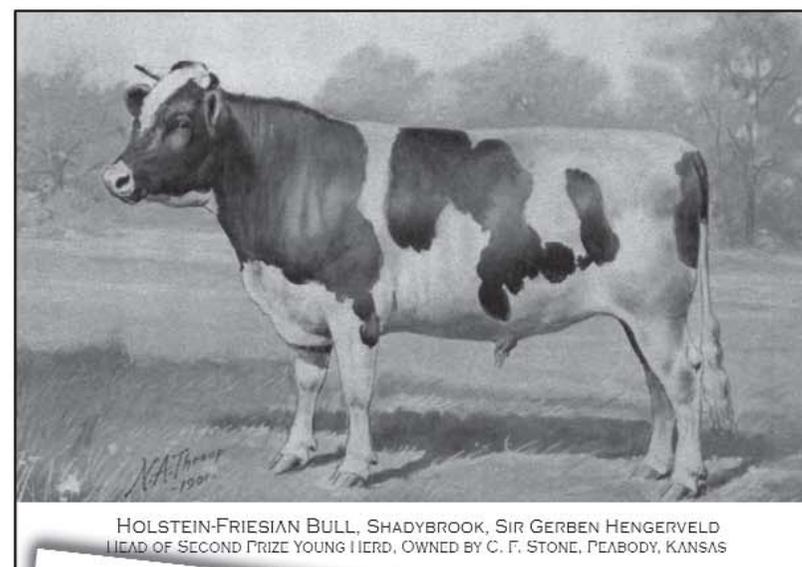
numbers. In the U.S. and Canada, the breed is now officially known as Holstein.

It is interesting to note that most improvements of the Holstein occurred in the absence of a herd book, or even of individual records of any great extent. Two herd books in the Netherlands handle the breed now. In 1874, the Netherlands Cattle Herd Book Society was formed. In addition to Friesians, this book records the other two Dutch breeds - the Meuse-Rhine-Issel and the Groningen. The Friesland Cattle Herdbook Society, organized in 1879, registers only those Friesian cattle in the province of Friesland. Probably the only reason for the split control of registrations is due to local pride. Little difference in type can be noted. In 1883, another registry - The North Holland Herd Book - was introduced. It was largely influenced by American importers and was short-lived. Along with the late advent of the herd books, systems of type evaluation and production records have quickly evolved.

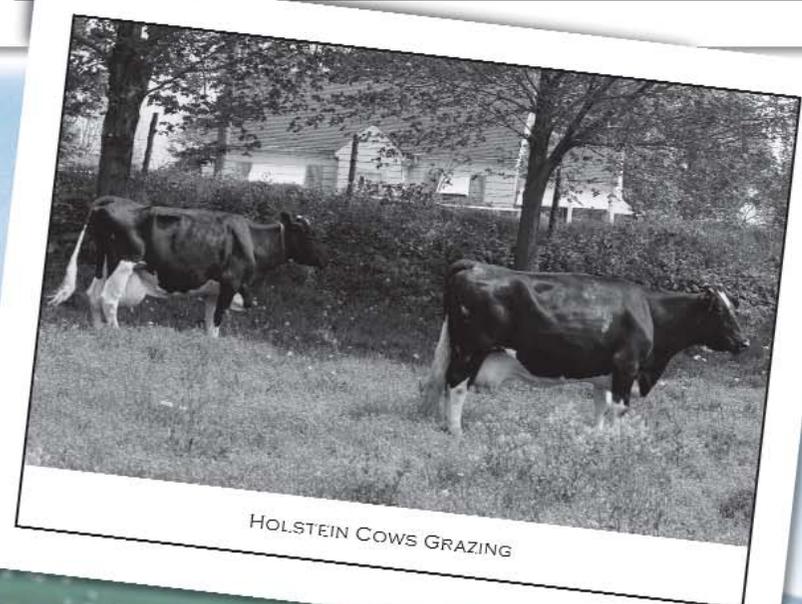
Promotion of the breed in Holland was not well organized. Cattle shows did not play as important a role in development as they did in breeds elsewhere, particularly in Britain. Nonetheless, the excellence of the Friesian breed was noticed early on. Dutch cattle were taken to England before local development of the beef breeds, and probably were used to some extent in the development of the Shorthorn breed and others. The Friesian of the Netherlands is more of a dual-purpose animal, showing more muscling when compared to the Holstein of North America. Holland is justifiably proud of the large, improved black and white cow that has been used heavily as a source of upgrading cattle in surrounding territories, as well as exported as a pure breed to at least 41 countries over four continents, where she is known as the premier dairy cow of the world.



