

THE EVOLUTION
OF BREEDS

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THE EVOLUTION OF BREEDS

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THE
Evolution of Breeds

An Analytical Study of Breed Building
As Illustrated in
Shorthorn, Hereford and Aberdeen Angus Cattle
Poland China and Duroc Jersey Swine

BY
DONALD F. MALIN

Live Stock Editor of Wallaces' Farmer

Des Moines, Iowa
WALLACE PUBLISHING COMPANY
1923

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PREFACE

A KNOWLEDGE of pedigrees is an essential adjunct to pure-bred live stock husbandry. Both the student of animal husbandry who plans to acquire a herd of pure-breds in the future, and the active breeder already engaged in the management of a herd, wants, as a matter of course, to familiarize himself with the bloodlines of his chosen breed. Herd books and pedigree forms facilitate the study of the bloodlines of individual animals. There are, however, fewer facilities for the study of the pedigree of a breed as an entirety. The average breeder or student has neither the time nor the equipment with which to obtain anything more than a rather general idea as to the pedigree background of a breed. This pedigree background, or breed history in terms of bloodlines, is of value to every thoroughgoing breeder. In *The Evolution of Breeds*, an effort has been made to present histories, from the pedigree standpoint, of a number of widely distributed breeds of cattle and swine, and, using these examples, to show at the same time the manner in which a breed is founded and constructed.

In the history of every breed there have been a few prepotent sires which have largely determined the trend of breeding within their breeds. *The Evolution of Breeds* is primarily concerned with those sires which have been most effective in the development of the Shorthorn, Hereford and Aberdeen Angus breeds of cattle and the Poland China and Duroc Jersey breeds of swine. A thorough study of breed history and the careful analysis of many pedigrees have determined the sires worthy to be included among the important foundation sires of their breeds. Their influence upon the trend of bloodlines in their breeds and their relation to modern animals are discussed in this volume. Incidentally, there are brought out the methods by which master-breeders of the past have shaped the destinies of their breeds through the use of the blood of these fundamentally important sires.

It is hoped that *The Evolution of Breeds* may in some measure stimulate the breeder and student alike to a deeper appreciation of

the significance of the pedigree and to a more thorough study of the principles of animal breeding. A careful study of inbreeding and the crossing of inbred strains is particularly commended to both the active and the prospective breeder.

Grateful acknowledgement is made to Mr. Henry A. Wallace, Mr. John B. Wallace and Mr. Donald R. Murphy for helpful suggestions in the preparation of the text of *The Evolution of Breeds*. Appreciation is also expressed to the officials of the breed record associations representing the Shorthorn, Hereford and Aberdeen Angus breeds of cattle and the Duroc Jersey and Poland China breeds of swine for their splendid co-operation in tracing back, at the expense of much time and labor, difficult pedigrees involved in the research work incident to the book.

DONALD F. MALIN.

Des Moines, Iowa,
July 25, 1923.

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INTRODUCTION

IN THE EVOLUTION OF BREEDS an attempt has been made to trace the development of a number of important breeds of cattle and hogs, not merely by noting the conspicuous breeders and animals associated with the history of these breeds, but by outlining in detail the manner in which these breeds have evolved from a few foundation animals.

The Shorthorn, Hereford and Aberdeen Angus breeds of cattle and the Poland China and Duroc Jersey breeds of swine are the concrete examples cited in *The Evolution of Breeds* to illustrate the principle of breed evolution which applies to any breed of animals. It will be found upon examination that every recognized breed has arisen from the concentration of the blood of one or a very few animals of greater than ordinary merit. The development of the breeds referred to is from this standpoint typical of their many companion breeds.

In the belief that it will afford a solid basis for the constructive study of pedigrees, the writer has sought to describe the manner in which these breeds have been built upon certain bloodlines. It is the hope of the writer that *The Evolution of Breeds* will stimulate an interest in the true significance of pedigrees among students of animal husbandry and active live stock breeders.

In the treatment of the five breeds considered in *The Evolution of Breeds*, the history of each breed is first briefly reviewed. Following this, a basis for the foundation sire studies is laid by means of a consideration of the bloodlines of the showring winners of a recent period.

Bloodlines of Show Winners Analyzed

The material used in the studies of the ancestry of showring winners comprises three-generation pedigrees of the first, second and third prize winners in each individual class at the most important show of the breed over a period of years. In the case of the cattle breeds, the subjects of the showring studies are the principal winners at the International Live Stock Exposition from 1918 to 1922, inclusive. The showring leaders in the swine breeds are determined by a tabulation of the principal winners at the National Swine Shows from 1920 to 1922.

A simple point system has been used to illustrate the relative influence of the recent showring sires of these breeds. Under this system, which is followed throughout the text of *The Evolution of Breeds*, the sire of each first prize winner receives 32 points, each of the grandsires of every first prize winner receives 16 points, and the great-grandsires of each first prize winner are awarded 8 points each.

In like manner, the sire of each second prize winner has been given 24 points, the grandsires 12 points each, and the great-grandsires 6 points each. The ratio of points for the ancestors of the third prize winners is 16 points to the sire, 8 points to each grandsire, and 4 points to each great-grandsire.

The following table illustrates the method of allotting points to the ancestors of the showring winners:

	First Prize	Second Prize	Third Prize
Sire	32	24	16
Grandsire	16	12	8
Great-grandsire	8	6	4

In the chapters devoted to a discussion of show winners will be found a number of tables giving the leading sires in each breed from year to year, as well as for the combined years of the period under consideration. The first column of these tables summarizes the points credited to each sire, while the second column gives the number of individual winners in which each sire appeared as an ancestor within three generations. Animals which won at two or more shows are numbered but once in the second column, although points are of course credited to their sires for each of their winnings. It is well to point out that in the chapters having to do with show winners, the term "showring sire" is used to refer to male ancestors in the first, second or third generation of the pedigrees of the prize winners.

Throughout each of the foundation sire studies in *The Evolution of Breeds*, the influence of each of these sires upon later animals is expressed in terms of the percentages of the blood of the foundation sires in the pedigrees of modern animals. These percentages refer to the actual mathematical amount of the blood of a foundation sire contained in the entire pedigree of a later animal. The determination of these blood percentages, many of which are cited in the book, has involved the analysis of hundreds of pedigrees of each breed. It was necessary to trace many of these pedigrees back ten or more generations, thus necessitating the application of a very large amount of time and labor.

Pedigree of William of Orange

1 Name William of Orange 95736		Calved	March 3, 1883
13/32 Ch. of E.			
Bred by Amos Cruickshank, Sittyton.		Color	Red
<u>1</u> First Generation		<u>32</u> Fifth Generation	
<u>2</u> Roan Gauntlet 45276 1/2 Ch. of E.		<u>32</u> Lancaster Comet (11663)	
<u>3</u> Orange Blossom 21st 5/16 Ch. of E.		<u>33</u> Virtue	
<u>4</u> Second Generation		<u>34</u> Lord Raglan (13244)	
<u>4</u> Royal Duke of Gloster 20901 1/2 Ch. of E.		<u>35</u> Duchess of Gloster 6th	
<u>5</u> Princess Royal 1/2 Ch. of E.		<u>36</u> Lancaster Comet (11663)	
<u>6</u> Caesar Augustus (25704) 1/2 Ch. of E.		<u>37</u> Virtue	
<u>7</u> Orange Blossom 14th 1/8 Ch. of E.		<u>38</u> Lord Raglan (13244)	
<u>8</u> Third Generation		<u>39</u> Maidstone	
<u>8</u> Grand Duke of Gloster 19900 1/2 Ch. of E.		<u>40</u> The Queen's Roan (7389)	
<u>9</u> Mimulus 1/2 Ch. of E.		<u>41</u> Cow by Will Honeycomb (5660)	
<u>10</u> Champion of England (17526)		<u>42</u> Plantagenet (11906)	
<u>11</u> Carmine		<u>43</u> Verdant	
<u>12</u> Champion of England (17526)		<u>44</u> Lord Raglan (13244)	
<u>13</u> Emily		<u>45</u> Corianda	
<u>14</u> Knight of the Whistle (26558)		<u>46</u> John Bull (11618)	
<u>15</u> Orange Blossom 12th 1-4 Ch. of E.		<u>47</u> Cow by Billy	
<u>16</u> Fourth Generation		<u>48</u> The Queen's Roan (7389)	
<u>16</u> Champion of England (17526)		<u>49</u> Cow by Will Honeycomb (5660)	
<u>17</u> Duchess of Gloster 9th		<u>50</u> Plantagenet (11906)	
<u>18</u> Champion of England (17526)		<u>51</u> Verdant	
<u>19</u> Mistletoe		<u>52</u> Matadore (11800)	
<u>20</u> Lancaster Comet (11663)		<u>53</u> Baoliana	
<u>21</u> Virtue		<u>54</u> Brutus (10000)	
<u>22</u> The Czar (20947)		<u>55</u> Laura	
<u>23</u> Cressida		<u>56</u> Knight of the Grand Cross 21625	
<u>24</u> Lancaster Comet (11663)		<u>57</u> Dame Quickly	
<u>25</u> Virtue		<u>58</u> Monarch (13347)	
<u>26</u> Lord Sackville (13249)		<u>59</u> Seraph	
<u>27</u> Eliza		<u>60</u> Champion of England (17526)	
<u>28</u> Knight of the Garter (22062)		<u>61</u> Candia	
<u>29</u> Blanche		<u>62</u> The Baron (13833)	
<u>30</u> Prince Imperial 21740 1/2 Ch. of E.		<u>63</u> Orange Blossom	
<u>31</u> Orange Blossom 2nd			

This Wallaces' Farmer Five-Generation Pedigree Chart presents in less space the same information that appears in an ordinary five-generation pedigree. In this form the relationship of the various ancestors is designated by the key numbers preceding the names. Thus the sire of William of Orange, the subject of this pedigree, is No. 2 and the dam is No. 3. The key number of the sire of any animal is twice the key number of the animal. Thus the sire of 2 is 4, of 4 is 8, etc. The key number of the dam of any animal is twice the key number of that animal plus 1. Thus the dam of 4 is 9, of 5 is 11. Males are always even numbers, females odd. Ancestors of the sire of the subject of the pedigree are denoted by underlined key numbers, while the numbers of the dam's ancestors are not underlined.

The procedure employed in tracing these blood percentages of the foundation sires is illustrated on page xv, in the pedigree of the Shorthorn bull, William of Orange. The object of this example is to determine the percentage of Champion of England blood in the pedigree of William of Orange.

Champion of England appears five times in this pedigree. Each of his sons and daughters is considered as 50 per cent, or one-half, Champion of England. Thus, in the fourth generation, is noted Prince Imperial, one-half Champion of England, and in the third generation are Grand Duke of Gloster and Mimulus, each of them one-half Champion of England.

Orange Blossom 12th, in the third generation, is but one-fourth Champion of England, since her sire was one-half Champion of England but her dam had none of this blood. Orange Blossom 14th, in the second generation, had but one-eighth Champion of England, or just half as much as her dam, her sire having none. When mated to Caesar Augustus, one-half Champion of England, Orange Blossom 14th produced Orange Blossom 21st, that carried five-sixteenths Champion of England blood, or half the sum possessed by her two parents.

The mating of Grand Duke of Gloster and Mimulus, each of them one-half, made Royal Duke of Gloster also one-half Champion of England. When Royal Duke was mated to Princess Royal, half Champion of England, the resulting offspring, Roan Gauntlet, also carried one-half, or 50 per cent, Champion of England. The final step, the mating of Roan Gauntlet and Orange Blossom 21st, gave to William of Orange thirteen thirty-seconds Champion of England blood, or 40.56 per cent, when reduced to a percentage basis.

SHORTHORNS

CHAPTER 1

AN OUTLINE OF SHORTHORN HISTORY

THE fertile valley of the river Tees in Northeastern England was the cradle of the Shorthorn. In this section, late in the eighteenth century, there was born a race of cattle destined to become the most numerous and one of the most valuable of the world's breeds of beef cattle. The counties of York and Durham, in the Tees valley, had long been the home of a type of cattle known as the Teeswater breed, characterized by size of frame, strength of bone and the ability to attain great weights at maturity. The cows of the Teeswater sort were credited with marked milking properties. In color, these ancestors of the Shorthorn were of various combinations of light or yellowish red and white.

Throughout most of the eighteenth century, the breeders of the Teeswater stock seem to have been quite generally in accord as to the type of cattle best suited to their operations. It was not, however, until within the last two decades of the century that the breed began to take definite form. The moulding of the Shorthorns was virtually commenced by the skillful hands of two brothers, Charles and Robert Colling, tenant farmers in Durham. Their foundation material was secured in 1783, and comprised the bull Hubback (319) and a number of cows, purchased at the Darlington market.

Colling Studied Bakewell's Methods

Charles Colling was a student of Robert Bakewell, the first man who bred live stock scientifically. Quick to discern the potential value of the Teeswater cattle, Charles and his brother, Robert, set about to improve and establish the type. Their first years with the cattle were spent in experimenting in search of breeding material most nearly approaching their ideal. After ten years, Charles Colling produced a bull that evidently met the requirements of his breeder. In the use of Favorite the Collings applied the Bakewell system of in-and-in breeding, mating Favorite to his daughters, granddaughters and occasionally to his female descendants in the fourth and fifth generations. Comet (155), an illustrious sire and noted also as the first Shorthorn to sell for \$5,000, came from the

mating of Favorite and Young Phoenix, a heifer that had been produced from the union of Favorite with his own dam.

The intensification of the blood of Favorite, and in less degree of Hubback and Lady Maynard, imparted to the Colling Shorthorns an improvement in fleshing ability and a refinement in quality that soon drew the attention of contemporary breeders. The type became popular, and practically all of the early nineteenth century breeders drew heavily upon the Colling cattle for breeding stock. The development of the Colling herds and the subsequent introduction into other hands of the blood of Colling-bred sires, especially Favorite, occupied the first epoch, or formative period, of Shorthorn history.

Associated with the Colling period are the memories of such Shorthorn celebrities as the celebrated "White Heifer That Traveled" and the redoubtable Durham Ox, the latter of which is said to have weighed 3,400 pounds. This noted pair, both sired by Favorite, was widely exhibited throughout the United Kingdom for a number of years. The preparation and exhibition of these two worthies by their breeders, the Collings, was a shrewd piece of advertising, since it focused the attention of the British public upon the new breed.

The Era of Bates and Booth

The second era of Shorthorn history is concerned with the activities of Thomas Bates, of Kirklevington, and the Booths, of Killerby and Warlaby, and the many other breeders who gathered about these rival standards. Although ultimately developed into two distinct types, these herds sprang from the common foundation of Colling-bred animals. Kirklevington, the farm of Bates, was the Shorthorn capital of the world from 1830 to 1850, and during this time Shorthorn history was made by Belvedere (1706), the Duke of Northumberland (1940) and the Duchess and Princess tribes of females. From 1850 to 1875, the popularity of Bates blood steadily grew, culminating in the historic New York Mills auction in America in 1873 and the sale in England in 1876 of the bull Duke of Connaught (33904) for \$26,904.

The Booths, Thomas, John and Richard, bred cattle of a type distinct from that of Bates, emphasizing especially the carrying of meat. English showyard annals from 1840 until almost the end of the century are replete with the exploits of such Booth-bred immortals as Crown Prince (10087), Commander in Chief (21451), Bride Elect, the famous "Queens" and their descendants.

The intense rivalry between the camps of Bates and Booth, a

veritable "War of the Roses," was the center of Shorthorn interest during the mid-years of the nineteenth century. While this struggle for supremacy was going on, however, there was quietly developing in Scotland a force that was destined to revolutionize the breed and to cause the influence of Booth and Bates to sink into insignificance. The story of how this force was evolved forms the third period of Shorthorn history.

Amos Cruickshank and Scotch Shorthorns

The era of Scotch breeding centers about the bull Champion of England (17526) and his breeder, Amos Cruickshank, of Sittyton, Aberdeenshire, Scotland. The Cruickshank herd was established in 1837 with animals of choice individual merit, little regard being paid to bloodlines. To a considerable extent, the early Cruickshank animals came from the Colling foundation through herds other than those of Booth and Bates, thus representing a large variety of bloodlines.

After testing many sires of widely divergent breeding, Mr. Cruickshank succeeded in breeding in his own herd the sire which fixed the type which he had sought for a quarter of a century. The vigorous, early-maturing, well-fleshed cattle produced at Sittyton by Champion of England and his descendants were a new and distinctive kind of cattle and they proved almost immediately popular with many British breeders. Within a comparatively few years the Scotch influence wrought a total change within the herds of both Britain and America. Today there are no herds of beef Shorthorns that have not felt the Champion of England impression.

The success of Champion of England induced Mr. Cruickshank to concentrate the blood of this sire in order to intensify the desired characteristics. This was accomplished through the use of such Champion of England-bred bulls as Royal Duke of Gloster 20901, Pride of the Isles 45274, Roan Gauntlet 45276 and Cumberland 50626. This fixation of the Champion of England blood resulted in animals that so universally appealed to Shorthorn breeders that the Cruickshank herd now occupies a historical position comparable to that enjoyed by the Colling herds three-quarters of a century before, and Champion of England may fairly be termed the "Favorite of Scotch Shorthorns."

The first cattle of Shorthorn origin to reach American shores were brought to Virginia in 1783 by the firm of Gough & Miller. As early as 1800, cattle bred from this importation had penetrated to Ohio and Kentucky. During the first part of the nineteenth century, the Shorthorn banner was more firmly implanted in Amer-

ica through importations made by Colonel Lewis Sanders, Felix Renick, the Ohio Importing Company and others.

After 1850, importations from England were frequently made and enthusiasm in the breed circles was maintained at a high point. Particularly prominent at this time were the herds of New York and the Ohio valley states. During this period the breed made rapid encroachments into the Mississippi valley and western states.

In this age of prosperity, the Shorthorn councils included such leaders as Robert A. Alexander, William Warfield, Abram Renick and B. F. Van Meter, of Kentucky; J. H. Pickrell, of Illinois; J. H. Kissinger, of Missouri, and Colonel William S. King, of Minnesota. The period from 1850 to 1875 was the golden age for Bates breeding. Cattle of Bates descent dominated American herds. Cattle tracing in all lines to Bates-bred animals were regarded as the cream of the breed, and the demand for such animals became so keen as to result in an era of speculation that has never been exceeded. The culmination came in the oft-mentioned New York Mills sale of September 10, 1873, where English nobility competed with American wealth for possession of the prized Duchesses and Oxfords, resulting in an average of \$3,504 for 109 animals.

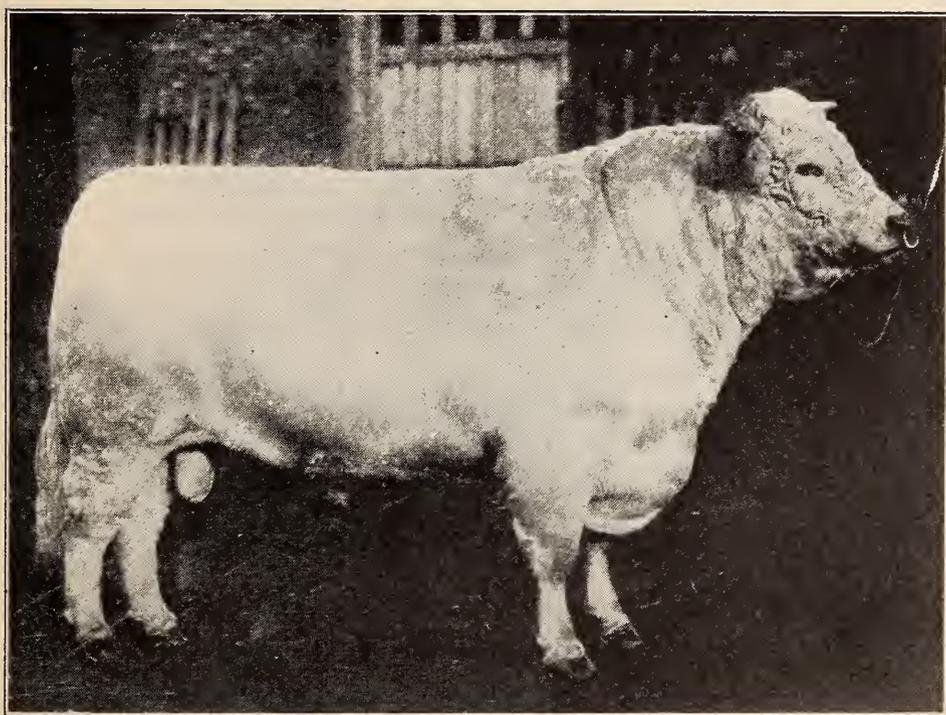
The Scotch Invasion of America

The seeds of Scotch invasion had by this time been sown in America. Prior to 1880, a few pioneers of the Scotch type had reached the herds of the United States and Canada. These representatives met with favor, and the importation of Scotch-bred cattle was taken up by such eminent breeders as William Miller, James I. Davidson and John Dryden, of Canada, and Colonel W. A. Harris, Luther Adams, C. B. Dustin and others, of the states.

The twenty years from 1880 to 1900 witnessed the triumph of the Scotch type over the Bates cattle, a struggle of intense historic interest and of vital significance to the Shorthorn breed. The victory of the Cruickshank cattle led gradually to the position which they now hold as the preponderant element in all the foremost American herds.

Notable among the earlier users of Scotch blood in this country were J. H. Potts & Son, of Illinois; Colonel W. A. Harris, of Linwood fame, in Kansas; J. G. Robbins & Sons, of Indiana; C. B. Dustin, of Illinois, and William Miller, Luther Adams and the Cooksons, of Iowa. Associated with the pioneer days of Scotch blood in America are the names of such valuable sires as Duke of Richmond 21525, Baron Victor 42824, Craven Knight 96923, Spartan Hero 77932, Baron Cruickshank 106297 and Gay Monarch 92411.

The most significant occurrence in American Shorthorn affairs thus far in the twentieth century has been the career of Whitehall Sultan 163573. This truly great bull, bred by J. Deane Willis, of England, and imported in dam by E. S. Kelly, of Ohio, has achieved a record as a progenitor of prize winners and useful breeding cattle that has seldom been approached. The merit of his descendants produced while in service at the Anoka Farms of George Harding & Son, of Wisconsin, led to such generous use of his blood that there are today practically no herds which have not been extensively influenced by Whitehall Sultan.



WHITEHALL SULTAN 163573

The most influential sire produced by the Shorthorn breed thus far in the twentieth century.

Outstanding among other Shorthorn developments of the past twenty-five years have been the glorious records of Avondale 245144, Whitehall Sultan's greatest son, in the Carpenter & Ross herd, of Ohio, and Villager, used with distinguished success by D. R. Hanna, of Ohio, and Weaver & Garden, of Iowa. Among a host of other valuable sires used during this period may be noted Gainford Marquis 370985, Cumberland's Last 229822 and Choice Goods 186802. Many herds now in existence show the impress of these bulls.

In Great Britain, the successors of Amos Cruickshank have continued his work, using in large degree animals that came directly or by descent from his own herd. The breed owes much to the constructive efforts of such breeders as William Duthie, of Collynie; the Marrs, of Uppermill; Sylvester Campbell, of Kinellar; the Laws, of Sanquhar; James Durno, A. M. Gordon and others, of Scotland, while much is also due to the accomplishments of such English breeders as J. Deane Willis and C. H. Jolliffe.

This brief sketch has merely touched upon the principal points of historic interest in Shorthorn development. Space is here lacking to refer in detail to those leaders which have been listed, as well as to others who contributed notably to Shorthorn advancement. Those who wish to review the progress of the breed in detail can not do better than to consult that admirable history of the breed, "Shorthorn Cattle," by Alvin H. Sanders.

The principal factors in the evolution of modern Shorthorn type are considered in the six chapters immediately following this. The first step is a study of the bloodlines of prominent Shorthorn winners within a recent five-year period. This is followed by a discussion of the foundation sires which were really vital forces in the moulding of the twentieth century Shorthorn. As a basis for determining the significant foundation animals, analyses have been made of the pedigrees of a large number of recently-bred animals. These analyses, the preparation of which involved much time and study, show the percentages of the blood of the most important foundation sires found in the pedigrees of living Shorthorns.

Champion of England Is Foremost Foundation Sire

Observers of Shorthorn bloodlines will agree that in the ancestry of the Scotch type, Champion of England will appear as the foremost foundation sire. This is amply borne out by the analyses and this sire has been given first consideration in this study. The influence of Royal Duke of Gloster 20901 and Cumberland 50626, two most important descendants of Champion of England, has also been measured. A fourth foundation sire in Lord Raglan (13244) has been included, largely because a majority of the most prepotent ancestors of the Scotch type originated from a combination of Champion of England and Lord Raglan blood.

CHAPTER 2

THE SIRES OF RECENT SHORTHORN WINNERS

ANY study of Shorthorn bloodlines may very properly begin with the animals which are exerting the greatest influence upon the breed at the time the study is made. In his search for the hereditary material best suited to his uses, the active breeder first turns his attention to the immediate ancestors and later considers the foundation animals which have contributed to the breed. A survey of the present influences within a breed is necessary in order properly to interpret the happenings of the past and to forecast intelligently the trend of the future.

Breeders Guided by the Showring

Breeders of beef cattle commonly use the standards of the show ring in measuring the usefulness of their animals. In a general way, the reputations of prominent sires are achieved by the performance of their progeny in the showyards. Frequently the prestige of a sire is colored by the less reliable index of sale prices obtained for his descendants. As a rule, however, breeders resort to the annals of the showring in forming their opinions of the relative importance of certain animals or bloodlines.

To furnish a basis for determining the sires which have most actively influenced the Shorthorn breed in the United States within recent years, an analysis has been made of the pedigrees of the principal winners at the International Live Stock Show during the five-year period from 1918 to 1922, inclusive. Three-generation pedigrees of each first, second and third prize winner at each of the five shows were used in this study. The first three animals in each class were selected as representing the highest type ideals of their breed. Arguments might, of course, be presented for considering the entire group of winners at these shows. As a matter of fact, such a study, to be minutely complete, would have to embrace the winners at a number of leading shows over a long period of years.

The purpose of this study, however, is to furnish men now breeding Shorthorns with information which they can practically apply in their work. With this in view, the consideration of the three leading winners at the breed's most authoritative show will present a useful and accurate cross-section of the breed. The

five years immediately preceding the time this is written are chosen as the most significant for those who are now actively breeding Shorthorns.

A definite system of awarding points has been employed for determining the extent to which various sires have influenced recent show winners. Each sire of a first prize winner at any of the five latest Internationals has been allotted 32 points, while the grand-sires of each first prize winner have received 16 points and the great-grand-sires 8 points each. In similar fashion the sire of each second prize winner has been given 24 points, the grandsires 12 points each and the great-grand-sires 6 points each. The male ancestors of the third prize winners have been awarded 16, 8 and 4 points, according to the generation in which they appear.

The Leading Sires of 1918

	Points	Number Winners
Whitehall Sultan 163573.....	122	15
Avondale 245144.....	114	11
Sultan Stamp 334974.....	84	4
Double Dale 337156.....	80	8
Dale Clarion 385195.....	80	3
Master Ruby 446601.....	72	3
Villager 295884.....	64	6
Fair Acres Sultan 354154.....	56	3
Radium 385197.....	56	3
Archer's Hope 402425.....	52	3

The application of this point system to the winners of the 1918 International confers the lead for that year upon Whitehall Sultan, as indicated in the above table. The second column of the table, which refers to the number of individual winners in which each sire appeared as an ancestor within three generations, shows that Whitehall Sultan figured in 15 of the 36 winners in 1918, or about 42 per cent.

As a bull that has exerted a more profound influence upon his breed than any other sire of the twentieth century, it is not surprising to find Whitehall Sultan in the leading position. It must be remembered, however, that by 1918 Whitehall Sultan had been dead six years and the show animals carrying his blood were of the second and third generations. His lead in 1918 was necessarily less decisive than it had been at a great many preceding Internationals.

Were the ancestry of the International winners for the ten years immediately preceding 1918 worked out on this basis, Whitehall Sultan would be shown to have an overwhelming lead among the sires, with his son, Avondale, second. In a study of this sort, lim-

ited to a study of three generations of ancestry, the influence of Whitehall Sultan had naturally begun to decline by 1918, since his career as a sire had ended some six years before, and each new generation of winners therefore contained animals further removed from him and his period of service.

A glance at the four bulls named immediately below Whitehall Sultan in the accompanying table helps to explain the high standing which Whitehall Sultan has been able to maintain as an ancestor of winners years after his death. Avondale and Sultan Stamp were his sons, while Double Dale was a grandson and Dale Clarion a great-grandson, each of the latter two bulls having two Whitehall Sultan crosses. Fair Acres Sultan, another son of the leader, ranked eighth in 1918, and Radium, another great-grandson, was ninth. Thus seven of the ten leaders for 1918 represented the Whitehall Sultan line.

Master Ruby and his sire, Archer's Hope, and Villager complete the list of ten high sires for 1918.

The Leading Sires of 1919

	Points	Number Winners
Avondale 245144.....	168	13
Whitehall Sultan 163573.....	92	12
Villager 295884.....	72	4
Revolution 388359.....	72	3
Master Ruby 446601.....	60	4
Pride of Albion 352820.....	44	2
Cumberland Marshall 412384.....	40	3
Archer's Hope 402425.....	38	4
Superb 300054.....	38	3
Dale Clarion 385195.....	36	2

The outstanding leadership of Avondale among the sires at the 1919 show is at once apparent from the table for that year. At this point, Whitehall Sultan was compelled to relinquish first position to his son. The influence of the noted leader of 1918 and the previous years was still sufficiently strong, however, to enable him to retain second place. Villager advanced to third place in 1919 and was tied for that position with a new contender, Revolution, a son of Avondale, that was destined for a high place during the following years.

It will be noted from the table that the tenth bull in the list had but 36 points, and that but four sires of the ten received any considerable scores, indicating that the distribution of Shorthorn honors at this show must have covered a wide variety of sires. Four

newcomers in the 1919 list were Revolution, Pride of Albion, Cumberland Marshall and Superb.

The Leading Sires of 1920

	Points	Number Winners
Avondale 245144.....	120	11
Revolution 388359.....	96	5
Villager 295884.....	68	6
Rodney 753273.....	56	3
Whitehall Sultan 163573.....	52	7
Master Ruby 446601.....	48	3
Choice Cumberland 410399.....	48	2
Archer's Hope 402425.....	40	3
Cumberland Repeater 454657.....	40	2

From the 1920 table it appears that the Shorthorn show at the International of that year was quite similar to that of the year before, in that few sires were able to make really outstanding showings. Altho he remained in first place, the lead of Avondale was less pronounced in 1920 than in 1919. Revolution, in second place, strengthened his position. Whitehall Sultan withdrew still further into the background, appearing in but seven winners and receiving only 52 points. Villager held third position, as in 1919. The fourth bull, Rodney, is the first of a group of recently imported bulls to appear in these standings. Two Cumberland-bred bulls, Choice Cumberland and Cumberland Repeater, not previously recorded among the leaders, qualified among the important sires of 1920.

The Leading Sires of 1921

	Points	Number Winners
Master Bapton 556804.....	80	3
Cornerstone 363116.....	64	4
Master Ruby 446601.....	56	4
Villager 295884.....	54	7
Superb 300054.....	54	4
Avondale 245144.....	50	6
Whitehall Sultan 163573.....	48	6
Sultan Stamp 334974.....	48	5
Regal Stamp 396730.....	48	3
Lavender Sultan 474341.....	48	2
Princely Stamp 576045.....	48	2

A revolution evidently took place in the Shorthorn show of 1921 and the table for that year discloses an interesting situation. Master Bapton, hitherto absent from the list of leaders, entered the list at the top in 1921. Cornerstone, also new to the list, stood sec-

ond. Master Ruby and Villager retained high positions, although the showing of the latter was weaker than in 1920.

While they lost the lead in 1921, the representatives of the Whitehall Sultan-Avondale group were nevertheless formidable contenders at the show of that year. It will be noted that the last six bulls shown above were of that breeding. The table as a whole reveals the lowest scores yet recorded, indicating intense competition among the producing sires.

The Leading Sires of 1922

	Points	Number Winners
Lespedeza Sultan 406929.....	84	4
Whitehall Sultan 163573.....	66	6
Rodney 753273.....	64	3
Harviestoun Grandee 732379.....	56	2
Royal Cup 592956.....	56	2
Sterling Supreme 596719.....	56	2
Sultan Supreme 367161.....	54	4
Kingwood 682218.....	48	2
Sultan Stamp 334974.....	46	5
Fair Acres Sultan 354154.....	46	4

In 1922, the representatives of the Whitehall Sultan line, with the exception of Avondale, reasserted their supremacy. The winnings of animals carrying this blood were sufficiently extensive to enable Whitehall Sultan to hold second place among the ten leaders at this show, while his grandson, Lespedeza Sultan, stood out as the ranking sire of 1922. Four other sires heavy in Whitehall Sultan blood, may be found among the top ten bulls for the year, including Sterling Supreme, Sultan Supreme, Sultan Stamp and Fair Acres Sultan. Avondale, however, was not sufficiently represented at the show to enable him to rank among the ten leaders.

All of the four remaining bulls may be classified as belonging to the group of recently-imported bulls which are having an important influence upon Shorthorn development in this country. Each of these bulls has some of the best blood used in Great Britain during the present century. Rodney appeared among the leaders in this study for 1920, while the other three are new to the list in 1922.

An idea of the relative strength of Shorthorn forces competing within a recent period is afforded by combining the tabulations for the five years from 1918 to 1922, inclusive. This summary, as the table indicates, reveals Avondale as the premier Shorthorn showing sire of the present time. He figured as an ancestor of 34 winners during the period covered and received 490 points.

Whitehall Sultan is second with 380 points, gained through 38 animals. Villager and Revolution are tied for third.

**The Leading Sires of Shorthorn Winners at the
International, 1918-1922**

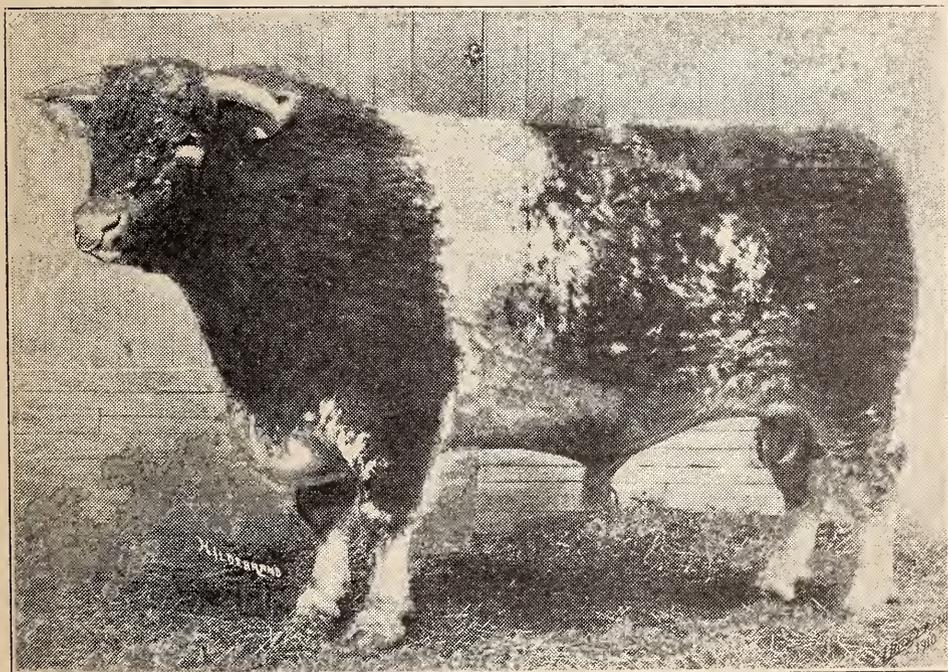
	Points	Number Winners
Avondale 245144.....	490	34
Whitehall Sultan 163573.....	380	38
Villager 295884.....	280	22
Revolution 388359.....	280	8
Master Ruby 446601.....	244	9
Sultan Stamp 334974.....	214	17
Double Dale 337156.....	182	17
Archer's Hope 402425.....	170	9
Lespedeza Sultan 406929.....	156	7
Master Bapton 556804.....	152	3
Rodney 753273.....	136	7
Cumberland's Last 229822.....	122	15
Fair Acres Sultan 354154.....	122	8
Dale Clarion 385195.....	120	6
Sultan Supreme 367161.....	118	7
Superb 300054.....	116	7
Village Beau 295883.....	112	14
Sanquhar Dreadnaught 680399.....	108	9
Village Supreme 423865.....	108	5
Maxwalton Pride 367542.....	96	2

The outstanding thing about this table is that the group of bulls coming from Whitehall Sultan and Avondale includes eleven representatives among the twenty bulls in the table. Three sons of Whitehall Sultan appear, including Avondale, Sultan Stamp and Fair Acres Sultan. Four of the sires listed are grandsons of Whitehall Sultan. Of these, Revolution, Double Dale and Maxwalton Pride are sired by Avondale, while Lespedeza Sultan is a son of Sultan Stamp. Dale Clarion and Sultan Supreme are grandsons of Avondale, while Village Supreme is his great-grandson. Five of the bulls, including Double Dale, Lespedeza Sultan, Dale Clarion, Sultan Supreme and Village Supreme, trace to Whitehall Sultan two or more times.

The performance of this group of bulls is a conspicuous tribute to the potency of the Whitehall Sultan-Avondale blood in producing animals which meet the type requirements of present-day breeders. The nine descendants of these two foremost sires are but the leaders of a group that has clearly dominated American show-rings for fifteen years past. Many more bulls which owe much to this line of breeding have figured in the pedigrees of recent winners to a lesser extent.

Villager made a commendable record during these five years. In points, he is tied for third with Revolution. In the number of winners which trace to him within three generations, Villager was exceeded only by Avondale and Whitehall Sultan. Of the many sons and grandsons of Villager which have figured in the production of International winners, Village Supreme, a grandson, is the only one which qualifies for a place among the twenty leaders. The bull Village Beau, ranking seventeenth in this study, will be recognized as the sire of Villager.

Master Ruby wins fifth place in the five-year standing, while his sire, Archer's Hope, holds title to eighth position. Master Bap-



AVONDALE 245144

The foremost ancestor of Shorthorn prize winners at the International Live Stock Exposition from 1918 to 1922, inclusive.

ton, Master Ruby's best son, is found in tenth place. The get of these bulls have been consistent winners and the three members of the group have been able to rank among the top ten sires with fewer prize winning descendants than is true of the other leaders.

Rodney is the sole member of the galaxy of lately imported sires to qualify for the high twenty International sires. This bull figured prominently at the shows of 1920 and 1922. His sire, Sanquhar Dreadnaught, claims eighteenth place in the table, achiev-

ing this position principally through the winnings of Rodney and his get.

Following Rodney is listed a bull that has meant much to Shorthorn herds, particularly those west of the Mississippi river. The get of Cumberland's Last have been prominently identified with Shorthorn activities since 1905. Were this study of winners extended back for five to ten years additional, Cumberland's Last would easily appear among the four leaders. He is obviously too far removed from the present generation of winners to maintain that position at the present time. While many of his descendants have figured in the production of the winners of recent years, but one, Dale Clarion, has won a place in the high twenty. Through his dam, Dale Clarion is a grandson of Cumberland's Last.

Superb, the sixteenth bull in the table, may be differentiated from all the others in the table as to bloodlines. His sire was a grandson of the famous Star of Morning 121243, while his dam was a daughter of Duke of Oakland 2d 118945.

Six Groups of Sires Among the Leaders

The twenty leaders may be divided into six groups, the first and most numerous being the Whitehall Sultan-Avondale group. Other distinct lines are represented by Villager, Master Ruby, Rodney, Cumberland's Last and Superb.

Thirteen of the twenty sires were bred in the United States, a fact in which American breeders may take pride: Master Ruby and Archer's Hope were the product of Canadian herds. Whitehall Sultan, Villager and Rodney were bred in England, while Village Beau and Sanquhar Dreadnaught had their origin in Scotland. Color students will note with interest that the list comprises eleven roans, seven whites and two reds.

Only two of these twenty leading sires of International winners were International champions themselves. Cumberland's Last won this honor in 1904, and Village Supreme was similarly placed in 1916. A number of the others, however, had notable records as show animals.

Shorthorn followers are assured an interesting situation in the breed for the next few years, viewed from the showyard and other angles. Apparently, the Whitehall Sultan-Avondale dynasty will rule for some years to come. The younger bulls of this line are adding to the prestige of the group. There is not now evident any force that threatens immediately to displace these leaders from their dominant position.

The scions of the Villager line will undoubtedly make an im-

pression upon future showrings. The Master Ruby and Cumberland's Last lines of breeding should also be contenders of some strength. Perhaps the chief point of interest during the coming years of Shorthorn history in America will be the measurement of the influence of the numerous bulls that have been lately imported from Great Britain and placed in service in American herds. A few of these bulls, such as Rodney and Harviestoun Grandee, have already shown marked promise. A number of others appear likely candidates for leadership among the oncoming sires. Whatever the outcome, the effects of this latest infusion of British blood are sure to be watched with interest.

This examination into the bloodlines which produced the principal Shorthorn winners at the International from 1918 to 1922 has been sufficient to demonstrate the presence within the breed during a recent period of a number of sires that have influenced an extensive section of the breed. The showring is of importance as a guide to the operations of breeders of beef cattle and the winnings of the descendants of such bulls as Whitehall Sultan, Avondale and Villager have led to the widespread use in American herds of animals carrying the blood of these sires. The analysis of the pedigrees of the showring sires alluded to in this chapter, as well as of other Shorthorn sires of known influence, will therefore reveal the foundation sources to which the present generation of Shorthorn cattle is most indebted.

CHAPTER 3

SHORTHORN FOUNDATION SIRES—I

CHAMPION OF ENGLAND (17526)

SCOTCH Shorthorns of today are nearly twenty-five per cent Champion of England (17526). Mathematically considered, the average Scotch or Scotch-topped animal of 1923 has as much Champion of England blood in his veins as though the famous Cruickshank-bred sire had been his grandsire, rather than an ancestor many generations removed. That such a concentration of the blood of this bull should be so universally maintained in the individuals of a breed throughout more than a half-century of breeding, testifies in a remarkable way to the all-important influence exerted by Champion of England.

Amos Cruickshank, of Sittyton, dean of the world's Shorthorn breeders, produced Champion of England after nearly a quarter of a century of breeding operations, in which every worth-while strain of Shorthorn blood of the time had been subjected to searching test. Many good bulls had had a part in the rise of the Sittyton herd, but none had satisfied Mr. Cruickshank until he discovered in his own byres, a product of his own breeding, the bull which possessed the ability to sire the short-legged, thick-fleshed, easy-feeding type of Shorthorns which he had long sought to produce.

Champion of England Calved in 1859

Champion of England, the animal which represented the consummation of Mr. Cruickshank's ideals as a Shorthorn breeder, was dropped at Sittyton on November 29, 1859. Even in his own lifetime the influence of this sire and his descendants was so great as to revolutionize type standards of the Shorthorn breed. And today, the term "Scotch" as applied to a Shorthorn is merely equivalent to saying that the animal is rich in the blood of Champion of England.

As a calf, Champion of England's chief distinguishing characteristics were a thick, low-set body and a coat of extra long, wavy hair. He developed rather well and was shown at the Royal Show at Leeds in 1861, where he failed to place, being handicapped for age, since he was compelled to show against two-year-olds, although only a November yearling. In a smaller show at Aberdeen the same

year he ranked third. Because of this showing, he was nearly disposed of, but his hair and feeding quality appealed to his owner and caused him to be retained.

Possibly Mr. Cruickshank's fondness for Lancaster Comet (11663), the sire of Champion of England, influenced him to grow out the young bull. Lancaster Comet had been brought to Sittyton from the herd of Mr. Wilkinson, of Lenton. He was low and straight-lined, with a beautiful coat of hair, but his head and horns were coarser than was desired.

Sire of Champion of England Was Inbred

Lancaster Comet was an inbred bull, both his sire and dam having been got by the same bull, the roan Will Honeycomb (5660). In bloodlines, the sire of Champion of England did not include much of the fashionable Booth and Bates blood of the time. His ancestors were, however, rich in the blood of the Colling bulls, Favorite (252) and Foljambe (263). These bulls, Favorite especially, are recognized by Shorthorn students as the fountain-head of Shorthorn ancestry. Lancaster Comet's pedigree carried forty per cent of Favorite, a significant instance of the extent to which Shorthorns of that period were inbred.

Unfortunately for Sittyton, the Wilkinson bull became crippled after a few months' service and his usefulness ended. Out of about a dozen calves that Lancaster Comet sired for Mr. Cruickshank, Champion of England was alone retained.

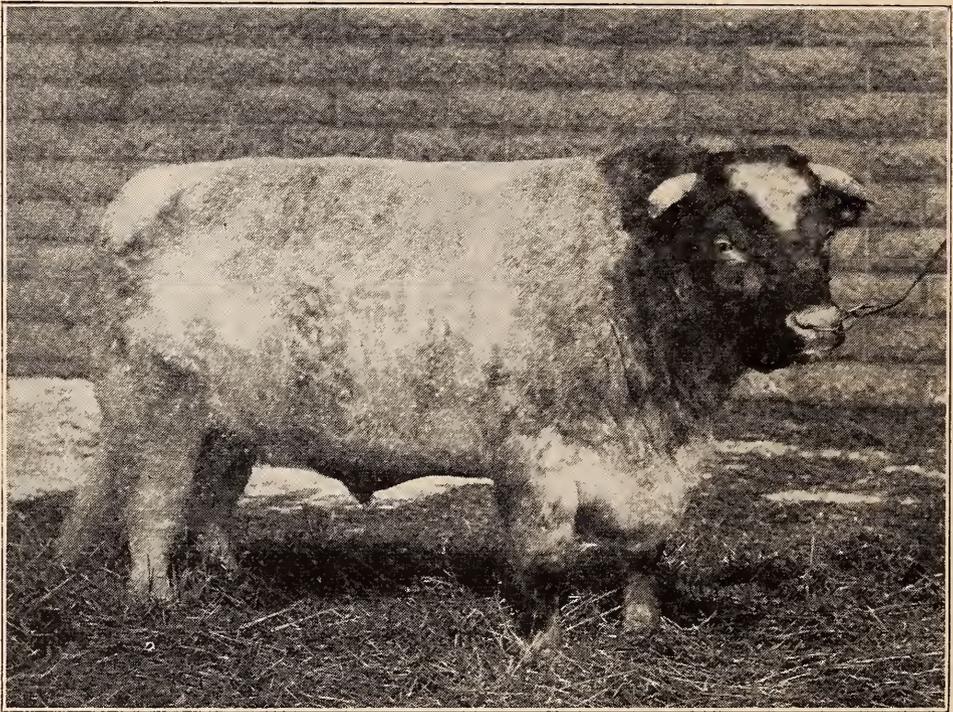
Virtue, a red heifer by Plantagenet (11906), was the dam of Champion of England. She was considered a good milker, but rather plain in appearance. Her pedigree embraced rather more Bates blood than that of Lancaster Comet, but in the main her ancestors had descended from the original Colling stock through herds other than those of Bates and Booth. She represented a stronger concentration of Favorite than Lancaster Comet, having forty-five per cent. Champion of England thus carried 42.5 per cent Favorite blood.

As a mature bull, Champion of England proved to have more scale and heavier bone than his sire. He developed especially well in his fore ribs and was thick throughout in his fleshing. He was, however, somewhat sloping in his quarters, a fault attributed to his dam. His calves early showed promise and influenced his owner to use him extensively.

The sons of the premier Cruickshank sire inherited his thick-fleshed blockiness and his strong constitution. Their subsequent prepotency led to the ultimate adoption of the practice of using

home-bred bulls almost exclusively in the Sittyton herd during the last quarter-century of its existence, a radical departure from the breeding methods employed by Scotch breeders of the time. The daughters of Champion of England combined rare fleshing qualities with the ability to produce milk liberally. The broad-chested, deep-bodied, easy-feeding type established in the get of Champion of England soon proved popular with neighboring Scottish breeders and his descendants were disseminated throughout the herds of Scotland and England and later through those of the Americas.

