THE PRODUCTION OF LIGHT HORSES

by

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CONTENTS

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INTRODUCTION

Because Virginia has been long regarded as a leading exponent of light horse production, it is particularly fitting that this subject should be included in the course of study for classes of vocational agriculture in the State. Virginia has provided the genesis of selective breeding to produce superior horses; through the efforts of Virginia horsemen has been evolved a type of animal adapted to pleasure, to work, and to general-purpose functions. Although mechanical power is utilized on some farms, the motor has not usurped, and can not usurp, the place of the light horse for purposes to which he is peculiarly adapted.

In spite of the fact that the successful feeding, care, and management of light horses comprises an important aspect of farm business, modern data in teachable form on the subject is not readily available to the teacher of vocational agriculture. Thus the problem of acquiring up-to-date teaching data on light horses for students enrolled in classes of vocational agriculture in the high school is encountered.

The selection of Orange County, Virginia, for the subject of intensive study was motivated by its topography, central location in the State, well-conducted horse breeding farms, experienced horsemen, and by the writer's experience as a teacher of vocational agriculture in the County, in which he noted the predominance of horse power over mechanical

power on the home farms of the boys in his classes.

It is hoped that the results of this study, in which practice is correlated with theory, may prove valuable to the teachers of agriculture and others interested in this subject.

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PLAN OF STUDY

Copious material in divers areas of livestock production commonly fails to include data in teachable form on light horse production as a vital farm industry. To meet the need for such material, this study was planned with the following definite objectives:

1. To establish the place of the light horse on Virginia farms from the standpoint of both utility and pleasure.

2. To secure, evaluate, and organize up-to-date information on light horse production.

3. To compile information on which to base a brief history of the light horse in Orange County.

Twenty-two experienced farmers of Orange County were visited in order to ascertain the specific practice followed in the feeding, care, and management of light horses. Through observation and interview, concrete facts of the husbandry of these farmers were obtained; these data were entered on a prepared questionnaire from which might be

garnered a composite picture of the mechanics of production on each farm.

The field was explored by research among the writings of recognized authorities on light horse production. The actual practices were checked against the recommended theories; evidence was weighed; facts were sifted. Finally, conclusions were organized in what was considered a logical form and one that would best serve the purpose for which it is intended.

By visitation of Orange County veterinarians, the most recent information on diseases, ailments, and parasites common to the horses of the County was secured. Again study on the causes, symptoms, and treatment advanced by the authoritative writers in these areas was necessary. From a joint compilation of these facts was derived information to aid in keeping the light horse healthy.

From the founder of the Orange County Horsemen's Association, which sponsors the second oldest horse show in the State, from those interested in history, and from leading breeders, was collected such information as was available on the history of the light horse in Orange County. Research was necessitated; from the libraries of the Virginia Polytechnic Institute and of the University of Virginia were found data on early importations of light horses from England and on stud books. By correspondence, material was also received from the registry associations of the various breeds.

To complete the study, the sum total of knowledge gained was organized into chapters, designed to cover the important jobs or units in light horse production in Virginia.

CHAPTER I

HISTORY OF THE LIGHT HORSE IN ORANGE COUNTY

From the beginning, horses have played an important part in the lives of Orange County citizens. Early colonists relied on the horse for transportation, farm power and recreation.

In 1609 English ships brought to Jamestown six mares and a stallion; the famine of the following winter forced the colonists to use them for food, but importations of horses were immediately renewed. Sir Thomas Dale in 1611 brought with him a total of seventeen horses and mares; from 1614 to 1620 the Virginia Company shipped twenty mares to the colonies. Such a precious commodity was the horse that in 1657 an act was passed prohibiting the exportation of horses from the Province of Virginia.

The historian of Orange County annals, W. W. Scott, surmises that it was probably not until a hundred years after the settlement at Jamestown that a white man, with the exception of hunters and Indian traders, came to what is now Orange County. At Germanna Ford in 1714, in what was then Spotsylvania County but is now Orange, was established the first settlement in the County. Alexander Spotswood, famed as the "Tubal Cain of Virginia", was then governor and owner of large tracts of land comprising the Germanna neighborhood. He is noted for horseshoes of two metals: of iron and of gold.

The early horses imported to Virginia were only thirteen and a half hands high or less; only rarely were they as high as fourteen hands.(1) Thus it was on these small, light horses that Alexander Spotswood with his "Knights of the Golden Horseshoe" set out from Germanna in 1716 to cross the Blue Ridge Mountains. That the party highly esteemed their horses is borne out by accounts in the journal of John Fontaine, a member of the expedition. Before camping for the night of August 25, 1716, the men "went out to find some convenient place for our horses to feed in". (2) In the journal are constant references attesting to their concern for their horses. Before leaving Germanna the horses were shod; one night they made a lodge for "our tired horses and sick men"; on the journey one of the horses was poisoned by a snake bite. Upon the return of the expedition, Spotswood presented small golden horseshoes to all in his party.

Governor Spotswood's stud books have been lost, but records of importations reveal that he was a noted horse breeder.

Joseph Morton, a Yorkshire immigrant to Virginia where he was a distributing agent for a number of Yorkshire breeders, imported to Virginia after 1750 eight horses of Byerly Turk blood. In 1739, five years after the formation of Orange County from Spotsylvania, he described himself in an advertisement for a runaway slave as "late an inhabitant of Richmond County but now living in the County of Orange".(1)

In 1772 J. D. F. Smyth wrote, "The Virginians of all ranks and denominations are excessively fond of horses.. .... even the most indigent person has his saddle horse. In short horses are their pleasure and their pride".(1) Since this was well after 1734, the statement may be construed as applicable to Orange County.

Because of the great distances between settlements and the immense size of the plantations, most Virginians were constantly in the saddle, since the horse was the only mode of transportation on land. The use of the horse for farm work, for business, for pleasure, for sport was universal. The earliest known importations of Thoroughbreds to Virginia took place around 1745; racing then took firm hold on the agricultural gentry.

Accurate records of individual horses in the County are very meagre, but a few may be found.

Atlas, a half-bred hunter by a Thoroughbred sire out of a common mare, was at stud in 1787 and 1788 in Orange and Spotsylvania Counties. He was described as "The elegant bay horse, Atlas, rising 7 yrs. old, 16 hands high, and master of 250 weight a-hunting". (3)

From 1789 to 1793 a Spanish horse, called Pensacola or Appalusia, sired saddle horses in the County. The evidence is contained in the pedigrees of S. Washington's Wild Medley

and Spotswood's Americus. Pensacola (or Appalusia) was a cream-colored horse with blue ears. He was brought to Virginia by Captain Jose Jones from the Spanish Dominion (Florida) and was believed to be of pure Andalusian blood.(3)

In 1805 Archduke by Sir Peter Teazle, son of Tattersall's Highflyer, was at stud at the farm of Thomas Taliaferro in Orange County.(3)

In 1808 Young Alexander, of Herod blood, stood at George Rhodes' estate in Orange.(3)

An advertisement in the Fredericksburg, Virginia, Herald advertised Chance at stud at Robert H. Rose's in Orange County in 1818.(1)

Truffle by Truffle, son of Socerer (while in France) out of Helen by Whiskey, son of Saltram (before he left England) was advertised in 1829 by Governor James Barbour of "Barboursville", Orange County, for service as a sire. The following is the text of the advertisement:

"Young Truffle, for so I call my horse, is, as you will see, of the best blood in England. His grandsire being Socerer indicates at once his purity. He was bred by the first sportsmen in France on a stock purely English, was bought by the famous racer (R. W.) Walker and sold at Tattersall's (in June 1829) in common with Walker's whole stud, one of the most valuable in England.

"He is a very dark bay, 16 hands high, and of great

activity. His age was six years last spring (i.e. foaled 1823)."

"James Barbour
"Barboursville" (Orange County, Va.)
November 29, 1829." (3)

While in the Barbour stud from 1830 to 1835, Truffle got Henry Clay's Allegrante out of Phantomia and thus founded in Kentucky a numerous matriarchial family, from which were descended the twenty-two Kentucky-bred winners from 1875 to 1930.(3)

Camel, son of Whalebone and out of Phantomia by Phanton, was imported in utero with his dam in 1829 by Governor Barbour and was foaled in Virginia in 1830. From 1833 to 1834 he was on the turf under the colors of John P. White. He was retired to stud at Barboursville in 1835.(3)

Early Orange County breeders also imported blooded mares of which only a few records may be found.

According to a bill of sale dated 15 July 1829; Governor Barbour acquired Phantomia from England. She was by Phanton, dam by Walton, out of Allegranta by Pegasus. Her dam was Orange-Squeezer by Highflyer, out of Miss Squeezer by Matchem. Phantomia was the dam of Camel and two noted daughters, Anna Maria and Allegrante; the latter two were sired by Truffle. Anna Maria, a chestnut mare, won many races on the turf in Virginia during the seasons of 1832 and 1833; she was later

sold to a breeder in Tennessee. Allegrante was sold to Henry Clay in Kentucky; it was from her that the twenty-two winners were descended.(4)

Prior to 1830 John Randolph Grymes of Orange County had imported Ruler-Mare. She was bred by Major Grymes in England and brought to Orange County in 1802. Major Grymes was a Tory refugee who lived in England during the Revolutionary War and returned in 1802. Ruler-Mare was later sold to the Tayloe Stud.(4)

A number of years prior to the Civil War, several prominent horse breeders of Orange County incorporated a joint stock company and built a training stable and race track at Lee's Crossing near Madison Run. This establishment was known as the "Horse College" and was in charge of an imported English trainer named Carrier. Here was also stabled Voltaire, a famous sire of those days. Voltaire was bought by a Confederate general during the War and was killed in battle.

During the Reconstruction period horses were at a premium. Much of the best stock had been lost during the War, either through being killed in battle or through being taken as prizes of war by the Northern forces. Horses were particularly in demand for farm work, for the soldier returned to a home haunted by famine. Throughout the Reconstruction years, efforts were made to replace the horses.

Shortly before the turn of the century, the Orange County Horsemen's Association was formed. Thus plans were laid for the second oldest horse show in Virginia. The idea was conceived by L. S. Ricketts and Walker Sanford in 1897 as they were returning from the Manassas Horse Show, which has the distinction of being the first horse show in Virginia. So great was the enthusiasm among the Orange citizens when the plan was broached that the first show was held immediately in a field at "Berry Hill". No buildings were erected before the first show, and the horses were tied to the fences. Later land was acquired from Captain Walker and extensive stables built. Mr. Ricketts was the first president of the Association and remained its head for over twenty years. In more recent years the show grounds have been moved to a new site on the old Gordonsville road. Miss Julia Shearer was the most recent president of the Association; it has been inactive during the World War II years. Through the Association's efforts, horse breeding has been greatly stimulated in the County.

In 1907 there were two hunt clubs which rode to the hounds: the Tomahawk with H. O. Lyne, president, and Wallace Sanford, master of hounds; and the Blue Run with William duPont, president, and Dr. James Andrews as master of hounds.

So great was the enthusiasm among both white and

colored in the County that about fifteen years ago, the Orange County Colored Horse Show Association was formed. Since a colored horse show is very unusual, the Orange Association has received national publicity in newspapers. It, too, has been inactive during the War.

In 1933 the Junior Woman's Club of Orange held its first Community Schooling Show, which was sponsored annually until 1941.

During 1946 two horse shows were held in the County: one at Gordonsville sponsored by the Girl Scouts under Mrs. Thomas Watson for five years; and the other at Belmont, where the classes ranged all the way from weanling mule colts to five-gaited saddle horses. The Montpelier Races are customarily the Saturday before Thanksgiving.

Throughout the history of Orange, interest in the breeding of horses has been outstanding. In the main the light horse has been predominant for utility and pleasure. Thoroughbreds have been extensively used for breeding, both for pure breeding and as a cross on common stock and other breeds to secure hunters and horses for driving and farm work. Standardbred horses were owned and bred by Mr. Charles Taliaferro of "Mount Sharon" in the early 1900's.

Orange County has the distinction of being the home of the first American-bred and American-owned horse to win the Grand National at Aintree, England. In 1938 Battleship

trained at Montpelier and owned by Mrs. Marion duPont Scott, won this race. Battleship is of Man O'War blood and has now been retired to stud at Montpelier.

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CHAPTER II

PLACE OF THE LIGHT HORSE ON THE FARM

"No labor-saving device can measure up to the horse for doing light chores and driving cattle. A horse is worth five men". Thus stated a prominent farmer of Orange County who specializes in large-scale breeding of pure-bred beef cattle which command high prices.

Preeminently adapted to farm work in mountainous or hilly sections, the light horse furnishes an efficient and economical source of farm power and is a means of healthful pleasure through riding and driving. Light horses resist heat well, possess good action, and exhibit speed and endurance in pulling loads or doing other work.

The horse represents a comparatively low initial investment and a lower cash outlay for up-keep than do other sources of power. After the original investment of money, replacements may be raised on the farm by mares which also do their share of the work. Additional income is possible through the sale of young horses. Cost of horse-drawn equipment is much less than that for mechanical power. Implements may often be bought at greatly reduced cost from dealers or from farmers who have converted to tractors. Actual cash outlay for the up-keep of horses is small. Feed, raised on the farm and consumed in a crude state by the horses, is much less expensive than is fuel which must be bought and

the cost of refining before it can be used in a motor taken into consideration.

Efficient systems of crop rotation and plans of farm work are necessitated by the use of horses if the work is to be done on schedule. The virtues of such good management furnish a sound lesson for any farmer to learn.

Not the least of the benefits of using horses is the manure gained. Used as a fertilizer, horse manure returns to the soil valuable nutritive ingredients which are of great value in improving the fertility of the land.

During the labor shortages of World War I many farmers turned to mechanical power because they believed that it would increase production with a minimum of labor. As a result the number of horses on farms has steadily declined. When the soldiers were demobilized, unemployment arose because machinery had taken their places on the farms. The land which had formerly produced feed, pasture, and range for horses was now diverted to crop farming; exports abroad declined; production of farm commodities greatly increased; the unemployed workers could not purchase food. For these reasons a surplus of foods arose. In 1933 the Federal Government was forced to inaugurate a program to restrict the production of certain crops in an effort to bring about a more equitable distribution between supply and demand, which would stabilize prices at levels that would assure a fair return to

the farmer. Throughout World War II gargantuan production goals were reached by farmers who coped with labor shortages and attendant difficulties; in spite of this greatly increased production, shortages, not surpluses, have existed. With the food demands of the Army and Navy greatly decreased, with the war-ravaged nations again raising agricultural products for their own use, with unemployment rising, it is inevitable that a surplus of farm products will again occur. The farmer who uses horses will profit financially, for he has home-raised power, fed by home-raised crops. As prices fall and labor becomes available, it is probable that the use of horses will increase.

Because he represents a small outlay of capital, is maintained on home-raised feeds, is capable of performing many kinds of farm work, and provides recreation, the light horse has a definite station on the farm today.

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CHAPTER III

TYPES AND BREEDS OF LIGHT HORSES

Light horses, intermediate in size between draft horses and ponies, are classified in a number of sub-types used for a variety of purposes. As indicated by their name, light horses are light in weight; they may range from eight hundred and fifty pounds to thirteen hundred pounds, although the latter is usually true only of heavy weight hunters and some general purpose animals. Bones of the light horse are comparatively small; the muscles, relatively light and long. Body lines are long, strong, and graceful. An outstanding characteristic of the light horse type is quality. General refinement, strong bone, loose, pliable skin, and fine hair are typical. The temperament is active and sometimes nervous. High action, speed, and variety of gaits are important in some of the various sub-classes. The way of going is always distinguished by snap and sprightliness.

Light horses are used both for pleasure and general utility. They may be further sub-divided into riding horses: polo mounts, hunters, cavalry mounts, park hacks (both three- and five-gaited), Plantation Walkers, and stock horses; driving horses: heavy and light harness (the adjective describing the harness, not the horse); race horses: running and trotting; and the general utility horse.

Riding horses are used for sport, for work under saddle, in war, and for pleasure. Riding horses may range in height from fourteen hands and two inches to seventeen hands, with the majority being between fifteen and sixteen hands. The polo pony, the cavalry mounts, and the hunter are not required to be of any special breed; the ability to perform determines their use. Hunters are classified according to their weight-carrying ability; light weight hunters carry riders from one hundred and thirty-five pounds to one hundred and sixty-five pounds; middle weight hunters, up to one hundred and ninety pounds; heavy weight hunters, above one hundred and ninety pounds. The polo pony, a smaller prototype of the hunter, is also rated as light, middle and heavy weight. Stock horses, used for work under saddle on large ranches, must be agile, fast for short distances, and possess great endurance and a calm disposition. Park hacks are both three- and five-gaited. The three-gaited horses must have a good walk, trot, and canter; five-gaited horses, in addition, must be able to do a slow gait and the rack. Peculiar to the Plantation Walking horse is his gait, known as the running walk.