Collection of Stamps Representing the Holstein



HOLSTEIN-FRIESIAN BULL, SHADYBROOK, SIR GERBEN HENGERVELD
HEAD OF SECOND PRIZE YOUNG HERD, OWNED BY C. F. STONE, PEABODY, KANSAS



HOLSTEIN COWS GRAZING



Top and Center: 19th Century Images Bottom: Holstein Cows

Phenotype

The weights of Holstein vary as follows:

1. Mature bulls should weigh at least 2200 to 2500 lbs., with some reaching 3000 lbs.
2. Mature cows in milk should average at least 1500 lbs., but may reach and exceed 1 ton.
3. Steers should weigh 1100 to 1300 lbs. at slaughter.

The average milk production per lactation of the Holstein is 22,838 lbs. of milk and 835 lbs. of butterfat. The top milk production per lactation by a Holstein to date is 67,914 lbs. of milk with 2216 lbs. of fat (365 days). The Holstein is a large, tall, and omnipresent dairy animal of unparalleled milk-producing ability.

The Hair

The Holstein is either black and white or red and white with clearly defined margins. Black and white greatly predominates. The proportion of black to white varies greatly from one individual to another. The hair coat in warm weather is fine and sleek, but grows out well in winter to greater length and thickness and can get quite shaggy on some individuals in prolonged cold. Holsteins tolerate cold weather slightly better than hot, although with protection from direct sun they can withstand the heat much better than once believed, and do quite well in the South.

Holstein Association USA has developed a classification system to define the conformation of Holstein cows and bulls based on the level of desirability exhibited by individual cows for each category compared to the try-type model. The five major categories for cows are as follows:

Front End/Capacity

This includes the skeletal parts of the cow, with exception of feet and legs, and rump.

Front End - Adequate constitution with front legs straight, wide apart and squarely placed. Shoulder blades and elbows set firmly against the chest wall. The crops should have adequate fullness.

Chest - It should be deep and wide floor, with well-sprung fore ribs blending into the shoulders.

Barrel - Long, deep, and wide: depth and spring of rib increasing toward the rear with a deep flank.

Back/Loin - Back should be straight and strong, with loin broad, strong and nearly level.

Stature - Height including length in the leg bones with a long bone pattern throughout the body structure. Height at withers and hips should be relatively proportionate.

Breed Characteristics - Should exhibit overall style and balance. Head should be feminine, clean cut, slightly dished with broad muzzle, large open nostrils and strong jaw.

Dairy Strength

This is a combination of dairyness and strength which supports sustained production and longevity.

Ribs - Should be spaced wide apart. Rib bones wide, flat, deep and slanted toward the rear.

Width of Chest - Wide, showing capacity for vital organs.

Spring of Fore Rib - Well sprung, while expressing fullness and extending outside the point of elbows.

Thighs - Lean, in curving to flat and wide apart from the rear.

Withers - Sharp with chine prominent.

Neck - Long, lean and blending smoothly into shoulders; clean-cut throat, dewlap, and brisket.

Skin - Thin, loose, and pliable.

Rump

The Rump should be long, wide throughout with thurls centrally placed to enhance mobility.