In Champion of England's calves, Mr. Cruickshank discovered



VILLAGER 295884

Celebrated as a sire of winners and valuable breeding cattle. Villager's pedigree represents concentrated Champion of England breeding, containing 25.69 per cent.

the type for which he had long sought, and in the production of their sire after twenty-five years of effort, his ambition had been realized. He therefore began the concentration of this desirable blood, exercising more caution, however, than had his distinguished predecessor. Thomas Bates, of Kirklevington, who inbred his cattle indiscriminately with not enough attention to selection of individuals. All of the best sons of Champion of England were given an opportunity as herd bulls at Sittyton. Those which left the most notable impress upon the herd were Grand Duke of Gloster

19900, Grand Monarque (21867) and Caesar Augustus (25704). There were a large number of others, however, whose performance conferred credit upon their sire, including Prince Imperial 21740, Viceroy 21842, Golden Eagle 19876, Caractacus (19397), Lord Lancaster 20239, Master of Arts 45271, Bridesman 58566, Lord Granville 61397 and Breadalbane 129268.

Champion of England Blood Tested by Inbreeding

The potency of Champion of England blood was thoroughly tested by concentration through the use of his sons. One of the first tests of inbreeding to which the valuable blood was subjected was the mating of Grand Duke of Gloster to Mimulus, a most valuable daughter of Champion of England, out of a dam by Lord Raglan (13244). Grand Duke of Gloster was also out of a Lord Raglan cow. From this union of three-quarters brother and sister came the red bull, Royal Duke of Gloster 20901, that proved to be one of Sittyton's greatest sires.

A further step in concentration was then taken by breeding Royal Duke of Gloster to the celebrated Princess Royal, sired by Champion of England. The offspring from this cross was Roan Gauntlet 45276, one of the two most famous latter-day Cruickshank stock bulls. Roan Gauntlet was thus 50 per cent Champion of England. The choice blood was further intensified through the use of Cumberland 50626, whose dam, Custard, was a full sister of Roan Gauntlet. Without exception, the sires in use at Sittyton during the later years of the herd were strongly concentrated Champion of England bulls. These included Barmpton 45274, 25 per cent Champion of England; Cumberland, 31.25 per cent; Commodore 96489, 45.24 per cent; Strongbow 100975, 46.80 per cent; Gondolier 98287, 35.88 per cent; Dunblane 65995, 43.75 per cent; Standard Bearer 100925, 26.52 per cent, and several others.

The daughters of Champion of England would in themselves have made a great reputation for their sire. Such cows as Princess Royal, regarded by Mr. Cruickshank as the greatest female ever produced at Sittyton; her full sister, Carmine Rose, and Mimulus, would have brought undying fame to any sire. For many years, Shorthorn breeders have considered most of the daughters of Champion of England as the foundresses of families or tribes and their descendants in the female line are eagerly sought after by breeders. In the long list of his daughters, there stand out, in addition to those mentioned, the names of Silvery, Bellona, Broadhooks 10th, Duchess of Gloster 12th, Golden Lady, Golden Wreath, Circassia, Surmise, Victoria 39th, Village Belle and Village Rose

In the history of the Cruickshank herd, it is apparent that the blood of Champion of England not only responded magnificently to inbreeding, but also gave splendid results when crossed with that of other Cruickshank sires of the time. The most fortunate cross was the Champion of England-Lord Raglan combination. Grand Duke of Gloster, Bridesman, Master of Arts and Mimulus were from Lord Raglan cows, while Princess Royal and Carmine Rose were daughters of the cow, Carmine, sired by The Czar (20947), the best son of Lord Raglan. Champion of England also "nicked" admirably with the daughters of Lord Sackville (13249) and Lord Bathurst (15173).

Other Scottish Breeders Emulated Cruickshank

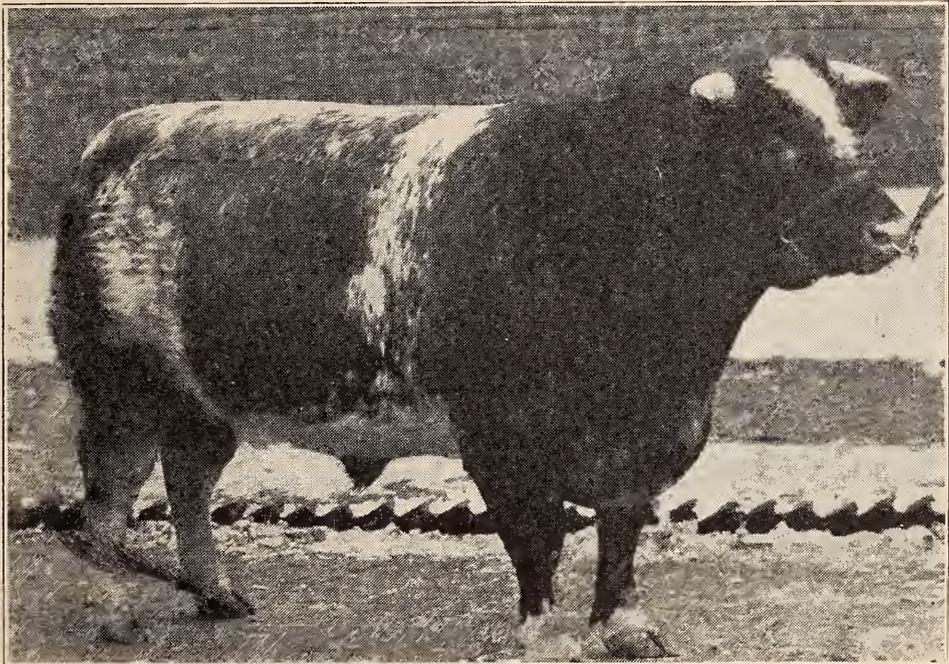
The contemporaries of Mr. Cruickshank who supplemented and later continued his constructive work achieved their greatest success with sires heavily concentrated in Champion of England blood. Much of the success of the herd of Sylvester Campbell, of Kinellar, was due to the use of Gravesend 98361 and Royal James 120945, each of them carrying 34.32 per cent of Champion of England. In the later years at Uppermill, William S. Marr used none but Cruickshank bulls. A profound influence upon present-day cattle has been exerted by such Uppermill sires as William of Orange 95736, 40.56 per cent Champion of England; Sea King 125762, 33.23 per cent; Captain of the Guard 132059, 37.44 per cent, and Wanderer 140614, 40.56 per cent.

William Duthie, of Collynie, who succeeded Mr. Cruickshank as the leader in British Shorthorn affairs, owed much of his earlier success to the use of Scottish Archer 117301, 31.25 per cent Champion of England, and Field Marshall 64894, 37.50 per cent. In a later period he used with conspicuous success such bulls as Collynie Commodore (105066), 24.64 per cent, and Knight of Collynie (112229), 23.94 per cent. In England, J. Deane Willis, of Bapton Manor, helped to perpetuate the Champion of England influence through such sires as Roan Robin 109921, 35.88 per cent, and Count Lavender 132575, 25.74 per cent.

With the introduction of Scotch cattle to America came the Champion of England blood. Colonel W. A. Harris was the first to use it extensively, importing the bulls, Baron Victor 42824 and Craven Knight 96923, each of them carrying 28.08 per cent of the blood of the famous foundation sire. James I. Davidson, John Dryden and Arthur Johnston had previously brought the valuable blood to Canada. They made it a potent influence in the herds of the Dominion through the use of sires like Indian Chief 98651 and

Barmpton Hero 58813, each of them 31.25 per cent. Other early-day sires that were important in fixing the Champion of England type in the United States were Spartan Hero 77932, 25 per cent, and Baron Cruickshank 106297, 26.98 per cent.

When it is realized that these highly important progenitors of American Shorthorns of the twentieth century were so high in Champion of England breeding, the content of 20 to 25 per cent of this blood found in animals of today can be better appreciated. Analysis of the bloodlines of the twenty leading sires of recent International winners on a later page reveals an average of 22.54



LESPEDeza COLLYNIE 576037

Grand champion Shorthorn bull at the 1920 International. Lespedeza Collynie is one of the most recent examples of rich Champion of England breeding, with 25.38 per cent Champion of England.

per cent Champion of England blood in each. The individual percentages of Champion of England and certain other foundation sires in these bulls and other important recent sires are the subject of tables found on the pages immediately following the discussions of the foundation bulls.

From these tables it will be noted that Villager was one of the most intensely bred Champion of England bulls of late years, his pedigree showing 25.69 per cent of the famous Sittyton sire. Whitehall Sultan must have owed much of his prepotency to the 24.06 per cent Champion of England blood which he carried. Avondale

was obviously from a dam somewhat deficient in the breeding, since his bloodlines show but 20.78 per cent.

Master Ruby, 23.40 per cent; Rodney, with 23.62 per cent, and Superb, 24.35 per cent, are above the average, while Revolution, whose content of Champion of England was but 19.67 per cent, is somewhat below the average. Most of the twenty bulls will be found to contain between 21 and 24 per cent.

A Few Bulls Low in Champion of England Blood

In contrast with these richly-bred bulls are others, such as Choice Goods 186802, 13.77 per cent, that were notably low in Champion of England. Shenstone Albino 317105, 18.3 per cent, and Ringmaster 307984, 17.06 per cent, were also well below the average. While all of these were excellent show bulls, none manifested the ability as a sire expected of him.

In the long list of Shorthorn sires that have proved truly impressive since the time of Champion of England, there have been scarcely any that contained less than 17 or 18 per cent of his blood. Pride of Morning 120551, 12.50 per cent, is a notable exception, having a highly creditable record in the Duthie herd. However, he was used almost exclusively on cows of the richest Champion of England breeding. He was a typical example of the highly successful outcross, apparently having something in his hereditary makeup which blended admirably with the Champion of England blood.

It may safely be assumed that the average Scotch Shorthorn of today has between 22 and 23 per cent Champion of England, since that figure is the average for the sires which figure in the largest number of animals of the present generation. A study of Shorthorn pedigrees of the past half-century proves conclusively that it is to Champion of England that we owe the Scotch Shorthorn of today. Such a concentration of the blood of one sire within practically all the individuals of a breed is without parallel.

CHAPTER 4

SHORTHORN FOUNDATION SIRES—II

ROYAL DUKE OF GLOSTER 20901

FOREMOST among the bulls which transmitted the influence of Champion of England (17526) to later generations of Shorthorns was Royal Duke of Gloster 20901 (29864), his grandson. So widespread was the effect of Royal Duke upon the breed that Shorthorns of today will average more than 14 per cent of his blood. His influence was greater than that of any other descendant of Champion of England, and, indeed, has few parallels among foundation sires of any breed.

Royal Duke of Gloster was a red bull, calved in 1870. He resulted from one of the most successful of the brilliant breeding operations of Amos Cruickshank. Grand Duke of Gloster 19900, a massive roan son of Champion of England, out of a cow by Lord Raglan (13244), was the sire of Royal Duke. The red cow, Mimulus, a daughter of Champion of England, out of a Lord Raglan dam, was the mother of Royal Duke. It will be seen that Royal Duke was closely inbred, his sire and dam having three-fourths identical blood. He was, therefore, 50 per cent Champion of England and 25 per cent Lord Raglan.

Royal Duke Was Used to Continue Inbreeding

The mating which produced Royal Duke of Gloster was at that time the boldest step in concentrating the blood of Champion of England that Cruickshank had taken. The bull thus produced showed early evidence of prepotency, confirming Mr. Cruickshank's wisdom in making this mating, and leading to a policy of further intensifying the Champion of England blood. In accordance with this policy, Royal Duke was used largely upon daughters and granddaughters of Champion of England. One of these matings may well be considered one of the most important ever made at Sittyton. This was when the inbred Royal Duke of Gloster was bred to one of Champion of England's best daughters, Princess Royal. From the union came first the noted sire, Roan Gauntlet, and later the cow, Custard, which became the dam of Cumberland 50626 and Commodore 96849.

Roan Gauntlet and Custard each carried 50 per cent Champion of England blood, altho removed from him by three generations on the sire's side and by two generations on the side of the dam. The illustrious breeding records of these two animals and their many descendants proved that the concentration of Champion of England, consummated largely through Royal Duke and his progeny, had successfully withstood the formidable test of inbreeding.

Roan Gauntlet was extensively used at Sittyton with the highest success. Among his sons were numbered such celebrated bulls as Field Marshall 64894, William of Orange 95736, Baron Violet 90446, Dunblane 65995, Ventriloquist 78218, and Cayhurst 58571, all of them breeding bulls of a high order. His daughters included such valuable cows as Gazelle, Gilliver, Candytuft, Glowworm, Sobriety, Sunflower, Sorrel, Spinster, Victoria 73d and Violet Girl.

Field Marshall was acquired by William Duthie, of Collynie, who used him with great success. For a period of three years, Field Marshall was also used in the herd belonging to Queen Victoria. He was the sire of many good animals, including the renowned show bull, Mario 131994, and Baroness 6th, the dam of Star of Morning 121243.

William of Orange Perpetuated Royal Duke Blood

The career of William of Orange as the chief herd sire in the Marr herd at Uppermill is familiar to all Shorthorn breeders. He proved the most potent sire in the long term of the Uppermill herd. Few bulls ever sired so many good daughters, and he had many useful sons as well. Among his best daughters were Pride of the Dairy and Missie 118th, the dam of Marengo 141581.

Dunblane, Baron Violet and Cayhurst were extremely useful in the development of the Sittyton herd, while Ventriloquist won distinction as a sire in the herd of J. Black.

Through his daughters, Roan Gauntlet became the grandsire of many valuable bulls. Glowworm was the dam of Roan Robin 109921 and Candytuft produced Master of the Ceremonies 136623. Sunflower became the mother of Touchstone 149631. From Gilliver came Gondolier 98287, one of the best of the later Cruickshank sires.

Barmpton 45246 was next in influence to Roan Gauntlet among the sons of Royal Duke. He was a red of 1875, and had for dam the good cow, Barmpton's Flower, by Allan (21172). Barmpton was not an inbred bull and had but 25 per cent Champion of England blood, received through his sire. He proved a forceful breeder and contributed many good animals of both sexes to Sittyton. Sev-

eral of his sons were among the first animals to carry the Cruickshank banner to American herds. These included the noted Baron Victor 42824, Double Gloster 55406 and Spartan Hero 77932. Baron Victor was the most celebrated sire of his time in America, and had a profound influence on the W. A. Harris herd in Kansas. Many recent animals trace to him and to Spartan Hero. Much of the Barmpton influence has come to present-day Shorthorns through Cumberland's Last, whose Champion of England blood came largely through Barmpton.

Barmpton also sired Chancellor 68693, an important sire at Sittyton. Barmpton's female offspring included some of Sittyton's most valuable females, such as Amaranth, Cowslip, Fernleaf, Germanica, Golden Autumn, Serenity, Violet Bud, Lavender 31st and Narcissus.

The descendants of Grand Vizier 66327, a red son of Royal Duke, have also been instrumental in bringing the Royal Duke-Champion of England blood to modern Shorthorns. Similarly to Roan Gauntlet, Grand Vizier was produced from a strongly-bred Champion of England cow, and carried 43.75 per cent Champion of England. Among his best calves were the bull Cetewayo 106768 and the cows, Cornucopia, Claret and Grizzle.

Privy Seal 109647, a red by Royal Duke, was successfully used by James Bruce, of Inverquhomery, in whose herd he sired many of the early foundation cows of the Augusta and Rosewood tribes.

Daughters of Royal Duke Were Producers

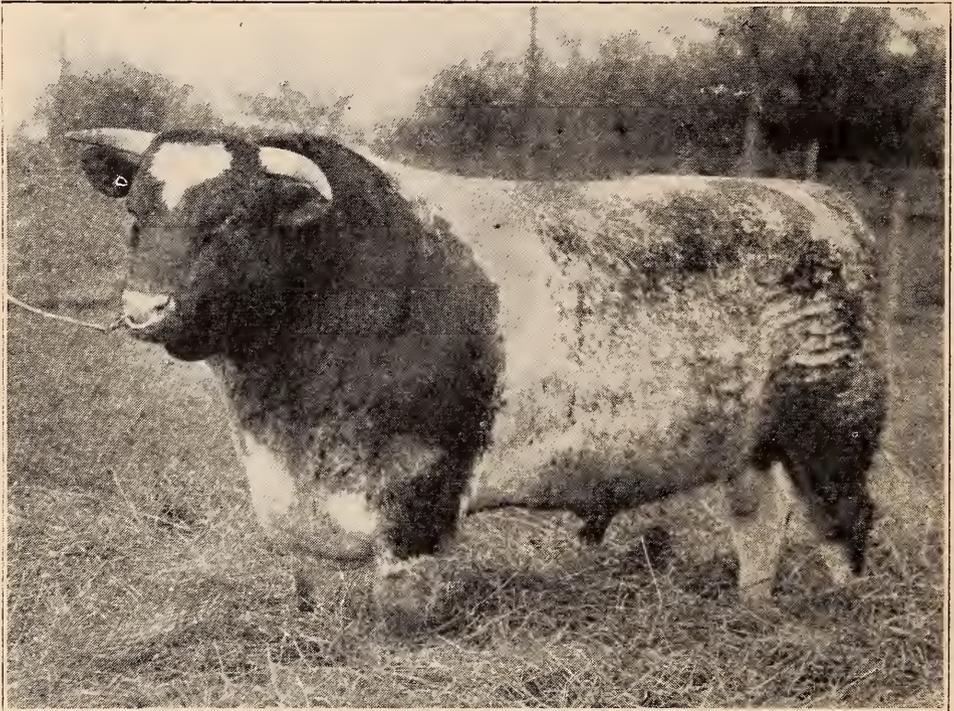
The greater part of Royal Duke's influence has passed to present-day cattle through the bulls referred to. However, his daughters were valuable producers and many animals trace frequently to them. Custard was the greatest of these, being the dam of the two great stock bulls, Cumberland 50626 and Commodore 96849. Cumberland was the greatest sire of his time. Commodore is noted as the sire of Captain of the Guard 132059 and Wanderer 140614, valuable sires used at Uppermill by W. S. Marr. Custard was a regular producer until fourteen years of age.

Souvenir, by Royal Duke, became the dam of Spartan Hero, and Cinderella, another daughter, produced the bull Marmion 145340. Victoria 51st, imported to America in 1876, became a noted breeding cow. Evening Star dropped the noted producer, Guelder Rose. Other daughters of Royal Duke of Gloster that made a distinct impression as breeders were Butterfly 43d, Garnish, Orange Blossom 19th, Silent and Victorias 53d and 54th.

Mr. Cruickshank did not attempt to concentrate the Royal Duke

of Gloster blood to the extent which he later practiced with that of Cumberland. Perhaps he considered that he had already done enough close breeding in producing the intensely-bred Royal Duke. At any rate, the offspring of Royal Duke and his sons were used principally for breeding to the descendants of Champion of England through other lines, notably Pride of the Isles, and to outside blood strains. There are very few cases where inbreeding with the Royal Duke blood was done. One of these resulted in the bull, Spartan Hero, that was from a sire and dam sired by Royal Duke.

It is not surprising to find that present-day Shorthorns are rich in the blood of Royal Duke of Gloster, in view of the many



LORD AVONDALE 391326

As a bull that contained 23.15 per cent Royal Duke of Gloster blood in his pedigree, Lord Avondale represents an outstanding concentration of the blood of this foundation sire.

channels through which this blood has reached them. Pedigree analyses of the twenty leading Shorthorn sires at the International shows from 1917 to 1922 disclose an average of 14.51 per cent. Since practically all living Scotch Shorthorns have some of these twenty bulls in their immediate ancestry, this percentage may be taken as quite an accurate index of the amount of Royal Duke blood in the Shorthorn of today.

Scottish breeders have consistently used richly-bred Royal Duke bulls. This has applied especially to the herds of Cruickshank, Duthie, Marr and Willis. Commodore 96849, Gondolier 98287, Roan Robin 109921 and Wanderer 140614 each had 37.5 per cent of this breeding. Master of the Ceremonies 136633 and Captain of the Guard 132059 were 31.25 per cent Royal Duke. Spicy Robin 134607 was 28.86 per cent and Sea King 125762 was 28.08 per cent. William of Orange 95736, Gondomar 108102, Dunblane 65995 and Field Marshall 64894 each contained 25 per cent of this foundation sire. Scotch Thistle 151800, a noted Scottish sire of more recent time than the foregoing, was high in this blood, with 22.29 per cent.

Many of the earlier Scotch bulls in service in America possessed a wealth of Royal Duke blood. Spartan Hero 99732 was 50 per cent, while both Baron Victor 42824 and Craven Knight 96923 were 25 per cent. Nonpareil Victor 132573, sire of the winning get of sire entry at the 1902 International, was 28.1 per cent Royal Duke.

Recent Sires High in Royal Duke Blood

Lord Avondale 391326, a son of Avondale out of an extremely well-bred dam, is probably the most highly concentrated Royal Duke bull used in America since 1910. His pedigree shows 23.15 per cent, a remarkable concentration for a bull of his period.

Other strictly modern sires used in the United States include many whose Royal Duke blood exceeds 16 per cent. Pines Renown 776994, a son of Lord Avondale, contains 18.86 per cent, while Maxwalton Renown 367543, one of the best sons of Avondale, had 17.55 per cent. Cumberland's Last 229822, Ceremonious Archer 171479, and Lord Banff 150718, all prominent sires during the first ten years of this century, each had 17.16 per cent Royal Duke. A number of others might be cited, including such sires as Linwood Favorite 268242, 17.59 per cent, and Glenbrook Sultan 243185, 16.81 per cent.

Reference to the table of sires of International winners discloses a number of bulls well above the average in Royal Duke blood. In addition to Cumberland's Last there are Whitehall Sultan, with 16.03 per cent; Villager, 15.25 per cent; Avondale, 15.01 per cent, and Sanquhar Dreadnaught 680399, 16.74 per cent. None of the sires in this group fall far below the average.

The Royal Duke heritage has been conspicuously rich in many of the best American show animals. Ruberta, the peerless show cow of the breed from 1900-1905, had 19.5 per cent of this breeding.

Young Abbotsburn 110679, champion at the World's Fair in 1893, had 18.75 per cent. The percentage in Whitehall Marshall 209776, champion at two Internationals, was 15.79 per cent. Ceremonious Sultan 674540, a Polled Shorthorn and grand champion of his sort at four recent Internationals, carries 17.06 per cent Royal Duke.

Animals that lack Champion of England breeding are necessarily low in Royal Duke. Choice Goods 186802 was but one-sixteenth or 6.25 per cent Royal Duke, and Ringmaster 307984 had but 8.83 per cent. Red Knight 157136, a sire of many American winners from 1900 to 1910, had only 3.12 per cent Royal Duke.

A high percentage of Royal Duke blood in a Shorthorn of today signifies that the Champion of England blood in that animal has come through the best channels. A large proportion of Champion of England's descendants which proved most potent in fixing the Scotch type came through Royal Duke. Therefore, bloodlines of modern animals high in Champion of England are more desirable if much of that blood comes through Royal Duke of Gloster.

CHAPTER 5

SHORTHORN FOUNDATION SIRES—III

CUMBERLAND 50626

IN THE brilliant group of sires in service at Sittyton during the last ten years of its existence was one that, figuratively, stood head and shoulders above the rest. This bull, Cumberland 50626, was a roan, calved in 1880. His performance as a sire during the closing years at Sittyton, and the extent to which his offspring have affected modern Shorthorns, entitle him unquestionably to consideration as a foundation sire of Scotch Shorthorns.

Cumberland was produced from the mating of Pride of the Isles 45274, an important Sittyton sire, and the celebrated Custard, already referred to as a full sister to Roan Gauntlet and daughter of Royal Duke of Gloster and Princess Royal. Pride of the Isles had less Champion of England blood than other latter-day Cruickshank sires, having but one-eighth received through his sire, Scotland's Pride (25100), that was a grandson of Champion of England through Grand Monarque (21867). The dam of Pride of the Isles was Golden Days, a most valuable producer sired by Lord Raglan (13244), and said to have been the best milker of her day in the herd.

Cumberland Carried Champion of England Blood

Cumberland was thus 31.25 per cent Champion of England, his dam being 50 per cent. Cumberland also carried 25 per cent of Royal Duke blood and therefore was a factor in passing on the influence of both of these earlier foundation bulls. As an individual, Cumberland is said to have been "massive, short in the leg, deep and long in the body, with an excellent head, full, wide chest, well-laid shoulders, strong loins, well-sprung ribs and with such a cover of lean flesh as is rarely met with."

The catalog of Cumberland's get is long and impressive, comprising many of the best animals bred by Mr. Cruickshank. No other Sittyton sire left so many really useful sons, and the breeding power of his daughters alone would have made Cumberland a sire of distinction. He continued as chief stock bull at Sittyton for over eight years, until the herd was dispersed in 1890. The

excellence of his get so impressed Mr. Cruickshank that during the last few years of the herd, the blood of Cumberland was concentrated through the mating of his sons and daughters.

In the early years of his service, Cumberland was crossed extensively upon the daughters of Royal Duke of Gloster and the daughters of Royal Duke's sons, Roan Gauntlet, Barmpton 45246 and Grand Vizier 66327. Through thus combining the Royal Duke and Cumberland blood, Mr. Cruickshank united the two strains which he had found to carry the most valuable Champion of England and Lord Raglan blood. The results were highly satisfying.

Gondolier 98287, one of the two best sons of Cumberland, was a product of the Cumberland-Roan Gauntlet cross, having for dam the excellent cow, Gilliver, by Roan Gauntlet. In service at Sittyton, Gondolier did much to enhance the reputation of Cumberland by siring such useful breeding bulls as Chesterfield 106811 and Touchstone 149631. His daughters rated highly among the producers of the day and included such cows as Sea Foam, Calypso and Lavenders 51st and 53d.

Good Sires Came from Cumberland-Royal Duke Cross

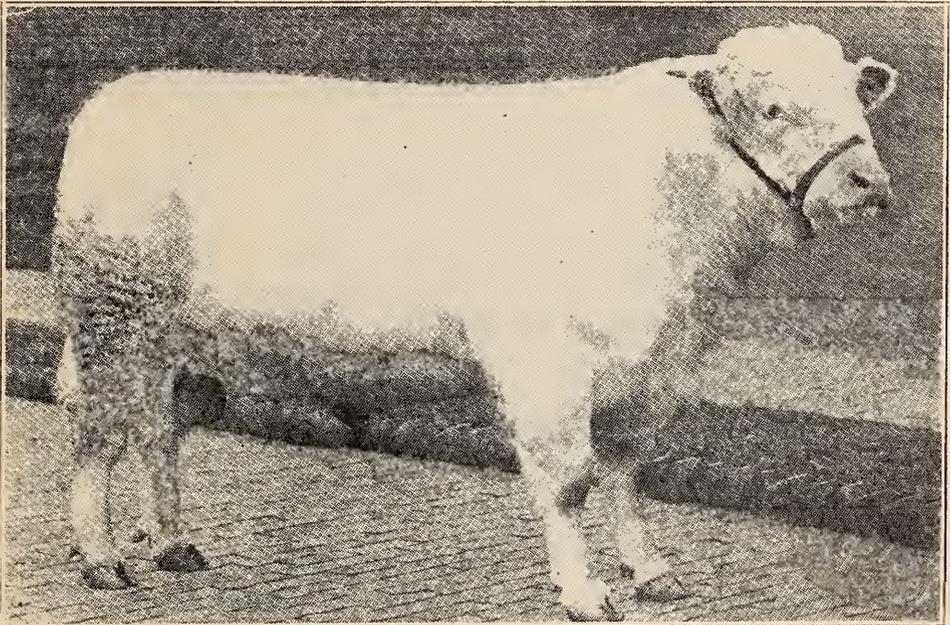
Master of the Ceremonies 136633, a sire of note in the herd of J. Black, Barthol Chapel, was produced similarly to Gondolier, being sired by Cumberland and out of Candytuft, by Roan Gauntlet. Craven Knight 96923, a most important figure in the introduction of Scotch blood to America, was the result of the mating of Cumberland and Golden Autumn, a daughter of Barmpton. Sittyton Fame 131992, used with much success by William Duthie, came from the union of Cumberland and the Roan Gauntlet cow, Barmpton Lily.

Roan Robin 109921, an influential sire in both the Willis and Marr herds, was produced by Glowworm, a daughter of Roan Gauntlet, to the service of Cumberland. Roan Robin is noted as the sire of Spicy Robin, that had a brilliant record at Uppermill, siring such bulls as Spicy King 156733 and Scotch Thistle 151800. Still another important bull arising from the Cumberland-Royal Duke combination was Sittyton Scarlet 151407, a son of the Barmpton cow, Amaranth.

Many of the most valuable daughters of Cumberland came from dams of Royal Duke of Gloster breeding. Godiva, dam of Gondomar 108102 and Wanderer 140614, was a full sister to Gondolier, being the offspring of Cumberland and Gilliver. Cardamine, the dam of Collingwood 106881, was a daughter of the Barmpton cow, Cowslip. Other valuable producing daughters of Cumberland

from this cross included Sarcasm and Wood Violet, from Roan Gauntlet dams, and Christmas Carol, from a Grand Vizier dam.

Cumberland had another important function in the breeding plan at Sittyton. He was bred back to his half-sisters, the daughters of Pride of the Isles 45274. This concentration of Pride of the Isles blood gave to the breed some of its best animals. Among those produced in this way must be named, first of all, the illustrious Scottish Archer 117301, out of Surname, by Pride of the Isles. Indian Chief 98651, one of the most prepotent Cruickshank sires ever used in Canada, was another. His dam, Victoria 58th, also produced to the service of Cumberland, the bull, Knight Tem-



MAXWALTON RENOWN 367543

Whose pedigree contained 22.42 per cent Cumberland blood, the largest amount to be found in any Shorthorn bull since 1910.

plar 66658. High Commissioner 144629, the progeny of Cumberland and Crocus, was still another of the useful double-bred Pride of the Isles bulls.

The cows from the Pride of the Isles concentration proved equally valuable. Among them may be enumerated such important matrons as Coraline, the dam of Clan Alpine 130852, and Capsicum, the dam of Standard Bearer 100925. Simplicity, a daughter of Surname, was a noted producer derived from this source.

From the standpoint of influence upon modern Shorthorns, Scottish Archer qualifies as the most important son of Cumber-

land. He was the last great bull produced at Sittyton, being calved in October, 1888. As a yearling, he passed to the herd of William Duthie, where he was used during the greater part of his life, although for a time he did service in the Willis herd at Bapton Manor.

Scottish Archer had a long and distinguished career as a sire, amply justifying the wisdom of the concentration of the Pride of the Isles blood. Among his sons were such herd-builders as Prince of Fashion 136634, Marengo 141581, Golden Ray 135023, Sittyton Pride 136401, Lavender Lad 119937 and Best of Archers 141832. The two latter were especially important factors in the development of American herds, Best of Archers siring the show and breeding bull, Ceremonious Archer 171479. Prince of Fashion proved a sire of great merit in Scotland. The daughters of Scottish Archer, among them such cows as Scottish Primrose, Scottish Rosebud and Scotland's Belle, were rated among the best females of their time in Great Britain.

Cumberland Blood Concentrated in a Few Animals

The third great function evolved for Cumberland by Mr. Cruickshank was the concentration of his own blood. This plan was adopted late in the history of the herd, being limited to the last four or five years of its existence. Those breeders who succeeded to the Sittyton herd did not, to any great extent, attempt further to intensify the Cumberland blood. The possibilities that might have attended the continuation of the plan begun by Mr. Cruickshank provide a highly interesting speculation for students of breeding. In view of the success of the experiments in concentrating this blood it seems probable that had the practice been continued, the already great name of Cumberland might have been still further enhanced.

At the conclusion of Sittyton activities there were among the five herd sires two which represented the Cumberland concentration. Gondomar, a red of 1887 calving, was produced by the mating of Feudal Chief 92299 and Godiva, both by Cumberland. Gondomar was a sire of much promise, but, unfortunately for the breed in America and Great Britain, was exported to South America when the herd was sold. Collingwood, the other herd sire referred to, was out of Cardamine, and sired by Pro-Consul 94510, a son of Feudal Chief. Standard Bearer 100925, that had been used at Sittyton for a time, was still another 50 per cent Cumberland bull, being the offspring of Feudal Chief and Capsicum.

The Cruickshank herd was sold in its entirety in 1889, to James Nelson & Sons, Liverpool, England, whose intention it was to export

the herd to Argentina. Serious financial complications in that country, however, rendered the project inadvisable. In 1890, the greater part of the herd was divided up among several British breeders, Duthie and Willis securing a large number of the females.

During their short administration, the Nelsons made several matings of animals in the herd which continued one step further the Cruickshank plan of concentrating the Cumberland blood. Gondomar, a double grandson of the old sire, was bred to Coraline, one of the best Cumberland cows. The result of this mating was Clan Alpine 130852, used with conspicuous success by Mr. Campbell. Another bull of note similarly bred was Sittyton Sort 121197, also used later by Mr. Campbell. Sittyton Sort was sired by Gondomar, out of Calypso, by Gondolier, a son of Cumberland.

Whether this further piling up of the blood of Cumberland was initiated at the expressed wishes of Mr. Cruickshank, or whether it was a policy determined upon by the Nelsons, is not known to the present writer. Whatever the source of these few steps in further intensifying the Cumberland influence, little was done to continue it after the herd was dispersed. The only instance in which the policy was continued was in the production in the Deane Willis herd of such animals as Cinnabar, produced by mating the Cumberland bull, Roan Robin, to Citron, a double granddaughter of Cumberland, and Lavender Lady, sired by Roan Robin and out of Lavender 60th, a double-bred Cumberland cow.

Much Cumberland Blood in Present-Day Animals

When the many channels through which Cumberland blood has come to animals of the present time are considered, it is not surprising to find that Shorthorns of the present generation average about 14.5 per cent Cumberland. Reference again to the pedigree analyses of the principal International sires discloses an average of 14.46 per cent Cumberland blood in these bulls. This figure may be taken as an approximate average for modern Scotch Shorthorns. A number of the bulls are notably high in this breeding, such as Villager 295884, Archer's Hope 402425 and Village Beau 295883, each with 18.75 per cent. Avondale, with 18.37 per cent, and Sultan Supreme 367161, with 18.5 per cent, were also well above the average, as well as Whitehall Sultan, 17.94 per cent.

Most of the sires which perpetuated the Cumberland blood in British herds have been referred to. Many bulls high in Cumberland have been used by British breeders from the time of Cruickshank until the present. Captain of the Guard 132059, Norseman 132576 and Wanderer 140614 were each 25 per cent Cumberland.

Others of importance that were rich in Cumberland include Prince of Beauty 186628, 29.64 per cent; Scotch Thistle 151800, 21.84 per cent; Pride of Avon 311139, 20.28 per cent, and King Christian of Denmark (86316), 20.28 per cent.

A study of the tables which follow the discussion of Shorthorn Foundation Sires, indicates that Cumberland blood in recent animals is somewhat more variable than the Champion of England blood. Some animals of recent origin are extremely high in Cumberland, while others are equally low. Maxwalton Renown 367543, 22.42 per cent, and Uppermill Omega 295763, 20.28 per cent, are examples of richly-bred Cumberland animals. Representing the other extreme, Choice Goods 186802 was altogether without Cumberland blood, while Pride of Albion 352820, 8.77 per cent, and Cumberland's Last 229822, 6.25 per cent, were notably low. Cumberland 118578, the sire of Cumberland's Last, had, despite his name, but 12.5 per cent of the blood of the original Cumberland.

A high content of Cumberland blood in a present-day Shorthorn is an indication that much of the Champion of England blood in that animal has come through the choicest channels. The proved efficacy of Cumberland and his immediate descendants in improving the Cruickshank and later Scottish herds makes the possession of a large measure of Cumberland blood a desirable adjunct to the pedigrees of modern Shorthorns.

CHAPTER 6

SHORTHORN FOUNDATION SIRES—IV

LORD RAGLAN (13244)

LORD RAGLAN (13244) affords an instance of a foundation sire that has never been given his due measure of credit. Except by close students of pedigrees, Lord Raglan is undifferentiated from the many other sires that were in the Cruickshank herd prior to the time of Champion of England. Exhaustive analysis of the bloodlines of modern Scotch Shorthorns shows that Lord Raglan was considerably more valuable than other bulls of his time in providing the right cross for Champion of England. The early history of the Sittyton herd demonstrates very clearly that the animals which proved most effective in fixing the Champion of England type were in a majority of cases from dams of Lord Raglan breeding. Animals in the later Cruickshank herd almost invariably carried considerable Lord Raglan blood, and even today, seventy years after the birth of Lord Raglan, the individuals of the breed average more than 10 per cent of his blood.

Lord Raglan Came from Bates and Booth Breeding

A roan of 1853 calving, Lord Raglan was bred by Mark Stewart, of Southwick. The sire of Lord Raglan was Crusade (7938), a bull of mixed breeding, including some very rich Bates breeding on his sire's side. Crusade's grandsire in the male line was Cleveland Lad (3407), bred and used by Thomas Bates, of Kirklevington, and a bull that carried the blood of Favorite (252) in the most concentrated form, having practically 60 per cent of that famous Colling foundation sire.

Brenda, the dam of Lord Raglan, was almost entirely of Booth extraction. The four sires in the third generation of her bloodlines were all bred by Richard or T. C. Booth. The ancestors of Brenda carried much Favorite blood, although less than those of Crusade, and Lord Raglan had more Favorite breeding than Champion of England, whose percentage was 42.5.

Lord Raglan has been described as "a large, stylish, rather high standing bull, fertile as a yearling, quite useless as a two-year-old and unusually prolific ever after." For several years he was a

winner at the important Scottish shows. He saw service in the herds of Lord Kinnaird, Lord Southesk, Mr. Stewart and Mr. Douglas, of Athelstaneford. At seven years old, he was purchased for Sittyton, and his greatest usefulness was realized after that time. He continued in service until twelve years of age.

It is interesting to recall that this bull, now ranking as an important foundation sire of the entire breed, was at one time very nearly exported to this country. Mr. William Miller, of Canada, and later of Storm Lake, Iowa, was in Great Britain in 1856, selecting Shorthorns for export. Being greatly attracted by Lord Raglan, Mr. Miller tried to buy him, considering him the best bull that he saw at the time. Mr. Stewart, however, priced the bull sufficiently high to retain him in Britain.

Lord Raglan Crossed Well With Sittyton Cows

After coming to Sittyton, Lord Raglan was used extensively on the wide variety of females in the herd at that time. Many of his best progeny came from cows sired by Matadore (11800) and The Baron (13833). Corianda, a daughter of The Baron, produced The Czar (20947), easily the best son of Lord Raglan. The Czar sired Carmine, dam of Princess Royal and Carmine Rose, and considered one of the foremost producing cows of the herd.

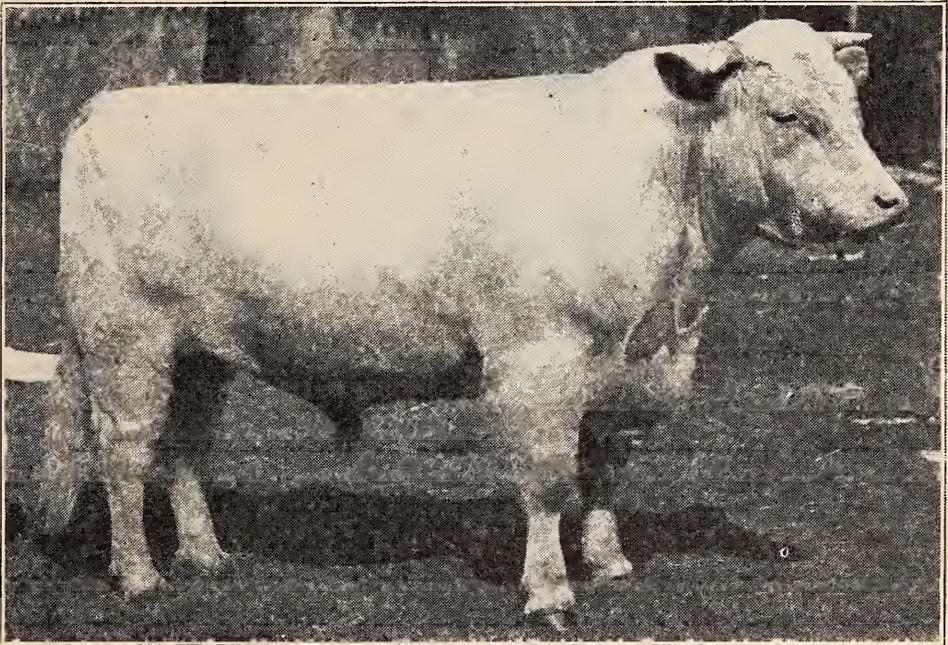
A number of other sons of Lord Raglan figured in the herds of the time, although none was so important as The Czar. Baron Sebastopol 58559 sired some useful animals. His breeding is of interest, since his dam was Virtue, also the dam of Champion of England. Lord Surrey 99240 was successfully used at Uppermill. Royal Standard (22803), The Challenge Cup 95406 and British Prince 118236 were other good sons of Lord Raglan.

The daughters of Lord Raglan far outshone his sons in their achievements in the Cruickshank herd. It was through the crossing of Champion of England upon these Lord Raglan cows that the really constructive building of the herd began. It will be recalled that Grand Duke of Gloster, by Champion of England, had for dam Ninth Duchess of Gloster, by Lord Raglan. Mimulus was out of the Lord Raglan cow, Mistletoe, that was from a Matadore dam. The mating of Grand Duke and Mimulus produced Royal Duke of Gloster 20901. Allusion has already been made to his importance in Sittyton activities.

Golden Days, a daughter of Lord Raglan, is declared to have been the best milker in the Cruickshank herd. The heavy milking characteristic seems, in fact, to have been possessed by many of the Lord Raglan females. Golden Days was a valuable breeder as well,

being the dam of the redoubtable Pride of the Isles 45274, his full brother, Lord of the Isles 45269, and the bull Golden Rule, by Champion of England. She also produced the noteworthy cows, Golden Morn and Golden Year.

Bride Elect, by Lord Raglan, became the dam of Bridesman 58566, by Champion of England. Duchess of Gloster 7th, a half sister to the Ninth Duchess, that produced Grand Duke of Gloster, was a highly useful cow in the herd. From Queen of Scotland, by Matadore, Lord Raglan produced Queen of the South, recorded as one of the best show animals of her day. Butterfly 5th and The



CUMBERLAND'S LAST 229822

An International grand champion and the sire of many winners from 1905 to 1915. The pedigree of Cumberland's Last is high in Lord Raglan breeding, with 11.47 per cent.

Gem, daughters of Lord Raglan, are said to have been regarded by the owner of Sittyton as among the best cows of their time.

Lancaster 25th, a daughter of Matadore, produced three heifer calves as the result of a mating to Lord Raglan. One of the triplets was Anne of Lancaster, the dam of Mary Anne of Lancaster, recognized by breeders as the foundress of the family of that name. Another of the three was Mary of Lancaster, that became the dam of the renowned Baron Booth of Lancaster 5735, imported to America in 1867, and the pre-eminent show bull of his time.

Other daughters of Lord Raglan were scarcely less valuable than those which have been listed. The list would not be complete

without the names of Autumn Rose, Valotta, Beauty, Blush Rose, Chastity, Golden Chain, Golden Princess, Mint 5th, Mint 6th and Ringdove.

The great quartet of latter-day Sittyton sires, Royal Duke of Gloster, Pride of the Isles, Roan Gauntlet and Cumberland 50626, were instrumental in bringing much of the Lord Raglan influence to modern cattle. The two first named bulls each carried 25 per cent Lord Raglan blood, while Cumberland had 21.84 per cent and Roan Gauntlet possessed 18.75 per cent. Other Sittyton-used bulls, such as Lord of the Isles, Master of Arts 45271 and Bridesman 58566, each of them 25 per cent Lord Raglan, were factors in passing on this blood.

Many of the bulls which succeeded this group at Sittyton, as well as the heads of the leading British herds which carried on the Cruickshank work, had a significant amount of Lord Raglan blood. Instances are found in Gondolier 98287, Roan Robin 109921 and Scottish Archer 117301, each 20.28 per cent. Golden Ray 135023 showed 19.5 per cent of this foundation sire, while Wanderer 140614, Clan Alpine 130852 and Master of the Ceremonies 136623 each carried 17.94 per cent. Dunblane 65995, Commodore 96849, Gravesend 98361, Gondomar 108102 and Captain of the Guard 132059 each had 15.6 per cent Lord Raglan.

American Herd Bulls Strong in Lord Raglan Blood

The bulls that have figured most prominently in the development of American herds have been sufficiently strong in Lord Raglan breeding to give the average Shorthorn of today more than 10 per cent of Lord Raglan blood. This is indicated by the table of analyses for the chief sires of International winners during the past five years. As will be noted, Whitehall Sultan, Villager, Archer's Hope, Rodney and Cumberland's Last had more than 11 per cent of this blood, while many others possessed more than 10 per cent.

A number of other important American sires have been notably high in content of Lord Raglan. Craven Knight 96923, noted sire in the W. A. Harris herd, was 20.28 per cent, while Gallant Knight 124468, used in the Tomson herd in Kansas, was 15.40 per cent. Nonpareil Victor 132574 had 13.58 per cent, while the pedigree of Ceremonious Archer 171479 contained 12.47 per cent. Lord Avondale 391326, a bull of more recent period, is higher than any of his contemporaries, having 13.08 per cent.

It is recorded that Mr. Cruickshank never regarded Lord Raglan as an outstanding sire. It is significant, however, that nearly

all of the animals that figured prominently in the evolution of the Sittyton herd carried a considerable amount of Lord Raglan blood. The extraordinary success which attended the admixture of Lord Raglan with Champion of England blood proves that credit is due Lord Raglan. It is clear that the Lord Raglan blood combined far more effectively with the Champion of England breeding than did any of the other bloodlines represented in the Cruickshank herd. As a result of this fortunate combination and the subsequent use of animals carrying the Lord Raglan cross, a consideration of the bloodlines of the breed today will conclusively show that Lord Raglan is entitled to rank as a foundation sire of the modern Scotch Shorthorn.

**PEDIGREE ANALYSES OF LEADING SHORTHORN SIRES
AT THE INTERNATIONAL, 1918-1922**

	Ch. of Eng.	R. Duke.	Cumb.	Lord R.	Total.
Avondale 245144.....	20.78	15.01	18.37	9.46	63.62
Whitehall Sultan 163573.....	24.06	16.03	17.94	11.05	69.08
Villager 295884.....	25.69	15.25	18.75	11.56	71.25
Revolution 388359.....	19.67	13.13	12.50	8.88	54.18
Master Ruby 446601.....	23.40	13.81	16.12	10.71	64.04
Sultan Stamp 334974.....	21.08	13.45	10.56	8.69	53.78
Double Dale 337156.....	20.18	13.81	15.34	9.44	58.77
Archer's Hope 402425.....	23.98	13.78	18.75	11.32	67.83
Lespedeza Sultan 406929.....	21.25	13.39	11.98	9.32	55.94
Master Bapton 556804.....	22.69	11.64	10.78	9.61	54.72
Rodney 753273.....	23.62	13.69	16.12	11.05	64.48
Cumberland's Last 229822.....	23.07	17.16	6.25	11.47	57.95
Fair Acres Sultan 354154.....	22.18	14.20	13.68	9.49	59.55
Dale Clarion 385195.....	22.50	14.96	12.93	10.66	61.05
Sultan Supreme 367161.....	20.91	13.98	18.50	9.96	63.35
Superb 300054.....	24.35	15.08	7.60	10.21	57.24
Village Beau 295883.....	23.46	15.60	18.75	10.42	68.23
Sanquhar Dreadnaught 680399..	23.96	16.74	13.06	10.22	63.98
Village Supreme 423865.....	23.50	14.93	16.67	10.30	65.40
Maxwalton Pride 367542.....	20.40	14.56	14.62	10.25	59.83
Average of twenty bulls.....	22.54	14.51	14.46	10.20	61.71

In this table are presented the percentages of the foundation sires contained in the pedigrees of the twenty leading sires of International winners referred to in Chapter 2. Under "total," in the extreme right-hand column, is given the sum in each pedigree of the four foundation bulls, Champion of England, Royal Duke of Gloster, Cumberland and Lord Raglan. The average for the twenty bulls as shown in the last line may safely be taken as typical for the breed at large during the five years considered.