Light harness horses are generally fifteen hands and two inches to sixteen hands in height. They should have speed and a rapid gait. The heavy harness horse is also referred to as the coach or carriage horse. He is usually

about sixteen hands in height. Driving horses of these types are used by wealthy people for driving over their estates. They also may be used for general utility.

There are two breeds of race horses. The Standard-bred is used under harness for trotting and pacing. Runners are from the breed known as Thoroughbred.

The oldest recognized breed of horses is the Arabian, known to be in existence long before the time of Mohammed. The Arabian breed is generally regarded as the nucleus from which all other light breeds were developed. Unexcelled as a saddle horse, the Arabian may also be trained for driving. Noted for his grace, docility, intelligence, and endurance, the Arab has been of great value in cross breeding. Mated to farm mares, the Arabian has sired fine saddle horses and cavalry mounts. General George Washington used a half-bred Arabian horse during the Revolutionary War. Pure-bred Arabians are not widely used in the United States today. This breed may be bay, white, gray, chestnut, or black in color. They are not as a rule over fourteen hands and two inches in height.

Only horses belonging to a breed of English running horses developed primarily for racing purposes should be referred to as "Thoroughbreds". Horses of pure ancestry in some other recognized breed should always be termed "pure-breds". The breed originated as the result of crossing oriental stallions on native English mares. Three stallions

The Byerly Turk, The Darley Arabian, and The Godolphin Barb, are commonly regarded as the progenitors of the breed. In respective order from these three sires were evolved the three families of famous racing horses: Herod, Eclipse, and Matchem. The influence of the Thoroughbred has been prominent in the early history of practically all light horse breeds. In appearance, Thoroughbreds are distinguished by great chest depth, mechanically correct legs, muscular development, and extreme refinement and quality throughout. Common colors are: bay, brown, chestnut, black, and, infrequently, gray. The height of Thoroughbreds is generally from fifteen hands to sixteen hands and one inch; they may weigh from nine hundred pounds to twelve hundred and fifty pounds. For speed as a running race horse, the Thoroughbred has no superior. He may also be used as a saddle horse. Hunters, cavalry mounts, and polo ponies are commonly the results of crosses of Thoroughbreds sires on mares of other breeds although the Thoroughbred may also be used for these three purposes. The half-bred, or better, is an excellent utility animal. He can perform all farm tasks except pulling extremely heavy loads; all work is done with excellent motion and great speed.

The American Saddle Horse, which is the result of Thoroughbred cross on native stock, was developed chiefly in Virginia, Kentucky, Tennessee, and West Virginia. The Thoroughbred sire, Denmark, is considered the founder of the breed. Saddle horses may be either three-or five-gated. In addition

to the walk, trot, and canter, five-gaited horses can also perform a slow gait and the rack. The saddle horse possesses excellent quality and finish, smooth conformation, and an intelligent and handsome appearance. Many park hacks may be used both under saddle and in harness. They may also be used for general business saddle purposes, such as riding after cattle, and for cavalry mounts. Saddle-bred horses are usually chestnut, bay, or black. They are commonly fifteen to sixteen hands high.

The Plantation Walking horses were developed primarily in Tennessee. They excel at easy gaits under the saddle and possess great endurance. The running walk, a four-cornered gait in which the hind feet over-step the forefeet, is their most popular gait. They are gentle but possess smooth action, quality, and spirit. In color, they may be chestnut, black, or roan; frequently they have white manes and tails.

Another breed developed in America is the Standardbred, so called because they are bred to a standard of speed performance. The Standardbred's working gait is the trot or the pace. The blood of the Thoroughbred and of the native American stock were fused for the development of this breed. Hambletonian, a Thoroughbred stallion, is credited with being the foundation sire. As a pure breed, these horses are commonly used for speed in racing at the trot or pace. Horses not able to exhibit the required speed may be used for driving

and as general purpose horses on the farm. They are also known as the light harness type. In conformation, the Standardbred does not show as much refinement as the Thoroughbred. A good average size of the Standardbred is fifteen hands and two inches in height, and one thousand, one hundred and fifty pounds in weight.

Although Morgans are sometimes considered as a subdivision of the Standardbreds, the former have been bred more for their general purpose qualities than for their speed. The breed takes its name from Justin Morgan, a New England stallion of noted prepotency. His ancestry is not definitely determined, but it is contended that he possessed both Thoroughbred and Arabian blood. Morgans exhibit smoothness, style and great endurance; their blood has influenced both the Saddlebred and the Standardbred. Bred originally for general purpose farm work, the Morgan is an excellent general utility animal for riding, driving, and farm work. In color, Morgans are usually chestnut, bay, brown or black; seldom do they have white marks. They are generally fifteen hands and two inches tall and weigh around one thousand, fifty pounds.

The Hackney, a heavy harness breed also known as a coach horse, is the result of English Norfolk mares being bred to Thoroughbred stallions. Blaze, a grandson of The Darley Arabian, figured prominently in the ancestry of the Hackney. Hackneys are generally bred pure for use in heavy harness

classes in shows. They are excellent for driving purposes. Half-bred Hackneys often make excellent hunters and jumpers. They may be used for light utility purposes on the farm. The pure-bred Hackney may be from fifteen hands to fifteen hands, two and one-half inches tall. Comparatively heavy in proportion to their height, Hackneys have very deep chests, large barrels, and heavy hind quarters. They have natural fine quality and high action. Bay and brown predominate among the colors, but chestnut and black Hackneys are also found.

The Cleveland Bay is so named for the Cleveland district of Yorkshire, England, where it was first bred, and from its color, which is invariably bay with black legs. White markings are found only as a white star on the forehead. An old established breed from the early eighteenth century, the Cleveland Bay has been used during its history as a pack horse, a coach horse, as foundation stock for other breeds, and to cross with Thoroughbreds to produce weight carrying hunters. The primary use of the Cleveland Bay, however, is as a general utility animal that will ride, drive, and do all types of farm work. They are also able to withstand hot weather and to stay in good condition on small amounts of feed. Cleveland Bays, which have a slight infusion of Thoroughbred blood, resemble the Thoroughbred in conformation; however, they have greater substance and more power. They generally stand about fifteen hands and three inches to sixteen hands, and weigh from fourteen hundred to fourteen hundred and fifty pounds.

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CHAPTER IV

SELECTING THE HORSE

In order to have good animals to meet one's needs, one must first be familiar with the principles of judging or selecting a horse. Before selecting a horse, one must first determine the type of work that is desired of him. A careful study then must be given to his temperament, conformation, ancestry, action, soundness, age.

There are three major steps in making a study of the individual horse: first, in his stall; second, out of doors; third, under saddle or in harness.

While the animal is in the stall, he should be observed for cribbing, kicking, wind-sucking, halter-pulling, persistent pawing, stall walking or stall trotting, weaving, biting or throwing back the head when approached, or rubbing the mane or tail.

The horse should be led out onto level ground in a good light. The prospective buyer should first stand off from the horse to observe his conformation and general appearance from the front, rear, and both sides. He should possess an alert, graceful carriage, a rich, lustrous coat, and good condition as to flesh. He should be of an acceptable height for whatever purpose desired; height in horses is expressed in hands, a hand being four inches, and is determined by measuring the vertical distance from the highest point of the

withers to the ground. A horse should be neither nervous nor phlegmatic; indications of desirable temperament are: prominent eyes set far apart, large muzzle and nostrils, clean-cut nose, and willing obedience to commands. The dark, solid colors, black, bay, brown, and chestnut, are usually preferred, although dark gray is popular for hunting and showing. White points, blazes, stars, or snips, are sometimes admired for show purposes because they give the horse a flashy appearance.

After studying from every angle from a distance, one should examine every part of the head, legs, feet, and body for defects and diseases. Colds or similar troubles are indicated if there is a discharge from the nose or swellings about the lower jaw and throat. The eye should be free from bad discharges and must be sensitive to light. Feeling the top of the head will disclose any sores, swelling, or unusual tenderness which would make him hard to bridle. The withers and the back may show scars of old running sores; signs of collar boils may be seen on the shoulders. If there are scars on the knees, they may indicate the stumbling habit. Enlargements, wind-puffs, and other defects may be observed on the front legs. Ring-bones, bunches, or scars may be felt near the hoofs or just above them. If the cartilages at the back of the hoof on either the inner or the outer sides are hard, the animal has sidebone and is subject to lameness. The hoofs should be

of proper color, size, and shape; they should be free from cracks, and the foot should not be contracted at the heel. The frog in the center of the sole should be elastic. Well-made hocks are important, and the two should be compared in attempting to detect curby hocks, soft or bog-spavin, and bone-spavin.

Examination of the mouth is very important as the condition of the teeth is a gauge to the age of the animal. The age of horses can be told with accuracy until they are nine years old, but a little practice is needed. The six incisor or nipper teeth in each jaw are the ones by which age is reckoned. The two center incisors are known as the center pair; the pair composed of one tooth on each side of the center pair is known as the intermediate; the two end incisors are known as the corner pair. The foal will possess all of its temporary incisors at around six months of age; by the time he is two years old, all of his temporary teeth will show some wear. At three years of age, the center temporary pairs are shed and replaced by permanent central incisors. These permanent teeth may be identified as being darker in color, larger in size, and more rigid in appearance. At four years, the intermediate pairs are shed and replaced by permanent teeth. At the age of five, the corners are shed and replaced by permanents. The horse now has a full set of incisor teeth. After five years, age is determined by wear on the

dental cavities or "cups" which are dark-colored indentations on the top of the teeth. At six years, the "cups" on the lower center pair have worn practically or completely smooth. At seven years, the "cups" are worn relatively smooth on the lower intermediate pair. At eight years, the "cups" are fairly smooth on the lower corner pair. After eight years, the indications are not very accurate, but it is usually considered that the "cups" wear smooth in the upper centers at nine years of age, in the upper intermediates at ten years, and in the upper corners at eleven. After that indications of increasing age are: the teeth appear longer, rougher, more protruding, and more triangular in shape.

When observing the mouth for the age of the horse, one should also look for indications of abscess, injuries to the mouth, and broken teeth.

Before one decides to buy a horse, he should try the horse in harness or under saddle in order to assure himself that the horse will perform well the task assigned him. The owner should not be allowed "to warm the horse up", as some forms of lameness disappear after working. It is also well to view the horse in action as some one else leads or rides him, so that one may observe his way of going. A horse should be smooth and graceful in action. Viewed from the side, the action at the trot should be long, free, and high. Viewed from front or rear, the feed and legs should go straight

ahead with a minimum of swinging and no interference as the feet pass each other. The stride at a walk should be long and smooth.

One should always purchase from a reputable dealer and insist upon a guarantee of soundness. A veterinarian's certificate is always to be preferred.

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CHAPTER V

PROVIDING AND CARING FOR EQUIPMENT

In purchasing equipment it is more economical to secure a good grade than one of poor quality. Inferior material may result in spoiling or injuring a good horse. Running away is often caused by the breaking of an imperfect piece of harness.

Harness is usually selected according to the type of implement the animal is required to pull. In working with such implements as the mower, wagon, grain drill, and disc, in which backing is often required, the breeching harness should be used in every case. Breeching harness gives the animal more control over the load by engaging the hips and helping to hold the collar in place.

For plowing and harrowing, the lead harness is preferred over the so-called plow gear because of the attachment over the hips rather than to the back-band. The lead harness prohibits the horse from stepping out of the traces and is relatively cool.

Utmost care should be given to the proper fitting of the harness. Poorly fitted harness reduces work efficiency, causes irritation, and, in some instances, injures the horse to the point where he is totally disabled for any kind of work. The harness should fit the animal comfortably and snugly. The collar is the most important item of equipment. If the collar is fitted improperly, or made from cheap materials, sore

shoulders will result. A good, heavy leather collar is unsurpassed, and a cloth collar is probably the poorest on the market. The Landford collar, used by a well-known breeder in Orange County, is particularly good. It is similar in construction to other collars except that there is a two inch open space at the bottom. This could be made by those skilled in leather work. This particular farmer, who has been very outstanding in the County and farms his three hundred and twenty-five acres almost entirely by horse power, stated that he has never had any difficulty with sore shoulders and believed that this type of collar aided in keeping the neck of the horse cooler. To have the collar properly fitted, the hand should be laid flat between the collar and windpipe of the horse; there should be just a tight squeeze on the hand. After the hand is removed from the windpipe, the four finger tips should be slipped between the collar and the side of the neck just above the shoulder points. If they fit snugly, the collar is then properly adjusted. If the collar is either too tight, too narrow, too long, or too wide, it is likely to irritate the shoulders. Sweat pads are poor substitutes for a well-fitted collar. After the pads become soaked with sweat, they harden and wrinkle; consequently sore shoulders result. Collars should be purchased for the individual animal, and care should be taken that they fit the horse which is to wear them.

The hames should always be fitted snugly and drawn tightly on the collar. The hame-tugs should be so adjusted as to have the draft on the collar bed, which is approximately one third of the distance above the shoulder.

Leather traces with chain attachment near the breeching are preferred over full chain traces; however, chain traces are usually cheaper than leather, and the former can be used fairly successfully if they are covered with a boot. Open chain traces will often cause irritation. Traces should be of uniform length to cause even tension on the shoulders.

Bridles and lines should be made of nothing less than the best quality leather and of good workmanship. The bridle should be so adjusted as to have the bit resting most comfortably on the bars of the horse's mouth. The smooth snaffle and the straight bit are the only types used for working the horse on the farm. Jerking the reins is one of the poorest forms of punishment, and the bridle should never be used to chastise the horse.

Like the bridle, the halter should be made of good material and adjusted for the comfort of the horse.

A rope halter for temporary use may be easily constructed. An eye splice is first made in one end of the rope; a loop splice is then made at a distance from the end of the eye splice equal to half the distance around the nose of the

horse. The other end of the rope is finished by whipping or by a crown and splice. The rope is then passed around the neck of the horse, and the nose piece is placed over the nose. A loop should be made in the rope where it is to pass around the nose; the eye end is passed through this loop. Finally, the end is passed through the eye below the loop and pulled taut; the rope is passed back under the horse's chin and attached to the loop of the loop splice in a similar manner.

When equipment is removed from the horse's back while he is hot, caution should be taken to lift the equipment off and gradually remove it; it should never be dragged off. After tack is removed, the surface should be cleaned with a damp cloth; this is particularly important for the collar as it will aid in preventing galls and sore shoulders, and will prolong the life of the equipment.

For general riding the forward-seat saddle is preferred over the park type. The cantle is slightly higher, and the skirts slant forward with knee-roll. The advantages of the forward-seat saddle are: it keeps the rider forward, and the knee-rolls induce better position and closer contact of the rider's knees for jumping. The folding leather girth is probably the most satisfactory one. The stirrups should be nickel-plated to withstand rust. The most satisfactory stirrup strap is one that is strong, flexible, and with numbered holes for convenient adjustments. The saddle should be individually fitted to each horse.

Bits are usually classified as snaffle, bar, curb, and special. The snaffle bit has a jointed bar; when the reins are pulled, pressure is applied to the mouth. The bar bit is a simple straight bar; sometimes it is covered with rubber for schooling colts. Curb bits are classified by four standard types: the Buxton, the elbow, the Liverpool, and the Pelham. They are further sub-divided into port and plain bar. Curb bits are used exclusively for riding after the animal has been well schooled with the snaffle bit. Special bits are usually designed to meet some special requirements. Numbers of such bits should never be used in a horse's mouth, as they often weaken or destroy the nerve centers.

Regular standard grooming tools of good quality are recommended for purchase. Fibre mud brushes should be soaked before using for the first time. The body brush is made of hair, and a rubber curry comb is preferred over all other types.

All harness should be taken apart for a thorough overhauling, special cleaning, and oiling at least twice a year. This promotes efficiency and prolongs life. To clean, the harness should be soaked for fifteen minutes in a solution of lukewarm water and mild soap. After soaking, all straps should be scrubbed and rinsed well. They should be allowed to become gradually nearly dry; all should then be blackened when needed. The harness is then ready for repairing. When

the harness is almost dry, a good harness oil should be applied; neat's-foot oil mixed with tallow to a light paste makes a good harness oil. Harness should never be dried in the sun or close to a stove as this will darken the leather. When the harness is entirely dry, the leather should be rubbed with saddle soap to remove sulphur grease.