Rump Width - Thurls should be wide apart.

Rump Angle - Pin bones should be wide apart.

Thurl Position - Centrally placed between hip and pin bones.

Tail Head - Should set slightly above and neatly between pin bones and free from coarseness.

Vulva - Should be nearly vertical.

Feet and Legs

Feet - Steep angle and deep heel with short, well-rounded closed toes.

Rear Legs:

Rear View - Straight, wide apart with feet squarely placed.

Side View - A moderate set (angle) to the hock.

Hocks - Are cleanly molded, free from coarseness and puffiness, or swelling, with adequate flexibility.

Pasterns - Short and strong with some flexibility.

Udder

Udder Depth - Moderate depth relative to the hock with adequate capacity and clearance. Consideration is given to lactation number and age.

Teat Placement - Squarely placed under each quarter, plumb and properly spaced from side and rear views.

Rear Udder - Ideally wide and high, firmly attached with uniform width from top to bottom and slightly rounded to udder floor.

Udder cleft - Evidence of a strong suspensory ligament indicated by adequately defined halving.

Fore Udder - Firmly attached with moderate length and ample capacity.

Teats - Cylindrical shape and uniform size with medium length and diameter.

Udder Balance and Texture - Should exhibit an udder floor that is level as viewed from the side with quarters evenly balanced; soft, pliable and well collapsed after milking.

Holsteins thrive on good pastures and handle large amounts of roughage extremely well. They are rapid growers but reach maturity

later than most of the other dairy breeds and, as a result, are the largest among the breeds. Heifers should first calve at 22 to 26 months of age. Milking cows should average 58 inches at the withers. A cow's normal productive life is about six years, although individuals have lived to 15 to 20 years. A calf will weigh 90 pounds or more at birth and does extremely well on the veal market. Holstein cows have a high salvage value for beef if culled from the milking string. Holstein steers have become popular in feed lot operations as efficient feed converters and excellent growers and gainers. The breed is large and rugged, but for the most part demonstrates dairy character at least as well as other breeds. Indeed, many great Holstein cows have been unsurpassed in this regard.