It is well to note the close relationship between the amounts of Champion of England and Lord Raglan breeding. This is best expressed by the correlation coefficient of .77, which exists between the Champion of England and Lord Raglan percentages in the bloodlines of these twenty sires. Greater variability will be noted, however, in the percentages of Royal Duke of Gloster and Cumberland blood in these pedigrees. In most instances, the analyses are high in the one and low in the other, although in a few cases the amounts of Royal Duke and Cumberland blood in an individual are about the same.

PEDIGREE ANALYSES OF PROMINENT SHORTHORN BULLS

	Ch. of Eng.	R. Duke.	Cumb.	Lord R.	Total.
William of Orange 95736.....	40.56	25.00	.....	9.36	74.92
Commodore 96849.....	45.24	37.50	.....	15.60	98.34
Gravesend 98361.....	34.32	12.50	.....	15.60	62.42
Scottish Archer 117301.....	31.25	12.50	50.00	20.28	114.03
Pride of Morning 120551.....	12.50	6.25	.....	9.67	28.42
Star of Morning 121243.....	21.84	12.50	.....	6.65	40.99
Count Lavender 132575.....	25.74	18.75	12.50	9.75	66.74
Waverley 136405.....	18.47	9.36	.....	6.94	34.77
Wanderer 140614.....	40.56	37.50	25.00	17.94	121.00
The Lad For Me 140618.....	26.28	18.72	21.84	13.19	80.03
Silver Plate 145554.....	17.68	8.99	3.12	6.39	36.18
Scotch Thistle 151800.....	28.94	22.29	21.84	12.03	85.10
Ceremonious Archer 171479.....	22.76	17.16	25.00	12.47	77.39
Choice Goods 186802.....	13.77	6.25	.....	4.42	24.44
Gainford Marquis 370985.....	21.25	13.45	10.14	9.66	54.50
Cupbearer of Collynie 548990....	25.47	17.40	15.25	10.78	68.90
Earl of Kingston 613050.....	17.49	10.65	11.70	7.76	47.60
King Christian of Denmark (86316).....	18.98	10.92	20.28	9.91	60.09
Knight of Collynie (112229).....	23.94	15.49	12.67	10.13	62.23
Harviestoun Grandee 732379.....	23.01	15.18	12.66	10.32	61.17

This table presents the pedigree analyses of twenty Shorthorn bulls, selected for their prominence as sires. The bulls chosen for this table represent various periods of Shorthorn history from 1885 until the time this is written. The earlier bulls in the upper half of the table include a number that were but a few generations removed from Champion of England, and had much of his blood. No animals can today be found with percentages as high as those in the pedigrees of Commodore, Wanderer and such bulls, indicating that since their time a slow dilution of the Champion of England blood in the breed has been taking place as a result of the introduction of other blood.

There may be distinguished in this table a number of sires that were uncommonly low in their percentages of the blood of Champion of England and the sires associated with him. Shorthorn history records that most of these bulls, especially Pride of Morning, Waverley, Silver Plate and Earl of Kingston, were highly valuable outcrosses for Shorthorns rich in Champion of England blood. Apparently, these outcross bulls had enough of some valuable foreign strain to enable them to cross exceptionally well with animals containing much more Champion of England and Lord Raglan blood than themselves.

CHAPTER 7

A SURVEY OF SHORTHORN BREEDING

THE foregoing chapters have outlined the manner in which the Scotch type of Shorthorn was developed through the concentration of the blood of Champion of England. To some extent, also, Lord Raglan was a factor in the origination of the Scotch type. Back of Champion of England, Lord Raglan and every other Shorthorn, Scotch, Bates or Booth, was another sire from which the entire breed evolved in the beginning.

Favorite 252, the source of all Shorthorns, was so profoundly important in the building of the Shorthorns that he may fairly be said to have sired a breed. All Shorthorns, irrespective of their classification as to Bates, Scotch or mixed breeding, trace to Favorite innumerable times, and he was unquestionably more important to the breed as a whole than any other foundation animal.

Scotch Shorthorns Came from Champion of England

In view of Favorite's importance, it may perhaps seem that the Shorthorn pedigrees in the studies which have preceded this chapter should have been analyzed in terms of Favorite. While this would have afforded interesting and desirable information, a knowledge of the Champion of England blood in beef Shorthorns of the present day is of more value to breeders, since the Scotch Shorthorns are but a strain within a breed, and a strain for which Champion of England is almost solely responsible. Similarly, cattle in which Bates breeding predominates might more practically be considered in terms of Belvedere rather than Favorite. This, however, in no way lessens the importance which Favorite has as the basis of the entire breed.

When Favorite appeared, Charles Colling was so impressed with the bull as a potential sire that he concentrated the Favorite blood intensely, after the Bakewell system. The great sire was mated to his daughters, granddaughters, and, in a few cases, to female descendants of the fifth and sixth generations. At the same time, the sons and daughters of Favorite were inter-bred. After a quarter of a century of this doubling in of the valuable blood, Colling-bred Shorthorns universally carried from 50 to 87.5 per cent Favorite blood. Thomas Bates and the Booths, as well

as the other contemporaries and successors of the Collings, followed the Colling lead by using Favorite-bred animals. Thus the rich heritage of Favorite blood was perpetuated through many generations.

Inbreeding had been resorted to in the production of Favorite, since he carried double infusions of the blood of the bull Foljambe and of the historic "beautiful Lady Maynard." Except in the case of Favorite, the Foljambe blood does not figure in the early animals of extraordinary breeding value. Lady Maynard, however, seems to have had quite an influence upon some of the best foundation Shorthorns, and it seems probable that Favorite owed many of his good qualities to her. Lady Maynard and her descendants displayed remarkable milking ability, a fact which points to this notable foundation cow as the probable source of the milking propensities of the Shorthorn breed.

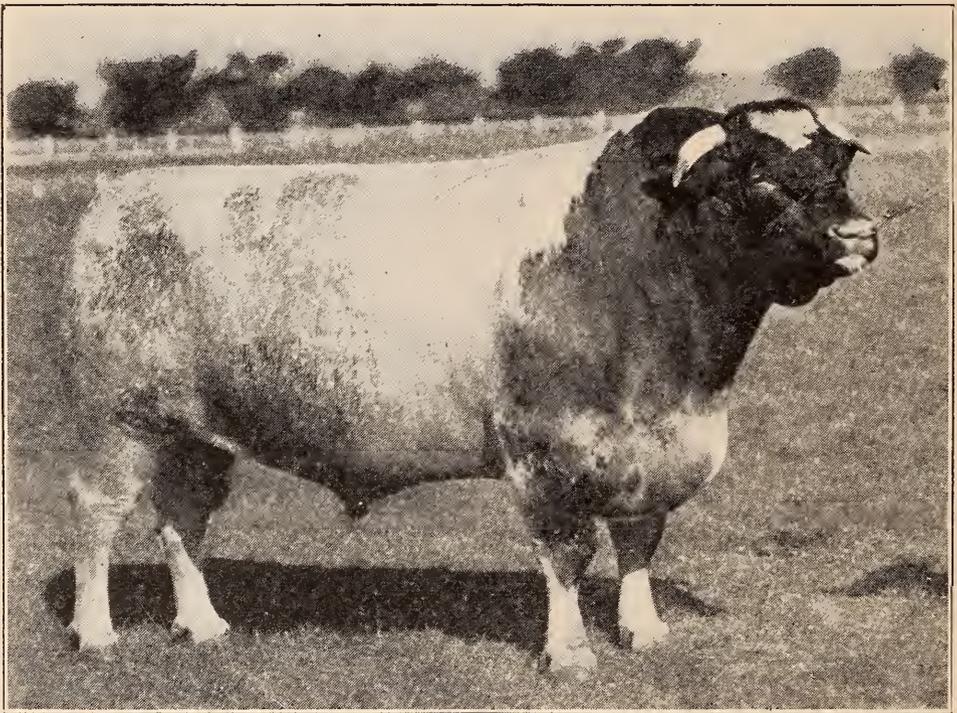
Hubback (319), also, should not be passed over without mention among Shorthorn foundation animals. This bull, antedating even Favorite, was certainly a factor of some influence in the formation of the breed. The true extent can never be known, owing to the imperfect pedigrees of the early years of the breed. It is certain that Hubback was considerably more important than the herd book shows him to have been. He figured slightly in the pedigree of Favorite, although not to any significant extent. Hubback, however, was responsible for some of the cows from which Favorite's best offspring were bred. It is quite clear that the Hubback blood was the only other important strain used with the Favorite-Lady Maynard blood in laying the foundation of the breed.

Bates Shorthorns Built Upon Belvedere

Belvedere (1706) was the rock upon which the Bates type of Shorthorn was built. Belvedere was more intensely inbred than Favorite, being the product of the union of full brother and sister. Heavily inbred in Favorite himself, Belvedere was purchased by Thomas Bates and installed in a herd that was equally strong in Favorite, having a Colling foundation. Belvedere was an outcross to the limited extent that his Favorite blood came through channels largely different from those of the Bates herd. The effect of this combination of the two highly inbred strains of Favorite was the production of such animals as Duke of Northumberland (1940), Duchess 34th and others which ranked as superlative expressions of the breeder's art in their time.

Mr. Bates was pleased to ascribe the success of Belvedere's offspring to the judicious crossing of Princess upon Duchess. It

was the Bates custom to classify pedigrees according to the female line of descent. Belvedere was, from this standpoint, a Princess, while the cows to which he was mated were largely Duchesses and Oxfords. The renowned Duke of Northumberland was therefore hailed by his breeder and others as a triumph of the Duchesses with a Princess cross. An analysis of the Duke's bloodlines discloses a lack of foundation for this claim. Belvedere, the sire, and Duchess 34th, or "Old Brokenleg," dam of the Duke and Mr. Bates' favorite cow, carried an identical percentage of Favorite blood, amounting to approximately 70 per cent. The Duke was thus 70 per cent



REVOLUTION 388359

An important factor in the pedigrees of Shorthorn prize winners since 1918, and a sire worthy of having his blood concentrated.

Favorite. On the other hand, he had but 5 per cent of the blood of the original Duchess and an equally unimportant amount of Princess blood.

The breeders who gathered about the Bates standard emulated their leader's policy of inbreeding. They followed his preferences in bloodlines within increasingly narrow limits until ultimately they were breeding cattle solely according to fashionable pedigree, using good, bad and indifferent animals. They believed, or liked to believe, that they were concentrating the Duchess blood, and so

they were to a slight extent. In reality, they were continuing the piling up of the Favorite blood, and, in addition, developing a very considerable concentration of Belvedere and a lesser concentration of Second Hubback (1423), also an important Bates sire. The pedigree of the \$40,600 8th Duchess of Geneva, that sold at the climax of the dramatic New York Mills sale in New York in 1873, is a typical illustration of the breeding of the later Bates cattle. The bloodlines of this cow contained 43.87 per cent Belvedere and 30.58 per cent Second Hubback. Although considered a highly-concentrated Duchess, she had less than 7 per cent of the original Duchess.

A parallel to the Bates situation is found in the composition of the bloodlines of the cattle bred by the Booths at Killerby and Warlaby. The Booth cattle had much Favorite blood, most of which came through sources apart from those transmitting it to the Bates stock. Pilot (496), a bull carrying 60 per cent Favorite blood, did for the Booth herd what Belvedere did for that of Bates. Crown Prince (10087), regarded as the greatest of the latter-day Booth bulls, showed 43 per cent Favorite and about 25 per cent Pilot in his bloodlines. His pedigree typified the Booth herd at the period of its highest fame.

Secondary Sires in the Scotch Shorthorns

The important relation which Champion of England bears to the Scotch Shorthorn of today has been discussed in previous chapters. It has also been shown that, as with the Bates and Booth strains, there were certain highly important secondary sires. In the development of the Scotch type, the two most important were Royal Duke of Gloster and Cumberland, although Pride of the Isles 45274 and Roan Gauntlet 45276 were also important in this connection.

The evolution of the breed may thus be traced through a series of distinct steps, with each of which is identified a sire of extraordinary prepotence. From Favorite the succession leads to Belvedere, Second Hubback and Pilot. The most recent sire in this group of foundation animals, and the one of greatest significance to present-day breeders, is, of course, Champion of England.

While recognizing them as great bulls in their day and for a time afterward, Shorthorn breeders have not generally realized the profound importance of these foundation bulls. This lack of appreciation has been fostered by the use of the extended form of pedigree with its undue emphasis upon the female line of descent. Misleading at best, the false values engendered by this style of

pedigree have frequently worked much harm. In late years, the majority of breeders have come to admit its errors. The form seems, however, to be firmly entrenched through long usage, and its use continues.

In an intelligent consideration of bloodlines, it is manifestly of little importance to know that an animal traces in the maternal line to a certain imported cow, particularly since that imported cow represents less than one per cent of the blood of the animal. It is worth something, however, to know that an animal has in its ancestry a high percentage of the blood of certain useful sires. The best evaluation of the blood strains involved in the production of an animal is gained from an analysis of the entire pedigree of the animal. Thus, for breeders of Scotch Shorthorns, the important pedigree consideration is the "Scotchness," or amount of Scotch blood in the animal as expressed in terms of Champion of England, Royal Duke of Gloster and Cumberland.

Pedigree Analysis Shows How Breeds Are Made

The analysis of pedigrees shows breeders how breeds and strains within breeds are made. It treats all elements of the pedigree alike, avoiding unequal emphasis upon certain lines. It gives the breeder knowledge of the extent to which his animals have been influenced by the important forces of the breed. This information should of course be supplemented by knowledge concerning the individuality and bloodlines of the immediate ancestors of the animal.

The practice of rating Shorthorns purely according to their female ancestry appears to have originated with Thomas Bates. The relatively insignificant influence of the much vaunted Duchess and Oxford blood as compared to that of Belvedere and Second Hubback has been referred to. Although Mr. Bates consistently exalted the virtues of Duchess, by Daisy Bull and the Matchem Cow, it is probable that he really conceded much of the credit to Belvedere, since he advised Felix Renick, the American pioneer, that "it would be money thrown away to buy any bull that has not sprung from him." This statement was further endorsed by Mr. Bates' own use of Belvedere and his sons and grandsons.

From the time of Bates until the present, the female tribe has been emphasized by breeders. The Booths laid great store by the descendants of Isabella and Halnaby. Later breeders have classified Scotch cattle into fashionable and unfashionable families. The great Cruickshank, fortunately, was guided very little by this custom. This is revealed in his work with the descendants of Cham-

pion of England. He did not breed cattle according to family, although he rightly gave plenty of attention to good dams.

The female family of a Shorthorn can in no sense be considered an index to the actual amount of good blood in that animal. A Young Mary or a Mrs. Motte might easily have more of the blood of Champion of England and Cumberland than a Rosewood or an Augusta. There have, in fact, been many instances of such contrasts since the use of Scotch blood became general. The bull, Ingle Lad 266313, used with success in Kansas a number of years ago, was a Young Mary as to family, and, as such, was forced to run the severe gauntlet of discrimination. A complete analysis of his pedigree discloses 27.38 per cent Champion of England blood and a total of more than 73 per cent of the four foundation sires. Although condemned as a Young Mary, this bull actually had in his pedigree more of the rich Cruickshank breeding than such well-bred bulls as Whitehall Sultan, Villager and Avondale. Despite the handicap of unfashionable family, Ingle Lad is today recognized as having been a worthy sire. How much greater reputation might he have achieved had he been freed from the prejudice against a single ancestor removed by nearly one hundred years in time and many generations in hereditary influence?

Hampton's Model Sacrificed to Family Prejudice

Another such instance is afforded in the show bull, Hampton's Model 210474, twice an International first prize winner and admittedly one of the choicest individuals of his time. Although technically a Young Phyllis, Hampton's Model was not lacking in Scotchness, having above 23 per cent Champion of England. Despite his great individual merit, this bull was allowed to sell for export to Argentina. Apparently, his tribal misfortune was lightly regarded in that country, since he afterwards sold for \$7,000.

In contrast with these two animals of "plain" family that were really more truly Scotch than many fashionably-bred cattle, may be cited such animals as Choice Goods 186802, 13.77 per cent Champion of England; Joy of Morning 153003, 14.04 per cent, and Silver Plate 145554, 17.68 per cent. Choice Goods was considered Scotch as to family, while Joy of Morning was a Jealousy and Silver Plate was deemed a richly-bred Rosewood. Although of approved family strain, all of these bulls were markedly deficient in Scotch breeding in comparison with the average of the breed.

During the past fifty years, breeders of Scotch Shorthorns have found here and there a bull, containing little or no Champion of England blood, that proved a highly useful sire when mated to

richly-bred Champion of England stock. The use of some of these valuable strains has been sufficiently extensive to reduce the average of Champion of England blood from approximately 35 per cent as it was in 1890 to the present average of nearly 23 per cent. Some of these foreign strains have been of marked value to the breed.

Lord Raglan (13244) was the first valuable outcross discovered for the Champion of England blood. The considerable extent to which this amalgamation contributed to the Cruickshank cattle has already been discussed. Among the later notable sources of "cold" blood suitable for crossing upon Champion of England stock were the bulls, Earl of March 58600, Duke of Beaufort 141833 and Knickerbocker 61392. Students of pedigrees will recognize these bulls as sires which frequently appear in the bloodlines of many good Shorthorns.

Outcrosses for the Champion of England Blood

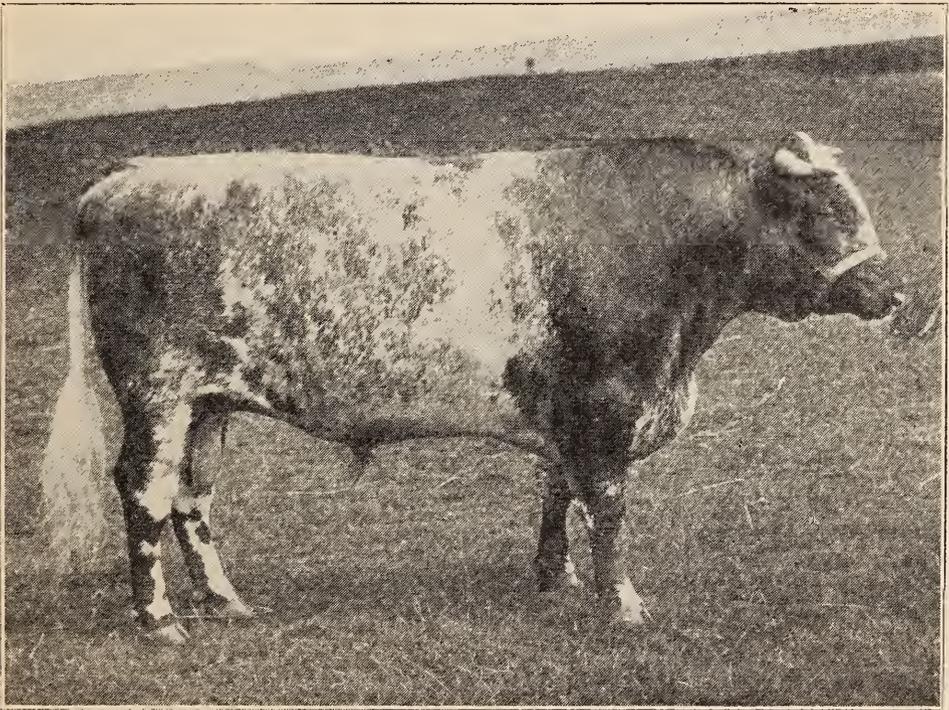
Earl of March was the sire of Sweet Lavender, dam of the celebrated Count Lavender 132575. Lord Chelmsford 99162, a son of Earl of March, and Leon 99047, a grandson, figured prominently in the development of British herds. Earl of March, was chief herd sire for J. Bruce, of Scotland. He was almost altogether of Booth extraction, tracing many times to Crown Prince and Buckingham (3239), while he had no Champion of England blood. It is related that Amos Cruickshank strongly advised Deane Willis to use Count Lavender on the Sittyton-bred females, indicating that Cruickshank recognized the value of the Earl of March outcross.

Duke of Beaufort was very largely of Bates blood. In the herd of Lord Lovat, in Scotland, this bull proved an admirable sire, mated to granddaughters of Champion of England. Knickerbocker was of mixed breeding in which Booth predominated. The dams of both Knickerbocker and Earl of March were sired by Royal Errant (22780), bred from Booth stock by the Duke of Buccleuch.

In later years, the outcrosses have included such bulls as Waverley 136405, his son, Silver Plate, and the Duthie-bred Pride of Morning 120551. Each of these had Champion of England blood, but in much less amount than was customary in the Scotch cattle of their day. Pride of Morning had but 12.5 per cent, while the other two had slightly more. These bulls received infusions of outside blood from varied sources, although there was no notable concentration in their pedigrees of any sire other than the Cruickshank bulls. Apparently, however, there was a contribution of

marked value from some source, since each of the three bulls proved a sire of far more than ordinary merit. They seemed particularly well adapted to mating with the richly-bred Champion of England females of their time.

In America, there have been during the present century a number of bulls, low in Champion of England, which crossed well on cattle carrying a wealth of the Cruickshank blood. Red Knight 157136, a bull that possessed in his pedigree but 8 per cent of the famous Sittyton sire, proved a noteworthy outcross for strongly-bred cows. Choice Goods, also low in Champion of England blood,



PRIDE OF MORNING 120551

A noted Scottish sire. Having little Champion of England blood, he proved a valuable outcross for richly-bred Champion of England cattle. Note how he differs in type from the bulls strong in Champion of England blood.

begot his best calves from cows that had been strongly impressed by the Champion of England influence.

It is regrettable that breeders did not select and inbreed some of these obviously successful outcrosses. It seems highly probable that had the blood of Earl of March or Royal Errant been separated and concentrated, there might have been provided a strain of tremendous usefulness for crossing with the inbred Champion of England cattle. An inbred strain descending from Waverley or

Pride of Morning might have been wonderfully successful in the same connection.

Shorthorn breeders now have one valuable inbred strain in the Scotch or Champion of England-bred cattle, which, of course, include practically all of the beef type animals of the breed. An important future activity of breeders should be to discover, preserve and concentrate other strains of cattle which appear well adapted to inter-breeding with the rich Cruickshank stock. While the best outcrosses of the past are doubtless unobtainable, there are very possibly some strains yet within the breed which will lend themselves admirably to such development.

In the light of animal breeding knowledge and experimentation, it seems altogether likely that Shorthorn breeders of the future will find their greatest opportunity for constructive service in the selection and concentration of inbred strains. A breed so numerous and widely distributed as the Shorthorn could well use half a hundred such strains.

Champion of England Blood Standardized

The time is now past when Champion of England blood can be further intensified. Fifty years' use of this blood has reduced the amount of it to a constant point in animals of the present generation. There are but few living animals that contain more than 25 per cent of this blood, and the general tendency in the future will be for the content of Champion of England blood to remain practically unchanged, unless some influential foreign strain is brought in.

It may, however, still be possible to do some work in concentrating secondary strains within the Champion of England strain. It has been pointed out that many of Sittyton's finest cattle came from the interbreeding of the descendants of Royal Duke of Gloster and Cumberland. Other good cattle were similarly gotten. The crossing of animals rich in one of these strains with animals carrying much of the other has frequently resulted in outstanding cattle in more recent times. Rodney, a living bull and a sire of merit, came from a sire carrying a heavy fixation of Royal Duke blood and a richly-bred Cumberland dam. Maxwalton Renown 367542 and Pines Renown were produced in the same fashion.

It should be worth while for breeders to watch for animals which show extraordinary percentages of the blood of Royal Duke of Gloster or Cumberland, or certain later sires, such as William of Orange 95736 or Scottish Archer 117301. Inbred strains should also be formed from the best descendants of Whitehall Sultan, Vil-

lager and similar valuable sires. The best future use of the Champion of England blood undoubtedly lies in the building up of inbred strains from the best of the Champion of England cattle.

Men of resources, courage and an experimental turn of mind have a splendid chance to shape the future of the Shorthorn breed through intelligent concentration and combination of the breed's best strains. Resources are essential to such experimentation, since only the best animals can safely be used in such fundamentally important work. Courage will be required by the constructive breeder of the future to enable him to ignore the predictions of



SULTAN STAMP 334974

One of the principal ancestors of Shorthorn prize winners at the International from 1918 to 1922—a sire whose descendants are good enough to justify an inbred Sultan Stamp strain.

disaster from those who do not believe in inbreeding. Courage will be needed when the breeder notes that continued inbreeding results in some loss of vigor, even though he knows that the crossing of inbred strains will bring greater vigor in the product.

Breeders who follow such policies need only remember that Amos Cruickshank spent nearly twenty-five years of his breeding career, to say nothing of a great deal of money, before he found the sire which he required in his breeding operations. It should likewise

be recalled that, in concentrating the Champion of England blood, the "Sage of Sittyton" proceeded directly against the advice of all his fellow-workers, who, almost to a man, prophesied disaster as the outcome of his plans. The past fifty years have amply proved that the breeder of Champion of England was sound in his theory and right in his methods.

What of the future of the Shorthorn breed? Has the Champion of England blood rendered its maximum service, or has it many years of usefulness yet to come? Perhaps the fact that this blood has come down through more widely divergent channels than the closely-bred Bates and Booth stock will enable it to rank as the predominant Shorthorn force for many years to come. On the other hand, there may be certain strains which, with some development, will be introduced into the breed to impart new vigor and to produce cattle superior to those of the present. There may be, living or soon to appear, a bull that will found a new race of Shorthorns and that will ultimately take his place among such immortals as Favorite, Belvedere, Pilot and Champion of England.

HEREFORDS

CHAPTER 8

A BRIEF HISTORY OF THE HEREFORDS

FOR centuries, Herefordshire, England, has been noted for good grass and excellent beef cattle. For a long time before the development of the distinct breed to which the county has given its name, this section of Western England, near Wales, had attained a reputation as a source of prime beef. As early as 1627, Herefordshire is recorded by English writers to have been unsurpassed "for corne and cattle."

There is considerable evidence to show that the definite establishment of a breed in Herefordshire antedated the systematic selection and breeding of other pure breeds of cattle in Great Britain. Benjamin Tomkins and William Galliers, Sr., were breeding cattle of the Hereford type before Robert Bakewell began his historic improvement of the Longhorns. Benjamin Tomkins, the Younger, the Tullys of Huntington, the Haywoods and others appear to have possessed herds of a well established Herefordshire type of cattle in the late eighteenth century, when Charles and Robert Colling were barely laying the foundation of the modern Shorthorn.

White Face and Markings of Unknown Origin

The origin of the white face of the Hereford is shrouded in mystery. Some traditions credit the marking to Dutch cattle; others attribute it to cattle brought from Yorkshire. The white face was a fixed characteristic in many herds as early as 1788, although it was not until many years later that it became the universal standard for the breed.

The work of improving the early Herefords fell to the hands of a number of families of Herefordshire farmers. Among the first was the Tomkins family, of King's Pyon. Benjamin Tomkins, the Younger, was born in 1745 and died in 1815. It is difficult to trace his work in detail, since little attention was given in his time to the preservation of pedigrees. Among others who worked with the Tomkins family were the Galliers and Tully families.

The foundations of the Hereford were not entirely laid within the confines of the county of Hereford, and, indeed, the two men whose work with the new breed was of the greatest ultimate signifi-

cance were William Hewer and his son John, residents of Gloucestershire and Shropshire. From the beginning of their connection with Herefords, in the late eighteenth century, the Hewers insisted upon the white face as a Hereford marking, and practically all of their cattle were so marked. Their breeding operations can be somewhat more clearly followed than those of most of the pioneers and it is certain that they resorted to inbreeding in their herd improvement, concentrating particularly the blood of the Silver Bull, calved in 1797, and described as "red with white face."

One of the sons of the Silver Bull, Old Wellington 290, appears from a study of the early pedigrees to have been more important than any other one animal in the formation of the breed as it exists today. Many other bulls descended from Silver Bull and Wellington saw service in the herd. The celebrated Sovereign 221, said by contemporary historians "to have been the best bull ever bred in the county of Hereford, and the sire and grandsire of more prize cattle than any other bull in the kingdom," was a product of the Hewer herd. Sovereign came from a mating of full brother and sister, that were highly inbred in the Silver Bull-Wellington blood.

The Hewer cattle were distinguished for extreme size, quality and longevity. From the herd of John Hewer came the mammoth Cotmore, first prize bull at the first English Royal, in 1839, where he is said to have weighed 3,900 pounds. While this was doubtless a generous estimate, the reference, with many others of the time, indicates that the Herefords possessed great size.

Hewer Herd Was Foremost Element in Early Herefords

The Hewer herd occupied a position of leadership during the first half of the nineteenth century, and other Hereford breeders of the time drew extensively upon it for foundation stock. The Hewers leased many of their good sires, and their best strains of blood became widely disseminated. A thorough study of early Hereford pedigrees shows quite conclusively that the Hewer blood was the most important single element contributing to the modern Herefords.

John Price, of Ryall, was an important early improver of the Hereford, working with and succeeding the younger Tomkins, and using Tomkins blood almost exclusively. The Jeffries family achieved a notable name in the production of Herefords during the century from 1750 to 1850. Thomas A. Knight, of Downton Castle, eminent in horticulture and agriculture in the early nineteenth century, also won distinction as a producer of Herefords.

He was partial to the gray color and was the leading breeder of the strain bearing that color.

Toward the middle of the nineteenth century, these men were succeeded by a group of men who brought about a uniformity of type and an improvement of form in the breed. Interest in pedigrees became stimulated, resulting in the compilation and publication in 1846, by T. C. Eyton, of the first volume of the Hereford Herd Book. Pedigree registration was not on a firm basis, however, until 1878, when the English Herd Book Society was founded. In the years preceding this move, there had been much difference of opinion as to color of the breed, and the first two volumes of the herd book had recorded mottle-faces, white-faces and grays. The adoption of the white face as the standard of the breed is, therefore of comparatively recent origin, dating back to about 1860.

Carwardine Herd Influenced American Herefords

Many great names appear on the roll of those who carried the Hereford banner in Britain during the latter half of the nineteenth century. Lack of space will here permit only the barest mention of many breeders whose work was of vast importance to the breed. From the standpoint of its relation to American Hereford development, the herd of T. J. Carwardine was probably the most important of this group. At Stocktonbury, the farm of Carwardine, were produced Anxiety 2238 and Anxiety 4th 9904, two bulls that were to impress American herds profoundly. Here also was used the great bull, Lord Wilton 4057, the leading sire of his day in England.

Philip Turner, of the Leen, and his son, A. P. Turner, for many years maintained a herd of Herefords of the highest order. They used such sires as Spartan 3978, Corsair 4581, and the celebrated The Grove 3d 2490, that was exported to America in 1884. As the breeder of Lord Wilton, William Tudge, of Adforton, ranks among the foremost Hereford men of this time. Benjamin Rogers, of The Grove, also won a great name among Hereford breeders. In his herd were produced the great sires, Sir Benjamin 36 and The Grove 3d, while Sir Thomas 20 made his illustrious record as a sire in the Rogers herd.

Edward Price and his son, John, of Court House, rank with the breed-builders that have been mentioned. Edward Price used with success the great Sir David 68, while John Price discovered and used Horace 2492, sire of The Grove 3d, and a bull that profoundly influenced British Hereford breeding for many years with no small effect upon early Hereford history in the United States.

Contemporaneous with the Turners, Carwardine, Tudge and the Prices, were a host of other breeders scarcely less important in shaping the Hereford breed. Much is due the operations of John Hill, of Felhampton Court; J. H. Arkwright; J. Monkhouse, of The Stow; Lord Berwick, of Cronkhill; T. C. Edwards, of Wintercott; William Taylor, of Showle Court; William Tudge, Jr., of Leint-hall; Mr. Roberts, of Ivingtonbury; J. B. Green; the Reas, of Monaughty and Westonbury, and others.

The first importation of Herefordshire cattle to America of which there is definite record was made in 1817, by Henry Clay, of Kentucky. About 1825, a pair of Herefords were brought to Massachusetts. In 1840, the first aggressive efforts to establish the breed in America were undertaken by William H. Sotham, a native of Herefordshire, who imported twenty-two head in partnership with Erastus Corning, Jr., of New York.

Hereford Expansion Began About 1880

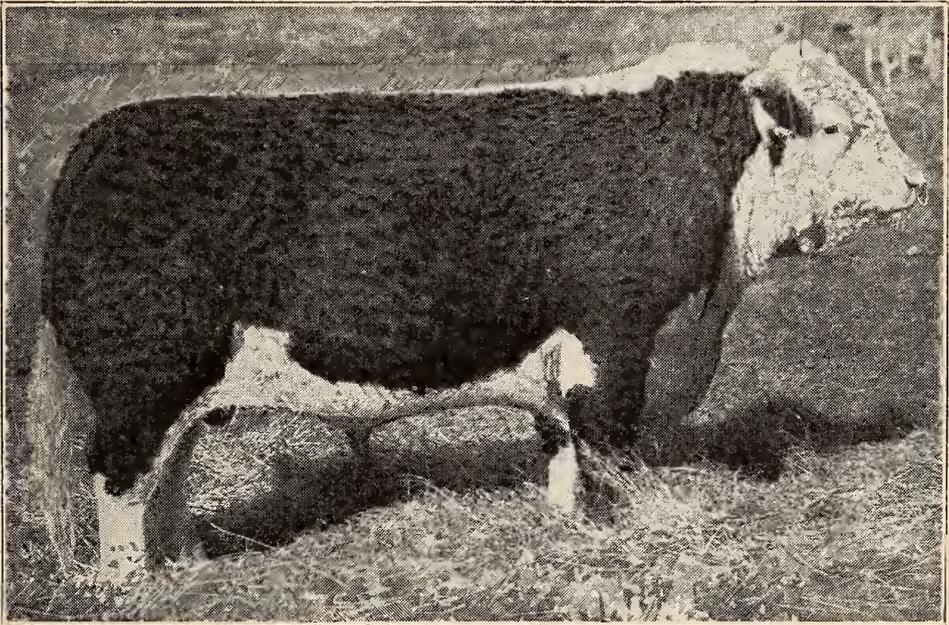
So far as any real significance to the present status of the breed is concerned, the history of Herefords in America begins during the years just prior to 1880, when T. L. Miller, of Beecher, Illinois, and others began importing and breeding Herefords. Mr. Miller and Thomas Clark, of Ohio, later of Beecher, Illinois, commenced the breeding of Herefords about 1870. Mr. Miller aggressively promoted the Hereford cause and was the first to foresee the future demand for Herefords from the great western beef-producing states. He opened up a range market for bulls as early as 1873.

The Miller and Clark herds attracted more attention than any of their predecessors of the breed, and a number of men were drawn to the breed shortly before 1880. Among the herds founded at this time were those of C. M. Culbertson, of Illinois; Fowler & Van Natta and Earl & Stuart, of Indiana, and Gudgell & Simpson, of Missouri.

In 1880, the adaptation of the Hereford to the range had become apparent. The range cattle industry was then expanding at a rapid rate, and the logical result was a marked stimulation of the Hereford trade. The demand for breeding stock led to importations from Herefordshire to America during the years from 1880 to 1886 on a scale that had not before and has never since been paralleled by any breed. The records of the American Hereford Cattle Breeders' Association show that more than 3,500 Herefords were brought to the United States and Canada during these six years. The new importations comprised the best blood of Herefordshire. It was fully utilized in the American herds, and so far-reaching was the effect of these importations that there are today

practically no Herefords which trace to importations made prior to 1880.

The bulls that have made the greatest impression upon American Hereford breeding during the years since 1880 were members of these importations or were represented by many of their get. Anxiety came over in 1880, in the C. M. Culbertson importation. In 1881, Gudgell & Simpson brought over a shipment of more than one hundred head, which included the bulls, Anxiety 4th and North Pole 8946. The Earl & Stuart importations of 1882 included the bulls, Sir Bartle Frere 6419, Romeo 6420 and Prince Edward 7001, all by Lord Wilton. The famous Garfield



REPEATER 289598

One of the most effective Hereford sires used in America during the present century.

7015, was imported at this time. The following year Mr. Culbertson brought over the great Hereford sire, The Grove 3d.

The years of extensive buying from England and heavy selling to the range were a golden age for the American Herefords. Many important herds were founded at this time. Others of note in addition to those already mentioned were the herds of George Leigh, T. C. Ponting and G. W. Henry of Illinois; Benjamin Hershey and the Cooks, of Iowa; the Wyoming Hereford Association; Shockey & Gibb, of Kansas; M. H. Cochrane, of Canada, and H. H. Clough, of Ohio.

During the past twenty-five years, the growth of the Hereford in America has been phenomenal. The American Hereford Cattle Breeders' Association, organized in 1877, has recorded more than a million cattle, and the number of registered Herefords is almost equal to the number of Shorthorns. Breed contests of the Herefords at American shows have provided many sensational exhibitions, and in inter-breed fat stock competition the breed has frequently triumphed, particularly in the feeder cattle classes. On the range, the Hereford has a lead over other breeds, and since 1885 the white face has been a dominant characteristic of the hordes of cattle bred in the great western plains country.

Six Important Hereford Foundation Sires

In succeeding chapters, the evolution of American Herefords with respect to bloodlines will be traced. The relative importance to the breed as it stands today of such foundation animals as Anxiety, Anxiety 4th, North Pole, Garfield, Lord Wilton and Horace, will be considered. An attempt will be made to show how these bulls have in large part determined the present Hereford type and to point out the channels through which their effect has come. The work which many constructive breeders have done with the Hereford breed in America has been accomplished with animals in the bloodlines of which these important foundation sires can be discerned. Chief among these sires was Anxiety 4th, and associated with him was North Pole, another foundation animal of genuine importance. Other noteworthy contributions to the Hereford have come from Anxiety, Garfield, Lord Wilton and Horace.

CHAPTER 9

LEADERS AMONG MODERN HEREFORD SHOWRING SIREs

AN ADEQUATE conception of the forces now at work in the Hereford herds of America may be gained from a consideration of the bulls that have contributed the principal show winners in Hereford rings during a recent period. In order to provide the groundwork for a study of Hereford foundation sires, an analysis of the ancestry of recent Hereford prize winners at the International has been made. The procedure has been the same as followed with the Shorthorn showring study, using the first, second and third prize winners at each of the Internationals from 1918 to 1922, inclusive. The tabulations which follow are likewise compiled on the basis used in the Shorthorn discussion.

The Leading Sires of 1918

	Points	Number Winners
Woodford 500000.....	120	5
Perfection 92891.....	96	9
Beau President 171349.....	94	7
Beau Mischief 268371.....	92	6
Bonnie Brae 8th 239653.....	88	6
Publican 189221.....	80	11
Repeater 289598.....	80	3
Beau Brummel 51817.....	64	9
Bonnie Lad 20th 355369.....	64	3
Paladin 126248.....	62	9

The Hereford has boasted many a mighty showyard monarch—from the days of The Grove 3d and Lord Wilton down to the grand champions of the present time. And while the breed has possessed many show bulls of remarkable qualifications, it has also had an impressive list of sires of winners. It will be apparent as the study with which this chapter is concerned proceeds, that the Hereford breed can number many sires of outstanding prepotence. It will also be noted that there is less variation of bloodlines among the dominant sires than is the case in several other breeds. As the story of the International Hereford show unfolds from year to year, the reader will note the same groups of sires in control of the showring from year to year. The table for 1918 affords an idea as to the identity of these showring leaders.

Woodford, a bull that has come to have a very famous name in American showyards, is found at the head of the sires of the foremost prize winning Herefords at the 1918 International. As the table indicates, Woodford figured in five animals which won third place or better at the 1918 show. Following Woodford comes Perfection, his sire.

The third and fourth bulls in the list are sire and son—Beau President and his son, Beau Mischief. By students of Hereford pedigree, these two bulls will be recognized as intensely-bred Anxiety 4th bulls. They are followed by Bonnie Brae 8th and Publican, two more bulls coming from the Anxiety 4th line.

Repeater, the seventh bull, was a show animal of distinction, as well as a sire. In breeding, Repeater is in a sense similar to Woodford, in that he combines the two major strains of the breed, the Anxiety 4th and Garfield-Perfection lines. Bonnie Lad 20th, in eighth place, also represents this combination, although his Anxiety blood outweighs the other.

Beau Brummel and Paladin, the remaining two, may be directly credited to the Anxiety 4th group. Beau Brummel was a grandson of Anxiety 4th, admittedly the greatest single factor in perpetuating the influence of the famous Gudgell & Simpson sire.

It will be noted that the entire 1918 list contains a number of bulls whose period of service had ended many years before the 1918 show. Notable among these are Beau Brummel, Perfection, Publican and Paladin. They were represented at the 1918 show by their descendants in the second, third and even fourth generations. Under the point system followed, each generation removed from the winner gives the sire less credit. It is thus apparent that the blood of these older sires was tremendously effective and figured in many animals or they would not rank among the leaders.

The Leading Sires of 1919

	Points	Number Winners
Woodford 500000.....	176	7
Perfection 92891.....	154	14
Beau Brummel 51817.....	104	13
Perfection Fairfax 179767.....	94	5
Beau President 171349.....	90	8
Bocaldo 6th 464826.....	72	3
Bonnie Lad 20th 355369.....	72	3
Dale 66481.....	64	10
Beau Mischief 268371.....	64	5
Beau Blanchard 362904.....	64	2

The membership of the 1919 table of leaders, as will be noted, bears a very close resemblance to that of the 1918 compilation;

but a few changes can be noted in the 1919 list. Woodford and Perfection rank first and second, as in 1918. Beau Brummel has moved up to third position, however, while in fourth place is Perfection Fairfax, a son of Perfection and a sire of great reputation. Perfection's extraordinary showing at the 1919 International is thus largely accounted for through the performance of his two celebrated sons, Woodford and Perfection Fairfax. However, Perfection figured in other animals in addition to those sired by these two sons, since the second column of the table shows that Perfection was an ancestor within three generations of fourteen animals, while his two sons figured in a combined total of but twelve winners.

Bocaldo 6th, a scion of the Anxiety 4th line, appears among the ten leaders for the first time in the 1919 table. The other bull initiated into the list is Dale, sire of Perfection. His appearance among the leaders is due solely to the remarkable showing of his son. Beau Blanchard achieves tenth place in the list, thus introducing still another bull from the Anxiety 4th line.

The Leading Sires of 1920

	Points	Number Winners
Woodford 500000.....	140	9
Bocaldo 6th 464826.....	96	5
Beau Brummel 51817.....	84	11
Perfection 92891.....	82	9
Peerless Prince 533333.....	64	2
Beau President 171349.....	60	6
Repeater 289598.....	56	3
Bright Stanway 366000.....	56	2
Prince Domino 499611.....	56	2
Bocaldo 362186.....	48	5

Woodford, it will be seen, retained his leadership in 1920, although this leadership was somewhat less decisive than in 1919. Bocaldo 6th improved upon his 1919 position by placing second in 1920. Beau Brummel and Perfection remained near the top of the list. In the 1920 list will be noted four bulls that have not heretofore appeared among the ten leading sires of winners. They include Peerless Prince, Bright Stanway, Prince Domino and Bocaldo. Anxiety 4th blood predominated in each of these four bulls, and thus nine of the 1920 leaders carried Anxiety 4th blood, seven of them having it in marked amount. Perfection was the one bull in the list for this year which owed nothing to Anxiety 4th. The Anxiety 4th line therefore had a somewhat stronger position in 1920 than it occupied in 1919.

THE EVOLUTION OF BREEDS

The Leading Sires of 1921

	Points	Number Winners
Woodford 500000.....	128	9
Perfection 92891.....	122	14
Repeater 289598.....	74	5
Bocaldo 6th 464826.....	68	3
Woodford 28th 691551.....	64	2
Perfection Fairfax 179767.....	62	5
Prince Domino 499611.....	56	2
Woodford 9th 559720.....	56	2
Woodford 6th 505407.....	56	2
Bocaldo 362186.....	54	5

The striking thing about the 1921 standing of the sires is the appearance of three sons of Woodford among the ten highest ranking sires. Woodford and Perfection duplicated their leadership of former years, while Perfection Fairfax reappeared among the top ten bulls. From the complexion of the 1921 list it may be seen that the 1921 International marked a triumph for Hereford cattle of Perfection breeding. The relative number of strongly-bred Anxiety 4th sires among the top sires of 1921 was considerably less than in the preceding years.

The Leading Sires of 1922

	Points	Number Winners
Woodford 500000.....	120	10
Perfection 92891.....	102	12
Beau Blanchard 362904.....	88	3
Bonnie Lad 20th 355369.....	80	5
Beau President 171349.....	74	11
Beau Mischief 268371.....	72	6
Hartland 1055000.....	64	2
Woodford 9th 559720.....	56	3
Woodford 6th 505407.....	56	2
Woodford 28th 691551.....	56	2

The Anxiety 4th group regained some lost ground at the 1922 show, although they presented no leaders that were capable of dislodging Woodford and Perfection from their position at the head of the list. By placing first in 1922, Woodford established the record of ranking at the head of sires of Hereford winners at the International for each of the five years from 1918 to 1922, inclusive. Ranking second in four of the five years, Perfection had an undisputed title to second place during the five-year period. Hartland, a bull of Anxiety 4th breeding, was the only new sire introduced in the 1922 list.

The extent to which Woodford and Perfection have triumphed among the ancestors of Hereford winners at recent Internationals is outlined in the accompanying table, which gives the standing of the twenty highest ranking sires during the entire five-year period. The first column displays the number of points credited to each sire, while in the second column is given the number of individual winners in which the sire appeared as an ancestor within three generations. A total of 148 animals placed third or better at the five shows, there being 32 duplications among the winners from year to year. Perfection, it will be noted from the second column, claims more descendants among the winners than any other one sire in the list, numbering 46 descendants, or 31 per cent of the total number of individual animals.

**The Leading Sires of Hereford Winners at the
International, 1918-1922**

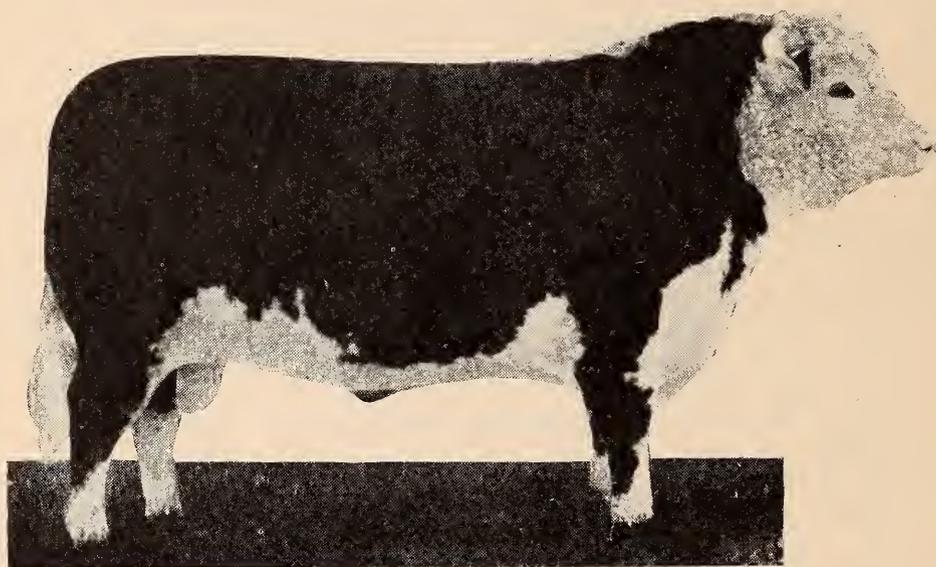
	Points	Number Winners
Woodford 500000.....	684	29
Perfection 92891.....	556	46
Beau President 171349.....	344	30
Beau Brummel 51817.....	328	32
Bocaldo 6th 464826.....	292	12
Beau Mischief 268371.....	272	18
Perfection Fairfax 179767.....	262	17
Repeater 289598.....	246	11
Bonnie Lad 20th 355369.....	228	12
Bonnie Brae 8th 329653.....	204	16
Beau Blanchard 362904.....	200	6
Publican 189221.....	196	24
Bocaldo 362186.....	182	15
Bright Stanway 366600.....	180	5
Woodford 9th 559720.....	168	6
Woodford 6th 505407.....	160	4
Domino 264259.....	158	11
Dale 66481.....	156	20
Prince Domino 499611.....	144	4
Woodford 28th 691551.....	144	3

Perfection may be considered as the head of a dynasty of forceful sires in this group of bulls responsible for recent winners. Woodford and Perfection Fairfax, his sons, may be grouped with him, as well as the three sons of Woodford, Woodford 9th, Woodford 6th and Woodford 28th. Dale, the sire of Perfection, may also be considered with this group.