A saddle and riding bridle should be cleaned with saddle soap after every use. It should be taken apart once a week when it is in constant use; after being washed with saddle soap, the under part of the saddle should be oiled with neat's foot oil; stirrups and billet leathers are also oiled. All pieces of metal should be polished.

Every farmer owning leather equipment should have a harness repair kit. A full kit consists of: a wood clamp, ball of thread, harness wax, four-tube revolving punch, riveting machine, pair of pliers, awls, assortment of needles, round knife, edging tools, creasers, supply of leather, snaps, and buckles.

Shoeing and trimming of the hoofs is often done on the farm today. For shoeing and trimming, one should have a set of horseshoeing tools: hoof hammer, hoof rasp, clinching block, hoof cutters, nail clippers, large pincers, clinch cutters, and punch.

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CHAPTER VI

HOUSING

Quarters for horses may vary from the simplest shelter, affording very little protection, to the most luxuriant type of building. The stable need not be expensive, but it should be well situated, well arranged, and ample in size. There are numerous types of barns for housing horses; but, in general, they may be divided into two categories: the general purpose barn, which houses other farm stock, and the horse stable, which is used solely for horses. The general purpose barn is the more economical to build but has a higher rate of casualties in case of fire because of the hay generally stored over the animals.

The stable should be located on well-drained soil and have a sunny exposure. Well-drained barnyards and adequate sunlight do much to promote the health and vigor of the animals. When stalls are arranged to face in one direction, a southern exposure for the stable is preferable; if there are two rows of stalls, facing in opposite directions, east-west exposure will give better results. Paddocks should be to the east or south and should drain gradually away from the building. Care should be taken that drainage can not pollute wells or other sources of water supply.

Weatherboarding, boarded up and down, was the most popular material for stables in Orange County. The materials

ranged from hard wood to pine, the latter being the most popular. Harder wood was more commonly used for stall partitions and for boarding up the stall. A four-or five- foot concrete passageway over heavy wood is preferable, for wood alone may harbor rodents and is not so durable.

The standard size for box stalls is twelve feet square. For the mare and foal twelve feet by sixteen feet provide a better size. A few horsemen use straight stalls, about six by ten feet in dimensions and planked up to a height of five feet with a grill above to permit circulation of air.

The best flooring for stalls is a clay floor. A layer of crushed stone topped with packed clay will facilitate drainage. Clay is used because it provides an excellent footing for the horse and also acts as a deodorant. Sand should never be used; the particles may work into the horses' feet and cause lameness.

Feed boxes are home-constructed from hard wood or commercially made from iron. Iron is preferred because it is easy to clean, more sanitary, and more permanent. There is a growing tendency to feed hay on the floor. In cases where hay is fed in mangers, they should be constructed diagonally across the corner of the stall to minimize sharp edges. Neither feed box nor manger should be built so as to have any rough edges, as they may cause injury to the horse.

Doors leading from the stalls should be approximately four and a half feet wide. It is preferred for the door to open into the stall rather than into the passageway, as this type of construction eliminates the possibility of the horse's forcing the door open from the inside and facilitates better mannagement of the horses in the passageway.

The latches and handles of the stalls should be well constructed and of strong material. The round-handled type prevents the horse from opening the door with his teeth.

Ventilation is a very important item to consider, as the horse requires abundant fresh air. This requirement can be met by having sufficient window space for the number of horses quartered. Windows should be so arranged that the horse will not be in direct line of a draft, nor should the horse be forced to stand with the light in his eyes. Having the stable too warm may cause influenza, inflammation of the eyes, and diseases of the respiratory organs.

If the stable is wired, lightening fixtures should be placed high enough that there will be no danger of the horse's hitting his head. Switches should be located near the door and out of reach of the horse. A convenient outlet for the use of electric clippers, if owned, should be provided.

Tack or harness rooms, which should be rat-proof, should be conveniently located but somewhat set off from the stalls. Racks and cases should be arranged in an orderly manner and so constructed as to provide protection for the tack.

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CHAPTER VII

STABLE MANAGEMENT

Observance of correct principles of stable management in a regular pattern will do much to promote health and efficiency of the horse.

Feeding, the most important item in stable management, should follow a definite routine. The horse should always be fed at the same time each day. Watering and feeding are both discussed in detail in the chapter on Feeding.

Hygienic conditions should prevail in all stables. Stalls should be freshly bedded each day after litter is removed. Bedding, of which approximately one ton per horse is required per year, tends to make the horse more comfortable, aids in keeping him clean, retains the liquid manure for use as fertilizer, and dilutes the solid manure, thus rendering it more efficient for use on the soil.

Men who work around barns should be quiet and gentle in the presence of the horses. One should never shout at a horse, nor should he punish an animal harshly or unjustifiably.

Because of the grave danger of fire, smoking should never be permitted in or about a stable.

Good grooming is an essentiality for the optimum health, efficiency, and general appearance of all horses. In

addition to enhancing appearance, regular and systematic grooming removes loose scurf and internal body wastes continually exuded through the skin pores. When this exretion is not removed, skin pores become clogged, normal activities are impeded, and the general well-being of the animal deteriorates. When grooming is neglected, the animal will possess a harsh, dry skin and rough, dry hair; this condition contrasts sharply with that of a well-groomed horse with pliable, soft skin and glossy hair. Because systematic grooming has a marked effect upon the appearance and vigor of an animal, horsemen are wont to remark that, "A good grooming is as good as a feeding."

Routines of grooming vary among the horsemen and must be suited to the individual horse. Less grooming is required for horses on pasture or out of doors, as they perspire less and are more able to throw off waste products through bowel and kidney channels. The combination of heavy feeding and active work induces profuse perspiration and waste elimination through the skin; thus the need for thorough grooming is intensified. Horses should always be groomed before and after being worked or ridden. Merely turning horses out at night or allowing them to roll is not a substitute for grooming. Heavily coated and phlegmatic horses required more and heavier grooming than do the lighter, more highly bred, more finely coated horses.

Instruments commonly used for grooming are: bristle body brush, rub rag, sponge, wisp, and hoof pick. A steel

curry comb should be used only as a brush cleaner; it has no beneficial effects upon the hair and skin. Rough mud and other debris may be removed with a stiff brush; however, the body brush is the primary tool.

Grooming should begin on the near (left) side of the horse. The attendant should stand facing the horse's hind feet and begin with the neck; then in order should be groomed: chest, shoulders, foreleg, back, flank, abdomen, loins, rump, and hind leg. The same order is followed for the off side. The body brush is used first and followed by the rub rag. To produce an excellent finish, the horse may be polished by rubbing with the hand.

Eyes, nostrils, and region under the tail should be cleansed with a moist sponge. The sheath of male horses should be cleaned in a like manner at least once a week. Care should be taken that the skin under the flank and between the hind quarters is kept clean. The horse's feet should always be picked out at each grooming.

Whenever necessary, the horse's mane and tail should be put in order by separating the hair with the fingers, beginning at the ends and gradually working up to the roots, and by brushing with a good brush.

A horse which has been brought in hot should never be groomed until he has been cooled.

Care of the feet of horses is often neglected. For maximum efficiency, it is important that the hoof be trim-

med properly and picked frequently, as foreign matter may often work into the surface of the hoof and cause lameness. The presence of long hoof walls reduces power of the foot; often the hoof will become cracked if the condition is not corrected. The rear hoofs have a tendency to grow faster than the fore hoofs. In order to do a proper job of trimming the hoof, one must stand off from the individual animal and study the position of the legs. If the hoof extends too far to the front, the condition may be corrected by using a trimming knife and a rasp. If the horse stands too high up on his heel, the hoof is too high; the sole should be trimmed down and finished with a rasp. The frog should not be trimmed unless superfluous growth is discovered; then only the overgrown part should be removed.

On soils comparatively free from stones, shoeing is generally not required. Animals that are used for racing, general purpose work, and traveling over man-made roads are usually shod. Shoeing is also done in some cases to correct defects. Where shoeing is practiced, it is necessary that the horse be re-shod every four to six weeks, as this facilitates removing new growth of the sole by trimming and re-setting the old shoe or fitting new ones.

It is vitally important that the shoe fit the foot of the horse. The weight of the animal, the work it has to do, its gaits, the shape of its hoofs, and the quality of the

horn all must be considered in determining the type of shoe preferred. After trimming the hoof, the first step in shoeing is to remove old shoes, if the horse is shod, by cutting clinched ends of nails from hoofs with a clinch cutter. The pincers are applied under the heel of the shoe, moved slowly forward, and pressed straight downward to loosen the nails. The inner arm of the pincers should not press inward on the sole. After the shoe has been removed, all dirt should be scraped from the frog and sole. All scaly, partially loose overgrowth of the sole should be removed with the hoof knife, working from the rear of the sole to the front. The overgrowth should be removed only down to the solid sole. With the sharp hoof cutter, the hoof wall should be cut to its normal height. The bars and other portions of the wall should be left a little higher than the sole. The hoof must be so rasped that it will provide an absolutely level bearing surface for the shoe.

To secure the proper size of the shoe required, the hoof of the horse may be outlined by having him stand on a piece of cardboard and drawing around the hoof with a pencil. The shoe must be so shaped that it will coincide exactly with the outside wall of the hoof. The heel of the hoof must rest exactly on the iron in order that there may be proper expansion and contraction of the hoof when the animal walks. Forge and anvil should be used to shape the shoe to the foot. Since the shoe is red hot while being shaped, it should be

partially cooled and held lightly against the hoof only long enough to determine whether it fits.

To nail the shoe, the nail is held between the thumb and index finger while the remainder of the fingers and hand hold the shoe in place and guide the nail. The second nail hole from the back is first nailed. The straight side of the nail is turned toward the outside of the hoof and driven at an angle that it will come through the hoof high enough so that the shoe will be held securely. The protruding point of the nail should be immediately bent over toward the shoe or twisted off with the claw of the shoeing hammer. After making sure that the shoe is still in the correct position, the workman should drive the next nail into a corresponding position on the opposite side; he should then alternate from side to side until all nails are driven. Then the clinching block should be held on the outside wall underneath the nails, and the heads of the nails should be hammered down well into the crease of the shoe. Nails are clinched by clipping off their points, filing a small groove in the hoof wall with the edge of the rasp immediately below the point where the nail protrudes, holding clinching block against the nail heads, and hammering the ends of the nails to a clinch with a hammer held parallel to the hoof wall.

Clipping is a customary practice and necessary for the removal of hair. Clipping is usually done at two periods

during the year: in early spring when the horse begins shedding, and in early fall to insure a protective coat for winter. Clipping prevents galled places and excessive sweating, and improves the appearance of the animal. The hand shears are used for the removal of hair on the fore-legs, fetlocks, ears, and parts that cannot be done with clippers.

Many horses indulge in stable vices for the lack of something better to do. A common stable vice is cribbing, in which the horse grasps objects between his teeth and gradually gnaws the wooden material away. It is suggested to cover the feed boxes and mangers with metal; a strap fitted closely around the throat to set up pressure when he begins to bite may also help. Pawing may be corrected by spreading lime in the stall so that a dust will be raised when this vice is attempted. About two applications will usually be sufficient. Horses frequently kick in the stable. Suspending a bag of sand from the ceiling behind the horse so that a kick will cause it to swing back against him may cure this habit. In weaving the horse shifts his weight from one foot to another. Halter shank chains will cure much of this trouble, as the horse shifts his weight to rattle the chains.

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CHAPTER VIII

FEEDING

The prime aim in feeding horses is to keep the animals in condition to do work of whatever type desired. The efficient feeder of horses solves this problem by providing a balanced ration tailored to the individual needs of each animal. Water, minerals, protein, carbohydrates, fats, and vitamins are necessary for maintenance, growth, plus work. Food-stuffs are not all alike in content and food value even though they may be identical in external appearance. If the parent plant is not supplied with sufficient plant food for growth, the produce will be subject to nutritive deficiency as a food for animals. A ration in general is composed of three categories of food-stuffs: concentrates, roughages, and succulent feeds.

Oats are recognized as the concentrate best suited to horses. The greater percentage of Orange County horsemen include corn in a grain ration; however, because corn has a heating effect on animals particularly during warm weather, it should not constitute the entire concentrate ration. Barley is commonly used as a substitute for oats. Wheat bran is preferred by those who use it regularly in a feed mixture; it is ranked very high as a feed for horses. Linseed oil meal is commonly fed as a conditioner, or, as some mean speak of

it, as a tonic. It also aids in giving an animal finish and bloom, particularly desired in an animal when being fitted for show or sale. Molasses is an appetizer, and for this reason it is often mixed with feed to make it more palatable. Crushed wheat was used by one horseman interviewed, but in general such grain is not an economical feed for horses.

Good quality hay, free from mold and dust, is the most important roughage for horses. Grasses are non-leguminous roughages, consequently low in protein. Legume roughage such as alfalfa, clover, and lespedeza are usually high in proteins. Well-cured timothy hay is classed as a nearly perfect roughage for mature horses. Corn stover in general is fed in early winter; it seems to be a fair feed when horses can still have access to pasture. Oat straw of good grade makes a fair substitute for non-leguminous roughage when moistened with diluted molasses, if the horse is not at hard work. Legume roughages are excellent for young growing animals; they should be fed in combination with timothy hay to mature horses.

Succulent feeds are most essential for horses. Pasture is the most economical green food. It furnishes abundant vitamins and also stimulates better assimilation and digestion of other rations. With the proper crop rotation, the horseman can provide access to pasture for his horses the year around except during unseasonable weather. One hesitates to recommend silage; if fed when the least bit spoiled, it has

a very harmful effect on horses; however, intelligent use of silage as a feed for horses can produce good results.

A mature horse will require approximately two ounces of salt daily on a yearly average. Providing salt is particularly important for horses in warm weather, as the loss of salt from the body through sweat is very high. Free access to salt at all times should be provided. It is better to include salt in the horse's feed when he is working.

A horse will consume approximately ten to twelve gallons of water daily. Water is necessary for the health, comfort, and efficiency of the horse. Only water of good quality and in sufficient quantity should be offered. Horses should have free access to water on pasture; frequent watering of working animals during hot weather is essential.

The daily order of feeding horses should follow a specific routine, as they are creatures of habit. The daily ration is divided into three feedings per day, particularly important when the horse is doing hard work.

Feeding the Foal the First Six Months

The most important problem in feeding foals is to keep them growing. If a young foal is ever stunted, he will never entirely recover from the lack of sufficient feed requirements. The most important item in the diet of a foal is his mother's milk; he should always receive the colostrum,

and he should be allowed to nurse frequently. It pays to feed some grain to foals during the first twelve months, as they will put on approximately half their maturity weight during this period. At approximately the age of one month, foals will begin to eat other foods; at this time, one can give the young animal about one-half pound of grain per 100 pounds live weight per day. This ratio of feed to weight should be continued until weaning. In addition, foals should have a good grade of legume hay and free access to the pasture with the mother. Many horsemen have obtained good results from feeding a mineral mixture to foals. Before feeding minerals, it is best to consult a veterinarian, or vocational agriculture instructor, as harm may be done to the animal if minerals are fed to excess. Suggested grain ration for foals:

3 parts cracked corn
2 or 3 parts wheat bran
3 parts crushed oats
1 part linseed meal (1)

Feeding the Orphan Foal

As stated in the chapter on the Care of the Brood Mare and Foal, every foal should have the colostrum milk during the first twenty-four hours. In the case of an orphan foal, perhaps it may be allowed to nurse another "fresh mare". With care it is possible to raise a foal on cow's milk, preferably milk of low fat content. Whole milk or skimmed milk

to which one and one-half tablespoonfuls of cream have been added to each pint may be given. One tablespoonful of sugar and three to five tablespoonfuls of lime water are added to each pint of cow's milk. The milk should be heated to blood temperature and fed at the rate of one-half pint every two hours for the first day. Gradually the period between feedings should be increased to four hours; at the same time the quantity of milk should be gradually increased to four and one-half to six quarts of milk for each 100 pounds of live weight. In addition, the suggested ration for foals when they begin to eat grain and pasture crops should be followed. (1)

Feeding Young Horses from Weaning or Six Months to Thirty Months

The grain ration is increased as the young foal grows. It should be gradually increased to about one pound per 100 pounds live weight by the time the animal is two years old. If the young horse has access to winter pasture, the grain can be reduced to one-half to two-thirds pounds plus one and one-half pounds of good legume roughage, which will furnish an extra amount of needed protein and calcium. During the second summer if grain is costly, one may eliminate grain and obtain nearly as efficient results from well-fertilized pasture.