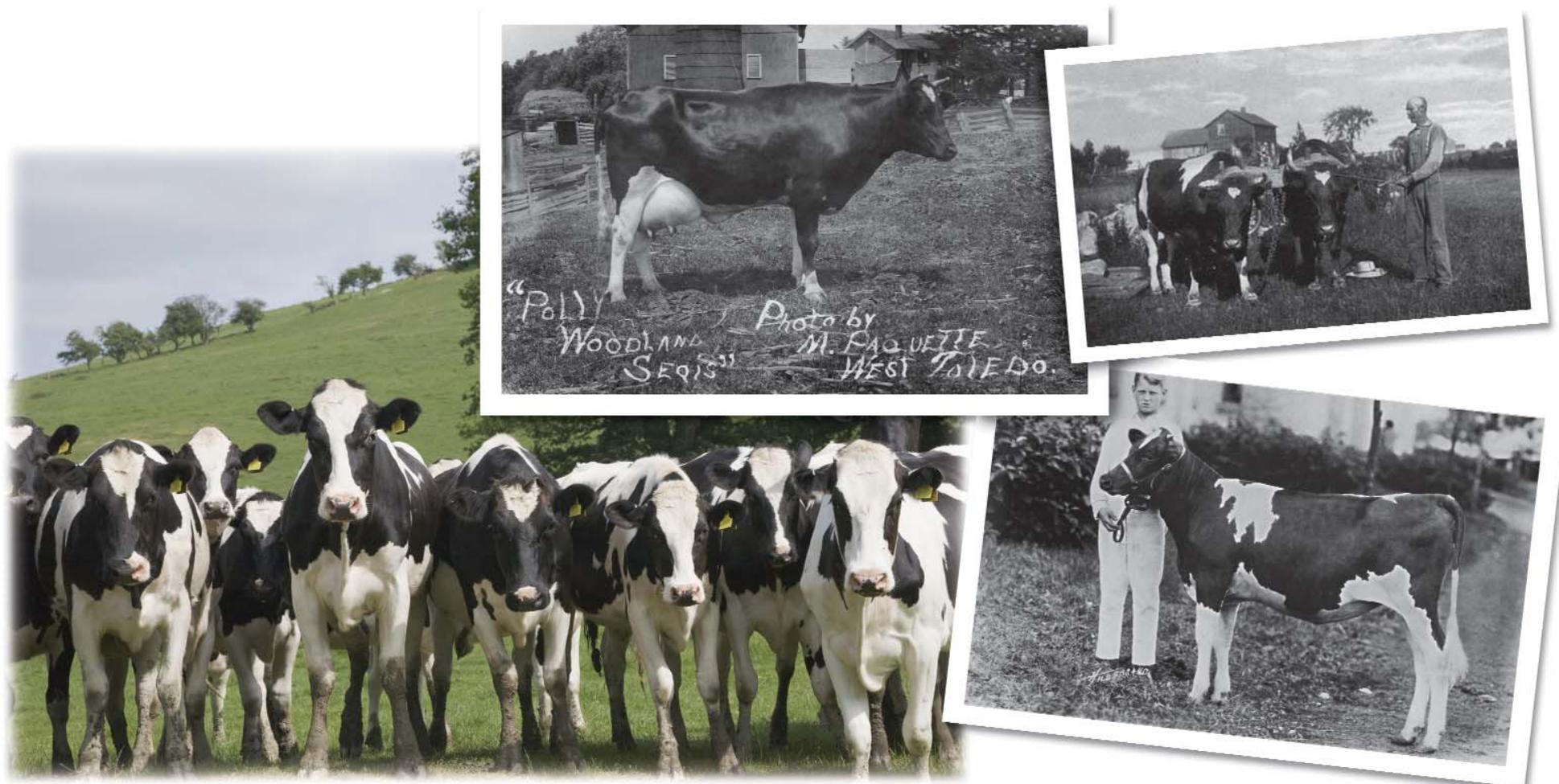
The trait for which the Holstein-Friesian is best known for is her unrivaled milk-producing capability. It is the single fact that has made her by far the most popular and numerous dairy animal in the world. Although highest in total output, she is lowest in total solids (12.18 percent), butterfat (3.60 percent), and protein (3.15 percent). As a result, her milk is highly acceptable in fluid form where fat content is standardized at 3.05 percent or less, but is of correspondingly less value for yield of milk products such as cheese, butter, and non-fat dry milk, where the colored breeds excel. Holstein milk is very white in color, the breed being efficient at converting carotene into vitamin A. Holstein cows are fairly docile in disposition, but again great variety exists. The bulls are more nervous and aggressive than the females and should not be trusted any more or less than the males of other dairy breeds. Holsteins have proven to be extremely adaptable to different management situations and can be found from small, 50 to 100 cow herds on family farms in New England or Wisconsin to the many thousand-head, highly automated, dairy farms of California - as always, coping well and giving an abundance of milk.

Statistics

The earliest Dutch cattle were brought to the U.S. between 1621 and 1625, when the Dutch colonized the Hudson and Mohawk Valleys of "New Netherland," which later became New York. However, the Dutch cattle and their influence disappeared in the flood of introduced British cattle. The first record of a special importation from Holland was that of the Holland Land Company of New York in 1795. Also about this time, William Jarvis of Vermont and Herman LeRoy of New York imported some of the animals. Records weren't kept and the cattle were crossed, their blood being lost to further purebred development. Winthrop W. Chenery of Massachusetts bought a Holland cow from a Dutch sailing vessel docked at Boston harbor in 1852. She had been used to supply milk for the crew on board during the voyage. Mr. Chenery was very impressed by the cow and arranged to bring more of her type to America in 1857 and 1859.