Outnumbering this group in representatives among the list of twenty leading sires are those bulls in which the blood of Anxiety 4th and his grandson, Beau Brummel, has been the predominating

influence. Twelve of the twenty bulls fall into this class. In addition to Beau Brummel, there are his son, Beau President, and his grandsons, Beau Mischief, Beau Blanchard, Publican, Domino, Prince Domino and Bright Stanway. Bocaldo, Bocaldo 6th and Bonnie Lad 20th also carry much of the Beau Brummel-Anxiety 4th breeding. Several of these bulls have from two to five crosses of Beau Brummel and many more crosses of Anxiety 4th.

In the list of twenty, there are but three bulls that do not carry at least some Beau Brummel-Anxiety 4th blood. The exceptions are Perfection, Perfection Fairfax and Dale. In a number of the twenty sires, Perfection and Beau Brummel lines have been



WOODFORD 500000

The foremost sire of Hereford winners at the International Live Stock Show from 1918 to 1922.

combined. Instances appear in Woodford and each of his three sons, as well as in Repeater and Bonnie Lad 20th.

Students of Hereford pedigree will note among the twenty principal sires of International winners many bulls whose blood is widely distributed throughout the breed at large. So forceful have these twenty sires proved in the Hereford world in comparatively recent times that there are few cattle in any Hereford herd that have not been influenced to a considerable extent by one or more of these sires. This list of prepotent sires serves, therefore, as an accurate and satisfactory index to the bloodlines of the breed in general, and from the ancestry of these sires conclusions may be formed regarding the bloodlines of the present generation of Hereford cattle.

Present-day Hereford cattle may be divided into three general divisions as to bloodlines. As the makeup of the list of leading sires indicates, the most numerous of these groups is that in which the blood of Anxiety 4th and Beau Brummel predominates. Another important section is composed of those cattle which have been extensively influenced by Perfection and his sons and grandsons. The third class embraces those Herefords in which the Anxiety and Garfield-Perfection lines have been blended, with significant contributions from each.

In succeeding chapters, the influence of Anxiety, Anxiety 4th and North Pole upon the Anxiety strain of Herefords will be carefully traced. The influence of certain foundation sires of the so-called Perfection-bred cattle will likewise be demonstrated. Analysis of many pedigrees shows conclusively that the earlier sires which contributed most to this group included Horace 2492, Lord Wilton 4057 and Garfield 7015. The Hereford breed has no foundation sire whose blood is common to all individuals of the breed in the manner in which Champion of England figures in the Shorthorns. For many years, Hereford cattle in America have been bred along two rather separate and distinct lines.

CHAPTER 10

HEREFORD FOUNDATION SIRE—I

ANXIETY 4TH 9904

THE career of Anxiety 4th 9904 and his descendants has been the outstanding event in American Hereford annals. This bull, more than any other, determined the destiny of the breed in North America. Fortunately for the Herefords, the full measure of the usefulness of Anxiety 4th was gained through intelligent interbreeding of his progeny. One after another the descendants of this great bull developed into cattle that possessed size and constitution with admirable fleshing and quality. The potency with which Anxiety 4th-bred cattle have reproduced the desired type has led to their universal distribution in the herds of the breed and, as a result, there are practically no Hereford cattle in America today that have not felt in some degree the influence of Anxiety 4th. A large and ever-increasing portion of the breed is made up of animals in which Anxiety 4th has been the dominant hereditary force. So extensive has the influence of animals bred in this fashion become that Anxiety 4th, in many respects, parallels Champion of England in the Shorthorns as a foundation sire.

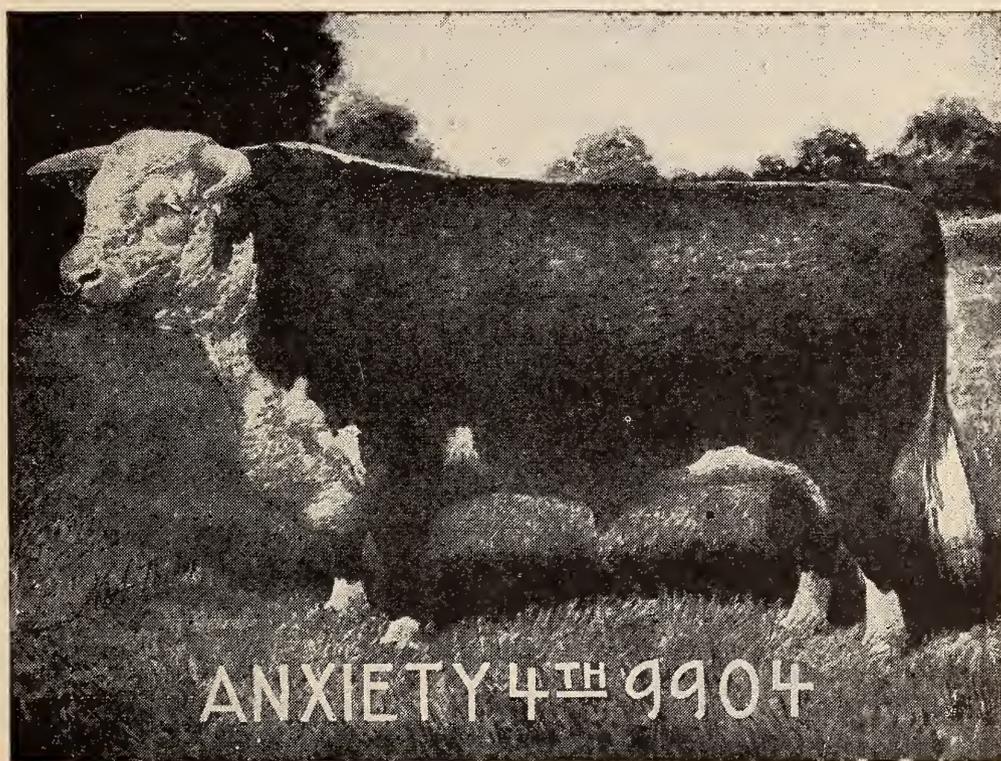
Anxiety 4th Corrected Faulty Quarters

A familiar story relates that Anxiety 4th was chosen by his American owners for a specific purpose: that of improving the hind quarters of their cattle. In 1881 "Governor" T. A. Simpson, of the firm of Gudgell & Simpson, Independence, Missouri, set out for Herefordshire, England, to buy breeding stock. As he left, Charles Gudgell, his partner, gave him the parting injunction: "If you find a bull over there with an end to him, bring him with you." When he returned Mr. Simpson brought with him Anxiety 4th, "the bull with an end." The bull admirably fulfilled his function of improving the thighs and tailheads of the Herefords of the time and also corrected faults in their heads, hides and backs.

In common with many great foundation sires, Anxiety 4th was the product of inbreeding. He was bred by T. J. Carwardine, Stocktonbury, England, and was calved in 1880, the offspring of Anxiety 2238 and Gay Lass 9905. The sire and dam of Anxiety

4th were son and daughter of Longhorns 2239, and both were from dams sired by De Cote 2243 and out of granddaughters of Counsellor 2264. Anxiety 4th therefore resulted from the union of two animals which possessed 81.25 per cent identical breeding. In other words, the sire and dam of Anxiety 4th were very nearly full brother and sister.

The intensification of the Longhorns-De Cote blood at Stocktonbury was a most fortunate combination, since it produced, not only Anxiety 4th, but his noted brother, Anxiety 3d 4466, and his sister, Prettyface 5735. Mr. Carwardine, the breeder, never realized the greatest benefit of this celebrated cross, being induced by flat-



The progenitor of a strain which includes a very large proportion of the Herefords in present-day American herds.

tering offers to part with the two sons of Anxiety, as well as their valuable sister. Had Anxiety or one of his good sons been retained at Stocktonbury for use on the Longhorns females and the inbreeding further continued, it is a safe prediction that the history of the herd would have been even more illustrious.

A yearling at the time of his importation, Anxiety 4th developed in a manner highly pleasing to his importers. He had a bold, masculine head with drooping horns. His top line was straight and level, and he was deep of body and heavy boned. It was in his full,

rounded quarters, however, that he excelled most of the Herefords of the day and in the improved hindquarter, the Anxiety Herefords left their trade mark upon the breed.

The results attending the use of Anxiety 4th in the Gudgell & Simpson herd were highly satisfactory to his importers. Most of his heifers were retained in the herd but nearly all of his earlier sons were sold, many of them going to the range, which at that time was an important outlet for the bull crop. It was also the practice in the early years of the herd to resort to outside strains of blood in the selection of herd sires. Some of the best sons of the great bull were thus lost to the breed so far as their influence upon the pedigreed herds was concerned, although the improvement which they wrought on the cattle of the vast range country was of undoubted benefit to the interests of the breed.

Beau Real and Beau Monde

Two good sons of Anxiety 4th, Beau Real 11055 and Beau Monde 9903, were saved from the range through their purchase by Shockey & Gibb, Lawrence, Kansas. The success of this pair, and particularly of Beau Real, in the showring and in the breeding herd, centered attention upon the excellence of the Anxiety 4th cattle. Beau Real was conceded to be one of the handsomest bulls of his time and was a consistent winner at the better shows of the late "eighties." In the herd of Shockey & Gibb he proved a prolific sire, producing such good bulls as Kansas Lad 36932, Beau Real 3d 30769, and Wild Tom 51592, as well as some outstanding females.

A few others of the sons of Anxiety 4th were bought to head contemporary herds and their names will be found in many pedigrees of living cattle. These included Sylvester 11123, Western Eagle 28109, Anxiety Monarch 41216, Brainard 41770, and Roscoe 16509. Don Quixote 37205 and Don Juan 11069 saw extensive service in the parent herd.

Foremost among the sons of Anxiety 4th from the standpoint of his influence upon Hereford posterity was Don Carlos 33734, bred from the imported cow, Dowager 6th 6932, that was also the dam of Don Quixote. That Don Carlos was a remarkable bull, from the standpoint of physical conformation as well as of breeding power, is shown by his winning of second place and reserve championship at the Columbian Exposition in 1893 at the age of seven years, and with more than 250 calves to his credit. Moreover, he had been fitted on short notice to replace another bull in the show herd.

The career of Don Carlos in the Gudgell & Simpson herd is of special significance, since it marked the departure from the prac-

tice of using sires bred outside the herd in favor of the concentration of the Anxiety 4th blood which was ultimately to bring the herd much distinction. Decision to intensify the Anxiety 4th blood had been reached as a result of the favorable outcome of a cautious experiment in mating Anxiety 4th with a half-sister, a daughter of Anxiety. Don Carlos was then chosen to succeed his sire in perpetuating the valuable blood. Don Carlos was freely used on his half-sisters, and, in a few instances, upon the daughters of Beau Real and Don Juan. The cattle from these matings were of such character as to encourage the further doubling-in of the Anxiety 4th blood.

Don Carlos is furthermore important in that he crossed outstandingly well with the daughters of North Pole 8946, a bull imported with Anxiety 4th. While Anxiety 4th was himself bred to these cows, the real worth of the cross became apparent in the offspring from the mating of Don Carlos and the North Pole heifers. Further discussion of this remarkably successful combination of bloodlines will be made in a later chapter.

Following Don Carlos in the herd came three of his sons, Beau Brummel 51817, Lamplighter 51834 and Druid 46833, all of them bred from North Pole cows. The first named two had long and impressive records at the head of the Gudgell & Simpson herd. They were succeeded in service by their sons and grandsons and the line was kept unbroken for the period of more than thirty-five years during which the herd was maintained.

Beau Brummel a Sire of Inestimable Value

Beau Brummel was a large, heavily-quartered bull of great length with a splendid head. He was calved in 1890, and his dam, Belle 24629, was by North Pole and out of a granddaughter of the celebrated English sire, Sir Thomas 20. The list of the get of Beau Brummel is a long and impressive one. It is doubtful whether a Hereford sire ever left so many really valuable sons. Chief among them must be named Beau Donald 58996 and Beau President 171349. Beau Donald was from the cow Donna 33735, by Anxiety 4th, while Beau President's dam was Pretty Lady 25th 121411, by Lamplighter and out of Pretty Lady 16th 56707, by Beau Brummel. Beau Brummel was thus used to continue the building of a concentrated Anxiety 4th strain of cattle.

Beau Donald was a sire of note in the herd of J. M. Curtice, of Kentucky. During the closing years of the nineteenth century and the first few years of the twentieth century, no Hereford sire claimed so many winners in American showrings. At the

St. Louis Exposition, in 1904, Beau Donald was represented in the winning by no less than eleven of his sons and daughters, in addition to numerous other descendants. His get included the useful bulls, Beau Donald 3d 86140, Beau Donald 5th 86142, Lord Erling 79642, Prince Rupert 75939 and Beau Donald 76th 187362, the sire of the dam of Woodford 500000. The females by Beau Donald numbered many brilliant winners and producing matrons, such as Belle Donald 20th 105176, the dam of Bonnie Brae 3d 203317; Belle Donald 76th 187362; Belle Donald 3d 109873 and many others.

Beau President followed his sire, Beau Brummel, at the head of the Gudgell & Simpson herd, where he made a distinguished name for himself among the latter-day sires of the herd. Beau President is best known as the sire of Beau Mischief 268371, a bull that has justly come to be regarded as a sire of high merit. In addition to Beau Mischief, Beau President sired such worthy breed improvers as Beau Delaware 259127, Beau Gaston 366153, Beau Randolph 418893, Beau Picture 308177 and Beau Perfection 254963, all of them prominently associated with the more recent development of the Anxieties.

Other Sons of Beau Brummel

Beau Brummel had many other sons not so well known to fame as Beau Donald and Beau President, but nevertheless of importance as contributors to breed progress. Among them should be named Beaumont 134751, long an important sire in the Missouri herd of Steward & Hutcheon; Beau Brummel Jr. 65073; Beau Donorus 144615; Beau Dandy 145564; Militant 71755, used in the home herd; Beau Santos 140444; Beau Modest 160589; Beau Donovan 3d 186831; Patrolman 91594; Printer 66684; Beau Beauty 192235, and Young Beau Brummel 207148.

Successful as a sire of sons and daughters alike, Beau Brummel gave to the Anxiety 4th herd such daughters of sterling worth as Lady Stanway 9th 171354, the dam of Prince Domino and Bright Stanway; Blanche 23d 144623, dam of Beau Blanchard; Pretty Lady 16th 56707, dam of Publican; Donna Anna 22d 189218, dam of Domino; Marietta 15th 135875, dam of Repeater 63d 486426, and a host of others—all of them enrolled among the breed's most worthy dams.

Eclipsed only by the stellar achievements of Beau Brummel were those of his three-quarters brother, Lamplighter 51834. This bull had headed the yearling bull section at the Columbian Exposition in 1893, and was retained for service in company with Beau

Brummel. Lamplighter was a smaller, thicker bull than Beau Brummel and had the Anxiety 4th richness of flesh and fullness of quarter. In the herd, Lamplighter gave a most satisfactory account of himself. Dandy Rex 71689, Princeps 66683, Masquerader 109740 and Paladin 126248 were among the best of his sons. Paladin and his two sons, Publican 189221 and Don Arthur 285925, were all successfully used by Gudgell & Simpson. Among the daughters of Lamplighter were Pretty Lady 25th 121411, dam of Beau President; Mischievous 71758, dam of Beau Mischief; Donna Anna 14th 135952 and Vignette 5th 71806. The get of Lamplighter were of a uniformly high standard of individual excellence and many winners were numbered among them, Dandy Rex and Mischievous being invincible in their time.

Later Sires Were of Anxiety 4th Breeding

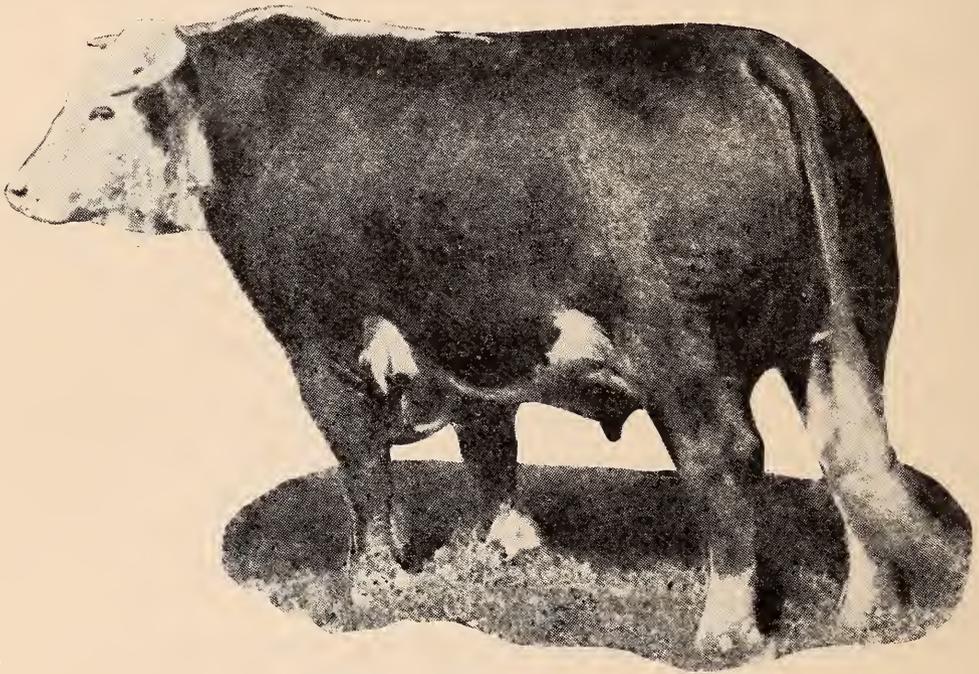
After the extraordinary value of Beau Brummel and Lamplighter had been demonstrated, no further attempts to introduce outcross blood into the herd were made by Gudgell & Simpson. The sires that followed the illustrious sons of Don Carlos were uniformly of concentrated Anxiety 4th lineage. The splendid results which attended the continuation of line breeding in the herd from 1900 until its dispersion in 1916 are a matter of recent Hereford history. A limited idea of the significance to the breed of the Gudgell & Simpson policy of using home-bred bulls has been afforded by the study of Hereford show winners in Chapter 9. Notable among the sires used in following this course were Dandy Rex, Beau President, Beau Mischief, Domino, Paladin, Publican and Bright Stanway.

In tracing the influence of Anxiety 4th upon living Herefords, the method of expressing the amount of foundation sire blood in an animal becomes of peculiar value. Analysis of the pedigrees of Herefords designated as Anxiety 4th-bred forcefully illustrates the dominance of Anxiety 4th. Consideration of the bloodlines of many of these animals discloses the standard amount of Anxiety 4th blood in line-bred Anxieties today as approximately 25 per cent. Moreover, the blood has been crossed upon and blended with all the other important strains of the breed to such an extent that it may safely be estimated that the average Hereford animal of today carries more than 20 per cent Anxiety 4th blood.

Among Herefords of the twentieth century period, Beau Donald doubtless ranks as the most richly-bred Anxiety 4th animal of note. It has previously been noted that he was sired by a grandson and out of a daughter of the foundation sire. He therefore

carried 37.5 per cent Anxiety 4th blood. Almost as great a concentration of the favored blood was possessed by Lord Erling and Don Arthur, each with 31.2 per cent, and Beau Blanchard and Young Anxiety 4th 659395, with 30.4 per cent Anxiety 4th. Beau Mischief, Bright Stanway and Beau Delaware each afford notable instances of richness in Anxiety 4th blood with 29.6 per cent.

The blending of bloodlines in the Gudgell & Simpson and allied herds has been such that many recent Herefords have carried exactly 25 per cent Anxiety 4th. Examples are found in Bonnie Brae 8th 329653, Domino, Prince Domino, Beau Carlos 248915, Beaumont, Bonnie Brae 3d and Don Perfect 400000. Beau Brum-



BEAU DONALD 58996

Beau Donald was one of the principal representatives of Anxiety 4th breeding. His pedigree contained 37.5 per cent Anxiety 4th.

mel and Lamplighter each had exactly 25 per cent of the blood of the famous sire.

Many other Hereford sires of recent origin show from 20 to 25 per cent Anxiety 4th blood, thus showing it to have been a dominating influence although tempered to a slightly greater degree by other strains than in the case of those animals carrying 25 per cent or more of Anxiety 4th. Examples in point are found in Beau Mischief, 21.8 per cent; Bocaldo 6th, 22.4 per cent; Wyoming 505146, 19.5 per cent; Mischievous Jr. 791452, 22.6 per cent, and Peerless Prince 533333, 23.4 per cent.

To a lesser extent, Anxiety 4th has figured in the makeup of certain other prominent Herefords from the standpoint of modern bloodlines. Bonnie Lad 20th was 12.5 per cent Anxiety 4th, while Woodford carried 9.3 per cent. Repeater 4.7 per cent, was outstandingly low in Anxiety 4th. It is significant, however, that the best of the offspring of Woodford and Repeater have come from females rich in the Anxiety 4th influence. This is reflected in the pedigrees of Woodford 9th, 14 per cent Anxiety 4th, and Woodford 6th, 11.7 per cent. Repeater Jr. 696352 has 12.5 per cent Anxiety 4th, while Repeater 63d, 17.9 per cent, by Repeater, has practically four times as much Anxiety 4th blood as his sire. Disturber and Prime Lad, bulls that were low in Anxiety 4th, likewise produced many of their best offspring from cows that had a generous measure of Anxiety 4th in their ancestry.

Few Herefords Lacking in Anxiety 4th Blood

Of the long list of effective sires used in American Hereford herds within the past twenty-five years, only a few have failed to contain in some measure the blood of Anxiety 4th. Perfection and his son, Perfection Fairfax, fall within the narrow category of those which have altogether escaped the Anxiety 4th influence. Hereford breeders have noted, however, that a large portion of the best descendants of these two sires have sprung from a blending of Perfection and Anxiety 4th blood.

The story of Anxiety 4th and his line marks the most important epoch in Hereford cattle breeding. Great as are the achievements already accredited to it, however, the full history of Anxiety 4th is apparently not yet written. The firmness with which Anxiety 4th-bred cattle have entrenched themselves and the widespread extent to which the blood has ramified throughout the entire breed suggests that the peak of Anxiety 4th influence has not yet been realized. The evidence of the present, however, indisputably shows that the blood of this great Carwardine-bred bull, used by Gudgell & Simpson, is now and has been for the past twenty years the foremost force in American Hereford breeding.

In passing, it is well to note the parallels of Anxiety 4th in the Herefords and Champion of England in the Shorthorns. Each represented an ideal sought by the breeders who so successfully used him. Each was given the fullest opportunity with an extensive herd of females. In each case, the breeders essayed to find a suitable outcross for the progeny of their chosen sire, and in both cases the attempt failed. Resorting finally to close breeding and the inter-mating of the descendants, the owners of both sires pro-

duced the greatest cattle of their careers. The parallel extends, in fact, to the successful use of the inbred descendants of each sire in contemporary and later herds. The record of Champion of England's family in the herds of Duthie, Willis and Marr is matched by the achievements of the Anxiety 4th-bred cattle in the herds of Curtice, Mousel Brothers, Steward & Hutcheon, Engle, Cassady and others.

CHAPTER 11

HEREFORD FOUNDATION SIRES—II

ANXIETY 2238

AS THE sire of Anxiety 4th, Anxiety 2238 has won lasting renown in Hereford history. His position, however, does not depend solely upon his one great son. Anxiety, in a brief period of service, left other offspring that affected American Hereford development to an extent sufficient to warrant the listing of Anxiety as one of the important Hereford foundation sires.

Anxiety was a product of the Stocktonbury herd of T. J. Carwardine, a herd justly celebrated in the annals of the breed in its native land. Imported at an early age to America, Anxiety proved a breeder of such power that he must permanently rank among the sires which did the most to determine the character of the Hereford breed in America. A consideration of the Hereford bloodlines of a period forty years after Anxiety's time of service, affords ample evidence of the influence which Anxiety had in fashioning Hereford type.

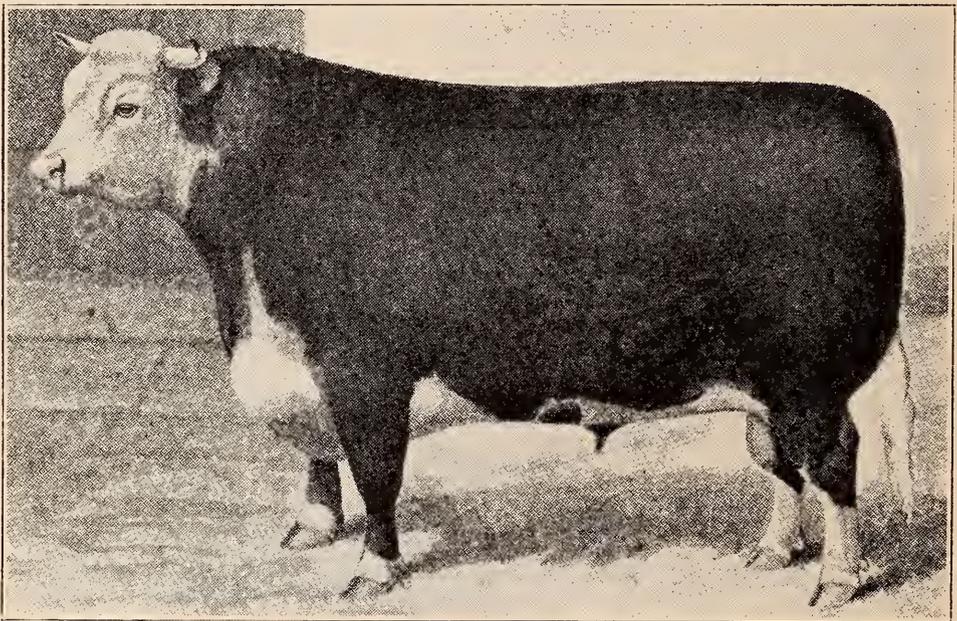
A Prize Winner at British Shows

Anxiety came of distinguished parentage in the Carwardine herd. His dam, Helena 2240, was a show cow of such merit as to win first place at three Royal shows. To the service of Longhorns 2239 she produced in 1877 the bull calf, Anxiety. As a calf, Anxiety stood first at the Royal at Liverpool. As a yearling, he was placed second, but at the International Exposition at Kilburn, in 1879, he headed a select class of two-year-olds. Shortly afterwards, the young bull was selected by George Morgan for importation to the American herd of C. M. Culbertson, Chicago, Illinois, the relatively high price of 200 guineas being paid for him.

Anxiety had appealed to the practiced eye of Morgan as a bull with well sprung rib, richly covered shoulders and an extraordinary wealth of meat on back, loin and ribs. In color markings, he differed from modern Herefords, lacking the white mane. He was not very large, weighing about 2,250 pounds at maturity. It is related that English critics faulted him as being too "effeminate" about the head. The excellence of his offspring subsequently pro-

duced in America proved that this real, or fancied, defect did not in the least affect his value as a sire.

Upon his arrival in the United States, Anxiety was at once fitted to head the show string of Herefords owned by Mr. Culbertson. In this capacity, his already brilliant record as a winner was added to by an unbroken succession of first prizes at the principal cattle exhibitions of 1879 and 1880. After these triumphal tours, his owner decided to retire Anxiety to the breeding herd. Unfortunately for the breed, the bull sickened and died during the course of an abrupt reduction from show form to breeding condition. The development and later usefulness of the comparatively small num-



ANXIETY 2238

The sire of Anxiety 4th and a number of other animals that had a most important influence upon American Hereford herds.

ber of calves that had been gotten from him clearly demonstrated that the untimely loss of Anxiety was a severe blow to American Hereford interests.

Anxiety had been used in a limited way in the Carwardine herd prior to his shipment to America. He had been mated to his half-sisters, the daughters of Longhorns, and it was from such unions that came the two greatest sons of Anxiety, Anxiety 4th and Anxiety 3d. Prettyface, a daughter of Anxiety, bred in England and later imported to the States, was likewise from a Longhorns dam. It thus appears that no small part of the credit for the success of the Anxieties must go to the concentration of the Longhorns blood.

To the person now studying Hereford pedigrees, it may appear that Anxiety figures in the blood of American Herefords solely as the sire of Anxiety 4th. However, detailed analysis of the pedigrees of many important cattle shows that the daughters and the other sons of Anxiety, although limited in number, left a distinct contribution to the breed which may be noted to this day.

Anxiety 3d, by Anxiety, was imported in 1880 as a yearling, being selected by George Morgan on the order of Thomas Clark, Beecher, Illinois. Anxiety 3d was a 2,300-pound bull, smooth and deep fleshed. He was shown with success until four years old and thereafter had a noteworthy career as a sire in the Clark herd, dying there at the age of sixteen years. The heifers sired by Anxiety 3d became the sensation of American showyards and breeding herds, and many breeders doubt whether his superior as a sire of females has existed. The Clark herd, one of the best of its day, won innumerable prizes on the progeny of this son of Anxiety, the get-of-sire prize at the Illinois State Fair, then the leading cattle show of the country, falling four years in succession to the daughters of Anxiety 3d.

Anxiety 3d and the Lord Wilton Cross

It was noted in the Clark herd that Anxiety 3d made an exceptionally fortunate "nick" with the Lord Wilton blood, at that time one of the leading strains. Securing the Lord Wilton heifer, Peerless, Mr. Clark produced from her to the cover of Anxiety 3d such useful cows as Peerless 2d and Peerless 3d. The daughters of Anxiety 3d proved valuable producers in the Clark herd and others of its time. The descendants which they left have perpetuated the blood to such a degree that today the major part of Anxiety blood which does not come through Anxiety 4th may be traced to Anxiety 3d.

Among the handful of calves left by Anxiety in the Hereford Park herd were two other bulls that materially aided the Anxiety cause by excellent service in some of the leading herds of the time. Anxiety 4th 2947 was purchased and successfully used by Frank Parmalee, Des Plaines, Illinois. Anxiety 5th 2948 was one of the important sires concerned with the upbuilding of the Indiana herd of W. S. Van Natta & Son, which made much American Hereford history. Anxiety 2d 2580, by Anxiety, and bred in England, also figures in present-day pedigrees as the grandsire of Melley May 41752, dam of the famous Perfection 92891.

Prettyface must be regarded as the most prominent daughter of Anxiety. Before being imported by Mr. Culbertson, she had

been undefeated in English showyards, and had, in addition, produced the bull, Lord Wilton 5739, one of the most useful sons of Lord Wilton 4057. A few other daughters which Anxiety left in the Culbertson herd included the famous Helenas, which sold for \$1,000 each, testifying to the high regard in which the blood was held.

That the blood of Anxiety has reached animals of the present Hereford generation through many channels aside from Anxiety 4th and his descendants is best illustrated by the analyses of the breeding of certain notable recent sires. Perfection, a bull that has had a most profound effect upon Hereford development since 1900, was 7.8 per cent Anxiety, although he had no Anxiety 4th blood. Woodford, the most prominent sire of winners in a recent period, as shown in a preceding chapter, was 9 per cent Anxiety and 9.3 per cent Anxiety 4th. Under the analysis system, these figures show that only half of Woodford's Anxiety blood came through Anxiety 4th. The noted Disturber 139989 contained 10.1 per cent Anxiety and 9.3 per cent Anxiety 4th, indicating that more than half of his Anxiety blood had been received through lines other than Anxiety 4th. Repeater 289598, a sire of recent period, shows 7 per cent Anxiety and but 4.7 per cent Anxiety 4th.

Examples of Rich Anxiety Breeding

Those who are familiar with the manner in which the Anxiety 4th blood has been intensified will, of course, expect to find the largest amounts of Anxiety blood in those cattle which are line-bred along Anxiety 4th lines. This is indeed the case, and such intensely-bred bulls as Beau Mischieff 268371, 14.8 per cent Anxiety; Bright Stanway 366600, 14.8 per cent, and Beau Blanchard 362904, 15.2 per cent, afford instances of high amounts of Anxiety blood in cattle of comparatively recent origin. The average "Anxiety 4th bred" animal contains at least 12.5 per cent Anxiety, while some have contained more than this amount. Beau Donald 58996, 18.7 per cent, and Lord Erling 79452, 15.6 per cent, present two notable examples of a high concentration of Anxiety blood.

The relation of Anxiety to the Herefords of the twentieth century is not so significant as it might have been. It is probable that a small measure of his usefulness was realized, due to his death at an unfortunately early age. Moreover, a number of the best of the small quota of calves which he left in the herd of his importer were sold to the range before their potential value was appreciated. Furthermore, no attempt seems to have been made to concentrate and utilize to the fullest extent the blood of Anxiety except as it

came through Anxiety 4th. The history of the Anxieties would doubtless have been even more glorious than it is today if breeding methods used with the descendants of Anxiety 4th had been applied to the offspring of Anxiety 3d and Anxiety 5th and of the daughters of Anxiety.

The chief significance of the percentage of the blood of Anxiety 2238 in a Hereford of the present time lies in its value as a measurement of the extent to which that animal has been influenced by the group of prominent Illinois and Indiana herds which set the Hereford breed on its feet. If an animal of the present generation shows just half as much Anxiety blood as of Anxiety 4th, it is a safe assumption that the animal has come largely from the Gudgell & Simpson herd and others which held the Anxiety 4th blood. If, on the other hand, a Hereford pedigree contains more than half as much Anxiety blood as Anxiety 4th, that animal unquestionably traces its ancestry to the herds of Culbertson, Clark and other pioneers who used the Anxiety blood.

CHAPTER 12

HEREFORD FOUNDATION SIRES—III

GARFIELD 7015, LORD WILTON 4057 AND HORACE 2492

THE early development of pedigreed Hereford cattle in the United States is intimately identified with a group of three bulls, Garfield 7015, Lord Wilton 4057 and Horace 2492. This triumvirate of bulls was rather closely inter-related as to bloodlines and, since the blood of each of the three was a powerful influence in the pioneer American herds and has extended to present-day Herefords, it will be convenient here to consider these sires as a group. In the hands of the early American breeders of Herefords, the blood of these three sires was interwoven to form a rather distinct strain of Herefords. The manner in which the descendants of these three bulls were inter-bred was, in many respects, similar to the combination by Scottish breeders of the blood of the great group of Tillyfour and Ballindalloch Aberdeen Angus foundation sires.

Garfield 7015

Garfield, calved in 1881, was a member of the historic 1882 importation made by Earl & Stuart, Lafayette, Indiana. This was an importation that profoundly affected the trend of American Hereford breeding, and which, in ultimate results in importance to the breed, as judged today, was second only to the Gudgell & Simpson importation of 1881, which had included Anxiety 4th and North Pole.

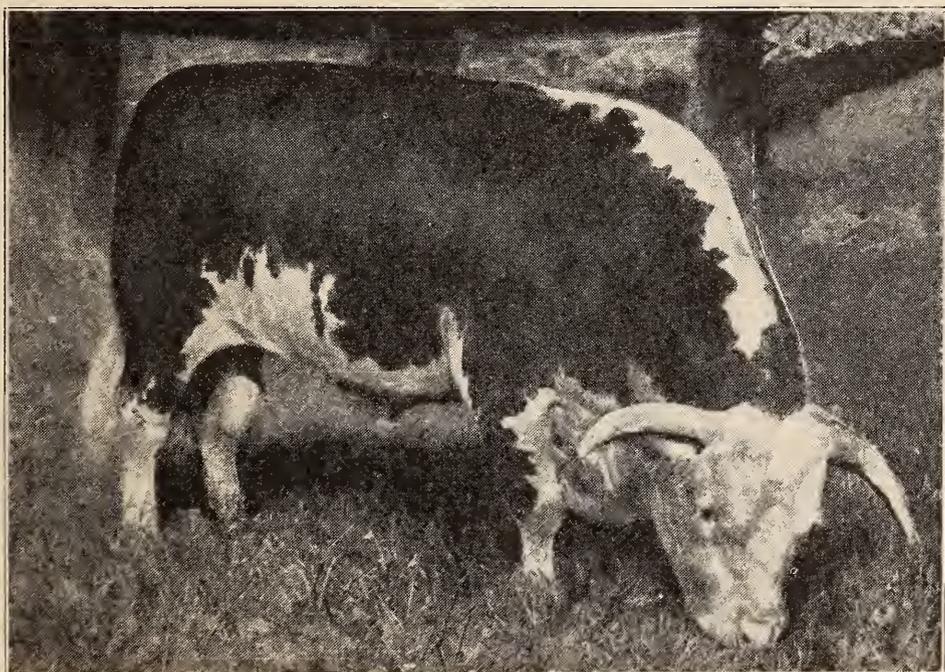
Winner of first as a bull calf at the English Royal Show, Garfield was regarded by British breeders as the best calf of his year. In the hands of his Indiana importers he became a deep-fleshed, strong-boned bull in which masculinity and great constitution were outstanding characteristics. Moreover, he displayed the ability uniformly to stamp his get with these good qualities, and until his death he occupied the position of premier herd bull at Shadeland Stock Farm, the noted breeding establishment maintained by Earl & Stuart.

In bloodlines, Garfield represented the best of the day. His sire, Quickset 6853, was by Regulus 3849, a son of Sir Roger 3850.

Quickset was from a dam by Horace. The dam of Garfield was well bred, tracing in many lines to Hewan blood.

Garfield proved to be the right bull for crossing upon the many good daughters and granddaughters of Lord Wilton, then in the Shadeland herd. His best offspring uniformly came from such matings, and the cross was one of the distinct successes of Hereford breeding.

The noted Earls of Shadeland drew the attention of breeders to Garfield as a sire. The Earls included a number of the finest show bulls of their period, while several of them became impressive



PERFECTION 92891

A prominent factor in the bloodlines of recent show winners. Perfection represented the Garfield-Lord Wilton-Horace breeding.

sires. Most important among the sons of Garfield were Earl of Shadeland 22d 27147; Peerless Wilton 12774, from a Lord Wilton dam, and Earl of Shadeland 41st 33378. Earl of Shadeland 41st was given a position alongside his sire among the Shadeland stock bulls and left many good offspring, including such daughters as Shadeland Cora, Shadeland Daisy, Sunflower 2d and Sunflower 3d.

Earl of Shadeland 41st and Peerless Wilton account for the greater part of Garfield blood found in present-day Herefords. From Earl of Shadeland 41st came the bull Columbus 51875, that

in turn sired the renowned Dale, a champion in many showrings, and of vast importance to the breed as the sire of Perfection, whose profound influence upon the past twenty-five years of Hereford development is admitted by every breeder.

The dam of Dale was Rose Blossom 39225, sired by Peerless Wilton, by Garfield. It will thus be seen that Dale had two Garfield crosses and carried 25 per cent Garfield blood. Both Peerless Wilton and the Earl 41st were from Lord Wilton dams, so that the production of Dale added to the prestige of the Garfield-Lord Wilton cross. Peerless Wilton became a noted sire of winners and breeding cattle in the herd of Thomas Clark, Beecher, Illinois. Among his get was Wilton Anxiety, sire of Benjamin Wilton 53298.

Another of the Earls that must be given much credit as a sire was Earl of Shadeland 9th 16900. His blood is found in many of the best cattle of today. His sons included Sir Carroll 2d 40067 and Earl 2d of Pine Park 41081, both of which sired many good cattle that have bred well. The 9th Earl was the double grandsire of Sophia 56115, dam of the great Beau Donald bull, Beau Donald 5th 86142. One of the daughters of Earl of Shadeland 9th became the dam of Prince Rupert 8th 142701. Through these and other channels much of the blood of the 9th Earl has reached the Herefords of today.

Other sons and daughters of Garfield made their mark. Earl of Shadeland 30th was for a long time invincible in middle-western showrings as the head of the C. H. Elmendorf herd of Nebraska. Earl of Shadeland 12th 20109 was successfully used by John S. Carlyle, of Illinois. The daughters of Garfield were less prominent than his sons, but they included a number of valuable breeding cows, including Erica 35th 36663.

Lord Wilton 4057

From 1875 to 1900, Lord Wilton 4057 was regarded by breeders of Herefords on both sides of the Atlantic ocean as pre-eminent among Hereford sires. His own brilliant career in British showyards was followed by an era in which his sons and daughters ruled alike in old and new country showrings. Brilliant as may have been the prize ring exploits of the Lord Wiltons, however, they had a more real and a more lasting value as improvers of the nucleus of American herds from whence came the Herefords of today.

Lord Wilton was bred in the herd of William Tudge, of Adforton, one of the foremost Herefordshire cattle-breeding strongholds. The bull came of illustrious ancestry, being sired by Sir Roger 3850, a son of Sir Thomas 20. Sir Roger also sired Regulus 3849,

the grandsire of Garfield. Lord Wilton's dam was by Marmion 4117. As a yearling, Lord Wilton placed first at the Taunton Royal and was there sold to Lewis Lloyd. In 1879, the bull appeared at the Kilburn International, but in such poor fitting that he failed to win a prize. Up to that time Lord Wilton had not had much opportunity as a sire and apparently was lightly regarded by his owner, since he was secured at Kilburn by T. J. Carwardine in exchange for a yearling bull. His long and distinguished career which followed at Stocktonbury is one of the bright pages of Hereford history.

Get of Lord Wilton Prominent in Showrings

The Lord Wiltons began to come to the front in England in 1882, when calves by the sire stood first and second in both the bull and heifer calf classes. The bulls were the redoubtable pair, Sir Bartle Frere 6419 and Romeo 6420, both of which were a little later exported to the American herd of Earl & Stuart. The heifers on this occasion were Venus and Henrietta, which accompanied their brothers to the Shadeland herd. British showyards for many years thereafter saw many prominent winners descending from Lord Wilton.

Lord Wilton was offered at auction at the Stocktonbury dispersal sale in 1884, and was bid off at \$19,000 by an American named Vaughan. It developed, however, that the buyer was unable to make settlement and the great sire was then sold for \$5,000 to William Tudge, of Leinthall, and Thomas Fenn, in whose ownership he died in 1886.

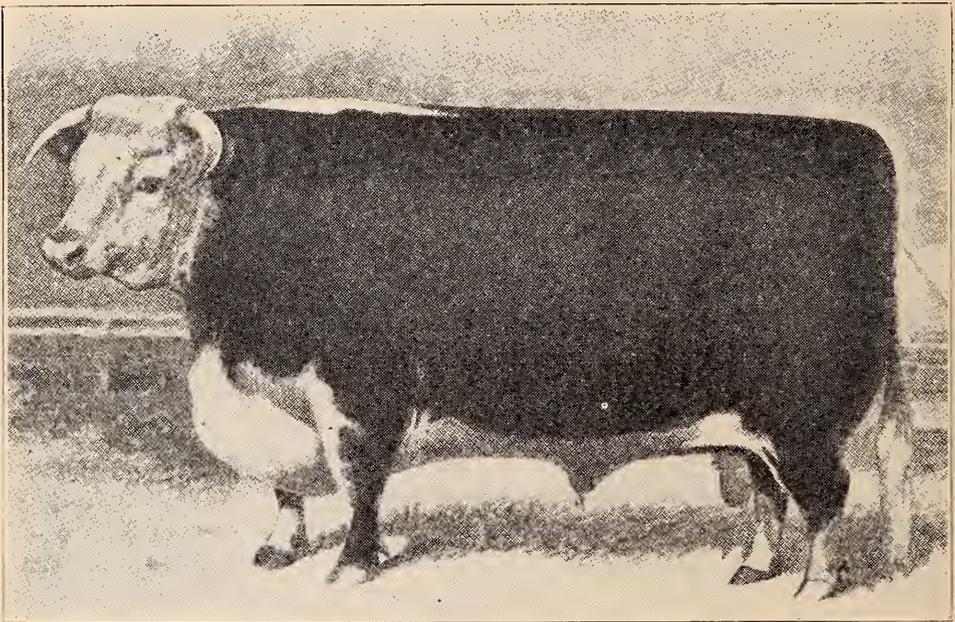
In conformation, Lord Wilton was an animal of medium size carrying a wealth of beef, especially through the crops and loins. The best descriptions of him indicate that he had more refinement in head and horn than many of the Herefords of the time, and his offspring are credited with largely improving American Herefords in head, horn, quality of flesh and style.

The blood of Lord Wilton was first brought to America in the noteworthy Earl & Stuart importation of 1882, which, as has been noted, included the bulls, Sir Bartle Frere and Romeo, and the heifers, Venus and Henrietta, as well as others by Lord Wilton. It had been necessary for the Indiana firm to pay \$3,000 for Sir Bartle, but he fulfilled their expectations as a sire, as did Romeo. Both bulls contributed many valuable females to Shadeland, the Lady Wiltons, by Sir Bartle Frere, ranking among the best matrons of the herd.

Prince Edward 7001, a son of Lord Wilton, brought over in the

1882 shipment, distinguished himself as a sire in the George W. Henry herd. Lord Wilton 5739, by Lord Wilton 4057, and out of the famous Prettyface 5735, by Anxiety, was successfully used in the C. M. Culbertson herd. Several of the best sons of Lord Wilton were retained in Britain, where their records as sires added considerably to the Wilton name. These numbered such useful bulls as Monarch 20001, Sir Edward 79298, Grove Wilton 3d and Torro 18072. Torro sired Bertha 24469, dam of the celebrated Kansas Lad 36932.

The daughters and granddaughters of Lord Wilton, in addition to those named, included many grand breeding cows. Peerless



LORD WILTON 4057

The foremost Hereford sire in Great Britain in the late nineteenth century, and a bull that had much influence upon early Hereford development in America.

10902, by Lord Wilton, was secured as a heifer by Thomas Clark, in whose herd she proved a mine of Hereford wealth. She left many valuable offspring in his herd, among them the heifers, Peerless 2d and Peerless 3d, by Anxiety 3d, and the bull, Peerless Wilton, by Garfield. The immediate descendants of Peerless won innumerable prizes in American showrings from 1885 until 1900.

Lady Wilton 19498, by Lord Wilton, was acclaimed one of the finest cows individually that was ever imported, defeating all comers when shown with the Fowler & Van Natta herd. As a breeding cow, she produced the good bull, Free Lance. Gertrude Wil-

ton, by Lord Wilton, became the dam of the famous Earl of Shadeland 41st, that sired Columbus. Pet 36054, the dam of Columbus, was by Prince Edward, while Electress 2d 11255, by Sir Bartle Frere, produced Earl of Shadeland 22d. Many more of the close-up female descendants of Lord Wilton distinguished themselves in showing and breeding paddock.

From 1895 to 1905, the blood of Lord Wilton was one of the dominating influences in American Hereford breeding. Many animals of this period carried a large percentage of his blood. The Lord Wilton blood was crossed with that of Garfield, Horace, and Anxieties 3d and 4th, with very successful results in most instances. Little attempt was made, however, to inbreed the Wilton blood, and while it became widely diffused throughout the breed, the introduction of other elements finally served to lessen the importance of its relation to Hereford pedigrees. The rise in favor of the inbred descendants of Anxiety 4th has in late years overshadowed the Lord Wilton blood. As a result, there are today few Herefords which carry an appreciable amount of Lord Wilton breeding, and his position as a foundation sire is of less significance than in an earlier period of American Hereford breeding.

In England, however, Herefords can today be found which show rather considerable percentages of Lord Wilton blood. The practice among British Hereford men apparently has been to concentrate the blood of Lord Wilton by line-breeding. English Herefords are not as strongly bred in Lord Wilton as many American cattle are in Anxiety 4th, but Great Britain is undoubtedly the only source now of cattle which carry a significant amount of Lord Wilton. The bull, Farmer, imported from England in 1916, carries more than 15 per cent Lord Wilton, and is a typical instance of the British Hereford line-bred in Lord Wilton blood.