Good results were reported from feeding a mineral mixture to young horses in Orange County; but as previously

stated, an authority should be consulted prior to feeding such a mixture. Suggested mixture No. 1:

2 parts cracked corn

5 parts crushed wheat

3 parts wheat bran

1 part linseed meal

Mixture No. 2:

4 parts cracked oats

1 part crushed corn

1 part wheat bran.

All calculations are by weight. (1)

Feeding Idle Horses

At times during the winter the horses are often idle when the soil is unsuitable for field work. It is essential that the animal be maintained in good, healthy condition; yet he should not become too fat, nor should he lose weight. Some authorities on feeding do not suggest any grain ration for idle horses, but results of the survey of Orange County reveal that in every case grain was included in the idle horses' ration in order to keep them in better condition for spring work. Suggested grain ration for idle horses:

2 parts oats by weight

1 part corn by weight

Grains should be fed in the ratio of one-quarter pound per 100 pounds live weight; hay, in the proportion of one and one-half

pounds. If legume forages are not included in a ration, three-quarters pound of linseed oil meal should usually be included. When corn was fed alone, with mixed hays, good results were claimed by Orange County breeders.

Feeding Horses at Light Work

As the work is increased, the horse requires more feed in proportion to the effort exerted. While oats and corn are the most popular components of the grain ration, it was suggested by a few horsemen that the greater the variety of a mixture, the more palatable the ration is for horses. Suggested grain ration No. 1:

2 parts barley, free from awns
1 part corn

Ration No. 2:

2 parts oats
1 part corn (2)

When the forage ration does not contain legumes, linseed oil meal should be added to the ration. When not on pasture, the animals should be fed wheat bran mash once a week.

Feeding the Horse at Medium Work

A good horseman recognizes that the more speed and work required from the animal, the greater should be the feed increase in order to obtain the most efficient work results.

Moderately-worked animals are fed one to one and one-fifth pounds of grain and about one-and one-quarter pounds of hay per 100 pounds of live weight. Suggested concentrate mixture for ration:

800 pounds cracked corn
400 pounds oats
200 pounds wheat bran
100 pounds linseed meal (3)

Ration No. 2: To be fed when horse has access to pasture after working hours and is fed a roughage ration containing a mixture of legumes:

1½ parts oats
1 part corn (2)

Feeding Horses at Heavy Work

As the work increases, the amount of hay is always decreased; the horse requires increased amounts of quick energy food-stuffs. For heavy work, the horse should have from one and one-quarter to one and one-third pounds of grain and one pound of hay per 100 pounds live weight. Upon the type of hay fed will depend the grain ration chosen. Suggested concentrate mixture for ration:

800 pounds cracked corn
400 pounds oats
200 pounds wheat bran

100 pounds linseed meal (3)

Ration No. 2:

One and one-quarter pounds oats or barley free from awns per 100 pounds live weight. This ration is to be fed when pasture is available and legume hay constitutes part of the roughage.

Feeding Pregnant Mares

Pregnant mares require more protein and minerals than do open mares and geldings. These food elements are essential for the development of the fetus. An additional amount of good legume hay is more economical and usually more important to consider in a ration than is a concentrated feed. However, oats, wheat bran, and linseed oil meal are usually included in the concentrate ration. The best guide for feeding pregnant mares is the mare's condition and the natural development of the fetus. At foaling time the chief items of diet should be of a laxative nature; other feeds should be withheld for about three days. Wheat bran is a preferred feed at this time. Before foaling, the mare should be given warm water to drink. After three to five days, the regular ration should be return gradually to the mare until in about ten days she is entirely back on the regular ration. The mare and foal should always have access to a good pasture.

Feeding the Stallion

The stallion must be kept in prime condition at all times; again, the individual horse's needs and condition must be considered. Proper nutrition to maintain breeding vigor and potency requires a ration somewhat higher in proteins and minerals during the breeding season. If a stallion does not receive ample exercise, laxative feeds should be increased. Suggested ration No. 1 for 1,200 pound stallion:

10 pounds oats
3 pounds wheat bran
15 pounds mixed hay

Ration No. 2:

6 pounds shelled corn
7 pounds oats
8 pounds timothy hay
7 pounds alfalfa hay (4)

Horses that are kept exclusively for pleasure or racing are fed slightly more concentrates and less hay, as a paunchy stomach is very objectionable.

In general if the weather is favorable, horses are allowed to range on the pasture at night after working hard and when they are idle. Good pasture provides an abundant amount of necessary food for the animal, and it lightens the feed bill.

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CHAPTER IX

BREEDING

Intelligent breeding of horses presupposes the recognition of the forces of heredity and the importance of the transmission of desirable traits to the offspring. Inherited characteristics of an animal are derived not only from the dam and sire but also from all those ancestors whose characters and hereditary forces the individuals mated possess. However, any given individual exhibits only a portion of the characteristics which he inherits and is, therefore, capable of transmitting factors which he does not possess. The ancestry of any horse considered for breeding should be carefully studied.

All animals, whether registered or not, have pedigrees. Since a pedigree is only a record of the ancestry, it is a misnomer to speak only of pure-bred animals as having pedigrees.

Prepotency is the ability of a stallion or mare to stamp its characteristics on its get. This power is more commonly found in the male and is exemplified by such noted sires as Justin Morgan, Hambletonian 10, and Denmark, commonly regarded as the progenitors of the Morgan, Standardbred and Saddle-bred, respectively.

When a mating results in a foal superior to either of its parents, it is commonly spoken of as a nick. Atavism is reversion or throwback to some remote ancestor; in this case, the progeny may bear no resemblance to either parent.

An animal is said to be pure-bred if both the sire and dam are registered in the same studbook. Eligibility rules for the various registry associations differ.

The practice of breeding common bred mares to pure-bred stallions is termed grading up. Crossbreeding is the mating of pure-bred animals of different breeds; hunters are often produced by this method.

Top cross is the term used in referred to the male line of ancestors, while distaff side relates to the female line.

In all matings careful consideration should be given to the selection of the stallion for service. Very often an inferior stallion is patronized because the farmer is attracted by the low service fee. On the other hand, many are impressed by the high price paid for a stud and believe that in breeding their mares to him, they will be assured of superior foals; such reasoning very often proves fallacious, for purchase price is not always indicative of a worthy sire. In choosing a stallion to which to breed, the best single criterion of his value as a sire is his ability to get quality foals. Certainly some consideration should be given to his pedigree

and to his individual performance in the show ring. The best policy is to select a stallion possessing good conformation; soundness; freedom from disease; good ancestry; and proper care in relation to feeding, exercise, and sanitary measures employed during the actual breeding operation. Sometimes it is preferable to select a stallion at a distance rather than one nearer at hand. The number of services allowed a stallion should be strictly regulated, for excess mating may tend to reduce his potency.

Selection of mares to breed should receive the same careful thought as does the stallion. Only mares of acceptable conformation and suitable ancestry should be selected to produce foals. Mares are usually not bred until they are three years old, depending upon their maturity. Mares after foaling will normally come into heat in seven to twelve days. Recurrence of oestrus, or the heat period, in the mare is extremely variable; however, on the average, oestrus will recur in the mare every eighteen to twenty-one days until she becomes pregnant. Most horsemen interviewed preferred the second heat period after foaling for breeding. Whenever she is bred, she should be re-tried in about eighteen to twenty-one days to determine if she is in foal. Many breeders try every other day after the fourteenth day until thirty days have passed.

Mare are more likely to conceive if they are gaining in weight, healthy, and in good condition. They should be

neither too fat nor too thin; either condition tends to inhibit pregnancy. The mare should never be served if she seems tired; in cold weather, moderate exercise prior to breeding may prove helpful.

Oestrus in the mare is usually characterized by teasing other mares, relaxation of the external genitals, frequent urination, and an apparent desire for company. Very often it is ascertained by teasing the mare with the stallion or with a "tryer". Those who are familiar with the habits of their mares can usually detect whether the mare is in season and will accept the stallion.

There are two methods of breeding: natural breeding and artifical insemination. The latter should be attempted only by a veterinarian or skilled technician. The natural method, allowing the stallion to mate with the mare, was commonly employed by Orange County breeders.

In the service of a mare by a stallion, all hygienic precautions should be observed. The hind parts of the mare that may be touched by the organ of the stallion should be carefully washed with mild soap and clean, warm water and then dried. Sterile cotton, not a sponge, should be used and then discarded. The lips of the vulva are barely washed, and care must be taken not to enter the vagina. The parts may be rinsed with a solution of two ounces of Zonite in one gallon of warm water. The tail may be wrapped from its base to a point opposite and below the vulva with a sterile bandage. The sheath

and organ of the stallion should be similarly cleansed both before and after service, except that the disinfectant solution is used on the stallion only after the cover.

Records of the service of each mare should be made in order to determine the approximate time of foaling. The period of gestation in a mare, which varies widely, is roughly calculated at eleven months.

The actual breeding operation should be under the supervision of an attendant familiar with the breeding habits of the sire. In addition, sufficient personnel should be present to aid with the mare and to perform any other duties requested by the supervisor.

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CHAPTER X

CARE OF THE SIRE

Judicious management and feeding of a stallion is necessary to promote and maintain breeding vigor. To insure potency the two major needs of the sire are exercise and proper nutrition.

It is imperative that the stallion be given daily exercise. There are three common methods of exercising the sire: allowing him to work out voluntarily in the paddock, riding him for thirty minutes to one hour daily, riding him and then allowing him to range in the paddock. This latter method was employed by interviewed Orange County horsemen who had well-conditioned and well-mannered stud.

Stallions are likely to become ill-tempered unless handled carefully. It is preferred for one man to handle the sire all of the time. Thoroughbred stallions are more inclined to ill-temper than are those of other breeds; many of the former have bad tendons as the result of racing. In handling a stallion, one must always use good, strong equipment; a good quality breeding bridle is recommended. One should always handle the horse in a firm, yet gentle, manner.

The feeding of a stallion should be regulated according to his work. During the breeding season, sires are usually given approximately one and one-half pounds grain mixture per

100 pounds live weight. It is essential that the ration be high in protein and minerals throughout the stud season.

Stallions should have access to green forages. If they are kept in close quarters, cut, fresh, green grass or a small amount of green corn is excellent for their needs. If the stallion's vitality lessens, three to eight cakes of yeast and from six to eight raw eggs fed daily will usually promote breeding vigor.

Grooming is necessary for the improvement of appearance and the maintenance of health. Special care of the sire during the breeding operation is discussed in the chapter on Breeding. The proper care of the feet must be given to insure good footing.

Stallions are usually put into service at the age of approximately three years. At this age, a well-cared-for stud should breed not more than twenty-five mares. The following year he may serve forty mares; a mature horse may breed seventy-five mares. In order to be of the maximum service, he must not become too fat; instead he should be kept in a hard condition.

Stallions may be kept either in a separate building or in a building with the other horses. In either case, the sire's stall should be constructed from strong, durable material.

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CHAPTER XI

CARE OF THE BROOD MARE AND FOAL

"Only about 60% of the mares that are bred each year produce living foals". This Statement from FEEDS AND FEEDING by F. B. Morrison graphically depicts the dire need for intelligent and efficacious selection, care, feeding, and management of the nation's brood-mares.

Brood mares should possess feminity of expression and of conformation. Desirable attributes in brood mares are: good disposition; quality; style; clean, flat bone; concave, open feet; strong constitution; good proportions, deep, roomy barrel; width across the hips; well-developed vulva and teats. The worth of the individual brood mare is, of course, evinced by the quality of the foals she produces. Some mares produce excellent foals until they are twenty-five years old; but after fifteen, their breeding powers are considerably lessened.

Since unsound horses are a drug on the market, it is vital that all horses reared should be as sound as possible. Unsoundness in horses is caused either by weakness of the tissue or the structure (or perhaps both) at a designated point in the body, or by undue strain exerted on the part in a degree greater than can be withstood by the tissue or the conformation. Care should be exercised in determining whether the conformation or whether unbearable strain was the

cause of unsoundness. An animal with an unsoundness capable of being transmitted to its offspring should not be used as breeding stock.

Mares should not be bred until they are three years old; some should wait until they are four if they are not strong fillies or if they are slow in maturing.

Breeding date of each mare should be recorded in order that the approximate time of foaling may be known. The period of gestation varies widely, but it is calculated at 340 days or eleven months; the period has been known to vary from 330 to 360 days. Various reasons for such a variance in the length of the mare's gestation period have been advanced. That a considerable time may elapse between service and actual fertilization of the ovum is one theory; that the date of foaling influences the length of time a mare carries her young is another; while the sex-factor, that of a longer period for colts than for fillies, is the basis of the third.

Spring, the natural time for foaling, provides warmth, grass, sunshine, and the opportunity for range and freedom in the out-of-doors. For working mares, however, foaling may take place in January or February. This date will interfere least with work from the mare, as she can do heavy work in the fall normally and perform the lighter work up close to foaling time. When foaling occurs at this time, the mare can also do her share of spring work.

Idleness in brood mares should be avoided. Mares which are used regularly are more certain to bring good foals than idle mares; yet good judgment should be exercised in working them. Pulling too hard, backing heavy loads, wading through deep snow or mud, or other over-exertion is dangerous. When not worked, the mare should be turned out daily for exercise. As the time for foaling draws near, work should be lightened and discontinued from one to two weeks before parturition; however, she should still be allowed to exercise. Mares, heavy with foal, are likely to be cross and quarrelsome; therefore, they should be handled gently.

Feeding a working brood mare is more economical than feeding an idle one. The prime requisite is a well-balanced ration of good quality feeds, containing a liberal supply of protein, calcium, and phosphorus, which are essential for the growth of the fetus. An abundant supply of these nutrients is especially needed by pregnant mares that have not yet attained their full growth and by pregnant mares suckling foals.

To furnish sufficient minerals, proteins, and vitamins, it is important that at least one-half the roughage for brood mares during the winter be legume hay. Remainder may be grass hay, corn stover, corn silage, or even good quality straw. Brood mares, idle during the winter, will require only a small amount of concentrates, if they are

supplied with an abundance of good roughage. Sufficient concentrates should be fed to keep the mare in good condition, but she should not be allowed to become fat. Proper elimination, a vital factor, may be insured through the use of such feeds as bran and linseed meal. The best single grain for horses is oats because they are palatable, safe, well-balanced, and light; they may be used as the sole concentrate. Although a good grain, corn is used most advantageously to form from one-third to one-half the grain ration of the mare. It is advisable to supplement corn, when fed heavily, with concentrates or roughage rich in protein and mineral matter, as corn is deficient in these components. Wheat must be ground or rolled and used in small quantities in order to prevent digestive disturbances. Barley, which is more bulky than wheat, more closely approximates the composition of oats than does corn; it is usually ground or rolled before being fed. Soybeans and cowpeas, extremely palatable to horses, are a satisfactory addition to the grain ration for mares in foal. Relatively rich in protein, soybeans and cowpeas blend well with corn.

A very popular roughage for horses is timothy hay, provided it is clean; if cut in early bloom, orchard grass is a good feed and contains more crude protein than timothy. Clover hay has good nutritive values although it is inclined to be dusty. Millet should not be fed to mares in foal.

Corn fodder, which is often used to feed idle horses in winter, does not contain sufficient food value when fed alone for mares in foal; the same statement in a stronger degree may be applied to straw. Alfalfa hay, an excellent feed, should be given once a day with timothy hay or corn fodder at the other feeding. In all cases, care should be exercised that the roughage is free from mold.

Succulent feeds are an important adjunct to the brood mare's diet, for they have a cooling, laxative effect on the digestive system and, in addition, stimulate the appetite. Common succulent feeds are grass and silage. Brood mares should be allowed access to grass whenever available. Pastures should be seeded with a variety of grasses and legumes so as to insure forage throughout the season. Pastures should be well-drained, not too rough or stony; abundant shade and water are other requisites.

Very little more feed is required to maintain through the year a work mare that raises a colt than is needed to maintain another horse doing an equal amount of work. Similarly, it costs practically no more to raise a well-bred foal than it does an inferior one; and the returns are much greater.