Unfortunately, all of these cattle except one bull had to be destroyed later due to contagious disease. Chenery tried again in 1861 by bringing one bull and four females. These escaped disease and formed the first permanent herd in America.

It was about this time that the name "Holstein" began to be used for the cattle breed. It is a misnomer, as Holstein, Germany, had no significant connection with the Dutch cattle brought to the U.S. In 1864, Mr. Chenery prepared an article about the breed for the United States Department of Agriculture Annual report, in which he used the name "Dutch" cattle exclusively. But once the article was printed, "Holstein" was used in the title and the captions, although only "Dutch" appeared in the text. It is supposed that someone in the U.S.D.A., for some unknown reason, changed the name, and Chenery and others accepted it and brought it into general use. In 1869, Gerrit S. Miller of Peterboro, New York, brought one bull and



A Group of Holstein Cows

19th Century Photographs Left: Holstein Cow Right: A working Holstein Ox Team

Bottom: A Boy and His Holstein Calf

three females from Friesland in what is considered the most important early importation. The animals proved to be of high quality, prolific and productive. Many Holstein in the U.S. today trace to animals imported or bred by Mr. Miller. Many imports took place in the 1870s, including the activity of the Unadilla Valley Stock Breeders Association, formed in New York to buy cattle imported by Thomas E. Whiting.

The years between 1877 and 1885 are considered the time of firm establishment of the Holstein in the U.S. It was an opportune time to introduce the hardy, prolific, and heavy-milking breed, as the dairy industry was expanding and farmers wanted cows that would make large returns in milk production. By 1886, when importation virtually ceased, about 10,000 Dutch cattle had been imported.

The firm of Smiths, Powell and Lamb of Syracuse, New York, imported a total of 1203 females and 90 bulls before 1887 and made great impact by sheer numbers. Netherland Prince 716 HHB was one of the animals brought over by the firm. He is considered the greatest foundation sire in America.

The Association of Breeders of Thoroughbred Holstein Cattle, formed in 1871, was the first society for the breed in any country. (Again the breed was given a misnomer, since Thoroughbred is the name of a breed of horse). It was largely made up of Mr. Chenery and his followers. The first volume of the Holstein Herd Book was printed in 1872. Late in 1877 the Dutch Friesian Association was formed to write its own herd book. Followers of Thomas E. Whiting, primarily Solomon Hoxie and his associates, were responsible for its formation and the administration of the Dutch Friesian Herd Book. The two herd book societies differed over the correct name of the breed and the source of pure breeding stock. The idea for the advanced registry system that all the other dairy breeds later adopted began in the Dutch Friesian Association under Hoxie, who saw the need for systematic improvement by selection for superior milk production. Any purebred cow could be recorded, but only cows that met or exceeded certain requirements in milk production could be admitted to the main register. Controversy cooled and the two associations merged in 1885 to become the