Horace 2492

The third member of this trio of foundation bulls antedates the other two. Horace 2492 was calved in 1867 and was bred by J. Davies, of Preston Court. With Lord Wilton, Horace was a factor in improving the English Hereford of the time, both in thickness of flesh and in quality of hair and hide. Horace was sold when nine years old to Frederick Platt, of Barnby Manor, for \$2,500. That he was a bull of exceptional vigor and prepotency is shown by his long period of active service which extended almost until his death, at sixteen years.

The name of Horace is added to the long roll of impressive sires of many breeds that were products of close breeding. Fru-

gality 2497 and Lady 2498, sire and dam of Horace, were both sired by Shamrock 2d 768, and Horace thus came from the mating of two animals which had 50 per cent of the same blood.

The Grove 3d 2490 was responsible, to a greater degree than any other son of Horace, for impressing the Horace characteristics upon American cattle. Calved in 1874, The Grove 3d was from a cow by the very celebrated sire, Sir Thomas 20. Benjamin Rogers, owner of the dam and breeder of The Grove 3d, used the bull in his herd until 1882, when he was sold to Philip Turner, of the Leen. In 1883, when nine years old, The Grove 3d was secured at auction at the Leen by C. M. Culbertson, of Illinois, who paid \$4,050 for his purchase, then the record price for Hereford bulls. Two years later, when Mr. Culbertson had secured a considerable number of calves from The Grove 3d, the sire was sold to Earl & Stuart, of Shadeland, for \$7,000, a remarkable price for an eleven-year-old bull. The faith of the purchasers in the longevity of The Grove 3d was justified, however, since he lived to be eighteen years old and was serviceable until within a year or two of his death, leaving a number of valuable progeny at Shadeland.

The Grove 3d Had Many Valuable Sons

The Grove 3d had a creditable list of offspring before coming to America. His best calves, in fact, were produced in England. Among his sons produced in Herefordshire was the celebrated Rudolph 13478, a show bull of note imported by George Morgan at a cost of \$3,500, and used by the Wyoming Cattle Company. Hartington 4010 was kept in England and was regarded by British breeders as one of the best sons of The Grove 3d. Hesiod 11975, another son, was a sire of such note that many breeders consider him as a founder of a line or family of Herefords. Cassio 13352 was imported by M. H. Cochrane and became an important factor in Canadian Hereford developments. Sir Garnet 2489, another son, was brought over in the first Culbertson importation.

Four of the best daughters of The Grove 3d were brought to America in an importation made in 1882 by George Leigh. These heifers, including Beatrice, Hawthorn, Rosina and Ethel, were sold to Mr. Culbertson and ultimately to Frank Parmalee, of Chicago. Beatrice and Hawthorn became remarkable producers, the former including among her calves the famous show bull, Sir Bredwell. Other daughters of The Grove 3d were meritorious breeders, among them such cows as The Grove Maid 25th 26581, The Grove Maid 22d 26575 and The Grove Maid 8th 17430.

The influence of Horace upon American Herefords was not

entirely limited to The Grove 3d, however. The name of Horatus 7163, by Horace, frequently occurs in American Hereford bloodlines. He sired the bull, Highland Laird 9440, and the cow, Cherry Pie 2d, dam of Cherry Boy 26495, a great show and breeding bull used by Fowler & Van Natta in the earlier days of their herd. The same firm used Horace 5th 12524, by Horace, with good results.

Horace 2d, by Horace, was a show bull and winner of first at the English Royal. Horace 4th (6490) was champion bull at the 1882 Royal. Truro 3492, another son, was a breeder of more than ordinary merit. The daughters of Horace were alike successful in the showring and as producers. Lorna Doone was a celebrated Herefordshire prize taker. Lady 5th 11331 was the dam of the good sire, Horace Hardwick 21185.

As in the case of Lord Wilton, the Horace blood was used both in England and the United States for crossing with other strains, particularly the descendants of Lord Wilton. Except in very few cases, no attempt seems to have been made to concentrate the Horace blood by inbreeding. An exception was in the production of the bull, Horace Hardwick, that was sired by a grandson of Horace and out of a daughter of Horace. The bull resulting from this relatively close mating proved to be an excellent sire in Herefordshire.

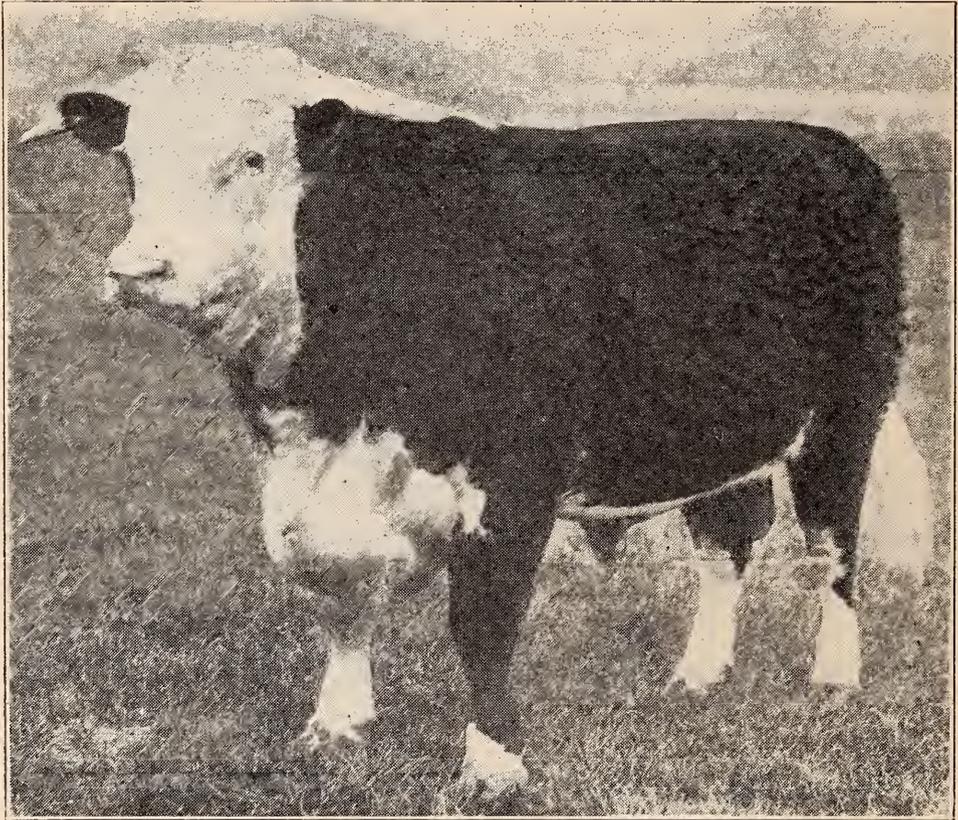
Influence of These Sires

It has been pointed out that in late years, the amount of Anxiety 4th blood in the breed at large has been increasing, while the influence of Garfield, Lord Wilton and Horace as foundation sires has been diminishing. It is doubtful whether the average Hereford of 1923 contains over five per cent of the blood either of Garfield or Lord Wilton or three per cent of the blood of Horace. This situation marks a distinct change from the condition of 1900 when the average American Hereford probably contained 10 to 12 per cent of the blood of each of Garfield and Lord Wilton and eight per cent Horace, with many of the better-bred animals of the time having as much as 25 per cent Garfield, 25 per cent Lord Wilton and 15 per cent Horace.

Animals in which the breeding of Perfection is prominent carry the largest amounts of Garfield blood. Dale was 25 per cent Garfield, while Perfection was 12.5 per cent, his dam having none. Woodford and his son, Woodford 9th, each had 10.9 per cent Garfield blood. Disturber's pedigree shows the same analysis. Beau

Donald 5th and Prince Rupert 8th each showed 12.5 per cent Garfield.

Bonnie Brae 3d 203317 carried 12.5 per cent Garfield, while Gay Lad 9th 386873 had 10.1 per cent. Repeater, Bonnie Lad 20th and most other animals that represent blendings of Anxiety and Perfection or other blood have relatively unimportant amounts of Garfield blood. The intensely-bred Anxiety 4th stock, as typified in



FARMER 426279

Bred in England and imported to America in 1916, Farmer is the most recent example of concentrated Lord Wilton and Horace blood. His pedigree analyzes 15.2 per cent Lord Wilton and 12.5 per cent Horace.

Domino, Beau Blanchard and Prince Domino, have no Garfield blood whatsoever.

The amount of Lord Wilton blood in modern Herefords is correlated quite closely with the amount of Garfield breeding. Dale, for example, had 18.7 per cent Lord Wilton, while Perfection contained 9.3 per cent. Perfection Fairfax 179767 had 11.7 per cent Lord Wilton, showing that his dam, Berna, an imported cow, was considerably richer than his sire, Perfection. Disturber, the Wood-

fords, the Gay Lads and Prime Lads have contained, as a rule, about nine or ten per cent Lord Wilton. The Repeaters and the crosses between Anxiety and Perfection breeding have lesser amounts. The cattle rich in Anxiety 4th and North Pole are as a rule totally lacking in Lord Wilton breeding.

Cattle resulting from the combination of Perfection and Anxiety 4th breeding now show from three to seven per cent Horace blood. Since 1900, the only group of cattle to show an appreciable amount of Horace blood has been that descending from the famous Prime Lad 108911. This bull was 15.2 per cent Horace, while many of his immediate descendants were 10 per cent or above. Most Anxiety 4th bred cattle have no Horace blood, although it is here and there present in negligible amounts, as in the case of Bright Stanway 366600 and Beau Carlos 248915, each with 2.3 per cent.

An Index to the Influence of Early Herds

Few recent American Herefords have had any significant amount of the blood of any one of the three sires here discussed. The combined amounts of the three are an index of some value, however, in showing the effect exerted by that group of early American herds which specialized in the blood of Garfield, Lord Wilton and Horace. In the latter part of the nineteenth century, little effort was made to cross the Anxiety 4th cattle with those descending from the other three sires. Since that time the cross has often been made with excellent results, and a gradual dilution of the Garfield-Lord Wilton blood has been brought about.

CHAPTER 13

HEREFORD FOUNDATION SIRES—IV

NORTH POLE 8946

NORTH POLE 8946 presents a typical case of a foundation sire that has never been accorded the credit due his contributions to his breed. Bred in the good English herd of Aaron Rogers and imported by Gudgell & Simpson, North Pole became in the herd of the latter firm an uncommonly successful sire of females which figure to an important extent in the pedigrees of modern animals. Today, however, this bull is largely forgotten save by the closer students of Hereford pedigrees.

The important relation of North Pole to the development of American Herefords may be established by detailed examination of the pedigrees of so-called line-bred Anxiety 4th cattle. As a matter of fact, quite a number of these animals are fully as closely bred in North Pole as in Anxiety 4th, which demonstrates that North Pole has never been allotted his due measure of credit as an early Hereford breed-builder in America.

North Pole in Service With Anxiety 4th

North Pole was brought over in the historic importation of 1881, which also contained Anxiety 4th. The two bulls stood together at the head of the Gudgell & Simpson Herefords for four or five years. Anxiety 4th was retained there until the end of his life, but North Pole was sold, and, it is said, spent the remainder of his days in siring steers for the market. While admittedly a sire of good females, the bulls by North Pole were a disappointment to Gudgell & Simpson, being regarded as too upstanding, and this undoubtedly led to their disposal of the sire.

North Pole himself is said to have been larger and taller than Anxiety 4th. The characteristics of the two bulls were of such nature, in fact, as to supplement each other admirably when combined in the offspring resulting from mating Anxiety 4th or his sons with the daughters of North Pole. To these cattle, North Pole supplied strength of constitution, scale and fullness of heart girth. Anxiety 4th gave them splendid heads, well rounded quarters and a quality unsurpassed by Herefords of the time. When

such eminently useful bulls as Beau Brummel and Lamplighter had been produced from this cross, Gudgell & Simpson realized that it was the most successful "nick" of bloodlines ever arrived at in their extensive career.

The sire of North Pole was Mars 12th 4462, while his dam was a granddaughter of Sir Thomas. The bloodlines of North Pole came from a number of sources, almost all of them distinct from those which had produced Anxiety 4th. North Pole had considerably more of the famous Sir David blood than Anxiety 4th, while the latter contained much Longhorns and De Cote blood that was not to be found in North Pole. In all probability, there were represented in North Pole and Anxiety 4th different strains which were admirably suited to blending.

North Pole Important Through His Daughters

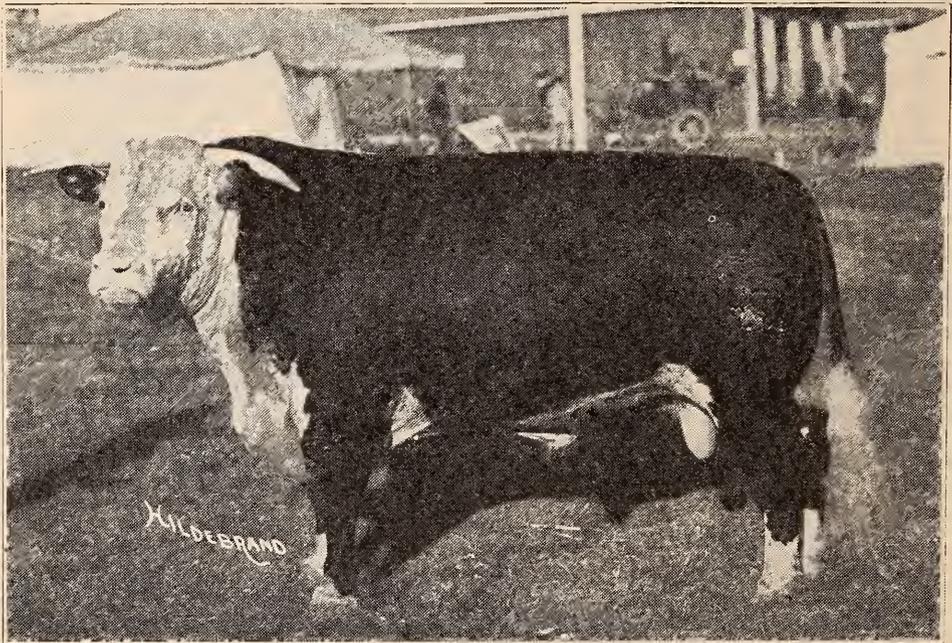
The career of North Pole presents parallels to some of the foundation sires of other breeds already considered. Like Trojan, of the Angus, the sons of North Pole left no lasting impression on the breed, but his daughters exerted a sufficiently powerful influence upon breed development that he may rightfully be given a prominent place as a foundation ancestor. The relation of North Pole and Anxiety 4th is analagous to that of Champion of England and Lord Raglan in the Shorthorns, in that North Pole and Lord Raglan provided the females from which the most useful get of Anxiety 4th and Champion of England were derived. North Pole, however, was somewhat more important in this connection than Lord Raglan.

As the dam of Beau Brummel 51817, Belle 24629 may be ranked as the most noteworthy of the daughters of North Pole. The great achievements of Beau Brummel as a sire have already been referred to in the chapter on Anxiety 4th. Another North Pole cow, Lady Bird 3d 31101, became the dam of the celebrated Gudgell & Simpson herd bull, Lamplighter. Pretty Lady 3d 27451, by North Pole, was the dam of Princeps and the granddam of Publican. Scarcely less noted in the list of distinguished Hereford matrons produced in the Gudgell & Simpson herd were Mansellette 3d 27399, Marietta 2d 17296, Lady Stanway 3d 27304, Bonny Lulu 5th 27387, Pretty Lady 2d 17306, Gertrude 17261 and Blight 37167. The mating of these cows to Anxiety 4th and to his two sons, Don Carlos and Don Juan, was the source of a large share of the most useful producers, both bulls and females, developed in the Gudgell & Simpson herd.

There are no Anxiety 4th Herefords in which the Anxiety-North

Pole cross does not figure to a very real extent. This is true because, almost without exception, the bulls which have done the most in extending the Anxiety 4th influence have carried the North Pole cross. Beau Brummel, Lamplighter and Paladin each had 25 per cent North Pole blood, or exactly the same amount as of Anxiety 4th. Domino, Prince Domino and Beaumont all had a like amount of both North Pole and Anxiety 4th.

Some of the most noted sires commonly credited to the Anxiety 4th line had, as a matter of fact, a considerably greater portion of North Pole blood than of Anxiety 4th. No better illustration can be offered than Publican, that was 31.2 per cent North Pole and



BONNIE BRAE 8TH 329653

The pedigree of Bonnie Brae 8th carries 21.8 per cent of North Pole blood.

but 18.7 per cent Anxiety 4th. Beau President affords a similar instance with 28.1 per cent North Pole and 21.8 per cent Anxiety 4th. When the records of such worthy sires as Publican and Beau President are considered, together with the fact that North Pole blood outweighed the Anxiety 4th blood in each, it becomes increasingly clear that the North Pole blood must have been a strain of much more than ordinary value.

On the basis of the analytical study of the pedigrees of the foremost Herefords during the years from 1890 to 1920, North Pole has been second only to Anxiety 4th. The twenty highest ranking sires of prize winners at the five Internationals from 1918

to 1922 have, as an average, carried 16.6 per cent Anxiety 4th and 13.4 per cent North Pole. The average of the breed is unquestionably somewhat higher than these figures, as cattle in which Anxiety 4th and North Pole blood predominates now outnumber those of other strains by a liberal margin.

In addition to the bulls mentioned, many other noteworthy Hereford sires have carried important amounts of North Pole breeding. Beau Mischief was 20.3 per cent North Pole, while Bonnie Brae 8th was 21.8 per cent and Bright Stanway, 18.7 per cent. Beau Blanchard's pedigree contains 16.4 per cent of the noted sire.

Beau Donald was rather below the average in North Pole blood, having but 12.5 per cent. His descendants, of course, have relatively less of the blood, Woodford, as an example, having but 3.1 per cent. Cattle which carry much of the blood of Repeater are also bound to be low in North Pole, since Repeater had less than one per cent of North Pole breeding.

The career of North Pole is so intimately connected with Anxiety 4th and the Gudgell & Simpson herd that Herefords which do not have Anxiety 4th blood are also without North Pole blood. No North Pole breeding, therefore, is found in Perfection, Perfection Fairfax or other animals which come of the Lord Wilton, Garfield, Horace and other strains apart from the Anxiety.

North Pole Blood of Genuine Importance

A more distinct appreciation of the true significance of North Pole as a Hereford breed-builder is one of the things to be gained from a study of Hereford pedigrees. It does not follow, of course, that simply because a Hereford is 25 per cent North Pole as well as 25 per cent Anxiety 4th, that North Pole was fully as important in the ancestry of that animal as was Anxiety 4th. He may have been more important or less so than Anxiety 4th. It is certain, however, that the blood of North Pole was a factor of genuine importance in the development of the great and numerous strain of Herefords known as the Anxieties.

The Hereford custom of emphasizing male lines of descent, coupled with the popularity of Anxiety 4th breeding, has apparently tended to minimize the real position of North Pole as a foundation sire. It is not possible to review the records of such makers of Hereford history as Beau Brummel, Lamplighter and Beau President and to study with care their pedigrees, without concluding that the blood of North Pole was of very real importance to the breed.

PEDIGREE ANALYSES OF LEADING HEREFORD SIRES
AT THE INTERNATIONAL, 1918-1922

	Anxiety 4th	Anxiety	Gar- field	Lord Wilton	Horace	North Pole
Woodford 500000.....	9.3	9.0	10.9	9.2	4.3	3.1
Perfection 92891.....	.....	7.8	12.5	9.3	6.2	.....
Beau President 171349.....	21.8	10.9	.....	.....	.....	28.1
Beau Brummel 51817.....	25.0	12.5	.....	.....	.....	25.0
Bocaldo 6th 464826.....	22.4	11.9	2.0	1.5	2.2	14.6
Beau Mischief 268371.....	29.6	14.8	.....	.....	.....	20.3
Perfection Fairfax 179767.....	.....	3.9	6.2	11.7	7.4	.....
Repeater 289598.....	4.7	7.0	6.2	7.5	5.6	.8
Bonnie Lad 20th 355369.....	12.5	9.8	7.0	3.9	1.3	10.9
Bonnie Brae 8th 329653.....	25.0	12.5	.....	.....	.....	21.8
Beau Blanchard 362904.....	30.4	15.2	.....	.....	.8	16.4
Publican 189221.....	18.7	9.4	.....	.....	.....	31.2
Bocaldo 362186.....	19.2	10.5	2.3	1.1	2.6	12.9
Bright Stanway 366600.....	29.6	14.8	.....	.....	2.3	18.7
Woodford 9th 559720.....	14.0	9.2	10.9	9.3	3.6	4.7
Woodford 6th 505407.....	11.7	9.9	9.4	7.7	4.2	3.9
Domino 264259.....	25.0	12.5	.....	.....	.4	25.0
Dale 66481.....	.....	3.1	25.0	18.7	12.5	.....
Prince Domino 499611.....	25.0	12.5	.....	.....	1.8	25.0
Woodford 28th 691551.....	7.4	7.4	6.2	8.7	5.5	5.1
Average twenty bulls.....	16.6	10.2	4.9	4.4	3.0	13.4

The above table gives the percentages of the blood of the six foundation sires found in the pedigrees of the twenty foremost sires of Hereford prize winners at the International Live Stock Exposition from 1918 to 1922, inclusive.

It will be noted that the pedigree analyses of these bulls fall into three classes. The first and most numerous division is composed of those pedigrees in which are contained high percentages of Anxiety 4th and North Pole and little or none of the blood of Lord Wilton, Garfield and Horace. Examples of this type of pedigree appear in Beau Brummel, Beau Blanchard, Beau President and others.

The second class is formed of those pedigrees which analysis shows to contain moderately large percentages of Anxiety, Anxiety 4th and North Pole, together with equal or smaller amounts of the blood of Garfield, Lord Wilton and Horace. Bonnie Lad 20th, Woodford and others fall in this category.

The third group comprises those bulls in whose pedigrees the chief element is the blood of the Garfield-Lord Wilton-Horace combination. These pedigrees are entirely lacking in the blood of Anxiety 4th and North Pole, but contain a moderate amount of Anxiety. Examples are Perfection, Perfection Fairfax and Dale.

**PEDIGREE ANALYSES OF PROMINENT HEREFORD
BULLS**

	Anxiety 4th	Anxiety	Gar- field	Lord Wilton	Horace	North Pole
Kansas Lad 36932.....	25.0	12.5	.....	12.5	.....	.....
Lamplighter 51834.....	25.0	12.5	.....	.....	.....	25.0
Columbus 51875.....	.....	6.2	25.0	25.0	3.1	.....
Beau Donald 58996.....	37.5	18.7	.....	.....	.....	12.5
Prime Lad 108911.....	6.2	3.1	.....	9.3	15.2	.....
Disturber 139989.....	9.3	10.1	10.9	10.6	2.5	3.1
Prince Rupert 8th 142701.....	15.6	7.8	12.5	6.2	2.3	3.1
Bonnie Brae 3d 203317.....	25.0	12.5	12.5	6.2	2.7	6.2
Prime Lad 9th 213963.....	4.7	3.1	.....	9.8	12.3	.....
Don Arthur 285925.....	31.2	15.6	.....	.....	.4	18.7
Gay Lad 6th 316936.....	3.1	6.2	6.2	10.6	10.1	.....
Gay Lad 9th 386873.....	3.1	5.1	10.1	9.8	10.6	.....
Repeater 7th 386905.....	8.6	6.6	6.2	8.1	5.5	2.0
Repeater 63d 486426.....	17.9	11.3	3.1	3.8	2.8	9.8
Wyoming 505146.....	19.5	10.5	.8	2.2	2.8	9.0
Brummel Fairfax 512465.....	6.2	5.1	3.1	5.9	5.3	6.2
Superior Mischief 590259.....	28.1	14.0	.8	.6	1.0	19.5
Repeater Jr. 696352.....	12.5	9.2	3.1	5.0	7.0	3.9
Mischievous Jr. 791452.....	22.6	12.1	2.7	3.5	1.0	13.3
Beau Best 890000.....	24.6	13.4	.8	2.0	1.1	16.0

In this table are given the foundation sire percentages in the pedigrees of twenty Hereford bulls, selected for their noteworthy achievements as sires. The upper ten sires include bulls that were prominent in breed development during the period from 1890 to 1915. In the lower half of the table are found animals of more recent origin, including a number of bulls still in service at the time this is written.

This tabulation shows that in the more recent animals there are many which trace to all six of the foundation sires. In animals predominantly Anxiety 4th-bred, such as Superior Mischief, there is but a trace of Lord Wilton and Horace blood. Others, including Wyoming and Mischievous Jr., show Anxiety 4th and North Pole as the major sires in their pedigrees, while they have small amounts of the blood of the Lord Wilton group. Prince Rupert 8th and Repeater 7th are similar in breeding to Woodford, as shown in the table on page 98, in that they have received contributions of similar extent from each of the Anxiety and Lord Wilton groups.

It will be noted that Anxiety is the only foundation sire that is common to each of the forty pedigree analyses presented on pages 98 and 99.

CHAPTER 14

THE TREND OF HEREFORD BREEDING

IT IS apparent from any detailed study of early Hereford pedigrees that the origin of the Hereford breed is a more complicated matter than the beginnings of the Shorthorn and Aberdeen Angus breeds. The Herefords are not the product of an intense concentration of the blood of one powerful foundation sire, as represented by Favorite in the Shorthorns, or even of two or three foundation animals, as found in the Joek and Panmure blood in the Angus. As well as can be determined from the somewhat obscure early history of the Herefords, the breed was formed by the blending of a number of elements arising from distinctly separate sources.

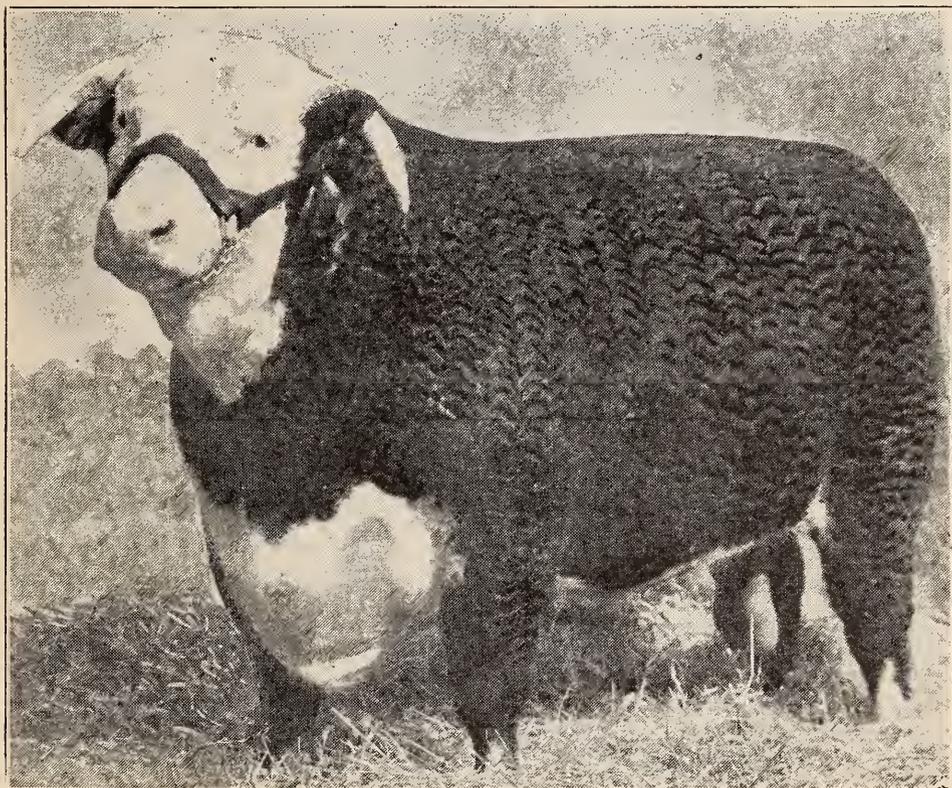
The pedigrees of Herefords prior to 1850 are disappointing as a record of the evolution of the breed. Many pedigrees of this time can be traced but two or three generations, while others which can be followed many years in one line or another nevertheless contain many important omissions. When the Hereford breed was taking form, there were but few breeders who were careful enough to record the lineage of their animals. Many whose herds were important sources of foundation material knew only in a general way the ancestry of their animals.

Inbreeding in the Early Herefords

From the imperfect records of the early Herefords, it is possible to discover a few early sires that were notably concerned in the building up of the breed, although it is clear that there was no animal that approached in importance the position of Favorite among the Shorthorns. These Hereford sires frequently bore a particularly important relation to a certain herd or group of herds of kindred breeding. An example is found in the early Hewer cattle, which were inbred in the blood of Old Wellington 290 and the Silver Bull 358, some animals carrying 50 per cent or more of the blood of each of these bulls, although several generations removed from them. There is evidence also to show that the early Tomkins stock was inbred to a considerable extent in the blood of the Tomkins Silver Bull 432.

The explanation for the much wider variety of bloodlines in

the early Herefords than in the first Shorthorns or Aberdeen Angus lies in the manner in which the Hereford type was evolved from the combination of a number of different strains. The herds of Tomkins, Hewer, Price, Rogers, Knight, Tully, Galliers and Haywood all were elements which contributed to the breed in greater or less degree, a situation vastly different from the beginning of the Shorthorn, in which the overwhelmingly important



BOCALDO 6TH 464826

Important as a sire of recent show winners and a bull that combined Anxiety 4th and North Pole blood in his pedigree.

source of blood was the herd of Charles and Robert Colling, strongly inbred in Favorite.

Careful consideration of the bloodlines of the bulls to which present-day Herefords are most indebted, including Anxiety 4th, North Pole, Lord Wilton and others, makes it clear that the Hereford of the late nineteenth century had no overwhelming amount of common blood comparable to the Favorite blood in the Shorthorns. On the basis of herd book records, Old Wellington was a factor of more importance than any other one bull in the ancestry of these foundation sires, although the six foundation sires considered in preceding chapters show an average of but 12 per

cent of his blood in their pedigrees. Obviously, much of the blood can not be traced, owing to pedigree deficiencies. If, however, it is assumed that only half of the Old Wellington blood can be definitely recognized, and that an equal amount does not show in the pedigrees, the cattle of this time could not, in most instances, have possessed more than 25 per cent Old Wellington blood. The great body of Shorthorns of this time had, in contrast, from 50 to 75 per cent of the blood of Favorite, showing a much greater degree of inbreeding than had taken place among the Herefords.

Old Wellington and his sire, Silver 358, were the foundation upon which the Hewan herd was reared. Sovereign 221, of the Wellington-Silver blood, was also influential in the Hewan and allied herds, and in the pedigrees of the cattle of the Anxiety-Lord Wilton period he appears to an average extent of a little more than 10 per cent.

The Influence of Sir David

Sir David 68 is often referred to as a sire that effected much early improvement in the breed. An inbred bull, the product of a sire and daughter mating, Sir David seems unquestionably to have been the most prominent sire of his time, and his blood was long in demand. He was calved in 1845, and followed Old Wellington by almost forty years. The dam of Sir David had considerable Old Wellington breeding, but his sire was of rather obscure derivation.

The popular theory that Sir David exerted a lasting influence upon his breed is not borne out by the analysis of later Hereford pedigrees. Lord Wilton and North Pole had about 10 per cent each of Sir David, while Anxiety, Anxiety 4th and Garfield each had only about five per cent. It should be noted here that, as a sire of a considerably later period than Wellington or Silver, the amount of Sir David blood which can not be followed in the herd books is relatively small. No definite effort was made to concentrate the blood of Sir David, and as a result it soon became widely dissipated.

In any history of Hereford cattle there are extensive references to the Tomkins family and their work with the early Herefords. Benjamin Tomkins the Elder probably was the first man who effected an improvement in the native cattle of Herefordshire. Part of his herd showed the red color with white face many years before the breed was really taking form. As pioneers who charted the way for future Hereford breeders, the names of Benjamin Tomkins and his son, Benjamin, Jr., are deserving of the highest respect.

From the standpoint of the influence of their herds upon the future trend of Hereford breeding, however, it seems probable that the Tomkins family was much less important than is commonly supposed.

A bull called Silver, calved in the latter part of the eighteenth century, was the keystone of the Tomkins herd. So far as pedigree records show, he was of trifling importance to the Herefords of 1880 and later. Anxiety 4th, Lord Wilton and others show less than one per cent of the blood of this foremost Tomkins sire. It is true, of course, that a correspondingly larger portion of the Silver inheritance is not shown in the herd books, due to his greater remoteness as compared with Sir David and even with Sovereign and Wellington. Even then, however, it is clear that the Silver Bull had very little ultimate influence.

Tomkins Herd Less Important Than Hewan

Another Tomkins bull, Wellington 160, seems to have been no more important than Silver from the standpoint of having lasting effect upon the breed. When all allowances for the uncertainty of pedigrees are made, it seems certain that the Tomkins blood was far less important in the make-up of the breed than is commonly thought, while the Hewan blood was undoubtedly the most extensively used of any of the foundation strains entering into the Hereford.

One other source to which early Herefords seem to be considerably indebted was the bull, Old Court 60. While Old Court's pedigree can not be established, he is thought to have represented a mingling of Tomkins and Tully blood. He was used by James Rea, of Radnorshire. It seems likely that Old Court was a quite important factor in the production of certain later Hereford strains. Lord Wilton's pedigree, so far as it can be traced, contains 7.1 per cent of Old Court blood. In view of the fact that Old Court lived sixty years before Lord Wilton and that the pedigree of the latter very possibly does not show even half the Old Court blood it really contained, it is possible that Old Court may have been an important source of foundation blood.

The Hereford, genetically speaking, may be said to be a much younger breed than the Shorthorn, or even the Aberdeen Angus. The Hereford was founded on a number of strains, similar in type but distinct in breeding, while the Shorthorn came about as the result of the selection and intensification of one strain—that descending from the Colling bull, Favorite. The Aberdeen Angus breed is highly inbred in the blood of Panmure and Old Jock. The

Hereford therefore presents a wider opportunity for the selection of strains which may be inbred to increase their potential value to the breed. In other words, the Hereford as a whole has a wider range of hereditary material with which the constructive breeder may work than is the case with the Shorthorn or Angus.

The composite pedigree for the Hereford breed at present shows significant concentrations of two sires, Anxiety 4th and North Pole. As a result of the policy of closely inter-breeding their descendants, the correlation between the Anxiety 4th blood and North Pole blood in living Herefords is relatively high. Those animals which have been inbred in this blood carry from 20 to 30 per cent of each of the two sires, the amounts being quite well standardized and averaging probably 25 per cent Anxiety 4th and 20 per cent North Pole.

From the standpoint of breeding policy, the Hereford breeder may very well divide Herefords of today into two classes—those which have Anxiety 4th and North Pole blood, and those which do not have it. Herefords which lack the blood of Anxiety 4th are sure to have the blood of Garfield, Horace and Lord Wilton in greater or less degree.

Anxiety 4th Intensely Inbred

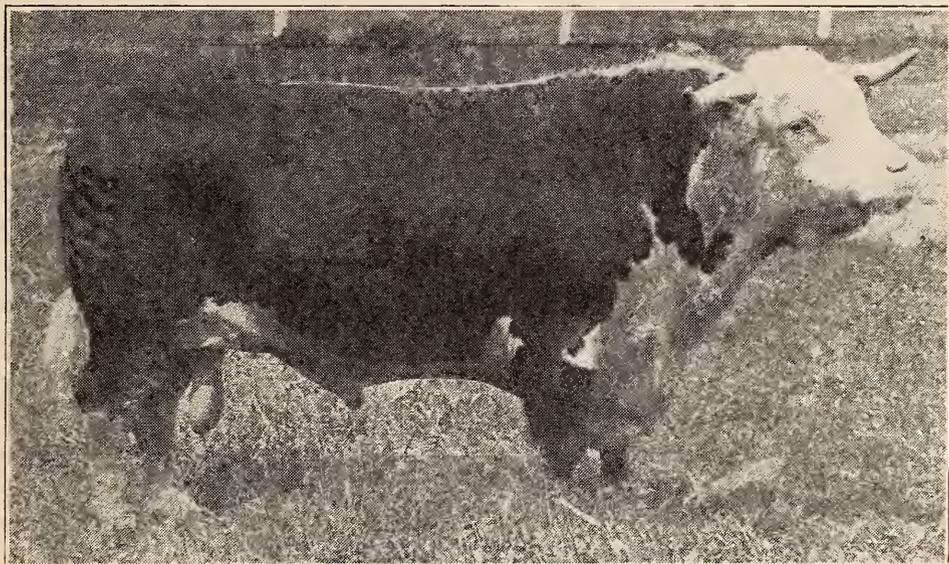
Anxiety 4th was himself an intensely inbred bull, coming from a sire and a dam which possessed 81.2 per cent identical breeding. The combination of bloodlines which produced Anxiety 4th continued to respond to inbreeding, as is evidenced by the success of his inbred descendants. A number of the most productive herds of the present time are entirely composed of inbred Anxiety 4ths which will average more than 25 per cent of the blood of their illustrious ancestor. At the same time they carry much North Pole blood.

These herds of closely-bred Anxiety 4th-North Pole cattle have for many years been producing excellent breeding stock for Hereford herds. It is almost certain that if the Anxiety blood is kept concentrated in these herds, they will continue to be sources of valuable material, not alone for perpetuating their own line but for crossing with other strains. It is, therefore, to the best interests of the Hereford breed, that these breeders retain this blood in intensified form, as it now is. It is without doubt the most valuable single instrument in the hands of Hereford breeders at the present time.

It is also quite likely that there are certain branches of the Anxiety 4th-North Pole line that will lend themselves profitably

to further concentration. Hereford breeders who are in a position to do so should concentrate the blood of Domino, Beau Brummel and Beau Mischief, with the idea of securing the best strains of the Anxiety 4th-North Pole blood in highly concentrated form.

It is not now possible to concentrate to any marked degree the blood of the Lord Wilton-Horace group of sires. Such work should have been done in America in the years prior to 1900, when many Herefords carried large amounts of this breeding. The concentra-



PERFECTION FAIRFAX 179767

A sire of great influence in American Hereford herds since 1910.

tion has to a certain extent been effected in England. Many English-bred animals of late years have carried 15 per cent or more of the blood of Lord Wilton and Horace. It is quite possible that English-bred cattle carrying a considerable measure of Lord Wilton-Horace blood would prove valuable breeding material for American Hereford men, despite certain differences in type that have arisen during the many years in which few imported cattle have been brought to America. It is certain that in the past some of America's best Hereford cattle have resulted from the crossing of closely-bred Lord Wilton animals with line-bred Anxieties. Breeders who wish to repeat this cross, using the most concentrated Wilton blood, will have to go to England for their material.

While there are no American-bred Herefords that are significantly inbred in Garfield, Lord Wilton and Horace, there are available certain more recent strains in which the blood of these foundation sires was an important factor. It is still possible for men now

engaged in breeding Herefords to build up strains from Perfection, Woodford, the Prime Lads and Gay Lads and from other outstanding bulls that represent the Lord Wilton group in modified form. Inbred strains of this sort should prove breeding material of the highest caliber.

The crossing of strains has frequently been practiced in past American Hereford breeding with highly satisfactory results. Such eminently useful sires as Prime Lad, Disturber, Bonnie Lad 20th, Woodford and the Gay Lads have come from combining Anxiety blood with the Lord Wilton-Garfield-Horace strains. The bulls resulting from this cross have shown a marked ability to reproduce their good qualities and their offspring have likewise shown a tendency to transmit them.

Breeders of Herefords would appear to have a most promising future before them. There is within their reach much valuable breeding material that is suited to building up a considerable number of inbred strains. At present, the breed has a greater diversity of bloodlines than many other breeds of cattle, and Hereford breeders have a wide selection of strains. The strains which are producing the best cattle should be concentrated by close breeding, just as was done with the Anxiety 4th blood, the greatest single influence within the breed at present.

The Breeding of Polled Herefords

The statements made in this and preceding chapters relative to the breeding of American Herefords apply in general to the large and ever-increasing body of Polled Herefords. Polled Herefords are, of course, of the same ancestral origin as horned Herefords, since the original polled animals were mutations. The Polled Herefords have, as a rule, somewhat less of the blood of Anxiety 4th and the other foundation sires than is found in horned Hereford pedigrees. The amount of such blood is increasing, however, with the wide introduction of horned blood into the Polled Herefords. Essentially, there are no important pedigree differences between Polled Herefords and the rest of the breed.

ABERDEEN ANGUS

CHAPTER 15

ABERDEEN ANGUS ANNALS IN BRIEF

THE written history of the Aberdeen Angus breed as preserved in herd books and showring records is shorter than that of some of its companion breeds. As a distinct type, however, Aberdeen Angus can prove a greater antiquity than is claimed by most other cattle breeds. There are agricultural records in Aberdeenshire, Scotland, which indisputably show the existence of black polled cattle in that country as long ago as 1523. There is much additional evidence to show that hornless black cattle were carefully bred in North Scotland at least one hundred and fifty to two hundred years ago.

In the eighteenth century there appear to have been in Northern Scotland at least two local breeds or types of black polled cattle. The Angus Doddies were the favorite cattle of the Forfarshire farmers of this period, while in Aberdeenshire there was a race of cattle known colloquially as Buchan Humlies. The two types were in all probability very similar. In the hands of the early patrons of cattle breeding in the north of Scotland, the two types of black, hornless cattle were welded together to form the breed now known as Aberdeen Angus. There is good reason to believe that Shorthorn blood was introduced in the early development of the Angus, due to the common practice among Scottish cattlemen of using Shorthorn bulls for crossing upon the native cows. In the main, however, the Angus undoubtedly came from the two local types of black polled cattle.

Hugh Watson and the Keillor Herd

Hugh Watson is recognized as the first important improver of the breed and the annals of the Aberdeen Angus are first concerned with his work, begun in 1810. At his farm of Keillor, in the district of Angus, in Forfarshire, Watson bred the Angus Doddies, as they were known, for many years before the keeping of pedigrees became common. A system of nomenclature under which animals of succeeding generations were often given identical names renders it difficult to follow the specific steps which improved the Keillor herd. The written and traditional history of Keillor is interwoven with a line of impressive sires which bore the name of Jock. Such records as were kept at Keillor, together with notes

from contemporary breeders who drew upon the Watson herd for their foundation material, point to two bulls, Grey-Breasted Jock and his son, Old Jock, as the principal sources of the excellence of the Keillor cattle. The early herd books, although far from complete, contain many references to cattle tracing to these two bulls, and it is certain that the Jock blood, coming particularly from Grey-Breasted Jock, was a powerful factor in the upbuilding of the breed.

Two other prominent early breeders of the Angus cattle in Forfarshire were Lord Panmure and William Fullerton, of Ardvie. Lord Panmure bred a bull called Panmure 69, which, in the hands of Mr. Fullerton, became a most important source of improving blood. Panmure gave to the Fullerton herd such valuable animals as Monarch 84 and Queen Mother 41. The blood of Panmure was so widely resorted to by breeders of the time that thirty years after Panmure's period of service, animals in the principal herds, such as those at Tillyfour and Ballindalloch, uniformly carried 30 to 40 per cent of his blood, solely on the basis of herd book records. Since many early pedigrees were faulty or incomplete, animals unquestionably coming from Panmure were never credited to him and his real value as a founder of the breed was greater than the herd books would indicate.

William McCombie and Tillyfour

William McCombie, of Tillyfour, who began the breeding of Aberdeen Angus in 1830, achieved distinction as a constructive molder of Angus type and as the first Aberdeen Angus breeder who kept strict written accounts of his operations. The importance of his work, therefore, can accurately be estimated since it stands on a firm historical base. In the production of such animals as Black Prince of Tillyfour 77, Trojan 198 and Pride of Aberdeen 38, Mr. McCombie influenced immeasurably the future destinies of the breed. In addition to furnishing much of the material from which the breed was made, he performed a further great service by establishing the identity of the Aberdeen Angus as a breed in all parts of Great Britain as well as in foreign parts. His famous ox, Black Prince, was champion at Smithfield and Birmingham, in 1867, and advertised the Angus beef-making ability as effectively as the Collings' celebrated "White Heifer" and Durham Ox had done for the Shorthorns more than a half century before. The performance of the Tillyfour Angus at the Paris exhibitions of 1856 and 1878 and at the International Exposition at Battersea, in 1862, did much to advance the Doddie banner.

The foundation of Tillyfour was laid with cattle from both Angus and Aberdeen, and the two strains of polls were thus assembled and amalgamated. Through the excellence of the animals bred there from such sires as Hanton 80, Windsor 118 and Black Prince of Tillyfour, the herd achieved the foremost reputation of its time and it was to Tillyfour that practically every other breeder resorted for improvement stock.

During the years when McCombie maintained the Tillyfour cattle at their high estate, there were other herds that made important contributions to the new breed. An excellent herd was kept at Kinnaird Castle by the Earl of Southesk. Here the bull, Cupbearer 64, established himself among the most prepotent Aberdeen Angus sires of all time, siring the notable breed improvers, Erica 184 and Druid 142, as well as other valuable cattle. One of the dark days of the breed occurred when the Kinnaird cattle were virtually annihilated by the dread rinderpest. The benefits of the herd were not altogether lost, however, because of the selections which had been sent to other herds prior to the calamity.

Alexander Bowie, Mains of Kelly, must be noted among the early breeders whose work was significant. He bred the distinguished bulls, Cupbearer 64 and Hanton 80, and other animals prominent in the breed development. The herds of Robert Scott, of Balwylo, and William Fullerton, of Ardovie, were also rich sources of foundation material. The latter herd, unfortunately, met the same fate as that of Kinnaird, but not until it had given the breed the great Queen Mother and other useful animals.

Ballindalloch and the Grants

The active work of Tillyfour ceased with the dispersion of the herd in 1880. Its usefulness from that time on appears in the innumerable good animals descended from it in other herds. Foremost among the herds succeeding it was the collection of Aberdeen Angus maintained at Ballindalloch by the late Sir George McPherson Grant. The ancestral home of the Grants had long been the seat of black cattle breeding operations, and it is said that as early as 1800, Ballindalloch owned the choicest herd of black cattle in Scotland. Ballindalloch still occupies a position of leadership in Angus affairs in Scotland, and it is doubtful whether a longer record of such distinction has ever been allotted to a herd of cattle.

The recorded history of Ballindalloch virtually began with the purchase of the cows, Erica and Jilt, and the bull, Trojan 198. Erica and Jilt were peerless breeding cows, and the herd was soon filled with their descendants. Trojan was a prepotent sire of fe-

males which gave to the herd the quality for which it has long been noted. Trojan was succeeded by the celebrated trio of sons of Jilt 422, Juryman 421, Judge 473 and Justice 854. Young Viscount 181 and Elcho 527 were then used, followed by sons of each as well as by other sires.

The herd has been maintained at a high point of excellence through shrewdness in the selection and use of herd sires. Iliad 14937, bred from a Ballindalloch sire and a cow of alien blood, was probably the most fortunate choice in sires ever made. At Ballindalloch he left many good offspring, including such valuable bulls as Eltham 34796, Prince Inca 26588 and Prince Iliad 26591.

The list of bulls used at Ballindalloch since 1890 comprises the names of many entitled to rank among the foremost improving influences in the evolution of the Angus history. Delamere 53428, Eblito 50098, Prince Ito 50006 and Bion 36896 were conspicuously successful in the herd. Today, the pedigrees of most Aberdeen Angus animals carry much of the blood of animals bred or used at Ballindalloch, and it is clear that this herd has been of more value to the breed than any other one collection during the past fifty years. The names of the impressive bulls used at Ballindalloch, together with the list of great matrons to which they were mated, including Elba 34793, Edelweiss 26597, Pride of Mulben 848, Pride of Invereshie 26587 and Evergreen 34819, have forever assured Ballindalloch an honored name in Aberdeen Angus annals.