Unless the mare can foal at pasture, a box stall should be provided for foaling in order to avoid infection which cause navel ill and join diseases. Sanitary measures

must be scrupulously observed at all times; but shortly before the mare foals, the stall should be thoroughly cleaned, disinfected, and bedded with dry straw.

Parturition can be foretold by observing the actions and appearance of the mare. Symptoms are: extreme restlessness, swelling of the udder, dropping of milk from the teats, formation of wax on the teats, relaxation of the pelvic ligaments. Shortly before foaling, the mare should be fed less grain and more laxative feeds.

As parturition approaches, the mare should be watched so that assistance may be rendered if necessary. The mare must not know that anyone is on guard, for often she will not give birth to her foal if she can prevent it when persons are present. The common duration of parturition is ten to fifteen minutes; if labor lasts four to five hours, the foal will be dead when born.

The rupture of the outer fetal membrane with the escape of a large amount of fluid is the primary actual indication of foaling. The inner membrane, generally conical in shape, surrounding the foal appears next; as soon as labor commences, the front feet, one slightly ahead of the other, followed by the nose should appear within the sac. The back is up with the head between the knees in a normal presentation. Any aid by pulling should be given only in case of dire need, and then only by a veterinarian or other experienced person, untill after the cross-section, withers to elbows,

has been presented. As far as possible, the mare should be allowed to work out the situation herself. Just before the hips are presented, a slight pull toward the hind feet of the mother may be administered.

After labor begins, if the feet are not presented first and followed by the nose, a veterinarian should be called at once. If the afterbirth, commonly expelled within the first two hours after foaling, is retained longer than ten hours, it should be removed by veterinarian or other competent man. The afterbirth should be buried deeply with a thick covering of lime or burned.

After the foal is dropped, the attendant should make sure that it begins to breathe. The film of tissue should be removed from its nostrils; if it does not begin to breathe at once, the attendant should immediately blow into its mouth, work the ribs, and rub the body with burlap sacks or straw to induce respiration.

The foal should always be allowed to break its own umbilical cord. If the cord is not broken in a reasonable time, it may be cut or broken; this is sometimes done by tying the cord with a sterile tape at a point one and one-half to two inches from the belly of the foal and then severing it one-half inch from the tape. In all cases the stub of the cord should be treated with iodine or washed with a solution of boric acid and then dusted freely with

the boric acid powder. In order to prevent navel infection, the navel cord should be washed several times a day by holding up around the cord a large-necked bottle nearly filled with a 1 to 1,000 solution of bichloride of mercury, or by saturating the stump with full strength tincture of iodine. It should then be dusted with powdered, slaked lime. This treatment should be repeated every day until the umbilical cord drops off. Professor R. E. Hunt recommended that 500 cc. of blood be drawn from the mare and injected into the jugular vein of the foal. If the hocks swell, this injection should be repeated.

It is essential that the foal nurse as soon as he becomes strong enough to stand and walk around. Before the foal nurses, the mare's udder should be washed with a warm two per cent solution of a good coal-tar disinfectant and then rinsed with warm water. If the foal is weak, he may be assisted in finding the teat, but absolutely no efforts should be made to force him to nurse. The first milk which comes from the mare is called colostrum; it acts as a physic on the foal, causing the fecal matter (meconium) to be eliminated. A mare must never be milked before parturition as the colostrum will then be lost. If the foal's bowels do not move naturally within the first twenty-four hours, a carthartic or enema should be administered. Two to four tablespoonfuls of castor oil shaken in milk may be given; in addition, warm water or

two ounces of castor oil may be injected into the bowels. This treatment should be repeated every three or four hours until the contents of the bowels are ejected.

After the foal is dropped, the stall should be thoroughly cleaned, lime scattered on the bare floor of the stall, and the stall freshly bedded. The mare, which was given a half-bucket of luke-warm water before foaling, will need another drink of water when she is on her feet. A small portion of bran may be given for the first feeding, followed by oats or oats and bran. After foaling, the mare should be fed sparingly, and she should be confined for four or five days after which she may be returned to pasture if she is recovering favorably. The mare and foal should preferably be turned into a lot where they can exercise and yet be quiet; care should be taken that the foal is not chilled.

A foal should always be allowed to nurse at regular intervals. He should never be permitted to nurse when the dam is warm or has just been bred, as indigestion or diarrhea may result.

At a very early age, the foal will take dry feed from the mare's feed box; therefore, she should be supplied with such feeds as corn meal, wheat bran, or ground oats. Later a creep, a partition that keeps the mare out of the enclosure, may be used to feed the foal without the dam. Roughage in the form of timothy and clover hay should also be

supplied. A small amount of alfalfa hay is often provided when the grass is not green.

The feeding of the orphan foal is discussed in the chapter on Feeding.

If the foal is accustomed to being fed grain, he will suffer little or no setback from weaning. The foal should be taken away from his dam and not allowed to see her again until he has completely forgotten her. The grain ration of the mare should be reduced until she is dry. Her udder should be partly milked out when necessary. Camphorated oil, petrolatum, or lard may be rubbed on the udder as an aid in preventing caking.

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CHAPTER XII

CARE OF THE YOUNG HORSE

The intelligent care of young horses is the foundation of successful management with profitable results. This includes the problem of having a knowledge of and finding the solution to the needs of each individual animal. Too many breeders are too prone to leave the rearing to nature, which can only do its part as far as heredity, natural composition of the soil elements, and available foodstuffs will permit.

The cardinal rule in caring for a young horse is to keep him growing. Once stunted, a horse will never entirely recuperate from a poor start. The stomach of a horse is somewhat small in comparison to that of other animals; therefore, good horsemen feed at least three times per day. In the chapter on Feeding will be found suggested rations for growing horses; however, the condition of the animal is the best criterion of growth and development. Feed differs in its composition, depending largely on the amount of plant food available for the growth of the plant and on the method of curing.

When young horses are restricted to the stable during unfavorable weather conditions, it is necessary that they be given a daily grooming as dust and dirt on the skin has a tendency to close the pores. A good grooming is essential for health, and a clean horse looks and feels better

than a dirty one. When the weather permits the young horse to be out of doors, there is no better place than this natural environment. Horsemen who fail to recognize this important fact often have difficulty with diseases, as stated by many of the breeders who were contacted for much of this information.

Horses are creatures of habit. For this reason, they should have regular stalls assigned to them; thus is avoided much confusion during the daily routine.

Not all horses lie down, but this may be the result of having a poor bed. Horses should be offered a good, clean bed each night as this is not only comfortable for the horse but the litter will absorb the liquid part of the manure which makes a vital food for plants.

In order to insure good footing, one should start caring for the horse's feet at a very early age. Proper nutrition that contains ample Vitamin A is essential for the formation of the hoof. The best supply is obtained from a good grade of green pasture. The hoofs of foals start to develop at about two months of age. Young horses that range freely will wear down the hoof tissue almost as fast as it grows. On an average, the hoof will develop one-third of an inch every thirty days. The rear hoofs have a tendency to grow faster than the fore hoofs. One can begin trimming the feet after the permanent hoof begins to grow. In order to

do a proper job, one should observe the standing position of the legs. If the animal is standing too high up on his heels, the excess should be trimmed off gradually from the toe to the heel; if the toe is too far to the front, it should be trimmed from the heel to the toe. A rasp should be used to level the sole and smooth the sharp edges around the hoof. Usually once a month is often enough to care for the feet when the young horse is on pasture. When young horses receive little exercise, more frequent care should be given. The feet should be thoroughly cleaned and all foreign matter picked out.

When the permanent teeth begin to develop, the young horse's mouth should be observed closely. If there is any indication that the milk teeth are not being shed in the proper order, the offending teeth should be removed with forceps. If the permanent lower and upper teeth are not perfectly aligned, sharp edges may cause irritation to the tongue and cheeks. These sharp edges should be filed down with a rasp.

It is wise to separate colts and fillies at, or shortly after, weaning time. Fillies may come into heat at a very early age, and the young colts may attempt to serve them.

Breeders usually castrate colts, not reserved for breeding purposes, at about the age of one year. While castration can be performed more safely much earlier when the

colt is only a few months old, such an operation when he is very young tends to result in an imperfect development of the fore parts. Castration should not be performed during the period when flies are abundant. It is always best to secure a veterinarian to perform the operation. Care should be taken that the geldings do not become chilled for the first few days after being altered.

One should never play with young horses or teach them tricks; instead they should be handled as discussed in the chapter on Schooling and Training.

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CHAPTER XIII

CARE OF THE WORK HORSE

The care of work animals is a vitally important item in horse management. It is the owner's responsibility to keep the horse in condition to perform whatever taks is required with optimum efficiency.

Proper nutrition is a basic requirement in the care and management of the horse. The animal must be fed a balanced ration at regular intervals to maintain condition. The amount of feed needed for the horse depends upon his condition and the amount and type of work done. In all feeding, the individual must be considered. After the day's work is done, the horse should be turned on pasture, to which he should have access at all times of freedom. The most economical source of food, pasture provides ideal natural conditions which permit the horse to rest more, keep cooler, have better elimination, be free from azoturia ("Monday disease"), and not to become overheated in hot weather. When horses are kept on pasture, less hay will be required and less stable cleaning and horse grooming will be necessary. During the days when winter pastures are soft and permanent ones are not ready, the horses are usually turned into a dry barn lot with access to a covered rick of hay and forage.

When horses are worked for one-half day only, it

is usually better to work them in the morning. They should be fed in the morning and at noon a regular ration determined by the type of work done. Immediately after the noon feeding, they should be turned on pasture and then fed again in the evening.

Horses idle for a few days should be fed grain and some hay in the morning, pastured during the day, and fed one-half the grain ration in the evening. When horses are subject to "Monday morning fever", a warm wheat bran mash fed on Saturday and Sunday evenings will help to prevent this trouble.

Feeds should always be examined for mold and dirt. If either of these objectionable conditions is present, the feed should be discarded.

It is better to separate open mares and geldings from foaling mares; pregnant mares are more sedate and quieter, while other animals running loose may injure them by kicking.

During unseasonable winter weather, shelter protection should be provided for the animals; a good, clean, comfortable bed is essential at night.

Horses on pasture should be protected from the hot sun by natural or artifical shade on the range.

In order to avoid possible injuries, it is necessary to remove all obstacles and potential sources of danger from the stable, pasture, and paddock.

Horses should be provided with sufficient quality

and quantity of fresh, clean water. Water should be offered the horse at the beginning and end of the working period; during extremely hot weather it may be wise to take a barrel of water to the field and water moderately every hour.

Horses should be thoroughly brushed and curried before and after working. In the morning a good brushing will dispose of all loose hair and foreign matter. Grooming after working will tend to make the horse more comfortable. Animals turned on pasture get some grooming in the form of rolling; this does not suffice and can not substitute for a thorough grooming. Idle horses perspire very little; therefor, less frequent grooming is adequate.

Horses usually grow a heavy coat of hair in the winter. Clipping of this coat in the spring will prevent excessive sweating, aid in preventing sore shoulders, and improve the general appearance of the animal. After being clipped, the horse should be blanketed for a few days for protection against the cool weather.

The feet of the horse should be examined frequently to observe their condition. If dirt and other material is removed, it will insure better health and surer footing. If shoes are used, they should be removed at least every six weeks; the hoof should be trimmed; and the shoes replaced.

When horses have been idle for a few days, they should be gradually "warmed up" before returning to regular

work. Similarly, horses should be so conditioned for spring work after a winter of comparative idleness that the optimum efficiency may be secured. All work should be increased gradually so that the horse's muscles will harden and his strength develop.

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CHAPTER XIV

SCHOOLING AND TRAINING

To develop a well-trained animal, responsive to command, is the primary aim of schooling and training. Creatures of memory and habit, horses learn by doing; only by persistent practice are correct principles instilled and ingrained.

The rudiments of the horse's education are attention and understanding. Without either, there can be no learning. Before attempting any training, one must first secure the attention of the horse; then one must be sure that the horse understands what is expected of him. The horse should be rewarded with a pat for a good performance and punished immediately for an error. The whip, which is used to punish the animal, should not be employed harshly; a few gentle, light taps are usually sufficient.

The trainer must study each horse as an individual in order that good traits may be emphasized and unsatisfactory characteristics subdued or eliminated. The horse must be taught to recognize the mastery of man. To inculcate this principle requires firmness, gentleness, and, above all, patience. A man who loses his temper easily has not place in a schooling program.

Experienced horsemen of Orange County reported that

they begin schooling their horses at a very early age. When the foals are still with their dams, haltering, leading, and handling the feet are begun. In some instances, the halter is kept permanently on the foal after he is a week old. It is poor policy ever to allow the foal to become frightened; this may be avoided by handling the young horse in familiar, quiet surroundings where his attention will not be diverted by strange animals or environment. A good method in handling the foal before he is taught to lead is to put one hand under the neck and the other around the hind quarters or buttocks. Care must be taken not to catch him by his neck. The sensitive parts of the animal are the ears, the back, the forelegs, the nose, and the flanks; the foal must be accustomed to having these parts handled. All equipment used in handling the foal must be well-fitted and of good quality.

It is suggested in teaching a foal to lead that one secure a small rope about ten or twelve feet long and tie a loop at one end. The rope should be placed carefully over the back a few inches in front of the hips with the loose end threaded through the noose on the under side of the body. It should be fitted snugly; then the loose end should be brought between the forelegs up through the ring of the halter; this rope is held in the left hand. A rope five or six feet long is then tied to the halter; the trainer then takes the halter rope in his right hand and pulls gently. If the foal

fails to move, a gentle pull with the left hand on the rope around the body of the foal will usually bring him forward a step immediately. Short but frequent and regular training periods produce more satisfactory results with foals; a long period tends to make him tired and disobedient.

When the foal becomes a yearling, he is usually ground broken in the fall for a few weeks and then turned out. The young horse should be given these lessons in a corral or paddock. A few days before he is to be put in the corral, it is a good idea to acquaint him with the bit and harness. The best method to follow is to use the "bitting harness" which consists of an open bridle with the snaffle bit and checkrein, a surcingle, and a crupper. There are also two side lines attached from the snaffle bit to the surcingle on each side. After he has become accustomed to the bitting rig, he is then turned into the corral for a few hours each day for about three days or until he goes satisfactorily.

The next step, that of driving in right and left circles, requires two men. A lunge rope or strap usually sixteen feet in length is used. The end of the lunge rope is run through the ring of the snaffle bit and tied on the opposite side. The trainer stands in the center of the circle and guides the horse in the desired direction; the helper uses a gentle tap of the whip if the horse does not move at the command of the trainer. Under these conditions, the young horse is made to walk, trot, and gallop. After he has been

thoroughly schooled in this lesson, he should be taught the meaning of "Whoa". The word must be spoken distinctly, and the horse must learn that it does not mean to slow or to back, but to stop and remain stopped until ordered to move. To halt the young animal, the trainer should give the command and simultaneously pull slightly on the reins. To teach the horse to go forward, the command, "Get up", is given and accompanied by a loosening of the reins. After he has learned to stop and go forward when ordered, the horse should be taught to back. To teach him to back, he should be stopped; the command, "Back", should be given; and at the same time, the trainer should pull slightly on the reins. A period of fifteen to twenty minutes is usually sufficiently long enough for the yearling to be trained each day. He should always be rewarded with a pat when things are done right.

The next lesson is accomplished by driving the yearling single with a double line or having a light boy ride. This completes his three week's schooling; he should then be left alone until he is two years old.

The training of the two-year-old should be started in the spring. It is a good idea to re-familiarize the young horse with his past training a few days before the actual spring schooling is begun. After he meets the requirements satisfactorily, the harness should be gently placed on his back and gradually fitted. He should stand wearing the har-

ness for a few hours and then be driven around the paddock until he becomes accustomed to his rig. If everything goes well, he may be hitched single to a cart.

When driving double is preferred, a gentle, well-trained animal should be used for a mate and the pair driven double around the paddock before hitching. The young horse should work on the off side; if he has a tendency to crowd the other horse, a bar of sufficient length to snap in the ring of the bit of the green horse and to extend to the outer hame ring of the older horse may be used to keep an adequate distance between the two.

Teaching the horse to drive single and double usually insures a quieter horse for riding. In harnessing or saddling a horse, one should always work from the left side and never approach the animal without first speaking to him or otherwise gaining his attention. The saddle without stirrups should be gently placed upon the back of the horse; the girth should not be made too tight. After the horse has become familiar with the saddle, he can be turned with the saddle on into the paddock.