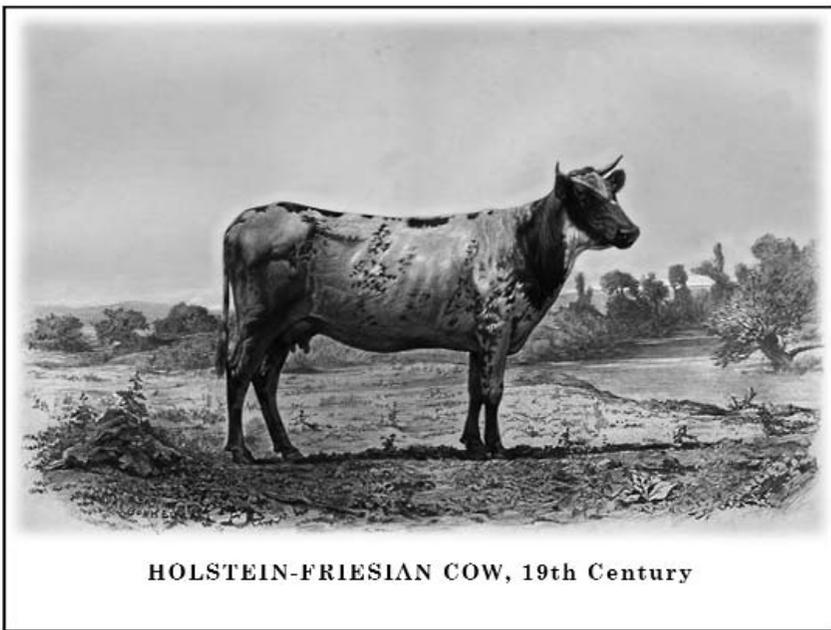


Left: Holstein Association, Current Logo Right: The Original Holstein Association Logo

Holstein-Friesian Association of America. The breed became officially known as Holstein-Friesian. T.B. Wales was the first secretary of the joint association, and Solomon Hoxie became the superintendent of advanced registration. From this beginning, the association has become the largest of all breed organizations. In 1994, the name of the association was changed to Holstein Association USA and the breed became officially known as Holstein.

The Association did much to promote the breed, but the cows did an impressive job at promoting themselves. Early in the history of the breed in this country (1888), the cow Pietertje 2nd of New York topped 30,000 pounds of milk in her lactation, a previously unheard-of amount, and a record that stood for 25 years. Several butter production trials were topped by Holstein-Friesians, namely Mercedes and Clothilde, defeating even some famous Jerseys in total butterfat production.

Livestock shows were important for early publicity for the breed. Many small local or regional shows were held. Holsteins were exhibited in the World's Columbian Exposition in Chicago in 1893, the Pan-American Exposition in Buffalo in 1901, the 1904 St. Louis World's Fair, and the first National Dairy Show at Chicago in 1906. The Black and White Shows - one-day events drawing exhibitors from several counties - continue to be very important in the purebred industry, as are junior shows and 4-H competitions. The "All-American" contest was begun in 1922 to recognize the top animals that have been leading prizewinners in the US



HOLSTEIN-FRIESIAN COW, 19th Century

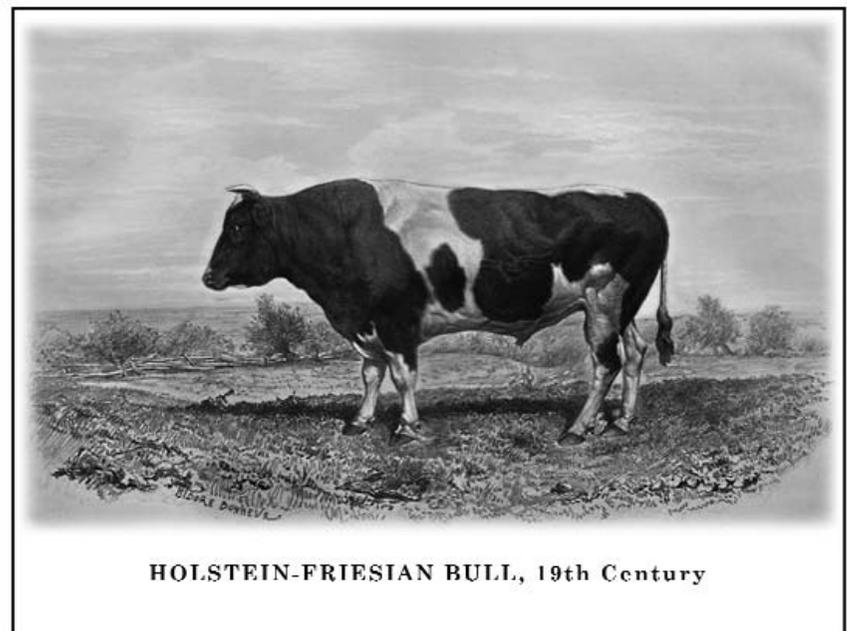
and Canada. Sales, tours, twilight meetings, and field days are other important breed activities.