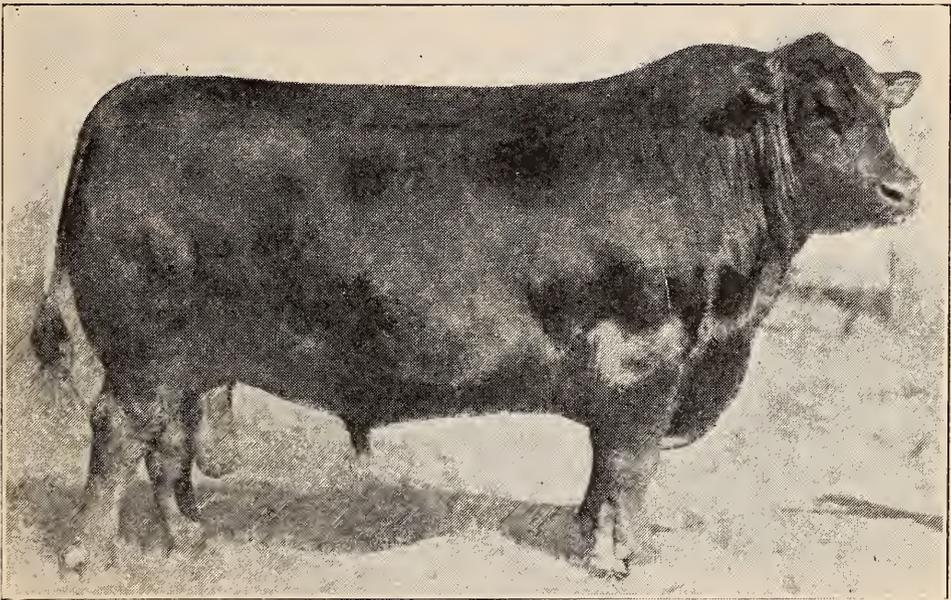
Other British Improvers of the Aberdeen Angus

There have been many other Scottish herds which have had a part in shaping the destinies of the breed in its native land as well as in assisting its progress in the two Americas. Much might be written concerning such useful herds as those of William Hannay, of Gavenwood; MacPherson, of Mulben; George Brown, of Westertown; Lord Airlie, of Cortachy; George Cran, of Morlich; George Smith Grant, of Auchorachan; James Kennedy, of Doonholm, and J. Ernest Kerr, of Harviestoun. Also deserving of mention are the herds of Dalmeny, Dalmore and Cullen House, as well as the Glamis herd, kept for many years by the Earl of Strathmore.

Aberdeen Angus cattle have a distinguished record on the farms of England. American herds, in fact, owe much to the importations made from a number of English herds. The Angus strongholds of England have included the herds of Dr. Clement Stephenson, of Balliol College Farm; J. H. Bridges, of Langshott; J. J. Cridlan, of Maisemore Park; O. C. Wallis, of Bradley Hall, and Thomas H. Bainbridge, of Eshott. The Angus have also ranked

high among the beef cattle of Ireland, where many good herds are kept.

The introduction of Aberdeen Angus cattle to North America occurred fifty years ago, with the importation in 1873 of three bulls by George Grant, of Kansas. These animals were used to improve the range stock of that district, and it was not long until the steers carrying the Angus cross drew the attention of breeders and feeders. In 1876, Professor Brown, of the Ontario Experimental Farm, brought over a small herd of Angus breeding animals and two years later Anderson & Findlay, Lake Forest, Illinois, made one of the first of the long series of importations which were



OAKVILLE QUIET LAD 109220

A son of Black Woodlawn that has done much in late years to demonstrate the excellence of the Black Woodlawn strain.

to come to the United States. F. B. Redfield, Batavia, New York, founded a herd in 1879, with G. W. Henry, of Kansas, and Estill & Elliot, of Missouri, began breeding Doddies in 1882. The Turlington herd of T. W. Harvey, long prominent in the showyard, was begun about this time. Other pioneers in the importing and breeding of Angus cattle in the United States were Gudgell & Simpson, of Missouri; John S. & William R. Goodwin, of Kansas, later of Illinois, and J. J. Rodgers, of Illinois.

In Canada, the breed became further established through the important operations of Geary Brothers, George Whitfield, J. H. Pope, the Mossom Boyd Company and M. H. Cochrane. Many of

the best cattle that have been bred in the United States were derived from animals imported by this group of Canadians.

In America, as well as Great Britain, the breed has had an illustrious record in fat stock show competition. At the International, in Chicago, the victories of the black breed in the fat stock competition, in both individuals and carlots, as well as carcass contests, have outnumbered those of other breeds.

Since 1890, the Aberdeen Angus breed has won followers in every cattle growing section of the United States. The herd maintained by the late W. A. McHenry, at Denison, Iowa, achieved a brilliant showyard record and had a widespread influence upon the bloodlines of the breed. Other important herds established in an early day were those of Charles Escher, of Iowa; D. Bradfute & Son, of Ohio, and B. R. Pierce & Son, of Illinois.

Frequent Importations from Great Britain

The breeders of North America have frequently made importations from British herds during the past quarter of a century. Such sires as Prince Ito 50006, Eliminator of Ballindalloch 50237 and Earl Eric of Ballindalloch 100422 have profoundly affected American herds, as will be shown in subsequent chapters. Much improvement has also been wrought by such American-bred bulls as Black Woodlawn 42088, Heather Lad 2d 7965, Gay Lad 19358, Heather Lad of Emerson 2d 19049, Tenth Laird of Estill 26230, Black Monarch of Emerson 30331, Baden Lad 61883, Oakville Quiet Lad 109220 and others of a more recent time.

A bare outline of the progress of the breed in its native land and in North America has been offered in this chapter. Space will not permit fuller discussion of the history of the many important breeders and animals identified with Aberdeen Angus progress.

As a means of determining the bloodlines predominant in the breed at the present time, a study has been made of the sires of recent American show winners. This is discussed in the next chapter. The pedigrees of the principal sires of winners have been subjected to exhaustive analysis and the foundation sires of most significant influence have been given further consideration in separate chapters. The bulls which were most active in the formative period of the breed and whose influence has reached every animal of the present generation of the breed include Black Prince of Tillyfour 77, Cupbearer 64, Trojan 198, Young Viscount 181 and Juryman 421.

CHAPTER 16

RULERS OF ABERDEEN ANGUS SHOWYARDS

TO AFFORD a basis for intelligently determining the principal forces that have been at work within the Aberdeen Angus breed during its history in America, a study has been made of the bloodlines of the principal showring winners of a recent period. The study, as detailed in this chapter, has been centered upon the principal Aberdeen Angus ribbon-winners at the five International shows from 1918 to 1922, inclusive.

The International is taken as the guide in this consideration of bloodlines because of its undisputed position as the foremost show of the breed on this continent. The pedigrees of the first, second and third prize winners in each Aberdeen Angus class at each of these shows have been analyzed and their sires ranked on a point basis. Since the best productions of American herds appear at the International and the strains of breeding which win there are closely noted and eagerly sought by breeders, this study serves accurately to reflect the present trend in Angus bloodlines, even though a comparatively small number of animals are included in the study. In the tabulations which follow, the point system used has been that employed also for the studies of Shorthorn and Hereford winners.

The Leading Sires of 1918

	Points	Number Winners
Black Woodlawn 42088.....	130	12
Earl Marshall 183780.....	96	4
Oakville Quiet Lad 109220.....	80	6
Baden Lad 61883.....	60	8
Epistos 201189.....	56	2
Bell's Eclipser 20695.....	52	7
Black Opal 125453.....	48	4
Elgon 111375.....	48	4
Protine 138372.....	48	4
Balatum 166769.....	48	2
Black Emerson 154629.....	48	2

Those who have followed Aberdeen Angus shows during recent years will understand why Black Woodlawn 42088 ranks at the head of these sires of prize winning get. Any consideration of winners over a period of years since 1905 could not fail to allot the leadership to this noted sire. A tabulated study of the blood-

lines of recent Angus winners serves to emphasize the important relation which Black Woodlawn and his blood bears to present-day Angus breeding in America.

The table for 1918 shows Black Woodlawn the leader among sires of Aberdeen Angus winners at the 1918 International. At that show he appeared as an ancestor within three generations of twelve of the thirty-six principal winners. He was thus a factor in at least one-third of the best winners of that year. Second to him ranked Earl Marshall, a much more recent bull of distinctly different breeding.

The third ranking bull in the list, Oakville Quiet Lad, will be recognized as a son of Black Woodlawn. Another son of Black Woodlawn is found further down in the list in Black Emerson. Bell's Eclipser, sire of Black Woodlawn, achieved sixth place in the 1918 standing.

Baden Lad, in fourth place, has some connection with a number of the other bulls in the table. He is the sire of both Protine and Black Opal and the grandsire of Earl Marshall, through Protine. Of the three remaining bulls, Elgon is quite distinct from all the others, having been sired by Earl Eric of Ballindalloch 100422 and from an imported dam, representing the richest of Scottish breeding. Epistos and Balatum have considerable blood in common, since the sires of each were produced from a combination of Prince Ito and Black Monarch of Emerson blood.

The Leading Sires of 1919

	Points	Number Winners
Black Woodlawn 42088.....	186	16
Earl Marshall 183780.....	128	5
Erwin C. 136625.....	64	5
Protine 138372.....	64	5
Earl Eric of Ballindalloch 100422.....	58	8
Bell's Eclipser 20695.....	56	7
Egerton W. 125979.....	56	4
Ensign of Glencarnock 217216.....	56	2
Baden Lad 61883.....	54	7
Oakville Quiet Lad 109220.....	52	3

Honors among the Aberdeen Angus showring sires at the 1919 International were less evenly distributed than at the 1918 show. The lead of Black Woodlawn was more pronounced than in 1918, while Earl Marshall, in second place, also had a higher score in 1918 than in the table for the preceding year. The 1919 table presents the names of four sires not found among the 1918 leaders.

The dominant leadership of Black Woodlawn and the number of his descendants among the principal sires of the year are strik-

ing features of the table of sires for the 1919 International. At this show, Black Woodlawn was the sire, grandsire or great-grand-sire of 44 per cent of the first, second and third prize winners. In some of the winners he appeared in the fourth generation, although this is not brought out in this study, since it is limited to three generations of ancestry. It is safe, however, to say that Black Woodlawn was a factor in the production of 50 per cent of the winners at this show.

Black Woodlawn includes three sons in the 1919 list in Erwin C., Egerton W. and Oakville Quiet Lad. Ensign of Glencarnock, ranking eighth in 1919, also owed something to Black Woodlawn, since his dam was a granddaughter of the leading sire. Bell's Eclipser, the sire of Black Woodlawn, is again found in the list of top sires.

Earl Marshall, Protine and Baden Lad are again found within the high ten sires. Baden Lad, however, failed to maintain his 1918 standard, falling from fourth to ninth place. On the other hand, Earl Marshall strengthened his position over that of the preceding year. Earl Eric of Ballindalloch, in fifth place, is a representative of the Ballindalloch and kindred Scottish breeding, of his sire, a son of the great Prince of the Wassail 202999, a bull of the richest Scottish breeding.

The Leading Sires of 1920

	Points	Number Winners
Ames Plantation Beau 219787.....	128	5
Black Woodlawn 42088.....	104	14
Earl Marshall 183780.....	96	4
Egerton W. 125979.....	88	7
Faultless Pass 251056.....	56	2
Protine 138372.....	48	4
Elmland Burr 231541.....	48	2
Black Peer 126290.....	42	4
Home Dale Kilburn 117014.....	40	3
Blackbird Baron 2d 179692.....	40	2
Meraman of Tierra Alta 206566.....	40	2

As the above table shows, Black Woodlawn's leadership was temporarily eclipsed in 1920 by his grandson, Ames Plantation Beau. The 1920 leader, a son of Egerton W., was himself a show animal of distinction, having been grand champion bull at the 1917 International. The extensive winnings of his descendants at the 1920 show thus bestow further credit upon Black Woodlawn as a progenitor of the type sought by American breeders.

Earl Marshall and Protine maintained their relative positions in 1920, indicating that their descendants were consistently in the winning as in former years. Faultless Pass, fifth ranking bull in 1920, is new to the table of sires as so far discussed in this chapter. In bloodlines, he has no immediate connection with any of the Black Woodlawn, Baden Lad or Earl Eric of Ballindalloch groups.

The last five bulls in the above table are likewise newcomers to the list. Elmland Burr may be classified as a grandson of Black Woodlawn, while Black Peer is a grandson of Prince Ito. All five of these bulls combine in their pedigrees the Ballindalloch blood of later importations together with the strains coming from America's older herds.

The Leading Sires of 1921

	Points	Number Winners
Earl Marshall 183780.....	144	5
Black Woodlawn 42088.....	110	13
Earl Eric of Ballindalloch 100422.....	88	10
Ensign of Glencarnock 217216.....	88	3
Protine 138372.....	72	5
Black Peer 126290.....	68	8
Baden Lad 61883.....	64	8
Ames Plantation Beau 219787.....	64	3
Meraman of Tierra Alta 206566.....	56	2
Elgon 111375.....	54	4

The situation at the International Aberdeen Angus show of 1921 was apparently much the same as at that of the previous year, in that the Black Woodlawn blood was given formidable competition from a number of sources. Black Woodlawn himself failed to regain first place, being displaced, not by one of his descendants, but by Earl Marshall, a sire that has consistently remained near the top in the period under discussion. Black Woodlawn held second position, however, and appeared in more animals than any other one sire.

The descendants of Earl Eric of Ballindalloch were prominent in the 1921 showring and his standing in third place is the best yet recorded for that worthy sire. Ensign of Glencarnock is again found among the leaders, in a higher relative position than he occupied in 1919. The 1921 table also discloses the reappearance of Elgon and Baden Lad among the leaders. Black Peer, Ames Plantation Beau and Meraman of Tierra Alta all continued among the ten top sires, a distinction which they gained in 1920. Ames Plantation Beau, however, failed to maintain the brilliant record which he established in 1920.

The Leading Sires of 1922

	Points	Number Winners
Black Woodlawn 42088.....	144	16
Earl Marshall 183780.....	116	5
Ames Plantation Beau 219787.....	88	3
Egerton W. 125979.....	80	5
Oakville Quiet Lad 109220.....	78	5
Prizemere 9th 292566.....	72	3
Glenfoil Thickset 2d 88142.....	68	5
Meraman of Tierra Alta 206566.....	68	4
Earl Eric of Ballindalloch 100422.....	66	6
Black Peer 126290.....	60	7

The International of 1922 witnessed the return to a commanding position of the Black Woodlawn group of sires. Black Woodlawn again assumed the lead with 144 points gained through 16 animals. This does not tell the entire story of Black Woodlawn's influence, since he is now sufficiently removed in descent from the younger winners so that he frequently does not appear until the fourth or fifth generation, and thus receives no credit in this tabulation. The potency of his blood in the showing becomes further apparent when it is noted that five of the nine other leading sires at the 1922 show are descended from him. Two sons, Egerton W. and Oakville Quiet Lad; two grandsons, Ames Plantation Beau and Glenfoil Thickset 2d, and Prizemere 9th, a great-grandson, complete the list.

Earl Marshall, as the 1922 table indicates, maintained his position as the chief competitor of Black Woodlawn. Earl Eric's influence declined somewhat from that of 1921. Black Peer and Meraman of Tierra Alta again qualified among the ten leaders.

The twenty leading sires of winners during the entire five-year period are shown in the table on page 120. The points column contains the total points credited to each bull from the five shows. The second column gives the total number of individuals among the principal winners at these five shows in which the sire appeared within three generations. Animals which won at two or more shows have been counted but once in the second column. At these five shows the principal winners included 141 different individuals. Black Woodlawn was an immediate ancestor of 54, or 38 per cent of the winners. As has been previously pointed out, he really figured in more than this proportion.

Black Woodlawn ranks first in the combined tabulation for the five years, having a lead of 94 points over Earl Marshall. This relative standing of the two bulls would of course be expected from

their records in the individual years, since they had a substantial lead over the other sires in each year of the five.

**The Leading Sires of Aberdeen Angus Winners at the
International, 1918-22**

	Points	Number Winners
Black Woodlawn 42088.....	674	54
Earl Marshall 183780.....	580	14
Egerton W. 125979.....	296	15
Ames Plantation Beau 219787.....	296	7
Protine 138372.....	288	13
Earl Eric of Ballindalloch 100422.....	282	32
Oakville Quiet Lad 109220.....	262	15
Baden Lad 61883.....	248	21
Black Peer 126290.....	246	23
Glenfoil Thickset 2d 88142.....	222	14
Eliminator of Ballindalloch 50237.....	182	17
Elgon 111375.....	182	14
Balatum 166769.....	176	6
Bell's Eclipser 20695.....	170	18
Ensign of Glencarnock 217216.....	168	4
Meraman of Tierra Alta 206566.....	164	6
Black Pass 177204.....	140	8
Belfast 148891.....	128	5
Black King of Home Dale 2d 104254.....	124	11
King of Clover Leaf 7th 180199.....	120	2

In the summary, Egerton W. and his son, Ames Plantation Beau, are tied for third place with 296 points each. The fifth bull, Protine, has already been referred to as the sire of Earl Marshall. Comparison shows that Protine's score of 288 points is almost exactly half that allotted to his distinguished son. It therefore follows that Protine's appearance in the table rests practically altogether upon the performance of his son, Earl Marshall.

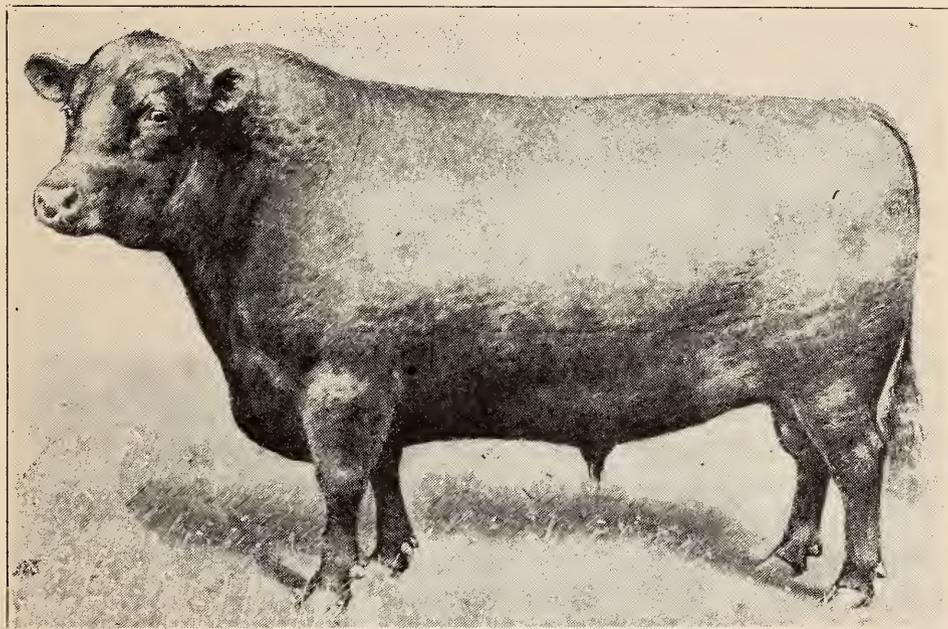
Earl Eric of Ballindalloch wins sixth place in the final table. His points were received through 32 animals, or 22 per cent of the total winners. His blood therefore appears more widely distributed among the winners than that of any other sire except Black Woodlawn.

Following Earl Eric come four bulls which have appeared as leaders in one or more of the Internationals. It will be noted that Baden Lad and Black Peer each were factors in the pedigrees of more than twenty of the winners.

The eleventh bull in the table is Eliminator of Ballindalloch, a sire that did not rank among the ten leaders at any of the five shows. His descendants, however, were among the winning animals at each show, although they did not make a sufficiently ex-

tensive showing at any one show to enable their progenitor to rank at the top. This consistent but not spectacular showing of Eliminator's descendants entitles him to a high standing for the five-year period. The last four of the twenty bulls are comparable to Eliminator in this respect, in that they were represented at each show, although not to a large extent at any one.

It must be borne in mind that such bulls as Black Woodlawn, Earl Eric of Ballindalloch, Baden Lad, Eliminator of Ballindalloch and Bell's Eclipsor had all ended their period of service some



BLACK WOODLAWN 42088

The most impressive Aberdeen Angus sire ever bred in the United States. Since 1905, about half the Angus winners at American shows have carried his blood. Breeders are wisely developing a Black Woodlawn strain of cattle by interbreeding his descendants.

years before these five shows took place. Consequently each succeeding year removed these bulls a little further in ancestry from the list of winning animals. The winners at the most recent International (1922) included many animals that are four and five generations removed from these sires. Were the study carried back an additional five or ten years, the standing of these bulls would be proportionately stronger.

Among the twenty bulls there are seven that carry Black Woodlawn-Bell's Eclipsor blood. The three sons of Black Woodlawn in the table are Egerton W., Oakville Quiet Lad and Belfast. Ames

Plantation Beau, Glenfoil Thickset 2d and King of Clover Leaf 7th are grandsons of Black Woodlawn, while Ensign of Glencarnock is a great-grandson.

Baden Lad has a son, Protine, and a grandson, Earl Marshall, among the twenty ranking sires. Black King of Home Dale also includes a son and grandson in King of Clover Leaf 7th and Balatum. Earl Eric of Ballindalloch is represented by one son, Elgon.

Many of the Sires Carry Scottish Breeding

Students of pedigree will note that about half the bulls in the list carry extensive amounts of Scottish breeding derived from Ballindalloch and allied herds. Two of the twenty, Earl Eric and Eliminator, were bred at Ballindalloch, while a number of others are strong in the blood of Ballindalloch's best sires, such as Prince Ito, Delamere and Bion. The bulls which represent this sort of breeding in the list of showring sires include Black Peer and his sons, Black Pass and Balatum, Earl Eric, Eliminator, Elgon and Meraman of Tierra Alta. Ames Plantation Beau and Ensign of Glencarnock represent a combination of Black Woodlawn and Ballindalloch breeding. Earl Marshall also carries a dash of the imported blood, through his grandsire, Eliminator of Ballindalloch.

A survey of the bloodlines of recent showring winners of the Aberdeen Angus breed in America reveals several important forces operating in the breed. Black Woodlawn and his descendants constitute one, while another is the Ballindalloch or Scottish influence arising from many descendants of Delamere, Prince Ito and Iliad. To these may be added a third group consisting of the cattle which descend in large part from the earlier American importations, coming through such bulls as Heather Lad 2d 7965, Gay Lad 19358 and Black Monarch of Emerson 30331. Earl Marshall and Baden Lad represent this breeding in the table.

CHAPTER 17.

ABERDEEN ANGUS FOUNDATION SIRE—I

BLACK PRINCE OF TILLYFOUR 77

THERE are no Aberdeen Angus cattle today that do not trace dozens of times to Black Prince of Tillyfour 77. Most of our fashionably bred animals, as designated by modern standards, trace literally hundreds of times to this great McCombie-bred sire. Careful analysis of a large number of Aberdeen Angus pedigrees discloses Black Prince as the sire whose blood is found in animals of the present generation in greater amount than that of any of the other early-day sires.

From an analytical standpoint, modern Angus cattle are 15 per cent Black Prince of Tillyfour. This concentration is not so intensive as the percentage of some sires in the bloodlines of other breeds, but nevertheless is 50 per cent greater than the amount of the blood of any other Angus foundation sire in present-day animals.

Black Prince Bred by McCombie

Black Prince was a product of the masterful breeding operations of William McCombie, of Tillyfour. The bull is entered in the second volume of the Polled Herd Book, where he is stated to have been calved "about 1860." His first recorded get began to appear about 1863, Trojan 198 and Jilt 422 being numbered among his first crop of calves. Since Kildonan 478, a son of Black Prince, was calved at Tillyfour as late as 1868, it is evident that Black Prince must have been in service in the McCombie herd for at least six years.

Concerning the individual conformation of Black Prince, there is little known. His name does not appear among the champions of his time, although such lists carry the names of a number of his sons and daughters. One observer of early Angus affairs has stated that Black Prince was retained as a stock bull, not through outstanding excellence of form, but because he combined in his pedigree the most useful elements of the breed at that time.

Examination of the bloodlines of Black Prince of Tillyfour shows the presence of two distinct hereditary strains. Since both of these

strains proved to be of the highest importance in building the breed, the prepotence of Black Prince was very possibly a result of their blending. The two influences came from the two pioneer bulls, Grey-Breasted Jock 113 and Panmure 69, both of them highly important factors in early pedigrees. In the McCombie herd, two strongly-bred Panmure cows, daughters of the celebrated Queen Mother, were mated to Hanton 80, producing the bull, Rob Roy MacGregor 106, and the heifer, Maid of Orleans 78. These two animals were then mated to produce Black Prince.

Hanton, the double grandsire of Black Prince, was sired by Pat 100, a double grandson of Grey-Breasted Jock. The crossing of Hanton upon the daughters of Queen Mother therefore served to impress the Jock blood upon the Panmure foundation. As a result of this cross, the bloodlines of Black Prince contained 12.5 per cent Grey-Breasted Jock, 32.8 per cent Panmure and 25 per cent Queen Mother.

Black Prince Crossed Well With Jock Blood

The first son of Black Prince to achieve renown as a sire was Bright 375, used extensively by Mr. McCombie. He had been produced by mating Black Prince to a granddaughter of Cupbearer 64, a bull that carried 25 per cent Grey-Breasted Jock blood. From the cow, Beauty of Tillyfour 2d, that was three-eighths Grey-Breasted Jock, Black Prince produced the famous Jilt 422. Bred to Charlotte 39, a granddaughter of Grey-Breasted Jock, Black Prince gave to the McCombie herd the bull, Trojan 198. It thus appears that Black Prince, strongly bred in Panmure, with a dash of Jock blood, gave highly satisfactory results when crossed upon cows which carried considerable Grey-Breasted Jock blood.

Trojan was sold in 1865 to Sir George MacPherson Grant, of Ballindalloch, in whose herd he achieved such a reputation as to be considered the breed's greatest sire for many years. Kildonan, by Black Prince, also saw service in the Ballindalloch herd. Another of the calves of Black Prince which gained him considerable fame as a sire was the noted ox, Black Prince, champion at Smithfield and Birmingham in 1867.

Jilt was the most distinguished daughter of Black Prince. She was a cow of excellent makeup and ranked among the winners at the Royal and Highland in 1865. At the McCombie sale of 1867, she was purchased and sent to Ballindalloch, where she made a notable record as a breeding cow, producing regularly until the age of sixteen years. Her stock was distinguished for size, as well as quality.

Bred to her half-brother, Bright, she produced Juryman 421, first at the Highland in 1871 and 1872 and a sire of note. Mated to Scotsman 482, she dropped the bull, Judge 473, first prize bull at Paris in 1876, and a bull that figured prominently in the early development of the breed in America. Jilt also produced, to the service of Elcho 527, her grandson through Juryman, the bull, Justice 854, a Highland first prize winner and sire of merit. Her three sons were of extraordinary value to the Ballindalloch herd. In addition to these bulls, Jilt became the dam of such useful breeding cows as Jewel 1669, Jewess 852 and Juno 1900.

While these were the principal channels through which Black Prince has come to modern Aberdeen Angus cattle, there were others of his progeny which helped to extend his lasting influence. Chief among these may be named his daughters, Ruth of Tillyfour 648, Vine of Tillyfour 822, Pride of Aberdeen 3d 37, Nymph 373 and Edith 545. His sons, Reform 206 and Black Prince of Enneteer 176, should also be mentioned.

Ballindalloch Had Much Black Prince Blood

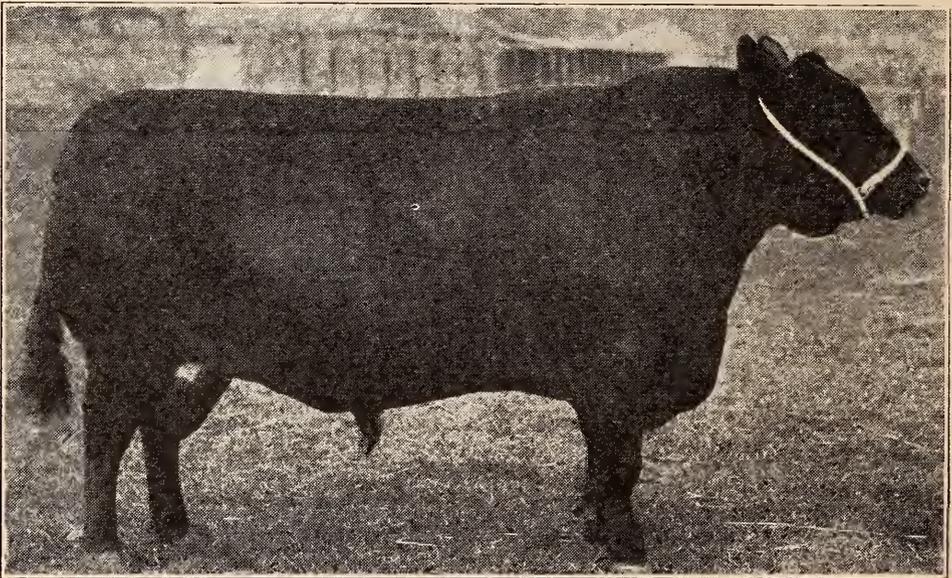
The descendants of Black Prince, particularly those coming through Trojan and Jilt, had a style and quality that were superior to the other Angus cattle of their day. At the same time, they possessed substance and fleshing qualities. They immediately became popular with the breeders of the time and the blood was introduced into many herds. In no herd was the Black Prince blood used more extensively than at Ballindalloch, and this herd has been the channel through which much of the influence of Black Prince has descended to recent Angus cattle.

The history of Ballindalloch may, in fact, fairly be termed a history of the descendants of Black Prince of Tillyfour. Analysis of the bloodlines of the animals produced in this herd during the past half century reflect the importance of the contribution of Black Prince to that herd. Ballindalloch breeding is, in a large measure, synonymous with Black Prince breeding.

Almost without exception, the sires used at Ballindalloch have carried a preponderance of the blood of the early McCombie sire. The valuable blood was first brought in through Trojan and Kildonan, sons of Black Prince. Through the use of Juryman, Judge and Justice, grandsons of Black Prince, the strain was further intensified. Elcho, sired by Juryman and out of Erica 184, did much to fix the qualities of the Black Prince blood in the herd through his many excellent daughters and through his sons, Justice, Etonian 524 (the sire of Iliad 14937) and Provost. Other early

Ballindalloch herd bulls in which the Black Prince blood was a potent factor were Elchies 552, by Juryman, and Young Viscount 181, a grandson of Trojan.

The line of Black Prince-bred bulls has been kept unbroken since being introduced to Ballindalloch. From 1885 until the present time, the content of Black Prince blood in the herd has been maintained at a high level, not only through the employment of such bulls as Iliad, Prince Inca 26588 and Eltham 34796 and their descendants, but also through the maintenance of a herd of cows highly concentrated in Black Prince. The pedigree of Prince Inca had 21 per cent Black Prince blood, while that of Eltham contained 19.5 per cent, illustrating the concentration of blood main-



EQUESTRIAN 34216

The pedigree of Equestrian, a noted Scottish sire, contained 24.2 per cent Black Prince of Tillyfour, a remarkably high percentage.

tained in the sires of the herd. Equestrian 34216, bred at Ballindalloch and used in Scottish herds, was an example of rich Black Prince breeding, with 24.2 per cent.

Iliad showed but 17.1 per cent Black Prince in his pedigree, having rather more outside blood than most of the bulls used in the Grant herd. It was due to this, possibly, that Iliad crossed exceptionally well on the richly-bred Black Prince cows in the herd, many of which carried 20 per cent or more of the foundation sire.

During the past thirty years, the long and impressive roll of sires bred or used at Ballindalloch have universally been characterized by a high concentration of Black Prince blood. Prince Ito

50006 constitutes a notable example, his pedigree containing 22.2 per cent. Eblito 50098, his son, carried 19.5 per cent. Jeshurun 74743, 17.4 per cent, and Everard of Ballindalloch 131648, 16.8 per cent, were important in the herd, as were Eblamere 100399 and Edensor 223195, each of them 15.6 per cent Black Prince. Evil-esco (37812), one of the most recent sires in service at Ballindalloch, shows 16.4 per cent Black Prince.

The typical animal in an American Aberdeen Angus herd at the present time has about 15 per cent Black Prince blood, as shown by the average of the pedigree analyses of the twenty leading sires of winners at the five most recent Internationals. Since by far the greater part of present herds are descended from these twenty bulls, 15 per cent Black Prince blood may be taken as an approximate average for the breed.

American Herd Bulls High in Black Prince

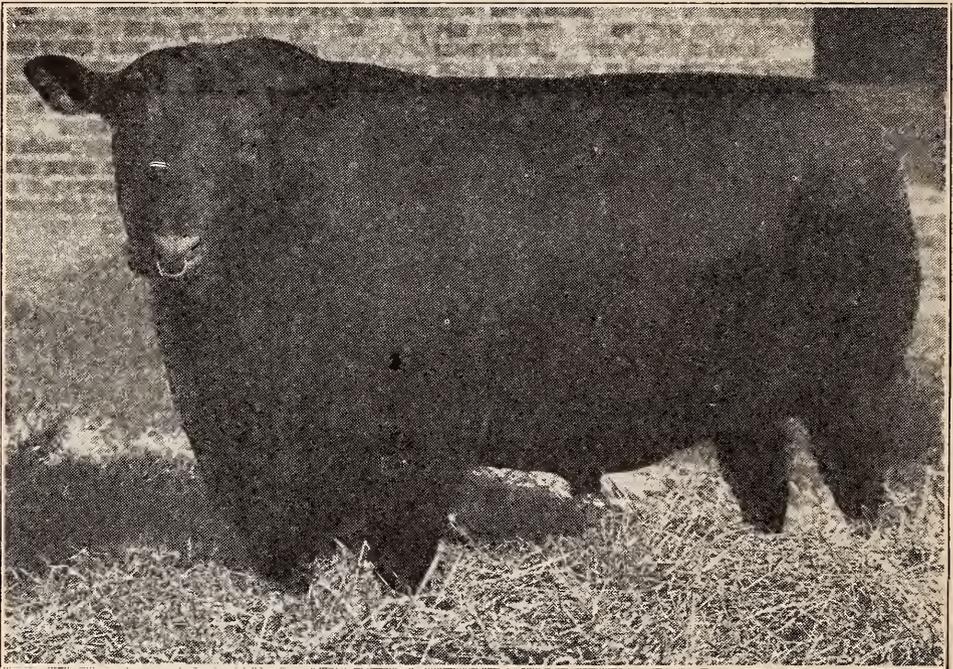
Nearly all of the noteworthy bulls used in American herds within the past twenty-five years have had an important amount of Black Prince blood. Earl Eric of Ballindalloch 100422, in the front rank of the imported bulls used in this country, was 16.3 per cent, while Eliminator of Ballindalloch 50237, 18.4 per cent, and Edward R. 61744, 20.1 per cent, were still higher. Zaire 15th 34371 had 19.2 per cent of this blood, while Blackcap King 22652 showed 18.9 per cent. Among the earlier importations to this country was included the bull, Emlyn 13211, 32 per cent Black Prince, possibly the most concentrated Black Prince-bred animal ever brought to this country.

Bulls in comparatively recent use in some of the best American herds have frequently displayed high concentrations of the old McCombie sire. Black Jovial 145513 was perhaps as high as any of these, with 22.3 per cent. Black Peer 126290, a worthy sire, carried 19.2 per cent Black Prince blood, while Eston of Eshot 123995 and Eston of Denison 158949 each had over 18 per cent.

The notable exception to the rule that the best American cattle have been high in Black Prince blood is Black Woodlawn 42088, easily the sire of greatest significance to the breed within the present century. This great sire's pedigree analyzes but 11.2 per cent Black Prince of Tillyfour. In the production of Black Woodlawn there were apparently involved some lesser known strains which were admirably suited to combining with the Ballindalloch blood. The foreign blood evidently came through his sire, Bell's Eclipser, since the latter had but 7.5 per cent Black Prince blood.

Black Woodlawn was mated extensively to cows carrying much

more Black Prince blood than he, and his most noteworthy progeny were produced from these matings. Among his sons were the International champions, Oakville Quiet Lad 109220 and Erwin C. 136625. These bulls were also good sires, as were Golden Gleam 93256, Belfast 148891 and other sons. Among the grandsons of Black Woodlawn may be enumerated the International grand champions, Glenfoil Thickset 2d 88142, Ames Plantation Beau 219787 and Idolmere 199904. It is worth noting that all of the bulls mentioned ranged from 12 to 14 per cent Black Prince, indi-



EVEREUX OF HARVIESTOUN 203000

The pedigree of this bull contains 17.6 per cent of the blood of Black Prince of Tillyfour, a concentration of this sire that is considerably above the average.

cating that they were uniformly produced from cows stronger in the Ballindalloch blood than was Black Woodlawn himself.

Aside from those animals most directly influenced by Black Woodlawn, the show animals of the Angus breed have for many years carried much Black Prince blood. Among International champions may be mentioned Prince Ito 2d 54471, 21.4 per cent; Epistos 201189, 18.2 per cent, and Kloman 135617, 17.8 per cent. Enlate 209477 was 15.9 per cent, while Evereux of Harviestoun 203000 had 17.6 per cent and Blackcap Bertram 183787 had 16.6 per cent.

A knowledge of the amount of Black Prince blood in his animals is decidedly of value to the present breeder of Aberdeen Angus cattle, since it is the most accurate method available of measuring the actual extent to which Ballindalloch and allied breeding has figured in his animals. The immediate descendants of Black Prince are recognized as having been the principal factors in establishing the Ballindalloch type, and it logically follows that the percentage of Black Prince blood contained by an animal is an accurate index of the extent to which Ballindalloch has contributed to that animal.

After sixty years of breeding, the Black Prince blood in Angus cattle has necessarily become quite standardized. The tendency in the future will undoubtedly be toward a dilution of the blood as the result of extensive use of cattle springing from Black Woodlawn. Ten years from now the average Aberdeen Angus animal may have only 13 per cent Black Prince instead of 15 per cent as at present. In view of this trend, there should be a certain number of breeders in the future who will preserve and inbreed some of the best animals of concentrated Black Prince blood, with a view of keeping the purity of the strain and rendering it more effective for combining with other strains of the breed.

CHAPTER 18

ABERDEEN ANGUS FOUNDATION SIRES—II

CUPBEARER 64

TO MOST Aberdeen Angus breeders, Cupbearer 64 is known chiefly as the sire of Erica 184, celebrated ancestress of the tribe bearing her name. Had he never sired another animal than Erica, Cupbearer would have been accorded a high place among the breed's sires. He left, however, other offspring of sufficient influence in shaping the breed that any roster of important Aberdeen Angus foundation sires must include Cupbearer. All Angus cattle of the present century trace many, many times to Cupbearer and it is clear that he contributed much to the formation of the breed.

Calved in 1850, Cupbearer was bred in the herd of Alexander Bowie, Mains of Kelly. For sire, Cupbearer had Pat 100, that was also the sire of Hanton 80, the bull which figured so prominently in the bloodlines of Black Prince of Tillyfour 77. Pat was a product of the herd of the great pioneer, Hugh Watson, of Keillor, being produced from the mating of Old Jock 126 and Favorite (2). It is worth noting that Pat was an inbred bull, his sire and dam having been full brother and sister, arising from matings of Grey-Breasted Jock 113 and Old Favorite.

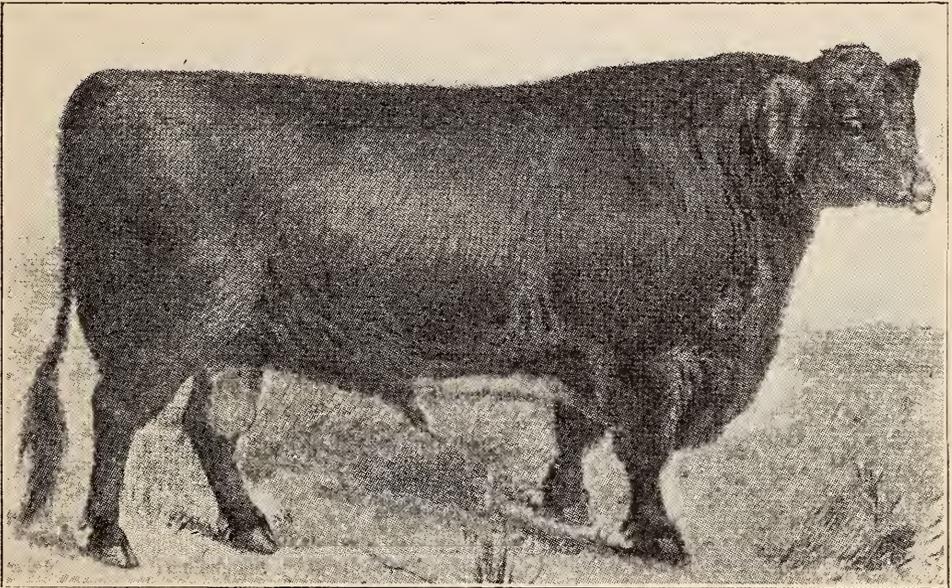
Cupbearer Had No Panmure Blood

Rose of Kelly 65, the dam of Cupbearer, was sired by Colonel of Ardestie 102 and out of Jenny 66. Little is known of the breeding of the sire and dam of Rose of Kelly, save that they came, respectively, from the herds of William Fullerton and Alex. Bowie. Thus, so far as his written pedigree goes, Cupbearer was a strongly-bred Jock bull but contained no Panmure blood.

Cupbearer is described by historians as a massive, deep-chested, evenly-fleshed bull of gay carriage and unsurpassed quality. In the painting by Gourlay Steell, Cupbearer is shown to have rather more white on the underline than is allowable today. He is said to have been one of the first bulls of the breed to sire calves that were uniformly polled. Thirty-eight of his progeny are recorded in Volume 1 of the Polled Herd Book.

As a two-year-old, Cupbearer took first at the Highland Society show, where he was sold by Mr. Bowie to the Earl of Southesk for 60 pounds, or \$292. Cupbearer then became the chief sire in the Earl's Kinnaird herd, where he was used until eight years old, when, having become crippled, he was sent to the butcher.

An important transaction in the history of Lord Southesk's herd occurred in 1853, when he purchased the heifer, Emily 185, from Hugh Watson. This female, a daughter of Old Jock, proved a rich producer at Kinnaird. When the worth of Cupbearer became apparent, Emily was mated to him, and the resulting issue was a heifer, Erica, born in May, 1857. With the name of Erica



CUPBEARER 64

An Aberdeen Angus foundation sire of note. Among his offspring was the celebrated cow, Erica 184.

is associated many of the greatest traditions of the Angus breed. Breeders credit her with founding a select and numerous tribe, the popularity of which has grown as the breed developed. Measured by the influence of her descendants, Erica has been without doubt the foremost producing female of the breed.

It has been related in a previous chapter that one of the great days in the history of Ballindalloch was that on which the bull, Trojan 198, passed from Tillyfour to the ownership of Sir George MacPherson Grant. Equally fraught with significance to Ballindalloch was that day in 1861 when Sir George bought Erica at the Kinnaird sale for 50 guineas. She is described as being at that

time "rather small, standing on short legs, with a lovely feminine head and splendid quality."

Students of Angus history are universally familiar with Erica's career in the Grant herd. There she produced the four heifers—Eisa and Enchantress, by Trojan; Erica 2d 183, by Chieftain 4407, and Ella 468, by Kildonan 478. Her recorded sons were: Guardsman (658), by Windsor 118; Cupbearer 2466, by Trojan; Excise-man 801, by Victor 528, and Elcho 527, by Juryman 421. Erica continued to breed regularly until her death, at Ballindalloch, at the age of sixteen years.

Elcho proved a sire of remarkable prepotence, leaving many desirable calves at Mains of Advie, the farm of Charles and John Grant, from whence he was subsequently returned to service at Ballindalloch. In the home herd he gave to the breed such sons as Justice 854 and Etonian 524, the sire of Iliad 14937. All of these bulls won imperishable renown as sires of the best cattle of the breed. It is clear that through Elcho came Erica's greatest influence, although popular opinion would credit Eisa and Enchantress with having been the chief factors in the perpetuation of the Erica blood.

The Daughters of Erica

Eisa and Enchantress stand out as two of the most valuable breeding cows in the annals of Ballindalloch. Erica 2d produced the heifer, Erica 3d 182, that became the dam of the celebrated Young Viscount 181, himself a sire of sufficient importance to rank as a foundation source. While the tendency has been to overlook the record of Ella, the achievements of her immediate descendants in the herd proves her a cow of undoubted worth.

Cupbearer's influence upon Aberdeen Angus cattle now living did not by any means come solely through Erica. Several of his sons worked notable improvement in the herds of their time. Kinnaird 195, by Cupbearer, was an influential sire, and his name occurs in many pedigrees. His daughter, Norma 178, produced Bright 375, the sire of Juryman. When bred back to her sire, Kinnaird, Norma became the dam of Zara 483, a breeding cow of note and considered as the foundress of a tribe bearing her name. The best known of the offspring of Zara was Scotsman 482, the sire of Judge 472.

Druid 142, an early son of Cupbearer, calved in 1854, developed into a formidable show bull and also did effective service in the Kinnaird herd. The few calves that he left became impressive breeders and many of the best cattle of today trace to his sons,

King Charles 424 and Raven 119, and his grandson, Theodore 225, through Thalia 226. Druid also sired Perdita 446, the granddam of Palmerston 444, a noteworthy sire.

Odin 146, a son of Cupbearer, went to the herd of Mr. Morrison, of Bognie. The best known of his get was The Earl 548, that sired Mayflower 2d 687, the dam of Lady Ida 686, widely known as the ancestress of the Blackbird family. It is thus apparent that Cupbearer contributed to every descendant of Lady Ida and Blackbird of Corskie.

Unfortunately for the breed, the herd of Lord Southesk was practically annihilated by rinderpest in 1865. But five animals of the herd survived, and they were unfruitful after recovering from the scourge. In this loss perished many of the best descendants of Cupbearer and Druid. In view of the merit displayed by the get of Cupbearer in other herds, the Kinnaird catastrophe was clearly one of the greatest misfortunes suffered by the breed in its early years.

Cupbearer and Modern Cattle

The influence of Cupbearer upon Aberdeen Angus cattle of the present day has come mainly through the offspring of Erica and through Druid, Kinnaird and Odin, although certain of Cupbearer's other daughters appear frequently in pedigrees. These include Victoria of Kelly 117, whose dam was the immortal Queen Mother; Princess Royal 26, Dulcinea 130 and Matilda Fox 575, dam of the showyard celebrity, Fox Maule. Circumstances limited the number of Cupbearer's offspring destined for future influence upon the breed, but the blood of these few proved so eminently useful that Cupbearer's blood was widely employed and today the average Angus has about 8 per cent Cupbearer blood.

The service at Ballindalloch and neighboring establishments of bulls having considerable Cupbearer blood accounts for its presence in animals of the current generation. Eltham 34796, the sire of Prince Ito 50006, was a strongly-bred Cupbearer bull, carrying 14.6 per cent. Prince Ito himself had 12 per cent, while the distinguished Iliad 14937 carried 11.7 per cent. More recently, the bulls, Everard of Ballindalloch 131648, Eblamere 100399, Edensor 223195 and Prince of the Wassail 202999, each have shown more than 10 per cent of the Cupbearer blood in their lineage. Baron Beauford (35480), now one of the most celebrated sires in Scotland, is 11.1 per cent Cupbearer.

Since the advent of the Ballindalloch breeding in America, many bulls notably high in Cupbearer have been used. Earl Eric

of Ballindalloch 100422, 9.8 per cent, and Eliminator of Ballindalloch 50237, 9.5 per cent, are typical instances. Such bulls as Elgon 111375, Eston of Denison 158949 and Eston of Eshott 123995 had over 10 per cent Cupbearer, while the bulls, Prince Ito 2d 54471 and Edinboro 277527, showed the high percentage of 11.4. Recently imported bulls, such as Perinthian 323447 and Evenest of Bleaton 223224, analyze about 10 per cent Cupbearer.

American-bred Angus cattle in whose pedigrees the later importations have not figured, show less Cupbearer blood than those extensively influenced by Ballindalloch. Black Woodlawn 42088, with 5.7 per cent, is a notable instance. Bell's Eclipser, sire of Black Woodlawn, had a striking deficiency of Cupbearer blood, since he contained but 2.9 per cent of the blood of the ancient Kinnaird sire. Lucy's Prince 46181, 4.9 per cent, and Black Monarch of Emerson 30331, 5.3 per cent, are additional examples of American-bred animals low in Cupbearer.