The next lesson is to acquaint the horse with being mounted. The assistant should hold the horse by a lunge rope tied to the bit while the trainer practices sliding in and out of the saddle without stirrups. Then the stirrups should be put on the saddle and the horse carefully mounted. He

should be taught to stand perfectly still while being mounted. He then may be ridden around the ring with the attendant still holding to the lunge rope.

After the young horse has been taught to be guided by the reins and to stand for mounting by the stirrups, he is ready to begin training in gaiting. The walk, a slow four-beat gait, is the most useful whether in harness or under saddle; it should be done at the rate of about four miles per hour. The horse should be taught to start out with a walk and to begin other gaits from a walk. It is important that he learn to walk well; he should execute the walk with snap and animation for the best results. For walking, the reins should be relatively loose but tight enough to have control over the animal. To get a horse to walk, the reins should be released slightly and his sides gently pressed with the calves of the legs. Schooling in the walk should comprise at least one week or until the lesson has been well learned.

The trot, a two-beat diagonal gait somewhat up and faster than the walk, is next taught. The signal for the trot is to lean forward slightly, squeeze him gently in the sides with the calves of the legs, and loosen the reins. Teaching the horse a good trot usually takes about two weeks.

The canter, a three-beat diagonal gait, is slow, deliberate, graceful, and easy. The canter, like all other

gaits, should begin from a walk. To get the horse to canter, the rider should give the horse a slight pressure with the calves of the legs and at the same time tighten the reins slightly. The animal's chin should be tucked in with his head up. He should be taught to canter in circles not more than sixty feet in diameter and with both leads. For the right lead, the rider should bring the horse out from the fence, then turn him into the fence, shift the weight to the left, and tighten the right leg. For a left lead, the reverse is true. A horse should canter on the right lead when going to the right and on the left lead when going to the left. The canter is the most collected of all gaits and requires extensive practice.

Five-gaited horses are also taught a slow gait and a rack, typical show gaits. The five-gaited horse should be ridden by only one person. The signal for the slow gait is to raise the horse's head on the snaffle and gently shake his head. To signal a horse to rack, he should preferably be on a down grade; the rider shifts his weight from right to left, lowers the horse's head slightly with the curb, gives him time to get his equilibrium, shakes him a little on the curb, and urges him forward.

Preliminary training for hunters and jumpers is the same as for walk-trot-canter horses. Horses are usually not schooled in jumping until they are three years old,

Orange County horsemen reported that they constructed an enclosure called a chute or corral, a rectangular pen about twenty-seven feet wide, about eighty-five feet long, and seven feet high. This pen is trisected by panels running lengthwise and stopping about ten feet from each end; this forms three aisles of equal width and open at the ends. In both of the outside lanes jumps may be placed; the trainer stands in the center lane and works the horses in the outer aisles.

Stripped except for a halter to which is attached the lunge rope, the young horse is brought into the corral and worked around the outside lanes at a walk, trot, and canter, going first in one direction and then in the other. This lesson lasts for approximately half an hour and is repeated the next day. On the third day rails are laid on the ground to represent the jumps, and the colt is worked over these. If all goes well, the jumps can be raised to one foot on the following day. If the horse progresses well, the jumps may be raised three inches each succeeding day until the horse is jumping four to four and one-half feet. Each day he is required to go over the jumps a number of times in both directions. Care must be exercised that the jumps are not raised too fast for the young horse and that he does not become tired. Frequent rest periods should be given the colt. The horse should not be allowed to stop after a fall or a

refusal, but should be made to try again. Work under the saddle at a walk, trot, and canter must progress simultaneously with work in the chute. A horse schooled in a chute should learn to jump one foot higher than is expected of him with a rider. When he is jumping slightly over three and a half feet, training over jumps under saddle should begin. He is first walked, trotted, and cantered over a rail laid on the ground; then the rail is raised a foot and the same routine followed. When the jump is in place, the horse is taken over in this manner: from a walk, the rider puts the horse into a canter; thirty feet from the jump, his speed is increased slightly; six feet from the jump he should take off. The horse must have complete freedom of the head during the jump. After the jump, the horse should resume his canter and repeat the process. A three-year-old should not be required to jump more than three and one-half feet.

Another plan for schooling and training hunters and jumpers is to school them entirely under saddle with the rider up. Under this method, the horse is first walked, trotted, and cantered over logs or rails lying on the ground. After he performs satisfactorily, the jumps are raised and the same procedure followed as for training in the corral.

Initial training in the chute has many advantages over training entirely with the rider up. In case of a fall, there is no danger of injury to the rider; the horse is taught

to estimate distances; he learns that all mistakes are due to his own error and not that of the rider; he is forced to jump even though he may not want to; he learns respect for the jumps since they are solid and can not be knocked down.

After the horse learns to jump acceptably, he should be schooled over a variety of jumps, such as chicken coops, walls, ditches, triple bars, in-and-outs, hog backs, and other obstacles.

Touching the jump with the feet is known as a tick and constitutes a fault in the show ring. This may be corrected by poling or having an attendant strike the offending legs with a long pole while the horse is over the jump. Another plan is to fasten a wire about three inches above the jump on one side, run it to the other side of the jump, let it go over a peg also three inches above the jump and run down to the ground where it is attached to a twenty-five pound weight. The wire will sting the horse as he comes in contact with it, punishes at the exact time of offense, and will not injure him.

If a horse becomes stale on jumping, he should be rested for a week or so; when he is started again, the jumps should be lowered and his training repeated.

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CHAPTER XV

EQUITATION

Equitation or horsemanship involves the underlying principles of intelligent control, characterized by what the horseman terms good hands and good seat. Control of the horse is accomplished, not by strong-arm methods, but by light, firm, manipulation. Riding horses should be so schooled that they may be started, slowed, stopped, backed, or changed in their gaits by signals rather than by words. "Get up", "Back", "Steady", and "Whoa" may accompany the signals of the reins for work horses.

Good form in horsemanship is distinguished by the grace and ease with which the rider or driver handles his horse and by the comfort and pleasure which he derives. Like any other art, equitation must be studied before it can be appreciated. It is imperative that the novice learn the correct principles and methods of riding and driving.

The major means of communication between horseman and horse is the bit. Through this instrument the will of the rider or driver is transmitted to the horse. Care must be taken that the correct type of bit for the desired purpose is used and that the bridle is well fitted. Reins should be held flexibly with a light hand; a heavy hand is ruinous to the mouth of the horse.

Before either riding or driving, all equipment should be checked to see that it is in good condition and well fitted to the individual animal. The horse is both harnessed and saddled from the near (left) side.

Driving is usually done with the left hand, leaving the right hand free for adjustments or the use of the whip. In this case, the near rein is held over the forefinger, and the off rein is held between the middle and rein fingers. If the two-hand grip is used, the near rein is held over the forefinger of the left hand, and the off rein passes through the right hand and over the thumb. The grip of the hands should be on the edges rather than on the flat sides of the reins. The knuckles of the left hand are perpendicular and turned forward; the forearm forms a high medium right angle with the reins. This method permits freedom of the fingers and wrist and promotes a light hand.

For better balance and control, the reins are held by both hands for riding. In riding the horse with a full bridle the curb reins and the snaffle reins are crossed. The jumper or hunter is ridden with a snaffle alone. The curb bit should never be used alone on a horse. The curb reins, which are slightly smaller than the snaffle reins, are passed between the little finger and the ring finger up over the index finger. The shaffle reins are carried under the little finger up over the index finger, where the thumb and

index finger engage both reins. When the single-reined snaffle bridle is used, the reins are held as described above for snaffle reins. The reins can be adjusted by allowing them to slip through the hands for lengthening or shortening; the reins should be held firmly with the thumb and index finger while the little finger and ring finger are slipped forward. In riding the hands are held in position with the little fingers down, the thumbs resting easily on the reins, and the fingers together about four inches above the pommel of the saddle. The forearms should be extended comfortably in a natural position with the elbows lightly held to the sides. The fingers and the wrists should be flexible.

For mounting, the horse is approached quietly on the left side. The reins are gathered up in the left hand, and the hand is placed on the crest of the animal's neck. Facing the rear of the horse, the rider takes the extreme right side of the stirrup in his right hand and turns it toward him; he places his left foot in the stirrup all the way to the heel; keeping his foot parallel to the horse, he pressed the shoulder of the horse with his knee, grasps the cantle of the saddle with his right hand, gives a little spring on the ground with his right foot, propels himself upward with the left foot in the stirrup, removes his right hand from the cantle of the saddle, throws his right leg and foot over, and swings into the seat of the saddle with

the right foot in the stirrup.

To dismount, the horseman merely reverses the procedure for mounting. He takes the reins in his left hand, places his right hand on the pommel of the saddle, removes his right foot from the stirrup, places his left hand with the reins on the crest of the horse's neck, swings his right leg over the back of the horse and onto the ground, removes his left foot from the stirrup, and at the end of dismounting finds himself facing the rear of the horse.

Once seated in the saddle, the rider should check his stirrup length. The correct length for riding may be ascertained by allowing the foot to hang naturally beside the stirrup; the stirrup should touch the foot midway between the top of the heel and the ankle bone. The foot should be placed straight in the stirrup and should rest on the ball of the foot. A straight line dropped from the knee should reach the end of the toe. The foot with the heel slightly lowered should be parallel to the body of the horse. The rider should pull his seat under him, roll his knees and thighs in for a proper grip, and maintain a relaxed position so that his body will move with the rhythm of the horse. The horseman, however, should remain on the alert to sense potential trouble before it occurs.

There are both natural and artificial aids which the horseman may use in communicating his desires to the

horse. The artificial aids, such as whips, crops, spurs, and severe bits, are necessary only in the case of a poorly schooled or spoiled horse. The natural aids are the weight of the rider's body, his legs, his heels, and his hands. The horseman uses the weight of his body to signal the horse to start, stop, turn, canter and rack. With his legs and heels, the rider may command his mount to start, to turn, and to change gaits. By pressure with the thighs and knees and by booting, which is a slight touch on the side of the horse with the side of the heel, the rider may express his will. The hands, by movement of the reins, serve to prepare the horse for a signal, to stop him, and to change his direction.

Because the walk is a slow four-beat gait with relatively little motion and impact to the rider, the horseman can easily sit down in his saddle and move along easily with the horse. The trot, however, is a two-beat gait which would jar the rider if he sat down in the saddle; for this reason, the technique of posting at the trot is required. To post one rises from the saddle and lowers himself back into the saddle on the two beats. The rider should not pull himself up by the reins nor should his knees and thighs lose contact with the saddle; he must not stand in the stirrups, but he should balance himself in the stirrups and spring from the ball of his foot. Both rising too far from the saddle and falling back into the saddle with a bump must be avoided.

The rider must learn to post on diagonals and to change his diagonal frequently to rest the horse. The right diagonal of the horse is composed of his right forefoot and his left hind foot; the left diagonal, of his left forefoot and his right hind foot. If the rider is in the saddle when the horse's right diagonal is on the ground, he is posting on the right diagonal. To change diagonals, the rider remains in the saddle for one diagonal and takes the bump of the trot. For the canter, a three-beat gait, the rider sits down well into the saddle. Light hands are required for all types of riding but are imperative in cantering.

For jumping, the stirrups are shortened two notches; the ball of the rider's foot should rest on the stirrup; the rider's ankle should be flexible. A horse should be put squarely at a jump, according to the technique discussed in the chapter on Schooling and Training. As the horse takes the jump, his head should be free; no pressure is applied to the reins during the jump. As the horse leaps, the rider should transfer his weight from the seat of the saddle to the grip of his knees and to his feet in the stirrups. The rider should point his knees and apply pressure during the jump, thus directing the horse and absorbing the shock upon landing. As the horse takes off, the rider should lean forward with the hands forward and down. Constant practice is necessary to become proficient in jumping.

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CHAPTER XVI

FITTING AND EXHIBITING

No longer is the horse show a pastime limited only to the wealthy. Many local shows are available for those who are not regular exhibitors in the circuit shows; to the community affairs, a person can bring his horse and be sure of finding a class where he can have the opportunity of competing for a trophy.

Success in the show ring is dependent upon efforts in operation for quite a period before show day. The long-time approach to the job is a prerequisite. Preparations for the show ring may be divided into three overlapping stages: 1, feeding; 2, training; 3, fitting.

What is the ideal ring condition toward which every showman should strive? The animal should be neither too fat nor too lean, but should carry a slight amount of fat. From the breeder's standpoint, excess fat is viewed with suspicion; too oftain it is a vain attempt to cover defects and, in addition, may impair the future usefulness of the animal. The objective should be the happy medium of good thrift, growth, condition, and bloom without having the animal over-fat.

There is no single definite feeding formula that is the one way to condition a horse. As a general rule, good feeding means good quality roughage and concentrates fed in

sufficient amounts to promote good gains. The protein content of the concentrate mixture should be adjusted to the kind and quality of roughage fed. Every showman has his pet formula of feed ingredients for the fitting ration. However, from the fitting standpoint, the proper feeding consists of a reasonable ration fed over a long enough period to get the animal into good body condition.

Keeping the horse in good condition from birth is important. If special attention is to be given to a fitting ration, it should certainly start at least six weeks before showing, preferably two months or longer. There are farms where the program is such that the horses could be led into the show ring at any time of the year and they would be in show condition.

Training the horse has been discussed in detail in the chapter on Schooling and Training. Certainly no one would attempt to show a horse which had not been schooled to give a creditable performance.

The main points to be considered in fitting are: 1, blanketing and brushing; 2, clipping; 3, fitting hoofs; 4, caring for tail and mane.

Most showmen use blankets to condition the hide and hair. Blanketing is commonly begun one month or six weeks before the show; a light blanket will keep the hair straight and flies off. Daily grooming is necessary to rid the animal

of dead hair and dust, and to promote general health and well-being.

Any obnoxious hairs, which detract from the animal's appearance, should be clipped. A horseman who follows a definite plan of clipping and grooming will usually have his horse in good trim. It is very undesirable to clip immediately before a show, as the clipped portions will then appear too angular and harsh.

Polishing hoofs is a good deal like finishing a piece of lumber. Plane the surface, sandpaper it, apply polish, rub hard. Hoofs are first treated by removing the excess scale with a half round file, wood rasp, or scraping with a piece of glass. This is followed by sandpapering with a coarse grade and then with a fine grade of emery cloth. A paste of tripoli powder and sweet oil is then applied; last the hoof is polished with a flannel cloth.

Tails and manes are put in order. Tails may be washed with castile soap in soft water; some breeders apply olive oil and follow with a shampoo. A five-gaited horse should have a full mane and tail; in the show ring ribbons may be braided in the foretop and first lock back of the ears. Three-gaited horses should have close manes and plucked tails. A hunter may have either full or plucked mane and tail. The tails and manes of hunters may also be braided.

When a horse is posed, care should be taken that

the front feet are a few inches higher than the hind feet. This position will cause the horse to stretch slightly, thus improving his appearance.

Catalogues or lists of classes are available before a horse show, large or small. From a reading of these, the owner can determine in which classes to enter his horse.

Saddle classes are divided into three- or five-gaited. The three-gaited saddle horse should show a flat-footed, brisk walk; an evenly cadenced, high trot; and a very slow collected canter. The five-gaited horse displays the same three gaits, but with more speed. In addition, five-gaited horses possess the slow gait, which may be the running walk, stepping pace, or fox trot; and another gait known as the rack, often termed the single foot. The latter is as fast as the trot and presents a dashing appearance when well done.

Combination classes are for horses that are both ridden and driven. The animal enters the ring in harness with the saddle and bridle in the vehicle. After demonstrating his ability as a harness horse, he is unhitched in the rin and saddled while an assistant runs the vehicle out of the way.

Novice classes are open to horses that have not won three blue ribbons in a recognized horse show. Green hunters are horses of the hunter type which have not hunted.

A hunter hunted for more than one season is known as a qualified hunter.

Hunters are judged not only on performance over jumps, but also on their conformation, manners, and way of going; varying percentages are assigned to each attribute. After being ridden, the horse is stripped (saddle removed), led back into the ring, and is judged for conformation. Hunters are classified according to age and to weight-carrying ability. A light-weight hunter must be able to carry up to one hundred and sixty-five pounds; medium weight, up to one hundred ninety; heavy-weight, more than one hundred and ninety.

Hunter hacks must demonstrate that they are comfortable and easy to ride; they must go steadily on a loose rein and take low jumps.