In 1922, with Fred Pabst presiding, 48 leading breeders, showmen, and judges, along with F.L. Houghton, secretary, began implementation of the "True Type" project. The purpose of the project was to develop clay models and paintings to depict the true type of the ideal Holstein female and bull to unify for all judging points of importance. Edwin Megargee, animal painter, and Gozo Kawamura, sculptor, were engaged to carry out the artistic part of the project. The models and paintings were approved later that year, and the project was a huge success. Duplicate metal models were made and went to Major Land Grant Colleges. The Scale of Points was modified so that measurements were in agreement with the true type. The last Scale of Points was replaced by the unified dairy score cards used by all dairy breeds today. Herd type classification, begun in 1929, continues to be of extreme importance in purebred Holstein herds. The association was particularly innovative in production records. The previously mentioned Advanced Registry was not popular at first, but in 1894, prizes began to be awarded for seven-day tests for butterfat production, and more breeders began to participate. Later, as supervision of testing came under the State Agricultural Schools and as the Babcock test for butterfat

became official, participation increased further, and the program evolved to a more modern form. Herd Improvement Tests were begun in 1928, following the earlier recognition programs, herd male and dam-daughter comparisons, and the modern production and type records using numerical indexes. Computerized Dairy herd improvement records now routinely handle many statistics important to the dairy farmer's management practices.

It should be mentioned that red and whites were not eligible for Holstein-Friesian registry in America for a very long time. Some breeders kept track of the red and white cattle and handled them as a separate "breed," recorded as Red and Whites. Since 1970, these cattle have been registered by the Holstein Association USA, and they are shown and compete in production with the black and whites. Red and white cattle have become very popular in some circles.

The Holstein Association has its office in Brattleboro, Vermont. Registrations and transfers in 2006 numbered 305,143 and 75,711, respectively. More than 22 million have been registered to date. There are Holsteins in every state of the Union. Wisconsin, Pennsylvania, New York, California, and Ohio lead in numbers. The association must take credit for the early, widespread use of artificial insemination that was in part responsible for the tremendous growth in numbers and in



HOLSTEIN-FRIESIAN BULL, 19th Century

quality of the breed. Of the 9.1 million milk cows in the country, 8.2 million are Holsteins. The demand for these black and white cows does not stop at our borders. Exports have gone to just about any country that supports or wishes to establish a dairy industry. Central and South America, and Japan have been very active importers. Animals are exported back to such European countries as France, Hungary, and Germany to improve the European Friesian there, a task for which they have proven very effective. A statistic drives home the overwhelming importance and influence of the Holstein - 90 percent of all milk consumed in our country comes from Holstein cows. They are indeed the nurse-mothers of our society.

Finally, Holsteins hold a unique place in the world of cattle breeding. That is, when bred for their known trait - milk production - they cannot be improved upon when mated to another breed.

At the time of the first edition Zane Akins was the Executive Secretary. Currently Doug Maddox is the President of the association and John M. Meyer is Executive Secretary and Chief Executive Officer.

American Association:

Holstein Association USA, Inc.
1 Holstein Place
Brattleboro, Vermont 05302
www.holsteinusa.com

International Associations:

Holstein Canada
Box 610 (civic: 20 Corporate Place)
Brantford, ON N3T 5R4
Canada
www.holstein.ca

Holstein UK and Ireland
Scotsbridge House
Rickmansworth
Herts WD3 3BB
United Kingdom
www.holstein-uki.org

Holstein Australia
PO Box 489
Hawthorn BC VIC 3122
Australia
www.holstein.com.au



"Milkmaids in the Field," by Julien Dupre, (1851 - 1910)



Holstein Bull



Holstein Cow