Significance of Cupbearer Percentage

The Cupbearer blood was unquestionably a vital factor in the formative period of those British herds whose history is of the greatest significance to present-day Aberdeen Angus breeders, irrespective of country. It is therefore well worth while for breeders to acquaint themselves with the percentage of Cupbearer blood in their animals. The Cupbearer percentage is in itself indicative of the extent to which Ballindalloch, Kinnaird and Mains of Advie have figured in the production of modern animals. Moreover, the Cupbearer content supplements the knowledge afforded by the percentages of Black Prince of Tillyfour, Trojan and Juryman. Another advantage of the Cupbearer determination is that it affords a rather accurate idea as to the amount of Erica blood in an animal. The two are sufficiently correlated that the Cupbearer percentage is of considerable value in estimating the Erica influence. In another sense, the knowledge of Cupbearer blood is useful in that it affords an index to the amount of fashionable blood in an Angus pedigree.

CHAPTER 19

ABERDEEN ANGUS FOUNDATION SIRES—III

TROJAN 198

NO LIST of Aberdeen Angus foundation sires would be complete without Trojan 198. Through his numerous and excellent descendants, the influence of Trojan has been impressed upon every animal of the breed. Angus breeders accord him honor as the sire of the celebrated daughters of Erica—Eisa 526 and Enchantress 541, foundresses of the Trojan-ERICAS, so highly prized by breeders on both sides of the Atlantic. A study of the early pedigrees of the breed shows, however, that Trojan's blood was passed on through several other important channels in addition to his two famous daughters.

Trojan it was, according to Scottish history, that gave to the Ballindalloch females their quality, sweetness and symmetry, impressing upon the herd a type which was afterward to be sought for eagerly by Doddie breeders far and near. These characteristics in the daughters of Trojan equipped them admirably for mating with such massive, deep-fleshed bulls as Juryman 421 and Young Viscount 181, that followed a few years later at Ballindalloch. An estimate of Trojan's value as a sire is contained in the words of Campbell MacPherson Grant, who wrote in 1882 that Trojan had "done more good to the Ballindalloch herd than any bull that has been in it."

Trojan a Son of Black Prince of Tillyfour

A son of Black Prince of Tillyfour 77 and the cow, Charlotte 39, a granddaughter of Queen Mother 41, Trojan was a product of the brilliant breeding operations of William McCombie, of Tillyfour. Trojan was calved January 5, 1863, and is said to have been a bull of surpassing quality but somewhat undersized. In bloodlines, he embodied a strong concentration of Grey-Breasted Jock 113, Panmure 69 and Queen Mother. In terms of blood percentages, Trojan's pedigree analyzed 18.7 per cent Grey-Breasted Jock, 31.9 per cent Panmure and 25 per cent Queen Mother. Trojan traced no less than twelve times to Panmure, being very nearly as rich in that breeding as his illustrious sire, Black Prince. Char-

lotte, dam of Trojan, was a granddaughter of Grey-Breasted Jock, and Trojan thus had three-sixteenths Grey-Breasted Jock blood, compared with one-eighth in his sire.

Trojan early demonstrated his prowess in the showring, winning first as a yearling at the Royal Show, at Newcastle, in 1864, and standing third at the Highland the same year. In 1865, he stood first at the Morayshire show, at Elgin. During a visit to Tillyfour, late in 1865, Sir George MacPherson Grant was favorably impressed with the young bull and purchased him for fifty guineas. Thereafter Trojan was in service at Ballindalloch, leaving an indelible mark upon the cattle in that great herd.

Trojan Sired Eisa and Enchantress

Trojan was afforded a splendid opportunity at Ballindalloch, being bred to the best matrons of the herd. To his service, Erica produced Eisa and Enchantress. Eisa, the older of the sisters, was calved in 1867, and developed into a beautiful cow of superb quality. She won premier position as an aged cow at the Highland show in 1871, at Perth. When in her prime, her type and conformation are said by pioneer breeders to have been so outstandingly good that few, if any, of the Highland champions since her time could have beaten her.

More lasting than her great show career, however, was Eisa's contribution to Ballindalloch, in the form of her sons and daughters, all of them breeding animals of a high order. Her son, Elchies 552, was used in the home herd with highly fortunate results, and it is related that the excellence of his calves was one of the chief causes of Sir George's attachment for the Erica and Trojan blood. Eva 525, one of the valuable daughters of Eisa, became the dam of Etonian 524, a powerful factor in the success of Ballindalloch as the sire of the renowned Iliad 14937. Eila 2587 and Echo 771 were among the other daughters of Eisa, the first named giving to the herd the two valuable herd bulls, Erroll 7474 and Sir Evelyn 2586. Emperor of Easter Tulloch 728, another son of Eisa, deserves mention as an ancestor of many good cattle. He was a source of wealth to the Easter Tulloch herd of James Scott, where he was used.

Enchantress, the younger of the two daughters of Trojan and Erica, followed in the footsteps of her sister as a show cow, taking first as a two-year-old and second as a cow at the Highland exhibitions of 1871 and 1872. As a breeder, Enchantress was likewise valuable. Her daughters, Ethel 540, Edith of Ballindalloch 543, Ebony 1630 and Edina 6073, were bright stars in the galaxy of

great breeding cows assembled at Ballindalloch. Edith produced the bulls, Editor 542 and Englishman 746. Editor distinguished himself at Ballindalloch and later at Montcoffer under the ownership of J. Strachan, while Englishman won distinction as a stock bull in the worthy English herds of Clement Stephenson and O. C. Wallis. Edina, when mated to Young' Viscount 181, produced Elba 34753, one of the most famous breeding cows in all Angus history. Elba thus represented a concentration of the Trojan-Erica breeding, since her sire, Young Viscount, was out of Erica 3d, by Trojan.

Erica 4th 694, a full sister to Erica 3d, issuing from the mating of Trojan and Erica 2d 183, gave to the breed the useful stock bull, St. Clair 693, noted as the sire of many worthy animals, including Blackcap 1552, ancestress of the highly fashionable line bearing her name.

Trojan's daughter, Bertha 752, out of Miss Burgess 753, must rank among the most useful of his progeny. She was a winner of first at the 1873 Highland. Numbered among her offspring were the cow, Maid of Aven, also a Highland first prize winner, and the bull, Bachelor 751, a sire of note. Angus cattle designated by breeders as Miss Burgesses trace to the foundation cow through Bertha and Maid of Aven. Bachelor was a highly useful sire, producing among others the distinguished show bull and sire, Prince Albert of Baads 750.

Cattle descended from certain other daughters of Trojan appear in pedigrees of modern cattle, although to a limited extent as compared with those of his offspring already alluded to. His daughters, Naiad 372 and Nosegay 2d 2250 left worthy descendants.

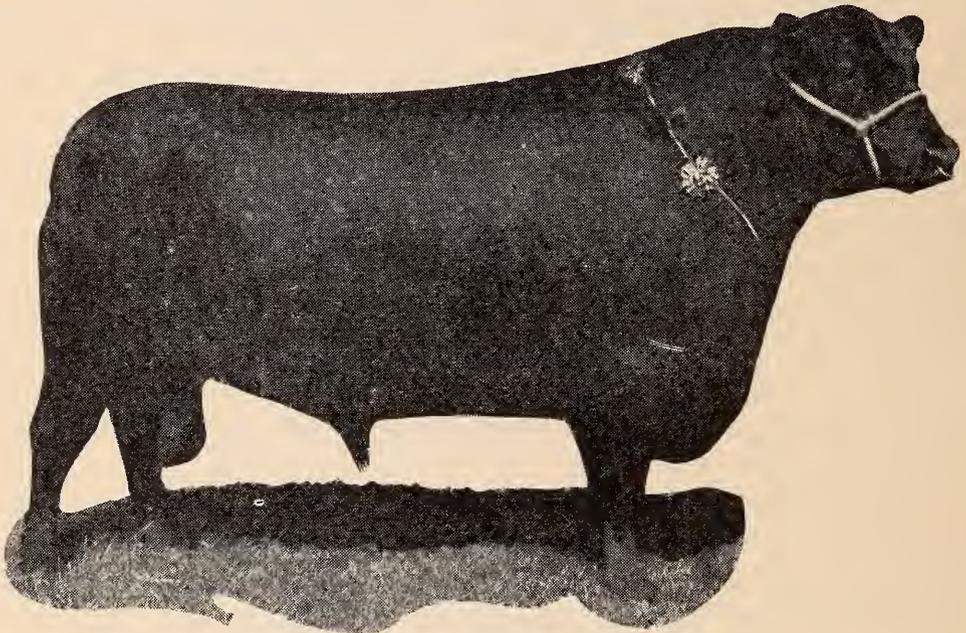
Trojan's Influence Came Through Daughters

As a foundation sire, Trojan occupies a unique position in that he never sired an outstandingly good bull. However, the merit of his daughters and the many splendid cattle bred from them entitle Trojan to recognition as one of the most important factors in establishing the Ballindalloch type. Cupbearer of Ballindalloch 2466, a son of Erica, is one of the few bulls by Trojan of which there is record. He was used to some extent in the parent herd with rather negative results.

The owner of Ballindalloch was quick to appreciate the worth of the Trojan females and many of the best bulls produced from these cows were put in service. One of the first was Elchies 552, out of Eisa. A number of the other earlier sires in use at Ballin-

dalloch carried the Trojan cross, including Editor, Young Viscount, Erroll and Sir Evelyn.

During the past thirty years, many of the best bulls bred in Scotland have owed much to the Trojan blood, as demonstrated by the percentage of it found in their pedigrees. Enthusiast of Ballindalloch 41404, the sire of Delamare 53428, was a richly-bred Trojan bull, with 15.6 per cent. Delamere himself was 11.1 per cent Trojan. Eblamere 100399 and Edensor 223195, each contained 13.4 per cent, while Edelfhof 100375 had 12.9 per cent. A host of other prominent sires have analyzed more than 10 per cent Trojan, among them such bulls as Prince of the Wassail 202999, Junior



BARON BEAUFORD (35480)

An important sire in Great Britain during a recent period. Baron Beauford's pedigree carries high percentages of Ballindalloch blood, particularly of Trojan, with 11.4 per cent.

Eric (34725), Baron Beauford (35480), Elate 123797, Ebbero 226517 and Eradiator 223201.

Many bulls richly bred in Trojan have come to the United States and as a result of their wide use the average percentage of Trojan blood in the breed has risen during the past twenty years. The increase in Trojan blood in American herds has been brought about through the descendants of such bulls as Eliminator of Ballindalloch 50237, 13.7 per cent, and Earl Eric of Ballindalloch 100422, 10.3 per cent.

The average of Trojan blood in American animals today is around 7 per cent. The average for the twenty leading sires of

winners at the past five International shows is 6.7 per cent Trojan. Scottish-bred animals run considerably richer and will average close to 10 per cent.

The list of influential sires used on this side of the water has contained, in addition to those mentioned, many bulls higher than the average in Trojan blood. Tenth Laird of Estill 26230 was 8.8 per cent Trojan and Heather Lad of Emerson 19049 showed 7.8 per cent. Blackcap King 22652, Zaire 15th 34371, Eston of Denison 158949, Edward R. 61744 and Evereux of Harviestoun 203000, each had between 9 and 10 per cent Trojan blood.

Black Woodlawn and Prince Ito Low in Trojan

Two great sires whose Trojan content was notably low were Black Woodlawn 42088, 4.5 per cent, and Prince Ito 50006, 4.6 per cent. The widespread use of the descendants of these two bulls has served to offset the rich Trojan infusion from other sources, and explains in large measure why American-bred cattle, in general, do not have as much Trojan blood as those bred in Scotland. Oakville Quiet Lad 109220 and Glenfoil Thickset 2d 88142, sires of extensive influence, were still more deficient in Trojan breeding than Black Woodlawn.

The percentage of Trojan blood in an Aberdeen Angus animal serves as an index of the degree to which the Ballindalloch and kindred breeding has influenced that animal. In this connection, the knowledge of the Trojan blood supplements the information gained from the analysis of pedigrees in terms of Cupbearer 64, Black Prince of Tillyfour 77 and Juryman 421. As a rule, the Trojan blood is found in greatest degree in those herds where imported sires or their immediate descendants have been used. Herds which are largely descended from the first importations of Angus cattle to this country are relatively low in Trojan breeding.

CHAPTER 20

ABERDEEN ANGUS FOUNDATION SIRES—IV

YOUNG VISCOUNT 181

AS THE ancestor of cattle which have contributed much to the Aberdeen Angus, Young Viscount 181 rightly deserves a most prominent place in any consideration of the breed's foundation sires. As an unbeaten first prize winner in Scottish showyards for six years, he was unquestionably one of the greatest individuals of the breed of all time. To American breeders of the Doddie, a study of Young Viscount is of especial significance, inasmuch as the first important infusion of Ballindalloch blood was brought to American herds through the importation and use of the sons of this sire.

Young Viscount was calved in April, 1873, and his breeder was William Duff, of Hillockhead. Mr. Duff had purchased Erica 3d 182, the dam of Young Viscount, from Sir George MacPherson Grant, at Ballindalloch. She was a daughter of Trojan 198 and Erica 2d 183, the latter by Chieftain 4407 and out of Erica 184. Erica 3d was bred to Hampton 187, a bull purchased by Mr. Duff as a calf, and the resulting offspring was Young Viscount.

Young Viscount of Mixed Blood

The bloodlines of Young Viscount received considerable of the choice Ballindalloch-Tillyfour breeding through his dam. On the side of his sire, however, the ancestry was for the most part less distinguished, containing several lines of blood alien to Keillor, Tillyfour and the other prominent foundation herds. The pedigree of Young Viscount had rather more of the blood of Grey-Breasted Jock 113, with 18.3 per cent, than of Panmure, with 12.3 per cent. This was in contrast to the lineage of Black Prince of Tillyfour 77 and Trojan 198, which showed from 12 to 18 per cent Grey-Breasted Jock and over 30 per cent Panmure.

The breeding of Young Viscount was not such as to attract extraordinary attention at his time. He developed exceptionally well as a calf, however, and was bought by the Earl of Fife, Duff House, who showed him at the Highland in 1874, winning first among the yearlings. As a two-year-old, Young Viscount was

triumphant at the Glasgow Highland, and in 1876 he headed the aged bulls at Aberdeen. Late in 1876, the major part of the herd, including Young Viscount, was transferred from the Earl of Fife to Mr. Hannay, of Gavenwood.

After two years of service at Gavenwood, Young Viscount was taken at auction by Sir George MacPherson Grant at 225 guineas, then \$1,125, and the highest figure ever paid for an Aberdeen Angus bull. In 1879, the bull was made first aged bull and champion of the breed at the International Exposition at Kilburn, near London. This was the climax of a career of six unbeaten show seasons. From the time of his purchase he was used extensively on the Ballindalloch herd, leaving upon it a profound impression.

Young Viscount a Superb Individual

A noted judge of the time declared Young Viscount to be one of the most perfectly formed animals for flesh-carrying purposes he had ever seen. George Hendry, noted Scottish writer, speaks of him as "the bull of a century." Critics of the time were unanimous in the opinion that his superior as an individual had not been seen. His massiveness and great constitution were combined with a tendency to take on flesh easily and distribute it uniformly. He lacked not at all in quality, and was in remarkable bloom when shown at six years old.

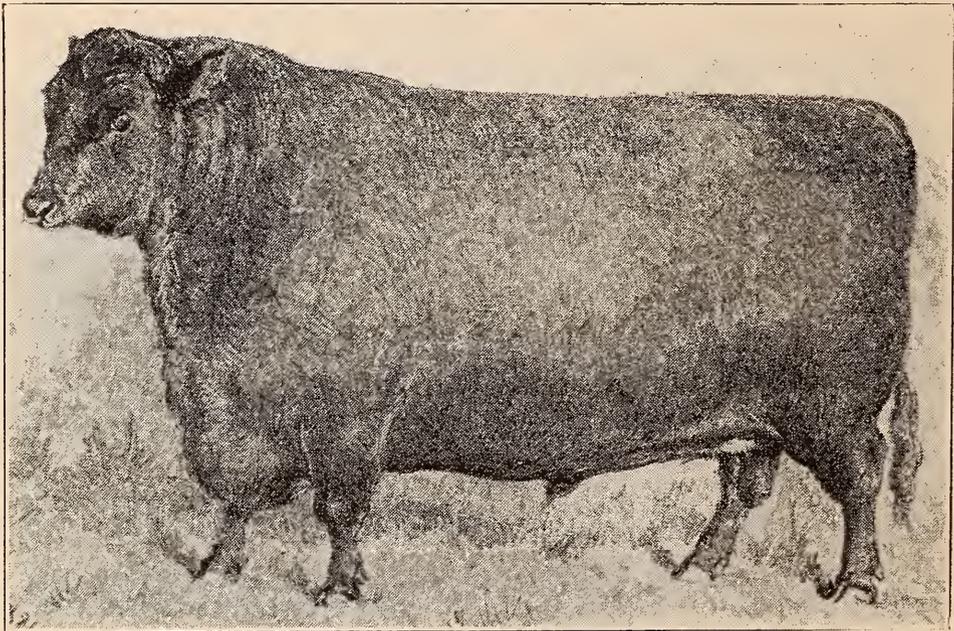
Young Viscount's greatest influence as a breeder was realized at Gavenwood and Ballindalloch, particularly in the latter herd, where he was extensively used for four seasons. The numerous progeny which he left at Ballindalloch were so uniformly excellent as to cause their breeder to regard Young Viscount as working more improvement in the herd than any sire used up to his time, with the possible exception of Trojan.

The host of good bulls sired by Young Viscount at Ballindalloch numbered such prepotent sires as Bushranger 732, Englishman 746, Julius 851, Ermine Bearer 1749, Rougemont 2252, King of Trumps 2690, Proud Viceroy 6080 and Erroll 7474. Bushranger came to America, where he was a successful sire in the herd of Estill & Elliott, of Missouri. Englishman did much to improve the herds of Clement Stephenson and O. C. Wallis, in England. Ermine Bearer was imported by the Mossom Boyd Company, of Canada. In their herd he proved to be one of the most useful sires in the early American development of the breed, producing such bulls as Abbotsford 2702 and Abactor 7426, while his daughters included the dams of Gay Lad 19538 and Tenth Laird of Estill

26230. Rougemont and King of Trumps had successful careers in the herds of North America.

Erroll succeeded his sire in service at Ballindalloch, where he distinguished himself as the sire of good breeding cows. His daughters numbered such worthy Ballindalloch matrons as Eloquence 53316, Genista 55745, Buxom Maid 58532, Eleuthera 26586, Eleusa 50020 and Kindred 26590. Julius was also used at Ballindalloch for a time and left such good offspring as the bull, Evander 12318 and the cow Erycina 53430. Proud Viceroy was a sire of note in the herd of John Cran, of Kirkton.

Much of Young Viscount's immediate influence at Ballindalloch



YOUNG VISCOUNT 181

Young Viscount had a profound influence upon the Ballindalloch herd and others important in early Aberdeen Angus development.

was transmitted through his daughters, which were, it is related, as if cut from one mold. Among them was the justly celebrated Elba 34793, assured of a permanent place among the breed's greatest producing females. She bred regularly throughout a lifetime of eighteen years, and gave to the herd the bulls, Enthusiast 41404, Esquire and Equerry of Ballindalloch 45903 and the heifers, Eliota 50236 and Eblana 50097. Enthusiast became the sire of Delamere 53428, while Eblana gained distinction as the dam of Eblito 50098.

Edelweiss 26597, by Young Viscount, must also be placed in the front rank of Ballindalloch matrons. Her produce included the

Highland champion and sire, Esmond. Other notable daughters of Young Viscount were Heather Blossom 2d 1732, Crocus 2d 6753, Jocosa 14936, Rose of the Valley 14955, Erica of Cortachy 14944, Kinswoman 16426, Blushing Maid 34813, Edvisca 36987 and Pride of the Tervie 62156.

The Gavenwood herd of John Hannay was the source of much of the Young Viscount blood which was early brought to America. In the early importations to this continent were many animals that had the blood of Marshal Var 613, Proud Viscount 1443 and Young Hero 1921, all sons of Young Viscount bred at Gavenwood. In 1886, the entire Gavenwood herd, rich in Viscount blood, was purchased and brought to Canada by Geary Brothers. These importations had much to do with the high percentage of Young Viscount blood now contained by American Aberdeen Angus.

In addition to the cattle bred at Gavenwood and Ballindalloch, Young Viscount had still other sons which assisted notably in perpetuating his influence. O. C. Wallis, of Bradley Hall, sent a cow to be bred to Young Viscount, and the result of the mating was Kabul 1537, a bull of much value in the Wallis herd. A. K. H. B. 1692, by Young Viscount, was produced in the herd of D. A. Pearson, Johnston Lodge. The blood of A. K. H. B. is found in many pedigrees.

Young Viscount Supplied Size and Vigor

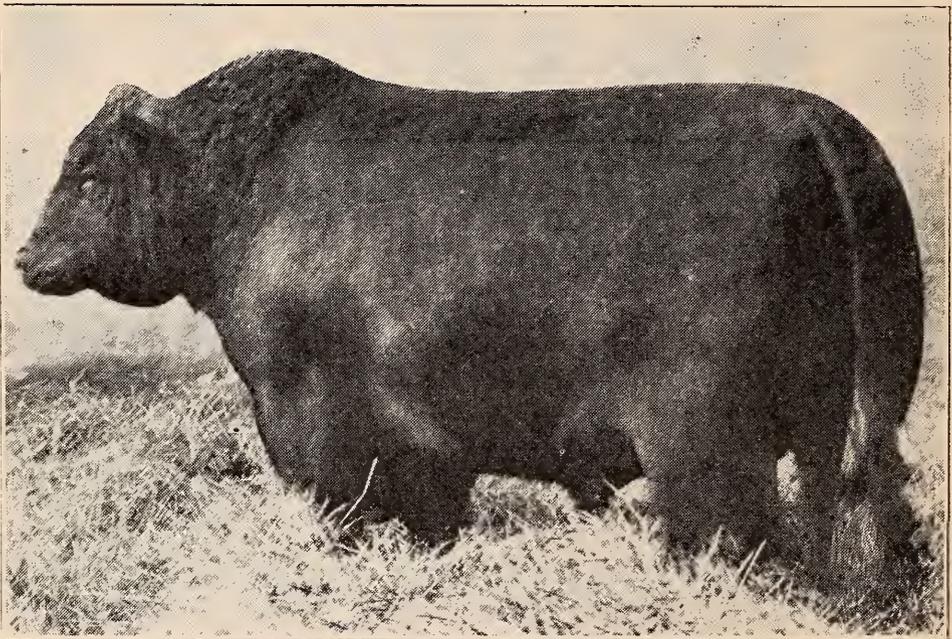
The rugged massiveness of Young Viscount was tempered with the refinement and style of the daughters of Trojan, Elcho and Juryman to produce cattle of size and vigor with a wealth of flesh and excellent quality. Although the dam of Young Viscount had been bred in the herd, his sire's ancestry was largely foreign to Ballindalloch, and this infusion blended exceptionally well with the blood of the smaller, high-quality, Ballindalloch and Tillyfour-bred bulls which preceded Young Viscount.

Young Viscount and his sons were followed at Ballindalloch by Iliad, bred from a Ballindalloch sire and a dam of alien blood. His success, especially when mated to Young Viscount females, paralleled that of the great sire which had preceded him. The Iliad-Young Viscount cross was responsible for bulls of the caliber of Esquire, Enthusiast, Esmond, Equerry and Edric 26598, and will forever rank as one of the most fortunate combinations of bloodlines ever effected in an Aberdeen Angus herd.

For the past quarter of a century, Aberdeen Angus cattle have carried from 7 to 20 per cent of the blood of Young Viscount. His influence has been universally distributed throughout the breed,

and, mathematically considered, is more important than that of any foundation bull except Black Prince of Tillyfour 77. American-bred Angus show about 10 per cent Young Viscount, the average in the bloodlines of the twenty leading International sires being 10.2 per cent.

Delamere 53428, noted Ballindalloch sire of a comparatively recent period, was 18.7 per cent Young Viscount. Eblamere 100399 and Edensor 223195, sons of Delamere, were even more strongly bred in Young Viscount, carrying 21.8 per cent. Eblito 50098 and Jeshurun 74743 were each 12.5 per cent Young Viscount. Prince



EARL MARSHALL 183780

Second only to Black Woodlawn as a sire of Aberdeen Angus prize winners from 1918 to 1922. Earl Marshall represents in large part the bloodlines of American-bred strains and is high in Young Viscount blood.

Ito 50006, of a slightly earlier period, was a noteworthy instance of an animal which contained no Young Viscount blood. Iliad and Equestrian were likewise entirely without Young Viscount blood.

Latter-day sires in Scotland have shown a relatively heavy percentage of Young Viscount influence. The celebrated Prince of the Wassail 202999 had 15.6 per cent Young Viscount, while Ebbero 226517, 17.2 per cent, and Junior Eric (34725), 14.5 per cent, are other instances of bulls that were high in this blood. Evileseo, at present the head of the Ballindalloch herd, shows 13.8 per cent of Young Viscount in his pedigree. Baron Beauford, high in his per-

centages of the other Ballindalloch sires, is likewise high in Young Viscount blood, with 15.8 per cent.

The important Angus herd sires in America have, for the past twenty-five years, included many animals richly bred in Young Viscount. Tenth Laird of Estill 26230, 21.1 per cent, had perhaps the highest concentration among such bulls. Eliminator of Ballindalloch 50237, 18.7 per cent, and Baden Lad 61883, 15.2 per cent, were responsible for the high content of Young Viscount uniformly found in cattle bred in or descending from the W. A. McHenry herd, in Iowa. Similarly, animals bred in or related to the Escher & Ryan herd, of Iowa, are high in Young Viscount through the use of such sires as Earl Eric of Ballindalloch 100422, 15.6 per cent, and Earl Marshall 183780, 14 per cent Young Viscount. Meraman of Tierra Alta, an effective sire during a recent period, shows 14.2 per cent of this blood. Other prominent American herd sires of a very recent period in the pedigrees of which Young Viscount is an important factor, include Edgar of Dalmeny 269216, 13.5 per cent; Estonian 209474, 12.3 per cent, and Broadus Norwood 3d 164977, 12.3 per cent.

Few American-Bred Angus Low in Young Viscount

The noted sire of winners, Black Monarch of Emerson 30331, was 12.5 per cent Young Viscount. The pedigree of Black Woodlawn 42088, which, it will be recalled, showed low percentages of other foundation bulls, is likewise low in Young Viscount, with but 7.8 per cent. Among American-bred animals there have been comparatively few that were lacking or strikingly low in Young Viscount. Among the few instances that may be named are Heather Lad of Emerson, lacking entirely in Young Viscount blood; Black Jovial, 4.5 per cent, and Undulata Blackbird Ito 81836, 5.2 per cent. The two last-named bulls were descendants of Prince Ito, a bull that had no Young Viscount blood.

A high percentage of Young Viscount in the pedigree of an Aberdeen Angus animal may mean one of three things: First, the animal may have come of British descent with many crosses of Erroll, Delamere and Elba; second, the animal may be largely descended from the early American importations, carrying the blood of Ermine Bearer, Abbotsford and Young Hero; third, the animal may be made up of a combination of the American strain of Young Viscount cattle with British or recently imported breeding high in Young Viscount.

Since the descendants of Young Viscount were uniformly important in improving both British and American herds, it is clear

that a high percentage of Young Viscount breeding signifies that an animal is backed by the best strains of the breed. The Young Viscount percentage does not classify the ancestry of an animal so definitely as the percentages of Trojan and Cupbearer. Taken in itself, however, a high percentage of Young Viscount is an asset to an Aberdeen Angus pedigree. Analysis of a large number of Aberdeen Angus pedigrees shows that the extent of the influence of Young Viscount upon Aberdeen Angus breeding in both Great Britain and America has been second only to that of Black Prince of Tillyfour.

CHAPTER 21

ABERDEEN ANGUS FOUNDATION SIRES—V

JURYMAN 421

JURYMAN 421 was the first of the great triumvirate of bulls given to the Ballindalloch herd by the peerless matron, Jilt 422, "the mother of monarchs." Juryman and his distinguished brothers, Judge 473 and Justice 854, were unbeatable in the Scottish show-rings of their time, and each, after retiring with his triumphs, achieved unusual prestige as a sire. While Judge and Justice contributed importantly to the breed, neither of them exerted the profound influence in shaping the breed that fell to Juryman. His value as a sire, admitted to be great during his own time and thereafter, is further confirmed by the extent to which he figures as an ancestor of present-day individuals of the breed.

The four foundation sires which have been discussed in previous chapters were all intimately identified with the fortunes of Ballindalloch. None of them, however, was bred there, and Juryman is thus the sole member of the five important Angus foundation bulls that was a product of the herd in which he became famous. He was calved at Ballindalloch in 1868, and resulted from the mating of half brother and sister, being sired by Bright 375 and out of Jilt, both of which were the get of Black Prince of Tillyfour 77.

Panmure and Jock Blood Combined in Juryman

It has been noted that each of the foundation sires that have been considered has represented a concentration of either Grey-Breasted Jock 113 or Panmure 69. In Juryman these two strains were almost equally balanced, since he contained 17 per cent Grey-Breasted Jock and 16 per cent Panmure. On the basis of herd book records, his sire and dam had about the same amount of Panmure blood, but his dam had more than twice as much Grey-Breasted Jock as his sire. While the contrast in breeding of the sire and dam of Juryman was not so pronounced as in the case of the parents of Black Prince of Tillyfour and Trojan, it is nevertheless probable that the crossing of the Grey-Breasted Jock and Panmure strains was a considerable factor in the success of Juryman.

Juryman was twice a first prize winner at the Highland Society

show. As an individual he was masculine in character, carried a frame of great size, and had surpassing quality. An historian says of him: "His frame was just a trifle narrow and his hindquarters drooped rather too much; but his quality under the hand, his head, neck, shoulders and chine atoned for any defects."

When Juryman became of serviceable age, the majority of cows at Ballindalloch were sired by Trojan. The thick-fleshed massiveness of Juryman proved to combine remarkably well with the smoothness and quality of the feminine daughters of Trojan, and the animals produced from this cross number some of the most illustrious names associated with Ballindalloch. From Enchantress, Juryman produced the two splendid breeding cows, Ethel 540 and Edith 543, while Eisa had by Juryman the useful breeding bull, Elchies 552 and the cow Echo 771. The mating of Juryman and Bertha 752, by Trojan, resulted in the bull, Bachelor 751, that sired the show winner, Prince Albert of Baads 750, and also the dam of Paris 3d 1163, an important bull in the early development of American herds.

From Erica herself, Juryman produced Elcho 527, one of the most useful bulls in the long list of distinguished sires in service at Ballindalloch. Bred back to his granddam, Jilt, Elcho gave to the herd the famous Justice 854, a show bull without a peer in his time, and a worthy sire, having to his credit such eminent producing cows as Evergreen 34819 and Pride of Invereshie 26587.

Elcho Sired Provost and Etonian

Elcho also sired the bull, Provost 3564, used with success in the herd, although his period of service was unfortunately short. The limited number of calves gotten from Provost included such good cows as Eurya (13708) and Joanna 55046, while his sons included Elocutionist 53317, used for a time in the home herd. Still another important bull that came from Elcho was Etonian 524, sire of the history-making Iliad 14937.

Elcho left many valuable daughters at Ballindalloch and at Mains of Advie. Chief among these were Eila 2587, Evening 12317 and Roseblossom 12803. Eila gave Ballindalloch two of its good herd sires in Erroll 7474 and Sir Evelyn 2586, while Evening was the dam of the good sire, Evander 12318.

The careers of Juryman and Elcho were not entirely confined to Ballindalloch. It was a common practice of Sir George MacPherson Grant to sell or lease sires to neighboring herds, later to secure them for further service in the home herd. Juryman and Elcho were thus used at different times in the Cortachy herd of

the Earl of Airlie, the Mains of Advie herd of Charles and John Grant, and the Spott and Hatton herd of William Whyte. In each of these herds the two sires left worthy descendants although they do not bear the same important relation to the later development of the breed that is allotted to the Ballindalloch-bred progeny of Juryman and Elcho. One son of Juryman produced at Cortachy, Norman of Powrie 2918, deserves mention, however, as a bull whose blood is extensively distributed in the pedigrees of present-day cattle.

The blood of Juryman, coming particularly through Elcho, Justice, Provost and Elchies, was profoundly important in shaping the destinies of Ballindalloch and allied herds. A quarter of a century after Juryman's time, the average individual in these herds carried from 12 to 15 per cent of his blood, demonstrating that his blood was highly regarded, even though it had not perhaps been concentrated to so great an extent as that of Black Prince of Tillyfour and Young Viscount. There were a few animals of this period, however, in which the amount of Juryman blood was exceedingly high. A notable instance was Eltham 34796, 21.5 per cent.

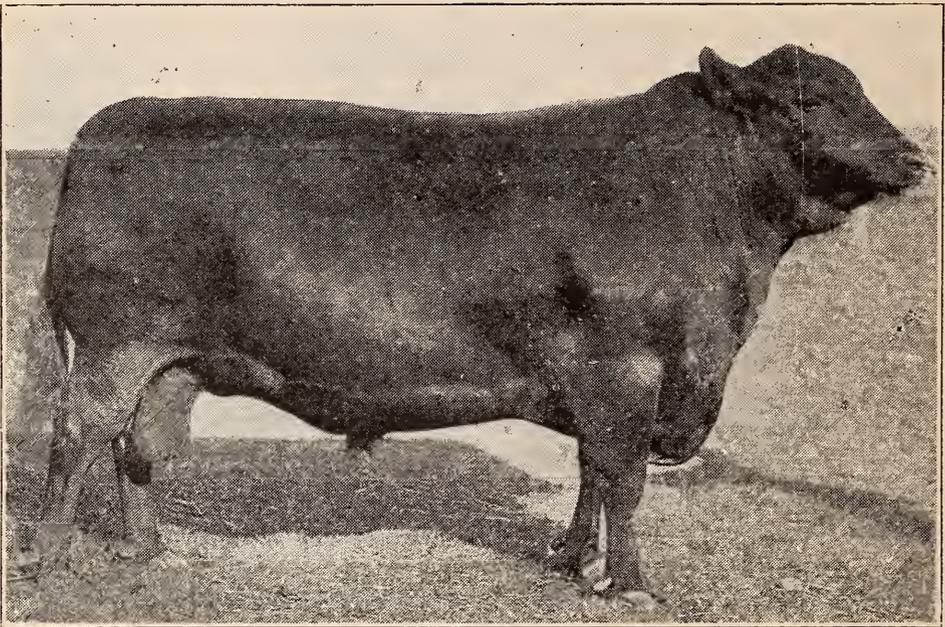
Imported Animals High in Juryman

The bulls which have done the most for breed advancement in both Great Britain and America during the past three decades have included many animals relatively rich in Juryman blood. Prince Ito 50006, 17.1 per cent Juryman, did much to increase the Juryman percentage in American cattle. Edward R. 61744, 14.5 per cent; Eston of Eshott 123995, and Eliminator of Ballindalloch 50237, each 11.3 per cent, and Earl Eric of Ballindalloch 100422, 9.5 per cent, also brought a considerable measure of Juryman blood to American herds. Still more recently such bulls as Black Jovial 145513, 13 per cent, and Elgon 111375, 11.1 per cent, have helped to perpetuate the Juryman influence.

Many herd sires used in Great Britain have carried more than the average content of Juryman. Edenhall 41421 and Elandslaagte 53322 each had above 14 per cent. Several of the bulls identified with the J. J. Cridlan herd, in England, afford examples, notably Wizard of Maisemore 123801, 12.1 per cent; Elate 123797, 11.3 per cent, and Everwise 123805, 10.8 per cent. Baron Beauford (35480), a bull of great prestige in Britain at present, shows 9.5 per cent of this breeding.

The approximate amount of Juryman in an American-bred Aberdeen Angus of today is 7 per cent. This conclusion is based

upon analyses of the pedigrees of the twenty foremost sires of late International winners. The average amount of Juryman blood in these sires is 6.8 per cent. It is apparent that, while the influence of such Juryman-bred bulls as Prince Ito and Earl Eric has been considerable, the Juryman blood has been subjected in America to a dilution of considerable extent. This dilution has largely come through the use of a number of important early American sires deficient in Juryman blood. Heather Lad 2d 7965 and Moon Eclipser 8635, whose descendants were uniformly useful in the pioneer American herds, had none of it whatsoever. Heather Lad of Emerson 19049 and Woodlawn Blackbird Lad 35103 each



PRINCE ITO 50006

The pedigree of Prince Ito contained 17.1 per cent Juryman blood, an uncommonly high percentage. Prince Ito was similarly rich in Black Prince of Tillyfour, with 22.2 per cent.

had but 1.6 per cent, while Black Monarch of Emerson 30331 contained but 2.7 per cent. Black Woodlawn 42088, distinctly low in the other foundation sires, comes nearer the average in the case of Juryman, his pedigree showing 5.5 per cent.

The blood of this group of sires is the basis of practically all existing American herds, and, although bulls carrying from 10 to 12 per cent Juryman have been used in later years, the percentage in living animals will not average above 7 per cent.

A high percentage of Juryman blood in an individual now living is therefore indicative of a high proportion of Ballindalloch or rich

British blood in that animal. It does not follow, however, that all animals which have received a strong Ballindalloch influence will be high in Juryman. The percentage of Juryman in the breeding material of Scotland's best herds has been somewhat more variable than that of the other foundation sires considered. The Juryman blood is not yet standardized in the breed to the same extent as Trojan and Cupbearer blood.

To the present-day breeder, the Juryman blood in an Angus animal is significant in that it supplies a further check upon the amount of rich Scottish blood in that animal. It supplements the information afforded by the blood percentages of Cupbearer, Black Prince, Trojan and Young Viscount. The cattle descending immediately from Juryman were among the best in form and the most useful in breeding ability in the herds of their time. A high percentage of Juryman therefore signifies worthy ancestry. At the same time, a lack of Juryman blood does not necessarily imply unfashionable or inferior ancestry, since some of the best ancestors of the present generation of Aberdeen Angus cattle were not extensively influenced by Juryman.

**PEDIGREE ANALYSES OF LEADING ABERDEEN ANGUS
SIREs AT THE INTERNATIONAL, 1918-1922**

	Cup- bearer	Bl. Prince of Tillyfour	Young Trojan	Viscount	Juryman	Total
Black Woodlawn 42088....	5.7	11.2	4.5	7.8	5.5	34.7
Earl Marshall 183780.....	7.5	15.3	7.9	14.0	7.1	51.8
Egerton W. 125979.....	7.8	14.0	7.2	9.1	6.0	44.1
Ames Plantation Beau 219787.....	7.6	14.3	5.8	8.8	6.7	43.2
Protine 138372.....	7.0	14.9	6.0	12.4	5.1	45.4
Earl Eric of Ballindalloch 100422.....	9.8	16.3	10.3	15.6	9.5	61.5
Oakville Quiet Lad 109220	6.3	13.2	3.8	5.9	5.3	34.5
Baden Lad 61883.....	6.6	15.2	7.3	15.2	5.9	50.2
Black Peer 126290.....	8.9	19.2	5.9	9.4	9.1	52.5
Glenfoil Thickset 2d 88142.....	6.0	12.0	4.1	6.0	4.3	32.4
Eliminator of Ballindal- loch 50237.....	9.5	18.4	13.7	18.7	11.3	71.6
Elgon 111375.....	10.1	16.5	6.3	7.8	11.0	51.7
Balatum 166769.....	8.0	17.2	6.1	8.3	7.6	47.2
Bell's Eclipser 20695.....	2.9	7.5	2.3	6.2	.....	18.9
Ensign of Glencarnock 217216.....	8.4	16.5	8.2	10.6	8.0	51.7
Meraman of Tierra Alta 206566.....	9.2	16.5	8.6	14.2	8.1	56.6
Black Pass 177204.....	8.3	17.2	6.8	9.8	6.6	48.7
Belfast 148891.....	6.2	13.1	6.1	8.5	5.7	39.6
Black King of Home Dale 2d 104254.....	7.5	16.0	6.2	8.4	6.2	44.3
King of Clover Leaf 7th 180199.....	8.1	15.5	6.5	8.3	7.2	45.6
Average, twenty bulls.....	7.6	15.0	6.7	10.2	6.8	46.3

This table presents the quantitative analyses of the pedigrees of the twenty foremost sires of Aberdeen Angus prize winners at the International Live Stock Show from 1918 to 1922, inclusive. The analyses are expressed in terms of the five most potent foundation sires used in the Tillyfour and Ballindalloch herds, the fountainhead of Aberdeen Angus breeding. In the sixth column, under "total," is given the sum of the amounts of the blood of the five sires contained in each animal.

It may be noted that the pedigrees of Black Woodlawn and his sire, Bell's Eclipser, are strikingly low in their percentages of the foundation sires, indicating that these two bulls differed materially in bloodlines from the major part of the breed.

PEDIGREE ANALYSES OF PROMINENT ABERDEEN ANGUS BULLS

	Cup- bearer	Bl. Prince of Tillyfour	Young Trojan	Viscount	Juryman	Total
Moon Eclipser 8635.....	2.6	7.0	3.1	12.5	.....	25.2
Iliad 14937.....	11.7	17.1	6.2	.....	12.5	47.5
Heather Lad of Emerson 2d 19049.....	4.8	10.2	7.8	.....	1.6	24.4
Gay Lad 19538.....	7.8	14.4	8.2	17.2	6.2	53.8
Tenth Laird of Estill 26230.....	6.2	14.2	8.8	21.1	6.2	56.5
Black Monarch of Emer- son 30331.....	5.3	17.2	5.3	12.5	2.7	43.0
Equestrian 34216.....	10.7	24.2	7.0	.....	14.0	55.9
Zaire 15th 34371.....	9.3	19.2	9.4	15.6	9.6	63.1
Prince Ito 50006.....	12.0	22.2	4.6	.....	17.1	55.9
Eblito 50098.....	11.5	19.3	10.1	12.5	11.7	65.1
Delamere 53428.....	9.5	14.8	11.1	18.7	5.9	60.0
Edward R. 61744.....	12.5	20.1	9.6	7.8	14.5	64.5
Erwin C. 136625.....	7.1	12.8	5.7	9.2	7.2	42.0
Elate 123797.....	10.0	18.1	11.1	14.0	11.3	64.5
Eston of Eshott 123995....	10.4	18.7	8.7	8.8	12.5	59.1
Blackcap Bertram 183787	8.6	16.7	8.1	10.4	8.7	52.5
Prince of the Wassail 202999.....	10.2	17.3	10.3	15.6	8.2	61.6
Evenest of Bleaton 223224	9.9	16.5	9.1	9.3	8.1	52.9
Bar Marshall 229185.....	7.2	14.6	6.4	10.6	6.1	44.9
Baron Beauford (35480)	11.1	17.5	11.4	15.8	9.5	65.3

In the above tabulation are presented the analyses of the pedigrees of twenty Aberdeen Angus sires, each of them a renowned animal either in Great Britain or North America. A number of the bulls in the upper half of the table are removed by fewer generations of ancestry from the five foundation sires than are the bulls in the table on page 152. This accounts in part for the extremely high percentages which feature the above table.

Examination of the analyses will show that animals whose bloodlines are high in Black Prince of Tillyfour blood are likewise relatively high in Cupbearer, Trojan and Juryman. A high percentage of Young Viscount is usually, although not always, associated with a high percentage of Black Prince of Tillyfour.

In this table, such bulls as Delamere, Prince of the Wassail and Baron Beauford represent the Ballindalloch strain. Tenth Laird of Estill and Zaire 15th show the bloodlines of the early American importations. The analysis of Bar Marshall is quite typical of the average American animal of today, which represents a blending of strains.

CHAPTER 22

THE FUTURE OF ABERDEEN ANGUS BREEDING

A STUDY of Aberdeen Angus foundation sires is significant in that it classifies the individuals of the breed into a number of divisions, quite distinctly separated in bloodlines. In this cataloging of animals as to breeding is found the principal function of the pedigree analysis in terms of early sires. A knowledge of the hereditary composition of their animals should enable breeders to determine which matings may be expected to yield best results. It further makes possible the selection and careful breeding of certain strains of proved value.

It has been pointed out in a previous chapter that all Aberdeen Angus cattle trace time and again to Panmure and Grey-Breasted Jock. It has also been shown that the five foundation sires that have been discussed were each highly important in distributing the blood of either Panmure or Grey-Breasted Jock, or both. As a result of the use of these bulls and similarly-bred animals, there are no Angus at the present time that do not run high in the blood of Panmure and Grey-Breasted Jock, the earliest foundations of the breed. From the standpoint of modern breeding practice, however, it is more practical for breeders to know the pedigrees of their animals in terms of certain later foundation sires, such as Black Prince of Tillyfour and Young Viscount, than to have the percentage of Panmure or Grey-Breasted Jock blood in their animals. Each of the five sires that have been chosen clearly effected some modification in Aberdeen Angus type, the results of which may be seen today. They have accordingly been chosen in preference to the two earliest sires, whose blood is standardized in the breed, thereby making it of less significance than the blood of Black Prince, Trojan and others of the five later sires.

Dangers of the Family System

If Aberdeen Angus breeders are to consider pedigrees in their true significance, a departure from the tribal or family system is obviously necessary. It is apparent that the name of the foundation cow in the direct female line is of slight value in determining the pedigree of an animal. Such a system of estimating pedigrees is both meaningless and confusing. It is perfectly possible, for

instance, for an animal, classified as an Erica from the standpoint of female ancestry, to have a great deal more of the blood of Pride of Aberdeen or Jilt than of Erica. Likewise, a so-called Pride may actually be more of an "Erica" when the percentages of these two foundation cows in her entire pedigree are considered.

The Bloodlines of Iliad

Iliad, the bull upon which rests the later success of Ballindalloch, came from a dam whose female ancestry terminated abruptly in the third generation in a cow called Meg o' the Glen 2801. Meg was sired by a good bull, but nothing is known of her dam. From the female family standpoint, Iliad was therefore of decidedly humble origin. He nevertheless had much of the best Tillyfour, Kinaird and Ballindalloch blood in him, received especially through his sire, Etonian 524. By some breeders Iliad would today be regarded as little better than a mongrel because of the absence of a fashionable termination in the female line of his pedigree. Yet an analysis of his pedigree shows that Iliad had 18.75 per cent of the blood of Erica, or exactly as much as was contained in the bloodlines of Eblito 50098, a most fashionably-bred bull, according to modern standards. While Sir George MacPherson Grant, the owner of Iliad, is said to have prized his Trojan-ERICAS and JILTS, it is significant that he was shrewd enough to select Iliad for service and to give him a thorough opportunity in the herd, a privilege which the bull amply lived up to. A few years later, Sir George bought Delamere 53428, a member of the Vine of Tillyfour tribe. Delamere's pedigree shows less than one per cent of the blood of Vine of Tillyfour, while he had 12.5 per cent of the blood of Erica. It is difficult to estimate the loss to the breed had the owner of Ballindalloch declined to use Iliad and Delamere on the grounds that one was a "Meg o' the Glen" and the other a "Vine."

Prince Ito, in family descent, is called a Pride. Yet his pedigree had only 7.8 per cent of the blood of Pride of Aberdeen 38, while his content of Erica blood was 18.75 per cent and of Jilt blood, 21.1 per cent. He might much more appropriately have been termed a Jilt or an Erica, were it at all necessary to attach a family name based on female descent.

Tenth Laird of Estill 26230, a bull that did much good in American herds, was a Drumin Lucy in family. Yet a complete analysis of his bloodlines discloses 11.2 per cent Jilt, 6.4 per cent Erica, and 2.3 per cent Blackbird blood, while of the blood of Young Lucy, the foundation of the Drumin Lucys, he had but 1.6 per cent, truly

a weak and uncertain foundation for such a classification of his pedigree.