In Corinthian classes, hunters are ridden in hunting attire. In some horse shows, this class is open only to members of recognized hunts.

In open jumping classes, the animal is scored on his performance only.

Touch-and-out classes differ from the regular open class in that as soon as the horse touched the jump, he is out of the competition.

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CHAPTER XVII

JUDGING

The ability to judge horses is a most essential and constantly used talent for a horseman to possess. Every time a horse is bought or sold, judgment is passed upon his value as an individual, both by the buyer and the seller. When animals are selected for feeding purposes, the farmer must exercise good judgment in gauging their gaining capacities and future market possibilities. In selection of individuals for mating and for retention on the farm, the breeder must again exhibit insight. Correct judgment swings the balance from loss to profit in transactions which often involve large sums of money.

The principles of the art of judging can only be acquired through study and practice. A clear knowledge of the ideal type is essential. A judge must be able to observe accurately, make comparisons, weigh evidence, and arrive at logical conclusions. Score cards are useful for classes of students in judging, as they furnish a means of recording scores for comparison and discussion.

Light horses are judged on: general appearance, head and neck, forehand, body, hindquarters, size and weight, intelligence and temperament, quality and refinement, and action or way of going.

In judging an individual or a class of horses, one

should make his first observation from a distance of about twenty feet. At such a distance, the best opportunity is afforded for determining the size and weight, conformation, quality and refinement. The animal should be standing on level ground with all four feet squarely under him. It is well to begin with a view of the horse from the front. The manner of standing, the conformation of the forelegs and feet, the width and depth of the chest, the features of the head, and the temperament and disposition may be noted at this range. The conformation of the legs should be such that if a vertical line were drawn downward from the point of the shoulder, it would bisect the knee, cannon, fetlock, pastern, and foot. Depth of chest is desirable, as it indicates ample lung room and a strong constitution. The proportion of the head to the body is important. Temperament is often expressed by the carriage of the head. After viewing the horse from the front, one should proceed to the side, usually the left. From this view, one can observe the head and neck, carriage, the symmetry of proportions, the set of the legs, and the slope of the pasterns. Common faults which may be observed from this position are: plain head and neck; shallow, straight shoulders; long, weak back; sloping croup; and short, upright pasterns. The conformation of the foreleg, when viewed from the side, should be such that a plumb line dropped from the center of the shoulder blade would bisect the elbow joint and foot. The

hind legs should be so constructed that a point line dropped from the point of the buttocks should just touch and coincide with the rear line of the hock and cannon; a perpendicular line from the hip joint should fall upon the center of the foot and bisect the gaskin. The same procedure is followed for observing the other side. The horse is then viewed from the rear. The conformation of the hind legs and feet, the rotundity of the hips, the fullness of the thighs, and the general contour are to be scored. When observed from the rear, the plumb line from the point of the buttock should divide the foot and legs into lateral halves.

After observation at a distance is completed, one should make a closer inspection of the horse. The order of front, near side, off side, and rear inspection may again be followed. The mouth may be checked for age; legs and feet should be scrutinized to determine whether ailments such as sidebone and ringbone are present.

Symmetry is one of the most desired qualities in a horse. The animal should be well proportioned and well balanced in all his parts.

The head, especially, should be proportionate to the rest of the horse. It should be wide between the eyes, tapering gradually to the poll and tapering again from the eyes to the nostrils; the latter should be free of any discharge and rosy in color. The eys should be prominent, full,

bright, and clear; the lid should be thin with an even curvature. The ears should be medium sized and well carried. The throttle, the point of union of the neck and head, should be clearly defined. The neck should be long, supple and not carried too high.

The shoulder blades should blend smoothly into the withers; the shoulder should be long, oblique, and muscular.

The legs should be muscular with straight, wide knees, and flat tendons in the cannon. The fetlocks should be wide with the tendons well back. The pasterns should be long, oblique, smooth, strong, and set at an angle of forty-five degrees. The feet should be uniform with concave sole, strong bars, and large elastic frog.

The chest should be medium wide and deep. It is important that the ribs be well-sprung, long, and close. The back must be short, straight, and broad.

After the horse has been subjected to detailed inspection, he is examined for action. Here again, observation should be made from the front, side, and rear. He should possess a walk, rapid, flat-footed, and in line, and a trot free, straight, smooth, springy, going well off his hocks, without extreme knee fold. Saddle horses are also judged on their canter, which should be slow, collected, and easy; the horse should canter from either lead, and there should be no cross-canter.

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CHAPTER XVIII

DISEASES, AILMENTS, AND PARASITES

That approximately seventy-five per cent of the diseases of the horse are due to incorrect ventilation of the stable, while the remainder are due to faulty care, was stated by an able veterinarian of Orange County. The importance of proper ventilation of stables is discussed in the chapter on Housing. The diseases of the horse are many, but primarily those found in horses in Orange County are discussed.

ABORTION

Causes: Certain drugs, the effects of eating some poisonous plants and chemicals or spoiled feed, colic, parasitic infestation, severe blows and kicks on the abdomen, severe exertion, and bacterial infection.

Symptoms: Swollen udder, congested external genitals, an offensive vaginal discharge, finally expulsion of the fetus before period of gestation is completed.

Treatment: Prevention by observation of sanitary precautions at all times is indicated. Hygienic measures at breeding time are imperative. An aborting mare should not be re-bred until tests indicate that she is free from infection.

AZOTURIA

This is also known as black water, or Monday morning disease.

Causes: Overfeeding and lack of sufficient exercise; appears in general shortly after horse begins work following a few days of idleness.

Symptoms: Stiffening or paralysis of the muscles usually in the hind legs, sweating freely, trembling, and passing of black or coffee-colored urine.

Treatment: The ration should be reduced to a minimum; laxative feeds such as bran should be given. If the weather is moderate, the animal may be allowed to exercise in the paddock.

COLIC, OR DIGESTIVE AILMENTS

Causes: Spoiled or indigestible feed, improper methods of feeding and watering, and infected teeth.

Symptoms: The animal refuses to eat, is restless, paws the ground, lies down and gets up frequently, and appears generally nervous.

Treatment: It is advisable to get veterinary assistance. The animal should be made comfortable by removing all harness and covering and by placing him in a well-bedded box stall. If the veterinarian can not come immediately, one-half ounce of pure turpentine in one quart of raw linseed oil may be administered as a drench through the mouth; extreme caution must be observed that the dose is given slowly, so that none

will escape into the lungs and cause pneumonia.

DISTEMPER OR STRANGLES

Causes: Cold, poorly ventilated stables, undue exposure to cold weather, and overwork. Found frequently in stockyards.

Symptoms: Poor appetite, high fever, watery discharge followed by thick, yellow discharge from nostrils, red, dry membranes of the nose, swelling of the glands of the lower jaw.

Treatment: The animal should be isolated, and a veterinarian should be called.

ENCEPHALOMYELITIS OR SLEEPING SICKNESS

(No cases of this disease have been reported to date in Orange County; however, it is found in various other sections of Virginia along the Atlantic seaboard.)

Causes: A filtrable virus, which may be transmitted by ticks and mosquitoes. The disease attacks the central nervous system and belongs to the same group as poliomyelitis in human beings.

Symptoms: Difficulty in chewing and swallowing, fever, sleepiness, grinding of the teeth, and wobbly gait.

Treatment: A veterinarian should be called at once. No attempt at home medication should be made.

FISTULA OF THE WITHERS, AND POLL EVIL

Causes: Authorities differ as to the cause. It is generally thought that injury to or undue pressure on the parts will cause the deep-rooted chronic inflammation known as fistula of the withers and poll evil of the head. In recent years, it has been revealed that BRUCELLA ABORTUS, which causes Bang's disease in cattle, may be the cause.

Symptoms: Withers or poll is hot, painful, and swollen. There may be a discharge.

Treatment: A veterinarian should be called.

HEAVES

Causes: Exact cause is unknown. It may be caused by inhalation of dust from damaged roughage; it usually follows bronchitis.

Symptoms: Double contraction of the blank with each expiration, expanded nostrils, and a short, dry cough.

Treatment: Feeding only sound hay, sprinkling fodder with water, or turning the animals on pasture will aid in correcting the condition.

INFECTIOUS ANEMIS OR SWAMP FEVER

This is also known as malarial fever, slow fever, or mountain fever.

Causes: Extreme heat, high humidity, faulty nutrition, poor sanitation, impure water supply, over-exertion, and heavy

infestation of internal parasites.

Symptoms: The disease is irregular; it may result in a rapidly fatal death, or it may remain chronic for months or even years. Weakness, depression and dropsical swellings on the lower portions of the body and legs, hanging head, shifting weight from one leg to the other, congested eyes, frequent urination, refusing to eat are all symptoms.

Treatment: A veterinarian should be called.

INFLUENZA

This is also known as shipping fever, pinkeye, catarrhal fever, and epizootic cellulitis.

Causes: Excessive hard work, poor hygienic conditions, and over-exposure.

Symptoms: Rapid breathing, harsh coughing, extreme weakness, hanging head, watery discharge from eyes and nostrils, eating very little. This disease is highly contagious.

Treatment: The animal should be isolated, and a veterinarian should be called.

LAMINITIS OR FOUNDER

Causes: Overfeeding of grain, gorging on green plants, any feeding to excess.

Symptoms: Extreme pain and fever, hot and throbbing feet.

Treatment: The feet of the animal should be placed in cold water, and a veterinarian should be called.

NAVEL ILL OR JOINT ILL

Causes: Infection of the navel at birth after the cord has been severed, or prenatal infection of the foal.

Symptoms: Refusal of the foal to walk, swelling of the knee and hock joints, increased temperature and rate of respiration. Death usually occurs early.

Treatment: Clean bedding and sanitary quarters should be prepared for the foaling mare unless she can give birth on pasture. The navel should be disinfected with tincture of iodine immediately after birth. A transfusion of 500 cc. of blood drawn from the jugular veing of the mare may be injected into the foal. This treatment may be repeated if the hocks swell.

PERIODIC OPTHALMIA OR MOON BLINDNESS

Causes: The cause is unknown, but numerous theories exist. The predisposition to the disease is hereditary.

Symptoms: Inflammation of one eye alone or both eyes. The attack is sudden, and in approximately ten days the inflammation decreases, leaving the eye little affected or chalky white and completely blind. Numerous attacks may recur.

Treatment: A competent veterinarian should be called.

PNEUMONIA

Causes: Carelessness in drenching, which allows liquid to flow into lungs.

Symptoms: Chills, fever, rapid breathing, weakness, refusal

to eat, spreading forelegs.

Treatment: Good ventilation, palatable food, blanketing the animal in severe weather will help. A veterinarian should be called.

PURPURA HEMORRAGHICA

This is a non-contagious infection.

Causes: Follows other diseases, especially influenza and distemper. Results from poisonous chemicals in the blood.

Symptoms: Hemorrhage of the nasal membranes, swelling of lips, eyelids, legs, and lower parts of the body.

Treatment: The animal should be given complete rest; his feedings should be reduced; improvements should be made in the hygienic conditions of the stable. A veterinarian may inject drugs into the blood stream as part of the treatment.

WOUNDS AND WOUND INFECTIONS

Causes: Wound infections are caused by germs invading the wound and infecting the tissue. These germs are widely distributed in forage, manure, and the soil.

Symptoms: Septicemia (blood poisoning) is indicated by loss of appetite, stiffness, fever, and depression. Death often occurs if anti-tetanus treatment is not begun immediately.

Treatment: Wound infections can be largely prevented by the removal of sharp objects and foreign matter from the stables or fields, and by hygienic conditions at all times. Simple abrasions of the skin should be immediately treated with

tincture of iodine. If the wound is serious, a veterinarian should be called. If bleeding from the wound is profuse, the flow of blood may be stopped by pressure over the part with a pad of sterile gauze. If this fails and the wound is on a leg, a tourniquet may be applied by tying a thick, twisted cloth around the leg loosely, inserting a stick, and twisting the stick sufficiently tight to stop the bleeding. The tourniquet must be loosened every twenty minutes.

Among the more common ailments of horses are diseases of the bones, which cause lameness.

BOG SPAVIN

This is an enlargement in the depression on the inner front side of the hock. It is formed by a collection of synovial fluid.

BONE SPAVIN

An enlargement of the bone, bone spavin is found on the inside of the hock joint, where the thick bony part tapers into the cannon. Usually gradual in development, lameness caused by bone spavin may disappear after the horse exercises slightly and return after he is rested.

CURB

This is a fullness at the back of the hock below the joint and is caused by a thickening of the ligament which may become hard and cause lameness.

RINGBONE

An unsoundness of the bones immediately below the fetlock which frequently stiffens the action is known as ringbone. When large enough, it may be detected by sight; earlier, it may be felt by the hand.

SIDEBONE

An ossification immediately above the hoof, usually occuring in the front feet is termed sidebone. This formation of bone in the cartilages causes lameness.

SPLINT

Splint occurs between the cannon bone and the small splint bones, located just below the knee. This bony enlargement, which is more common among young animals, usually begins with inflammation, due to strain or injury. Although the horse may be able to walk normally, he is extremely lame at the trot.

STRINGHALT

This is an ailment of the hind legs, involving spasmodic contractions of the muscles. The foot is pulled or jerked upward, in severe cases so violently that the animal is thrown to the ground. It is most noticeable when the animal is backed or when it is first taken from the stall. There is no known cure.

THOROUGHPIN

Thoroughpin is marked by a swelling in the depression between the bone of the hock and the tendons running upward. It is caused by a collection of synovial fluid and may result in lameness.

Proper nutrition, proper management of the feet, good conformation of the animal, and good heredity will all serve to aid in the prevention of diseases of the bones.

When lameness occurs, the animal must receive rest. If the condition is not corrected, a veterinarian should be called for treatment.

INTERNAL PARASITES

Internal parasites are numerous. There are approximately one hundred and fifty kinds of internal parasites which infest horses; however, comparatively few of them do any real damage. Bots, pinworms, threadworms, tape worms, stomach worms, and intestinal roundworms usually cause indigestion and general unthrifty condition. The veterinarians in Orange County have always cooperated with the agricultural agencies each year in treating horses for bots. The charge is nominal, and professional treatment is much to be preferred to attempted home medication.

The presence of internal parasites can usually be detected in the droppings of the horse, which at the same

time exhibits an unthrifty condition. When such conditions occur, it is suggested that the farmer call a veterinarian.

EXTERNAL PARASITES

External parasites in horses reduce their efficiency and promote a generally unthrifty appearance. Common external parasites of the horse are: flies, lice, ticks, and mange mites. Burlap coverings for animals in harness, darkened sheds, and smudges will afford relief to animals from flies. Treating with insecticides will help control lice, ticks, and mange mites; more than one treatment is usually required. Arsenical solution, coal-tar creosote, and nicotine are recommended for the eradication of lice; arsenical solution will aid in the control of ticks; for mange, warm lime-sulphur solution and nicotine solution are preferred.

It appears that D.D.T. may be used satisfactorily for the eradication of external parasites; however, before using such preparation, one should consult an instructor of vocational agriculture.

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CHAPTER XIX

MARKETING

Too often in horse production, the business angle is overlooked. If the management, care and marketing of the horse were regarded more as an industry rather than as a sideline of the farm, more beneficial results could be obtained and greater profits would accrue to the farmer.

As a rule the original producer of the animal receives a lower percentage of the price which a horse brings than is the case with most other farm products. The average farmer is generally indifferent to market demands and lacks the knowledge of the best means of meeting the requirements of the market. Thus the middleman thrives. In order to produce stock of salable value, the farmer must acquaint himself with the type of horse for which there is the greatest demand. The public taste fluctuates, and the most popular class of horse varies.

Horses are classified at markets according to their use; names of the classes are self-explanatory and indicative of the uses to which the animals are put. Traits which determine the market value of a horse are: soundness, conformation, quality, condition, action, age, color, training, and general appearance.

Farmers who raise a few colts each year only as by-products will realize more from the sale if the young horses are broken and trained before being offered for sale. Careful grooming, feeding, training, and handling all serve to enhance the animal and thus help it to bring a higher price. All breeders, but particularly those who raise pure-bred horses and colts for sale, should make use of fairs and shows to exhibit their horses and by this means advertise their business. Other methods of advertising may also be employed in the marketing of pure-bred animals. All animals eligible for registry should be recorded with the association in charge of the studbook for their breed.

Care should be taken that the horse is in prime condition before being offered for sale; a judicious amount of fat is desirable, but in no case should the animal be so heavily fleshed that action is sacrificed or legs and hocks filled. Dealers who attend farm sales make their profit from the purchase, fattening, and immediate sale of animals which the farmer erroneously through he had in good condition.

Various methods of selling horses are employed. They may be sold to horse buyers, through cooperative marketing, and directly to the customer who will use them. The seller should thoroughly familiarize himself with the conditions of sale if he dispoes of his animals by auction. When horses are sold directly to a buyer, it is the best policy

to have a definite understanding, preferably in writing, as to the terms of sale and trial period. Green buyers and inexperienced horsemen can do more damage to a horse in one week than can be undone in months. Two days should be the limit to one's guarantee.

Of the methods of selling, that of selling directly to the ultimate user is by far the most satisfactory. Through the private sale the breeder avoids paying any profit to the middleman, thus nets more actual profit from the sale.

In every case, the seller should conduct his business in such a way that he will have a reputation for integrity, dependability, and fair dealing.

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APPENDIX

SURVEY OF LIGHT HORSES

Name of Farmer	No. A.	No. A. Cul. Per Animal	Number of Horses								TYPES
			Mature			2 Yr.		Foals			
			S	M	G	F	C	F	C		

SELECTING THE HORSE

Age	Temperament	Action	Soundness	Conformation	Other

EQUIPMENT

Halter	Bridle	Bits	Harness	Collar	Saddle	Blanket	Other

HOUSING

Type	Location	Stalls	Passageway	Doors	Windows	Feed Boxes	Mangers

STABLE MANAGEMENT

Grooming	CLIPPING	Care of Feed and Legs (Shoeing)	Stable Vices	Ties	Bedding	Routines

RATIONS

Horses At Work	Idle Horses	Brood Mares	Brood Mares and Foal	After Weaning	1-2 Years	Stallion

BREEDING

Stallion	Age of Mare	Month Bred	Fees	No. Days after Foaling	Aver. Gestation Period	Other

CARE OF BROOD MARE

Exercise and Work	No. Nor. Foals / Av. Wt. Foals	Feeding at Foaling Time	Care of Mare and Foal at Parturition

CARE OF YOUNG HORSES

Schooling and Training

Age to Break to Halter	Methods of Breaking	Walk	Trot	Canter	Working
Age to Break to Bridle and Harness					

Other:

Disease Prevention and Sanitation Program

Marketing

Remarks (History of Light Horse in Orange County)

THE JOCKEY CLUB

250 Park Avenue
New York 17, New York

LIST OF BREEDERS OF THOROUGHBREDS FOR 1943, 1944, AND 1945 - STATE OF VIRGINIA

Allen, Dr. Lewis M.	Winchester
Anderson, Henry W.	Wippernock Farm, Sutherland
Andrews, Dr. John S.	Orange
Armstrong, T. Weedon	Culpeper
Arnold, William S.	Chain Bridge Road, McLean
Ashby, Stanley R.	Middleburg
Audley Farm	Berryville
Back, L. P.	Culpeper
Baird, Alvin V.	Delaplane
Baldwin, A. A.	Dundridge, White Post
Belcher, Benjamin M.	Airlie Farm, Warrenton
Belk, J. B.	Charlottesville
Bennett, Miss Ansley	Cedarville
Bennett, F. W.	Culpeper
Bidstrup, Holger	Burnleigh Farm, Middleburg
Blackburn, Howell	Falmouth
Booker, G. Y.	Abingdon
Bostic, Joseph	Healing Springs
Bowman, Mrs. A. S.	Culpeper
Broaddus, Luther	Berryville
Brookmeade Stable	Upperville

Brown, T. Beatty (Mrs.)	Upperville
Buckley, D. A. Jr.	The Plains
Buckley, Mrs. David A.	The Plains
Burgess, Edwin M.	The Plains
Carter, M. W.	Orange
Chichester, Estate of A. M.	Leesburg
Chrysler, Walter P. Jr.	North Wales Stud, Warrenton
Clark, John Balfour	The Plains
Clark, Robert H.	Upperville
Clark, R. Sterling	Sundridge, Upperville
Clark, Robert V.	Middleburg
Cockerill, W. H.	Purcellville
Clarke, George C.	Belmont Plantation, Leesburg
Colbert, L. R.	Fredericksburg
Connors, Philip	Middleburg
Corbin, H. L.	Boyce
Criser, Clarence C.	Hot Springs
Crouch, C. H.	Aldie
Crouch, H. M.	Aldie
Cushing, Miss Elizabeth L.	The Plains
Dancer, H. M.	Kinloch, The Plains
Daniel, Mrs. Charlotte B.	Brandon
Darden, Miss Antoinette	Oak Island, Suffolk
DeButts, W. H.	Upperville
Djordjadze, Dimitri	Plain Dealing Farm, Scottsville
Dorman, Frank	Warrenton

Dorman, Mrs. Nancy C.	Warrenton
Eacho, James T.	1800 East Grace St., Richmond
Edens, Robert L.	Big Stone Gap
Elgin, Robert L.	The Plains
Ellett, Thomas W.	Cedar Grove Farm, Route #1, Midlothian
Ellis, Mrs. Geo. A.	Hot Springs
Ellis, H. E.	R. F. D. #13, Broad St. Rd. Richmond
Ellis, R. H.	R. F. D. #13, Broad St. Rd. Richmond
Ellis, Mrs. T. Kenneth	Hot Springs
Faulconer, P. H.	Charlottesville
Fitchett, Lewis	Greenbush
Fleming, C. P.	Leesburg
Flippo, Arthur P.	Doswell
Foley, Lionel J.	Warrenton
Fred, Dorothy	Middleburg
Freeman, John F.	Fredericksburg
Furr, Harry E.	Aldie
Furr, Walter L.	Mountville
Gall, John C.	Upperville
Garth, Jas. W. 3rd	R. R. #2, Charlottesville
Garth, Thomas H.	R. R. #2, Charlottesville
Garth, Mrs. Jane Hancock	R. R. #2, Charlottesville
Garth, J. Woods 2nd	Charlottesville
Garth, William	Charlottesville

Gerhardt, Mrs. Earl A.	1304 Edley Place, Lynchburg
Gilpin, McGhee Tyson	Boyce
Goodrich, Beatrice	Middletown
Graham, S. O.	Purcellville
Gray, Leslie B.	Orange
Gray, Mrs. Leslie H.	Orange
Greer, Christopher M. Jr.	Middleburg
Greer, Mrs. Christopher M. Jr.	Middleburg
Gregory, John S.	Box 57, Norfolk
Griffing, J. D.	Berryville
Guest, Raymond R.	Rock Hill Farm, Bayard, Warren County
Gulick Mrs. Mary Maxwell	Duhallow Farm, Warrenton
Haas, Miss Nancy M.	Warrenton
Hamilton, A. S. Jr.	Warrenton
Hardin, Mrs. Taylor Scott	Newstead, Upperville
Harrison, Chas. C. Jr.	The Plains
Harrison, Mrs. Chas. C. Jr.	The Plains
Hawes, B. J.	Round Hill
Haynes, J. Marvin	Aldie
Herring, Chas. G.	Dayton
Herring, Thos. G.	Dayton
Hewitt, Abram S.	Montana Hall, White Post
Householder, E. Wallace	Clifton Farm, Markham
Howard, Herbert	Leesburg
Hulbert, Wm. P.	Middleburg

Hummer, T. S. & Son	Millwood
Humphrey, R. L. Dr.	Mountville
Ingalls, Mrs. Fay	Hot Spings
Jackson, Howell E.	Middleburg
Jacobs, Edward B.	Boyce
Johnston, Mrs. Ewart	Boyce
Johnston, Capt. Ewart	Boyce
Jones, Arthur H.	Somerset
Jones, John P.	Inglecrest Stud, Charlottesville
Jones, Paul	Fredericksburg
Jones, W. D.	Fredericksburg
Jones, William G.	Charlottesville
Kerr, Mrs. Dion Sr.	Warrenton
Keyser, J. E.	Flint Hill
Kirkpatrick, Herbert	Leesburg
Kirkpatrick, R. J.	Warrenton
Kirkpatrick, Richard P.	Middleburg
Kirkpatrick, Col. R. V.	Warrenton
Kronfeld, Dr. Charles	Herndon
Layman, Ernest A.	Rural Route #3, Harrisonburg
Lee, Edward B.	White Post
Lee, Elizabeth H.	"Brandonlea", Waterford
Lee, Robert E. Memorial Foundation	Stratford
Leith, J. E.	Middleburg
Lindsay, Jas. B.	Boyce

Lindsey, E. A.	Boyce
Lipscomb, S. Ross	Leesburg
Livingston, Mrs. L. A.	Berryville
Macdonald, Mrs. Angus S.	Rapidan
MacLeod, Colin Jr.	Huntlands Farm, Middleburg
Marsh, Paul R.	Catlett
Mason, Sam A.	Charles City
Maxwell, Miss Mary	Duhallow Farm, Warrenton
Mayo, Mary D. (Mrs.)	Merry Meadow, Ellerson
McClanahan, Raymond	Box 1032, Warrenton
McCleary, George D.	McLean
McConnell, Robert E.	The Plains
McGehee, H. C.	Berryville
McIntosh, Col. J. W.	Overlook Farm, The Plains
McLane, John T.	Cornwall Homestead, R. F. D. #2, Middleburg
McNeir, Mrs. Burrows	Warrenton
Meade, D. H.	The Plains
Meade, Edward H.	Marshall
Mellon, Paul	Upperville
Mellon, Mrs. Paul	Rokeby Farms, Upperville
Mentzer, P. C.	Lovettsville
Merrill, Keith	Route #2, Herndon
Metzger, Wm. B.	Leesburg
Miller, Dr. E. B.	Elkton
Miller, W. A.	Washington

Mills, Larry	Box 111, Middleburg
Mitchell, Mrs. R. W.	Hilton Village
Moore, Mrs. Marie A.	Warrenton
Moran, Jean	Middleburg
Morven Stud	Charlottesville
Mosby, Mrs. N. T.	Ellerson
Mountvill Corporation	Mountville
Murphy, John E.	4519 19th St. N. Arlington
Neder, James W.	Route #1, Alexandria
Nesbit, Miss Elizabeth	Alwington Farms, Warrenton
North Cliff Farm	Rixeyville
O'Keefe, Frank A. Jr.	P. O. Box 398, Warrenton
Palmer, Geo. C.	Riverdale Farms, Charlottesville
Palmer, J. Russell	Staunton
Parsons, L. L.	Fairfax
Payne, Jack	Orange
Peach Brothers	Upperville
Pearson, Edward A.	Hume
Peach, W. F.	Leesburg
Perry, Mrs. W. Haggin	Beau Val Farm, Cobham
Phipps, Hubert B.	Marshall
Preece, Stewart	Vienna
Preston, W. A.	Amsterdam
Pritchett, Karl W.	920 Marye Street, Fredericksburg
Randle, U. S.	Fairfax
Randolph Dr. A. C.	Upperville

Randolph, Mrs. A. C.	Upperville
Randolph, Robert John	Hartfield
Randolph, T. A.	Upperville
Rawlings, George C. Jr.	c/o L. R. Colbert, Fredericksburg
Reed, Dr. William C.	Warrenton
Reid, A. C.	Upperville
Reled Memorial Foundation, Inc.	Stratford
Remount S ervice	Front Royal
Reynolds, Homer C.	Waynesboro
Reynolds, Richard S. Jr.	Hawkwood Farm, Gordonsville
Riticor, Robert A.	Leesburg
River Edge Farm	Charles City
Riversible Holding Corp.	Upperville
Rogers, S. H.	Hamilton
Rudacille, Paul W.	Front Royal
Rumsey, Miss Mary A.	The Plains
Sackett, A. J.	Riverview Farm, Shirley
St. Emma Industrial & Agricultural Institute	Rock Castle
Sands, Mrs. D. C.	Middleburg
Satterwhite, Thomas B.	Stuarts Draft
Schlessinger, R. H.	Charlottesville
Scott, George H.	1204 Charles St. Fredericksburg
Scott, Mrs. Marion duPont	Montpelier Station
Shaffer, Harvey W.	Milldale

Shearer, Miss F. Julia	Meander Farm, Locust Dale
Sigler, M. G.	Mt. Jackson
Simpson, James P. Jr.	Falmouth
Simpson, Samuel C.	124 Luray Ave. Front Royal
Skinner, John T.	Middleburg
Skinner, Mrs. Mildred B.	Middleburg
Slosson, George Jr.	Hot Springs
Smith, Mrs. Margot K.	Middleburg
Smith, Morton W.	The Plains
Sniffen, Mrs. J. W.	Clear Brook
Spratt, Tom	Box 539, Fredericksburg
Strauss, Lewis L.	Brandy
Tabler, D. H.	Charles Town
Taylor, A. T.	Box 1456, Norfolk
Taylor, Forest T.	Staunton
The Thorncroft Company	Wicomico Church
Townsen, J. B. J.	c/o Mrs. T. Lee Evans, Warrenton
Trunnell, Emma Florence	R. F. D. #3, Herndon
Trunnell, Isaac H. Jr.	R. F. D. #3, Herndon
Tyler, William B. Jr.	Aldie
Van Clief, Mrs. Courtlandt	R. F. D. #3, Ivy
Van Clief, Mrs. R. A.	Wydrie, Esmont
Vincent, Miss Geraldine, C. B.	Lorton, Fairfax County
Virginia Polytechnic Institute	Blacksburg
Vogel, Martin, Jr.	Charlestown, Jefferson County

Wagely, Mrs. H. W.	Charlestown, Jefferson County
Warren, C. R.	Newport
Watkins, B. Garrett	Stratford College, Danville
Watson, Capt. Thos. A.	Gordonsville
Waugh, Goree G.	Culpeper
Waugh, Mrs. M. R.	Brandy
Weir Brothers	Berryville
Westenberger, Mrs. F. E.	Haymarket
White, Albert S.	Waterford
White, Arthur J.	Middleburg
White, Dr. Charles S.	R. D. #1, Leesburg
White, Jere	Winston
White, Raymond	Staunton
White, W. Holden	Middleburg
Whitehouse, Mrs. Norman deR.	Halfway House, Middleburg
Whitney, Mrs. M. E.	Upperville
Wiley, J. L.	Upperville
Williams, Wyatt A.	Orange
Wiltshire, Turner (Maj.)	Middleburg
Winmill, E. W.	Warrenton
Winmill, Robert C.	Clovelly Farm, Warrenton
Wright, Mrs. D. B.	Abingdon
Wright, D. B.	Abingdon
Zarbock, Mrs. William F.	Fairfax

AMERICAN SADDLE HORSE BREEDERS' ASSOCIATION

204-5-6 Urban Building
Louisville, Kentucky

LIST OF BREEDERS FOR 1945, 1946

STATE OF VIRGINIA

Abbitt, A. W.	Hilton Village
Akers, Mr. and Mrs. Clyde	Wytheville
Anderson, Earl P.	Saltville
Bowen, Mr. and Mrs. M. H.	Eland
Carolanne Farm	Norfolk
Cassell, Garland D.	Max Meadows
Davis, J. Garnett	Max Meadows
Gillespie, John C.	Tazewell
Gregg, W. W., Jr.	New Market
Hoge, Mr. and Mrs. E. M.	Eland
Hume, J. H.	Cartersville
Leatherwood Farms	Bluefield
Long, Eli	Norfolk
Miller, Mr. and Mrs. Walter A.	Mt. Jackson
Salyer, Mr. and Mrs. M. E.	Big Stone Gap
Scott, Thomas A.	Richmond
Scyphers, C. E.	Abingdon
Swain, K. C.	Roanoke
Todd, Wiley	Independence
Umberger, Mrs. L. J.	Wytheville
Vinyard, Julia Day	Vinton
Virginia Polytechnic Institute	Blacksburg

Welch, Emily Cassell	Max Meadows
Wheeler, Elizabeth Brown	Keswick

THE MORGAN HORSE CLUB

90 Broad Street
New York 4, New York

LIST OF BREEDERS FOR 1945

STATE OF VIRGINIA

Jackson, J. E.	Corbin Hall Farm, Samos
Stone Farm Association	Charlottesville
George Washington Birthplace National Monument	Washington's Birthplace

CLEVELAND BAY SOCIETY OF AMERICA

WHITE POST, VIRGINIA

LIST OF BREEDERS FOR 1945

STATE OF VIRGINIA

Smith, A. Mackay	White Post