Were it possible for breeders to analyze the complete pedigrees of their animals in terms of the foundation cows, such as Erica and Blackcap, the resulting information would be of far more value than that afforded by noting the direct female line of descent. The analysis expressed in terms of foundation cows would, however, be of considerably less significance than an analysis based on foundation sires. A detailed study of pedigrees will show that where an animal traces twelve times to Erica, he will very likely trace from eighteen to twenty-four times to Cupbearer, the sire of Erica. An animal that traces a dozen times to Jilt will, in all probability, trace three dozen times to her sire, Black Prince of Tillyfour.

Fortunately, there are many men now breeding Aberdeen Angus cattle who can see the pitfalls of the family system. They have witnessed the placing of undue values upon animals because of tribal distinctions. There are indications that this type of breeder is increasing among the breed followers, and that there will come in the future a time when Angus breeders, generally, will recognize individual merit both in conformation and pedigree, where it is found. They will also consider a pedigree in its entirety, rather than to assign it a value based on a single thin line of descent. It will not matter to such breeders whether an animal traces in the female line to Miss Burgess or Meg o' the Glen; their concern will be with the sires and dams in all lines of the pedigree.

Three Kinds of Aberdeen Angus Pedigrees

From the broad genetic standpoint which considers all elements of the pedigree, the Aberdeen Angus breed is today made up of three quite distinct sections. The first and most numerous of these is composed of those animals which descend directly and in every line from the small group of British herds revolving about Ballindalloch. There are, of course, no cattle within the breed which have not felt the Ballindalloch influence, as it may be termed, and there are a great many in which this has been the predominant force. Cattle which belong to this group may be distinguished by high percentages of Cupbearer, Black Prince of Tillyfour and Trojan. They are very apt to contain a high percentage of Juryman and Young Viscount also. The blood of the five bulls, taken together, is therefore a reliable index to the Ballindalloch blood within the animal. If the total runs above 50 per cent, with high percentages of Trojan and Cupbearer, the presence in the animal of a large amount of the rich British blood is definitely established.

Contrasted with the Ballindalloch-bred group, high in the blood of the Tillyfour-Ballindalloch sires, is the large and ever-increasing portion of American herds which owes much to Black Woodlawn 42088. Since animals of this group have less of the blood of Cupbearer, Black Prince and the other three sires than cattle of recent British descent, the Black Woodlawn strain necessarily differs materially from the Ballindalloch division. Black Woodlawn's descendants show from 30 to 45 per cent of the five sires combined. Few have more than 6 per cent Cupbearer, 14 per cent Trojan and 10 per cent Young Viscount. This difference in pedigree analysis indicates that Black Woodlawn came largely from sources other than the important British herds, a fact that is borne out by a close inspection of his pedigree.

The prepotency of Black Woodlawn is difficult to explain on the basis of pedigree. It is known that his immediate ancestors were individually of good type. The breeder of Black Woodlawn gave the credit for the bull's greatness to his grandsire, Moon Eclipser. Whatever the secret of Black Woodlawn's prepotency, there must certainly have been involved in his production certain little-known strains which were admirably fitted to combining with the Tillyfour-Ballindalloch blood. His power as a sire and the widespread success of his descendants entitle Black Woodlawn and his descendants to rank as a distinct strain of cattle.

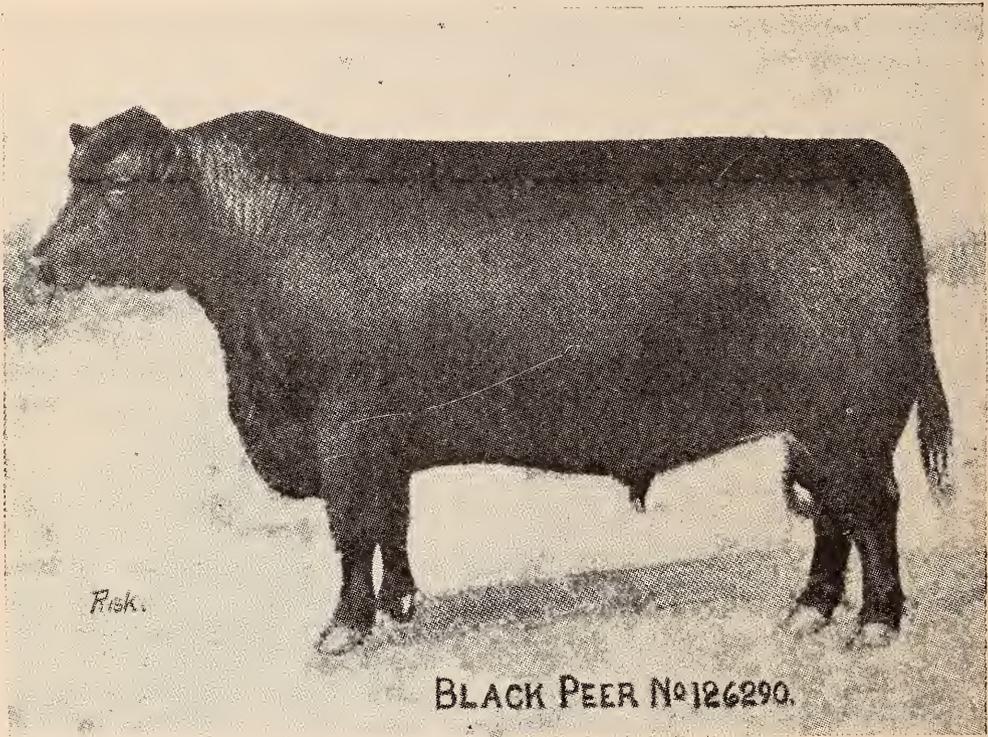
The American-Bred Group

In addition to the Ballindalloch and Black Woodlawn groups, there may be differentiated a third strain of Angus cattle, comprising the animals descending from the early importations to the United States and Canada. In one sense, Black Woodlawn may be considered as of this group, since he necessarily traced to the early importations. The prepotency of his strain, however, entitles it to separate consideration. In bloodlines, Black Woodlawn differed markedly from this third group, which, for convenience, may be termed the American-bred strain.

In their relation to the five foundation sires, the animals of this American-bred group are not greatly different from the British-bred stock. Animals of this division are generally found to be as high in Black Prince and Young Viscount as the Ballindalloch cattle. They are somewhat lower in Cupbearer, Trojan and Juryman than the Ballindalloch stock. It has already been pointed out that much Young Viscount blood came to America in an early day, and a high percentage of Young Viscount unattended by proportionately great amounts of Trojan and Cupbearer blood, stamps an

animal as belonging to the American-bred group. Typical examples are Tenth Laird of Estill and Black Monarch of Emerson. Earl Marshall comes very largely of this sort of breeding.

During the past quarter of a century these three strains have been inter-bred to such an extent that the Aberdeen Angus herds of today are largely made up of cattle which represent various combinations of the three strains. The results of these crosses are worthy of the deepest study by breeders. Notwithstanding the extensive crossing of strains, there are still to be found animals which represent one or another of these strains in concentrated



An important sire whose pedigree is strong in Ballindalloch breeding,
with 19.2 per cent Black Prince of Tillyfour and 8.9
per cent Cupbearer.

form, and the future work of breeders will lie in selecting and using those animals which are inbred in Ballindalloch, Black Woodlawn or American-bred blood.

The chapter on Aberdeen Angus show winners amply demonstrated the tremendous importance to American herds of Black Woodlawn and his progeny. Their leadership in American showings for a long period is evidence of remarkable breeding ability. In view of its conspicuous value, breeders should make every effort to utilize the Black Woodlawn blood to the fullest extent. It

is worth noting that breeders have already begun the concentration of Black Woodlawn breeding, and animals may be found which carry from two to four crosses of the celebrated sire. Cattle bred in this fashion should prove to be an immensely profitable source of breeding material, from the standpoint of using the Black Woodlawn strain most effectively in crossing with other strains. It is sincerely to be hoped that a number of breeders will continue to intensify the blood of Black Woodlawn, as it seems certain that much of the future success of the breed in America depends upon the intelligent use of this strain.

The value of Black Woodlawn blood for crossing with other strains is commonly recognized. Within the past fifteen years many of the best animals produced in American herds have come from a combination of Black Woodlawn and Ballindalloch strains. It is necessary only to mention such sires as Erwin C., Egerton W. and Ensign of Glencarnock, produced in this way, to prove the success of this combination. The Black Woodlawn blood has likewise mated well with animals of the American-bred strain.

Breeders Should Concentrate Strains

Breeders who possess animals concentrated in the Ballindalloch breeding, as shown by many crosses of Iliad, Delamere, Prince Ito, Earl Eric of Ballindalloch, Prince of the Wassail, Black Peer and sires of similar origin, should make every effort to maintain some of the best of this blood in concentrated form, preventing its dilution with alien blood. Such blood, if further intensified, should have an even greater usefulness in the future than it has had in the past. It has already proved a highly desirable asset to American herds, both in crossing on the descendants of the early American importations, and for crossing with the Black Woodlawn blood.

In like manner, the best descendants of the early American herds should be inbred for crossing with the other strains. Breeders should strive to secure animals which carry many crosses of Heather Lad 2d 7965, Gay Lad 19538, Black Monarch of Emerson, Tenth Laird of Estill and Baden Lad. Animals in which this blood predominates are becoming less numerous as a result of the extensive use of Ballindalloch and Black Woodlawn blood. There are still valuable representatives of the American-bred strain to be found, however, and the great contributions which cattle of this breeding have made in the past clearly indicates the advisability of perpetuating such blood in concentrated form.

There may yet be in Great Britain certain strains which have been kept largely separate from those in general use. There were

in the earlier years of the breed certain useful sires which had come in from sources other than Tillyfour and Ballindalloch. Sir Maurice 772 is a typical example of these sires and Souter Johnny 2270 is another, although the latter had some Tillyfour and Kinnaird blood through his dam. Students of pedigree will recall that the celebrated Iliad was produced from a richly-bred Ballindalloch sire and from a dam regarded as of cold blood. This cow, Inky 7784, was a double granddaughter of Moudiewart 654, a bull that carried much Tillyfour breeding through lines other than Black Prince and Trojan. The outcross blood received by Iliad through his dam may have had much to do with his prepotency. It is, of course, highly improbable that any animals can now be found to contain any important concentration of the blood of Sir Maurice, Souter Johnny or Moudiewart. It is possible, however, that certain "cold" strains of meritorious blood may yet be discovered that will be well adapted to crossing with the bloodlines now common. The constructive breeder will be constantly on the watch for such strains.

Future Breed Building in the Aberdeen Angus

In summary, it may be predicted that breeders of Aberdeen Angus cattle will find their greatest opportunities for breed building in the intensification and subsequent crossing of the Ballindalloch, Black Woodlawn and American-bred strains. Intensely-bred Ballindalloch cattle may be depended upon to supply the style and quality, while the two American strains will furnish the size, constitution and fleshing qualities. The greatest usefulness of the British strain will doubtless come through the development of sub-strains concentrated in Iliad, Prince Ito and Delamere. The fixation of American strains should proceed along the lines of concentrating Black Woodlawn on the one hand, and Gay Lad, Black Monarch of Emerson and Baden Lad on the other.

POLAND CHINAS

CHAPTER 23

AN HISTORICAL SKETCH OF THE POLAND CHINA

POLAND CHINA swine originated in the Miami Valley, in Butler and Warren counties, in southwestern Ohio. During the first few years of the nineteenth century, settlers brought to this district hogs of varying types. The present type known as Poland China was evolved from these through a long period of years. From 1816 on, the hog industry was of importance in this section of Ohio and in an adjoining part of Indiana. As a result, considerable attention was given to improving the native hog stock, and as the efforts of the early breeders gradually were co-ordinated, the forerunners of the modern Poland China were developed. As a definite breed, the Poland China dates back to about 1865.

The exact combination of breeds or types which resulted in the Poland China is not clear. It is stated that prior to 1830, there existed in southwestern Ohio a number of types of swine among which were the Bedfordshire, Byfield, Russian and Big China. In 1835, Berkshire blood was introduced, and in 1839 an infusion of Irish Grazier blood was made into herds of the community.

Many Types Entered Into Poland China

The blood of these widely divergent types appears to have been intermixed with no definite plan. As a result, in 1850 the hogs of this territory were a heterogeneous mixture, far from uniform in appearance. Some of the original elements had been white and some sandy or black. After 1850, there appears to have been more careful selection in the direction of securing a standard type. Between 1850 and 1870, it is quite certain that further Berkshire blood was introduced. The Berkshire, in fact, is commonly credited with being the source of the black color of the Poland China.

By 1870, the prevailing colors of the Warren County Hog, as it was then known, had become black or black and white spotted. In body conformation, the hogs were probably quite uniform. They were then generally regarded as a distinct breed, and in 1872 were given the name of Poland China at a national convention of swine breeders in Indiana.

Prominent among the early improvers of the Poland China were John Harkrader, D. M. Magie, J. B. Duffield and the Shaker

Society (a religious community). The efforts of these Ohio pioneers were aided by A. C. Moore, who introduced the breed into Illinois. The boar, Tom Corwin 2d, was undoubtedly of more influence than any other one animal in shaping the breed during the years from 1880 to 1890. This boar was farrowed in 1878 and was bred by Duffield. His progeny are said to have been noted for great vigor and heavy bone, and his offspring were in high demand for breeding purposes. It is stated that the extensive use of Tom Corwin 2d blood accounts for the final fixing in the breed of the black color with white points.

The very earliest foundations of Poland China pedigrees are found in the Harkrader Sow and the boars, Zack 310 and Irwin's Sweepstakes 137-A, all farrowed prior to 1870. It is recorded that Irwin's Sweepstakes weighed 1,086 pounds and Zack 940 pounds, showing that extreme size was a breed characteristic in its early days. Although much is heard of them, these animals appear to have been of less ultimate significance than Tom Corwin 2d and Tecumseh 4339. Tecumseh was bred in Ohio and was a famous sire of herd boars in the Eighties. His blood was an important factor in Poland China development during the last fifteen years of the nineteenth century.

The Importance of Chief Tecumseh 2d

Chief Tecumseh 2d 14579, a great-grandson of Tecumseh farrowed in 1890, stands out as a sire whose blood has been found to an important degree in all Poland Chinas since his time, regardless of their type. Chief Tecumseh 2d was bred by W. A. Jones, of Van Meter, Iowa, who retained a half interest in the great sire throughout his life, other western breeders sharing his ownership. The progeny of Chief Tecumseh 2d were highly successful in the showings from 1892 to 1900, and breeders of the time, both in western and eastern states, used this blood extensively.

An important change in the trend of Poland China breeding occurred shortly before 1900 in the promotion of the Chief Perfection line of breeding. Chief Perfection 2d 42559, farrowed in 1896 and bred by B. L. Gosick, of Iowa, was a boar of moderate size and showed ability as a sire. He was purchased by an Illinois firm and was later owned by a syndicate of twenty middle-western breeders. Most of the influential breeders of the time introduced the Chief Perfection 2d blood into their herds.

These breeders selected fine-boned, smooth, short-legged animals as the preferred type of the breed. Special attention was given to the black color with white points, the set of the ear and

similar unimportant characteristics. In showings this type was chosen by judges in preference to larger, more rugged hogs, and the great mass of breeders accordingly began to specialize with the "hot blood" type, as it came to be called. Practically all of the "hot bloods" were rich in the blood of Chief Perfection 2d.

About 1908, it became apparent that if the Poland China was to meet competition from other breeds which were threatening its leadership, a larger, more rugged and more prolific type must be had. The demand from practical men for this sort of a Poland China, coupled with disastrous financial conditions then prevailing among the promoters of the small type, led to the collapse of the "hot blood boom" in 1908. The "Big Type" rapidly came into favor thereafter, and ten years later it was scarcely possible to find animals of pure "hot blood" type and breeding.

The Origin of the Big Type .

While the Big Type was later in coming into favor with Poland China adherents, its origin as a distinct type really antedated that of the "hot bloods." As early as 1890, Peter Mouw had begun the building of a herd of Poland Chinas of extremely large type. Allusion has already been made to the fact that the early Poland Chinas had many animals that possessed great scale and heavy bone. Between 1890 and 1900, a few breeders, of whom Mouw probably was the first, became convinced that size was essential to the most practical type of hog, and they selected and bred the largest animals they could find. Despite the discouragements of showing defeats and a lack of demand for their surplus stock, a few of these pioneers continued to breed for bone, scale and prolificacy throughout the years when the small type dominated in Poland China activities.

The early Big Types and the "hot bloods" had a considerable measure of common blood, despite their wide difference in type. Much Chief Tecumseh 2d blood was used in founding the Mouw herd, as well as the small type herds. While the two groups of breeders were using much of the same blood, their selection of breeding animals was, of course, diametrically opposite, the Big Type followers choosing only the largest-framed animals, while the proponents of the small type retained only the finer-boned type and discarded the larger animals.

Through the use of the boars, Grand Chief 20177, Longfellow 38611 and Jumbo 3d 18321, Mr. Mouw built up a Poland China herd between 1890 and 1900 that was distinctive in type and that exceeded in size any of the other Poland Chinas of the time. Chief

Price 61861, farrowed in 1900, was bred by Mr. Mouw and exerted further improvement in his herd. This boar, in fact, probably contributed more to the ultimate development of the Big Type than any other one animal.

In 1901, H. C. Dawson & Sons, of Nebraska, purchased the yearling boar, Expansion 57691. Expansion came of larger stock than the "hot bloods," so popular at that time, and was so large as to be considered a freak. The Dawson firm used this boar in founding another strain of Big Types. The Poland Chinas bred by Peter Mouw and John Miller, of Iowa, and the Dawsons, of Nebraska, became popular with the farmers of Western Iowa and Nebraska, and this part of the country became the Big Type stronghold during the early years of the twentieth century when the "hot bloods" still dominated the territory further east. Other breeders, among whom were A. T. Shattuck & Son and John Blain, of Nebraska, and Peter Ellerbroek, Henry Dorr, Harvey Johnson and Ruebel Brothers, of Iowa, took up the Big Type standard, and by 1907 a considerable number of capable men had turned to the Big Type.

Big Type Has Dominated Since 1910

Since 1910, the Big Type has dominated in Poland China circles. There are today no Poland Chinas that do not carry a large measure of Big Type breeding. The blood of such Big Type sires as Chief Price, A Wonder 107353, Big Bone 137161, Chief Price 2d 142681 and Big Orange 145509 had a profound effect upon Big Type development from 1908 until 1915. During the years since 1915, the breed has been dominated by a number of valuable sires, among them Big Ben 208905, Big Bob 212613, The Clansman 306669, Liberator 356319, Big Timm 190903 and F.'s Big Jones 320555.

Recognition in the showring was not accorded the Big Type until 1912, when the Big Type was decided upon as the standard for the breed at the Nebraska State Fair. Three or four years later, size and strength of bone were insisted upon by Poland China judges almost without exception.

The Poland China breed has become one of the two most popular breeds in the great hog-producing section known as the Corn Belt. United States census figures for 1920 showed 726,478 Poland Chinas in the United States, giving the breed second rank. In a number of the important hog-producing states, the breed stands first numerically.

Several associations for recording Poland China swine have

existed. The first of these was the Ohio Poland China Record Association, organized at Dayton in 1878. This was later merged with the Central Record to form the National Poland China Record, which since 1905 has been located at Winchester, Indiana. The American Poland China Record was organized at Cedar Rapids, Iowa, in 1878, and was later moved to Chicago. For many years it has recorded most of the Poland Chinas in the Mississippi valley and northwestern states. Most of the Poland Chinas in the southwest are recorded in the Standard Poland China Record, at Maryville, Missouri, which was organized in 1887.

Changes of Type in Poland Chinas

No breed of swine has undergone such radical type changes as the Poland China. In the past, fashions, sometimes of doubtful utility, have swung the Poland China from one extreme to the other in physical conformation. Through it all, the breed has retained a notable amount of common blood. This apparent paradox of finding identical blood in widely varying types is a notable instance of the part which selection may play in the development of a breed.

Genetically, the history of the Poland China is fascinating. The succession of steps which led to the Big Type, the rise and fall of the "hot bloods," the Expansion experiment in inbreeding, and many other developments in Poland China breeding combine to form one of the most thoroughly interesting studies available in live stock history.

CHAPTER 24

BOARS THAT HAVE SIRED POLAND CHINA WINNERS

FOR the purpose of determining the trend of Poland China breeding during a recent period, an analysis has been made of the immediate ancestry of the principal winners in Poland China classes at recent National Swine Shows. The period considered includes the years from 1920 to 1922, inclusive, and the winners included have been the animals placing third or better in the individual classes at each of these shows. Three-generation pedigrees have been analyzed and the point system employed has been the same used in the studies of beef cattle prize winners in preceding chapters.

This consideration of the sires of recent Poland China winners is made for two purposes. In the first place, a knowledge of the bloodlines of the breed at the time this is written is important in order to form a basis for the study of foundation sires which follows. Breeders who have devoted their efforts during late years to breeding the Big Type Poland China are most interested in the source of the strains which predominate in the breed at the present time. It will therefore be in order to show which Poland China sires have been most effective within a recent period and later to determine the sources of these important sires.

The Leading Sires of 1920		Number
	Points	Winners
Liberator 356319.....	212	9
The Clansman 306669.....	162	12
Disher's Giant 240655.....	100	12
Giant Buster 240657.....	98	7
Grand Big Orphan 251923.....	78	11
Masterpiece 257345.....	70	10
Orange Boy 230167.....	60	6
The Rainbow 329731.....	56	3
Smooth Prospect 304389.....	43	3

A second reason for determining the outstanding sires of late years is to provide breeders information concerning sires and strains which are now proving most effective in the showring. The table on this page illustrates the relative standing of Poland China sires at the National Swine Show in 1920. The term sire is used, as with the other breeds, to refer to male ancestors within three generations.

A glance at the table of leading sires for 1920 shows that Liberator and The Clansman dominated the show. Liberator had a decisive lead in points, showing that his get included many first prize winners. The Clansman, sire of Liberator, figured as an ancestor of more animals than Liberator, showing that he was a factor in a number of animals other than those sired by Liberator.

Disher's Giant and his son, Giant Buster, constitute the next pair of boars in the table. Following them are Grand Big Orphan, sire of The Clansman, and Masterpiece, sire of the dam of Liberator. The last three boars in the list are sires used in Iowa herds.

The Leading Sires of 1921

	Points	Number Winners
Liberator 356319.....	228	9
The Clansman 306669.....	130	11
The Rainbow 329731.....	88	5
Giant Buster 240657.....	74	7
Orange Boy 230167.....	72	7
Grand Big Orphan 251923.....	68	10
Masterpiece 257345.....	60	9
Disher's Giant 240655.....	52	8
Mammoth Giant 429263.....	48	2
The Latchnite 407929.....	48	2

No changes, except of a minor nature, can be observed in the transition from 1920 to 1921. At the 1921 show, Liberator and The Clansman retained their leadership, won in 1920, with Liberator slightly stronger in position and The Clansman slightly less so than in 1921. The Rainbow bettered his standing somewhat at the 1921 show. The ninth and tenth boars in the 1921 table are new to the list of leaders. Mammoth Giant is a member of the Giantess strain, while The Latchnite is a son of The Rainbow.

The Leading Sires of 1922

	Points	Number Winners
Liberator 356319.....	240	14
Revelation 401801.....	168	7
Giant Buster 240657.....	158	15
The Clansman 306669.....	144	16
Just A Buster (97122)	52	4
Peter the Great 406277.....	52	3
The Pathfinder 406701.....	48	2
Grand Big Orphan 251923.....	42	6
Big Price's Equal 265269.....	42	4
Highland Giant (116305).....	40	3
Peter the Great 2d (123670).....	40	2

The winners in 1922 apparently varied somewhat from those of the two preceding years, since but four of the leaders of 1920 and

1921 appear as such in 1922. Liberator retains the lead with the most decisive score credited to him in any of the three years. Immediately following him is Revelation, a son of Liberator from a Giant Buster dam. Giant Buster also made the strongest showing in 1922 of any of the three years. As the second column indicates, he was a factor in fifteen, or half, of the thirty principal winners at this show.

The Clansman occupied fourth place in 1922, although his influence upon the winners was greater than in each of the two preceding shows. In 1922 he was an ancestor of sixteen, or more than 50 per cent, of the first, second and third prize winners. It will be noted that in each of the years The Clansman led in the number of winners of which he was an ancestor.

With the exception of Grand Big Orphan, the remaining seven boars are found in the table for the first time. Just A Buster is a son of Giant Buster, while Highland Giant is of similar breeding to Giant Buster. Peter the Great and Peter the Great 2d are of the Giantess line of breeding. The Pathfinder is a son of The Rainbow, out of an Orange Boy dam. Big Price's Equal is not closely related to any of the other boars in the list.

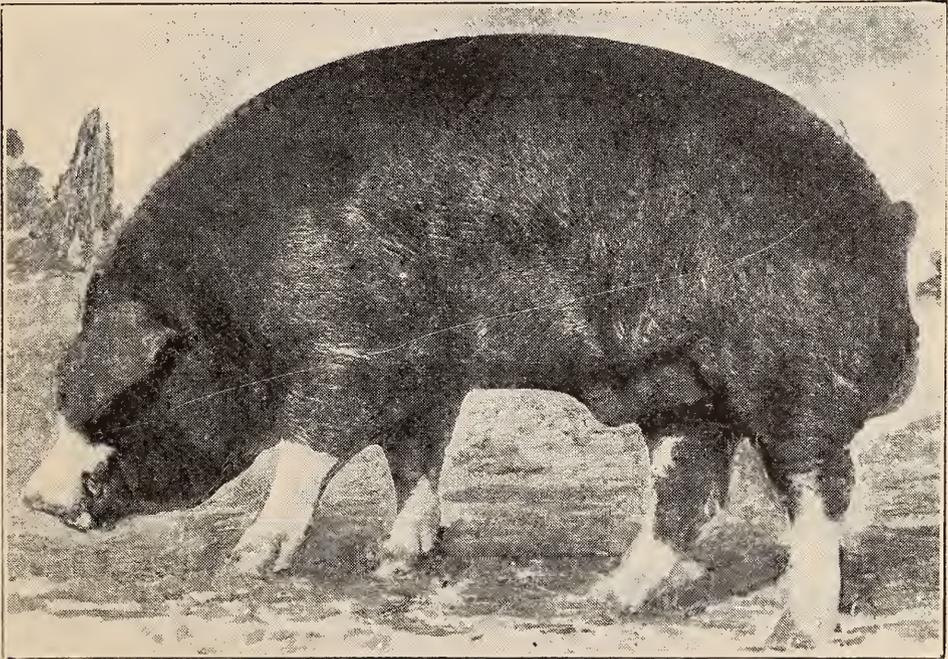
The Leading Sires, 1920-1922

	Points	Number Winners
Liberator 356319.....	680	29
The Clansman 306669.....	436	35
Giant Buster 240657.....	330	26
Grand Big Orphan 251923.....	188	24
Disher's Giant 240655.....	186	22
The Rainbow 329731.....	180	11
Masterpiece 257345.....	168	21
Revelation 401801.....	168	7
Orange Boy 230167.....	156	15
Hawkeye Giant 323785.....	96	5
Big Bob 212613.....	94	10
The Yankee 298157.....	90	11
Peter the Great 406277.....	84	5
F.'s Big Jones 320555.....	76	9
W.'s Giant (94719).....	70	8
Smooth Prospect 304389.....	68	6
Kool's Orange 209749.....	62	11
Jumbo 185275.....	56	5
Columbian Giant 374229.....	56	3
Just A Buster (97122).....	52	4

The records of the twenty highest ranking sires for the three-year period are given in the preceding table. In the points column is given the sum of points credited to each sire during the three

years. The second column shows the number of animals winning third or better at the three shows in which these sires appeared as ancestors within three generations. Individuals which won at more than one of the shows are counted but once in this table. Each year's study included ten classes of three animals each, so that the total number of winners considered was ninety. There were five duplications among these winners, making a total of eighty-five individual animals.

Liberator stands at the head of the table, with a commanding lead of 680 points, gained through twenty-nine different animals. Since he has a margin of 244 points over his nearest competitor



LIBERATOR 356319

Liberator was without a peer as a sire of Poland China winners at the National Swine Show from 1920 to 1922, inclusive.

for the three years, the get of Liberator was clearly the most important single group by one sire in Poland China showing activities from 1920 to 1922.

Second to Liberator in the summary appears his sire, The Clansman. Since The Clansman figured as an ancestor of thirty-five animals, as compared with twenty-nine for Liberator, it is obvious that he figured in several other animals aside from those sired by Liberator. Under the point scheme followed, The Clansman's maximum score from the get of Liberator would have been 340 points. His total score, however, is 436 points, indicating that

at least 25 per cent of The Clansman's influence upon these winners was exerted through channels other than Liberator. The influence of The Clansman was thus impressed upon a larger section of the winners, since he figured in 41 per cent of the first, second and third prize winners at the three shows, or more than can be credited to any other boar.

Several of the twenty sires may, for convenience, be grouped with Liberator and The Clansman. Grand Big Orphan, fourth in the list, is the sire of The Clansman and grandsire of Liberator. Masterpiece, in seventh place, is the sire of the dam of Liberator. Revelation, the eighth boar, is a son of Liberator. Four generations of The Clansman-Liberator group are thus represented among the progenitors of winners during this period.

Giant Buster has a clear title to third rank, figuring in more winners than any other sires excepting Liberator and The Clansman. Disher's Giant, sire of Giant Buster, is found in fifth place. Two others of the twenty leaders belong in this group. W.'s Giant was sired by Disher's Giant, while Just A Buster is a son of Giant Buster.

The Giant Buster-Clansman Cross

Those who followed Poland China shows from 1920 to 1922 know that a number of the champions and outstanding winners at these shows were produced by a combination of The Clansman and Disher's Giant bloodlines. A glance at the pedigrees of the winners discloses that in a great many instances Liberator, The Clansman, Disher's Giant and Giant Buster all figured in the same animals. There is no means of showing in the tables the effects of these crosses, and it is therefore of interest to point out that of the forty-one animals in which these four sires appeared, twenty-eight were the result of the crossing of The Clansman or Liberator upon the descendants of Disher's Giant, or the reverse. Seven of the forty-one represented the combination of The Clansman with other lines, while six were the result of crossing Disher's Giant blood with other strains. Of the six animals which were winners at two or more of the shows, four combined the blood of Liberator and the Giant Buster-Disher's Giant strain. This evidence is sufficient to show that the cross has been a most prolific source of recent Poland China winners.

The Rainbow, sixth ranking sire among the twenty leaders, represents a third group of boars in the production of which the blood of Big Orange 145509 has been an important factor. Other members of this group which qualify among the twenty leaders

are The Yankee, sire of The Rainbow, and himself a grandson of Big Orange; Kool's Orange, by Big Orange, and Orange Boy, a son of Kool's Orange. In connection with this group, it is worth noting that a considerable percentage of the winners in which they appear were produced by line-breeding the Big Orange blood through mating The Rainbow to daughters of Orange Boy.

Hawkeye Giant, in tenth place, is not closely connected with any of the foregoing groups, although he is related to some extent to the Giant Buster group. Hawkeye Giant figured in a relatively small number of winners during the three-year period. Most of them came from dams sired by Orange Boy.

Big Bob Less Important Than in Former Years

Big Bob, in eleventh position, is likewise distinct from any of the well-defined groups. This boar, although further removed by time from the winners of 1920-1922 than most of the other twenty boars, figured in ten winners. An analysis of the shows from 1916 to 1920 would show Big Bob in a very strong position.

One other group of three boars can be identified among the twenty leaders. This is composed of F.'s Big Jones and his two sons, Peter the Great and Columbian Giant. The latter two boars are among the sires which have contributed the Giantess strain.

Two other boars remain unclassified. Smooth Prospect is distinct in bloodlines from any of the sires mentioned. In the pedigrees of the winners he appears most frequently in conjunction with Orange Boy or Hawkeye Giant blood. Jumbo sired the dam of Orange Boy. His appearance in the table is largely due, however, to the fact that he also sired the dam of Buster's Best, dam of a number of the important winners.

This study of the bloodlines which have produced Poland China prize winners suffices to show the strains of greatest prominence in the breed. It is obvious, of course, that this list of twenty boars does not contain all of the worthy sires of the breed. It does, however, include representatives of all of the important strains which are now found within the breed. This study makes it clear that the Poland China breed now has a number of strains of more than ordinary merit.

In the summarized table for 1920-1922 will be noted the names of a number of sires that did not appear among the leaders for any one year. This is accounted for by the fact that such boars were consistently represented to a moderate extent at each of the three shows, although not sufficiently at any one to gain a place among the ten leaders.

CHAPTER 25

POLAND CHINA FOUNDATION SIRE—I

CHIEF TECUMSEH 2d 14579

CELEBRATED within his own lifetime as a peerless sire, Chief Tecumseh 2d 14579 today, thirty years after his period, must be regarded as the most important foundation sire of the Poland China breed as an entirety. His blood is found to an important extent alike in the "hot blood" and the Big Type, although he was not the only sire that contributed to each of these strains. Chief Tecumseh 2d breeding has been universally found in the pedigrees of Poland Chinas since 1900. He is the one ancestor, since the time of Tom Corwin 2d, that is common to the entire breed.

Chief Tecumseh 2d was farrowed June 18, 1890, and was bred by W. A. Jones, of Van Meter, Iowa. The boar was sired by Chief Tecumseh 10815, a grandson of the famous sire, Tecumseh. The dam of Chief Tecumseh 2d was a sow called Gilmore's Slick. Both sire and dam came of good stock from the Ohio herds of the time. Neither parent was inbred to a marked degree, although both necessarily carried quite an amount of Tom Corwin 2d blood, which was found in most of the Poland Chinas of that day.

Chief Tecumseh 2d Had Show Record

Chief Tecumseh 2d headed his class at the Iowa State Fair in 1891. A year later he won his class at Iowa, although he was defeated for championship by a younger boar. A group of his pigs were shown along with him at the 1892 show, and they were of such individuality as to cause something of a sensation among the breeders present. This, probably, was the beginning of the popularity of Chief Tecumseh 2d pigs which later followed. In 1893, Mr. Jones sold a half interest in the boar to E. H. Andrews, of Kearney, Nebraska. Two years later, the Andrews interest was purchased by T. R. Wilson, of Morning Sun, Iowa. Chief Tecumseh 2d died in 1899.

Evidence of the prepotency of Chief Tecumseh 2d was afforded by the individuality of his offspring with which they perpetuated the good characteristics of their sire. Chief Tecumseh 2d seemed to "nick" equally well with many lines of breeding. His blood

seemed to be prepotent wherever it was used. From 1892 until 1900, middle-western shows gave many ribbons to the get of Chief Tecumseh 2d, and toward the end of that period the demand for his sons was very great.

Chief Tecumseh 2d and his get would, according to modern standards, probably be designated as "medium type." They are described as having been smooth with excellent quality, good bone and usually of good size. It is certain that by far the greater part of Chief Tecumseh 2d's immediate descendants were considerably larger than the "hot bloods" of a few years later.

One of the first sons of Chief Tecumseh 2d was L.'s Tecumseh 20493, owned by A. J. Lytle, of Iowa, who used him with marked success. Chief Tecumseh 3d 38233 was considered the best individual among the sons of Chief Tecumseh 2d, and he proved also to be an excellent breeder. His descendants bred in the herds of Harvey Johnson, Logan, Iowa, and S. McKelvie & Sons, Fairfield, Nebraska, were of a desirable type and apparently were larger than much of the Chief Tecumseh 2d stock, since they were important factors in the building up of a number of modern Big Type strains. Columbia Chief (37362) was one of a number of good sons of Chief Tecumseh 3d.

Grand Chief and Young Jones

Grand Chief 20177, by Chief Tecumseh 2d, was sold as a pig to Peter Mouw, Orange City, Iowa, in 1892. While Grand Chief was lost at an early age, he left a son, Grand Chief 3d 28013, that was for a number of years the principal sire in the Mouw herd. As the sire of Chief Price 61861, Grand Chief 3d was a most important boar in the foundation of the Big Types. Mr. Mouw also used another son of Chief Tecumseh 2d, Young Jones 29671. This boar also had a considerable part in the fashioning of the Big Types.

A number of other sons of Chief Tecumseh 2d achieved renown in their day as sires and show boars. The names of several appear frequently in the pedigrees of the bulk of modern Poland Chinas. Among these are Trio Chief (18801), Oak Terrace Chief (19603), Teddy Chief (25981) and Chief (16427).

Chief Perfection 32199, farrowed in 1893, was at one time considered the greatest son of Chief Tecumseh 2d, since he was the principal channel through which the Tecumseh blood was impressed upon the popular small types. Inasmuch as he figured scarcely at all in the production of any of the Big Types, Chief Perfection is no longer of significance, except from an historical standpoint. His son, Chief Perfection 2d 42559, farrowed in 1896, was the foun-

dation of the "hot bloods" and the ancestor of such small type celebrities as Corrector (26466), Keep On (28553) and Meddler 99999.

In the main, the "hot bloods" were produced by concentrating the blood of Chief Perfection 2d, selecting the smaller, fine-boned, stylish animals. Chief I Know (11992), another son of Chief Tecumseh 2d, also figured to some extent in the "hot bloods." Neither Chief Perfection 2d nor Chief I Know were noticeably below the average of the Polands of their time in size, but as the demand for small type increased, their larger descendants were culled out and the smaller ones retained and bred.

Chief Tecumseh 2d sired many sows that made creditable records as producers. Sunshine 83200, one of his daughters, was said to have been the greatest sow of her time. She was a grand champion and the dam of Ideal Sunshine 44645, at one time a boar of much note. Extra Tecumseh 119280, Nellie Tecumseh (80715) and Carrie R. (63506) were other meritorious producers credited to Chief Tecumseh 2d.

Much Chief Tecumseh 2d Blood in Modern Polands

Analysis of a large number of pedigrees of Poland Chinas of a late period leaves no doubt that Chief Tecumseh 2d was a factor of material importance in the formation of the Big Types. Many of the early Big Type sires carried the Chief Tecumseh 2d influence in very considerable measure. Allusion has already been made to the use by Mr. Mouw of sons of Chief Tecumseh in the founding of his herd, and in Big Type pedigrees the highest percentages of Chief Tecumseh 2d blood are found in those animals which contain the greatest amount of Mouw breeding.

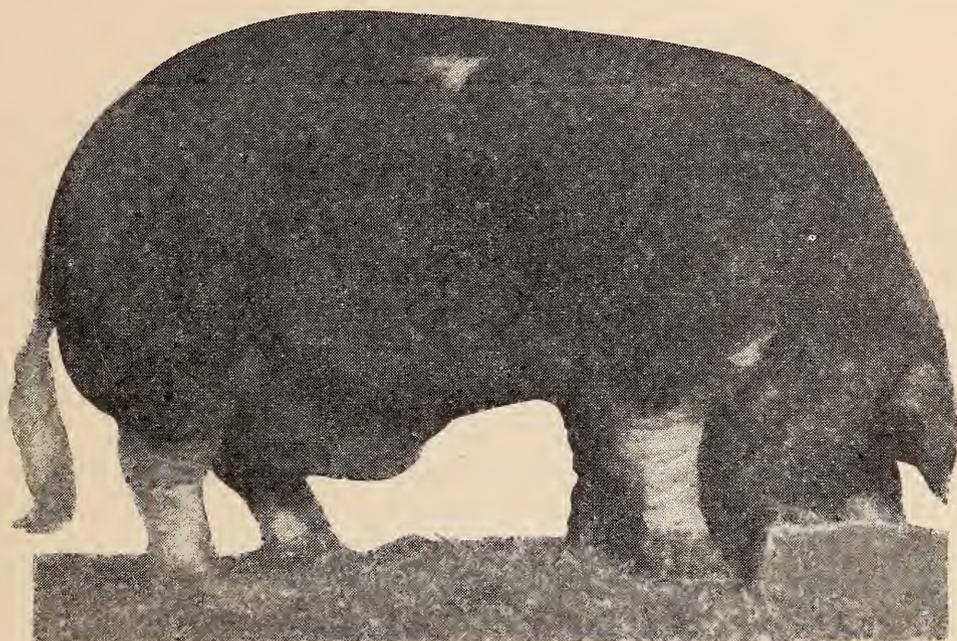
An instance of the extent to which Chief Tecumseh 2d blood was sometimes concentrated in the Mouw herd is found in the boar, Maid's Chief 98789, farrowed in the Mouw herd in 1905. The pedigree of this boar contained 24.8 per cent Chief Tecumseh 2d. Chief Leader 99241, one of the best known sons of Chief Price 61861, and also bred by Mouw, had 20.3 per cent Chief Tecumseh 2d.

Longfellow 7th 95747, bred by Mouw and used with marked success by E. Gritters, was 21.8 per cent Chief Tecumseh 2d, while Long Price 133305, a boar of later date, analyzed 21.1 per cent of the famous sire. Wonder 3d 90451, 19.9 per cent, and Dorr's Tecumseh 103381, 19.5 per cent, afford still other instances of Big Type animals influenced to a marked degree by Chief Tecumseh 2d.

Chief Price 61861, the great Mouw sire commonly referred to as the "Father of the Big Types," possessed 15.6 per cent Chief

Tecumseh blood. Surprise Wonder (32433) and Surprise Wonder 4th (32435) each carried 12.5 per cent, and A Wonder 107353 had 12.1 per cent. Pawnee Lad 97491, an important factor in Big Type development in Nebraska and other western states, was 17.2 per cent Chief Tecumseh 2d.

Since 1900, there have been few Big Type sires of note that have not shown at least 10 per cent of the blood of this foundation sire in their pedigrees. Prior to 1900, however, there were three boars of significance to the large type Poland China which were not affected by Chief Tecumseh 2d. One of these, Jumbo 3d 18321, was farrowed before Chief Tecumseh 2d. The other two, Long-



DISHER'S GIANT 240655

The bloodlines of Disher's Giant show much of the Chief Tecumseh blood, which figured in the Big Types. The percentage of Chief Tecumseh 2d blood in the pedigree of Disher's Giant is 14.4 per cent.

fellow 38611 and Expansion 57691, followed the Chief by a very few years. The descendants of Jumbo 3d and Longfellow were, in almost all cases, mated with animals carrying Chief Tecumseh 2d blood; the offspring of Expansion, however, were not always mixed with the Tecumseh strain, and animals of a considerably later time that were strong in the blood of Expansion not infrequently showed a low content of Chief Tecumseh 2d.

While the Chief Tecumseh 2d blood in the Big Types has been diluted slightly by the introduction of Expansion and other blood,

the percentage has not lowered greatly since 1900. Pedigrees of the latest generation of Poland Chinas show that the breed in 1923 will average somewhere near 15 per cent of the blood of the old Chief. Recent well-known sires, such as Liberator, Big Bob and The Clansman carry about 14 per cent, while Big Ben 208905, 15 per cent, and Big Orange 145509, 15.5 per cent, were slightly richer. Big Timm 190903 had 15.5 per cent, while Fessy's Timm 256027 carried 16.2 per cent. Other sires of a recent period, including Giant Buster, Disher's Giant, Orange Boy, The Rainbow, Hawkeye Giant and the Giantess boars, such as Peter the Great and Columbian Giant, all had from 12 to 15 per cent Chief Tecumseh 2d.

Chief Tecumseh 2d and the "Hot Bloods"

The fact that Chief Perfection 2d, a grandson of Chief Tecumseh 2d was the principal source of the "hot blood" Poland Chinas suggests that Chief Tecumseh 2d may have figured in the production of the small type to a greater extent than he did in the establishment of the large type. A close inspection of "hot blood" pedigrees, however, fails to support this view. Meddler, one of the principal "hot blood" sires, was but 12.5 per cent Chief Tecumseh 2d. Corrector 63379, another important small type boar, had still less of the foundation sire, with but 7.8 per cent. There were, in fact, no small type animals that carried any more Chief Tecumseh 2d blood than many of the Big Types of the same period. Spellbinder 93317, 23.9 per cent, and High Roller 84255, 20.1 per cent, two prominent small type boars during the years from 1900 to 1906, were among those most richly bred in Chief Tecumseh 2d blood. Banker 128749, 19.4 per cent; Orient 133943, 15.9 per cent, and Outlook 150783, 17.2 per cent, afford further instances of the extent to which Chief Tecumseh 2d blood figured in the small types. A comparison of these analyses with those of the influential Big Type sires of the same time shows that the "hot bloods" contained little, if any, more of the Chief Tecumseh 2d blood than the large types.

In spite of the peculiar position of Chief Tecumseh 2d as a sire that figured equally strong in the production of Poland Chinas of widely differing types, the percentage of his blood in Poland China pedigrees of 1923 is of considerable significance. A relatively high amount of this blood (15 per cent or more) in a Big Type Poland of today indicates unerringly that the animal is derived in large part from the herds of Mouw and those who used his stock. A Poland China that is today 15 per cent Chief Tecum-

seh 2d will very likely show in its pedigree such worthy sires as Chief Price, Chief Price 2d, Big Ben, Big Orange, Smooth Price, Longfellow 7th, Big Timm and other boars that have been fundamentally important in the more recent development of the Big Type.

A relatively small amount of Chief Tecumseh 2d breeding, however, by no means implies that an animal is of nondescript breeding. There are many Big Types in which Expansion, Longfellow and other impressive sires low in or lacking Chief Tecumseh 2d blood have been important factors. Such animals may contain only 10 or 12 per cent, and in some cases even less.

CHAPTER 26

POLAND CHINA FOUNDATION SIRES—II

JUMBO 3d 18321

THE first chapter in the history of the Big Type Poland China is concerned with Jumbo 3d 18321. Any study of the bloodlines of the early Big Types leads to the conclusion that Jumbo 3d constituted the foundation. Upon this foundation was later impressed, of course, the blood of Chief Tecumseh 2d, Longfellow and Chief Price, the last named of which was a combination of Chief Tecumseh 2d and Jumbo 3d blood.

Jumbo 3d was farrowed in the spring of 1890, the same year in which Chief Tecumseh 2d was produced. Jumbo 3d was a product of the herd of T. J. Harris, West Liberty, Iowa, whose hogs included many of the popular strains of the day and are said to have been of a large, useful type. The sire of Jumbo 3d was Young Jumbo 17533, by Jumbo 15655. Jumbo was also the grand-sire of the dam of Jumbo 3d and the latter thus contained 37.5 per cent of Jumbo blood. It is related that the boar, Jumbo, weighed 1,100 pounds when shown at the Iowa State Fair in 1888. Jumbo came from desirable bloodlines, being sired by a son of Tecumseh 4339 and out of a granddaughter of Tom Corwin 2d. Jumbo 3d therefore had considerable blood in common with Chief Tecumseh 2d, although he had come through ancestors that had been selected for greater size than had been the case with Chief Tecumseh 2d.

Jumbo 3d Attained Great Size

Jumbo 3d was purchased as a pig for \$100 by Peter Mouw. As a mature animal, the boar was fitted for the shows, and is said to have weighed more than 1,000 pounds at the Iowa State Fair in 1893. Shortly after that show he was accidentally killed, and so his full usefulness was probably never realized. During his period of service in the herd, however, he sired the large, heavy-boned sows that were the real foundation of the Mouw herd, and Mouw breeding ever since has carried a large measure of Jumbo 3d blood.

Mollie King Jr. 28009, by Jumbo 3d, and out of a dam by Orange King 18323, was a sire of unquestioned value in the build-

ing of the Big Type. He is the only son of Jumbo 3d found to any appreciable extent in modern pedigrees. In the Mouw herd Mollie King Jr. became the sire of a class of sows that ranked among the foremost producers of the herd in any period of its history. One of these sows, Miss King 89180, was the mother of Price's Maid, the dam of Chief Price. Another of the daughters of Mollie King Jr. was Young Mollie C. 115645, the dam of Surprise Wonder 3d 50633. Other excellent sows sired by Mollie King Jr. were Mollie Jones 146842 and Mollie King A. 136434.

Mollie King 2d 82680, a daughter of Jumbo 3d, gave to the Mouw herd a priceless breeding sow in her daughter, Mollie King 3d 127266. Since her sire, Grand Chief 3d, was from a Jumbo 3d dam, Mollie King 3d was strongly line-bred in Jumbo 3d. Mollie King 3d produced three of the most useful boars connected with the Mouw herd, in Longfellow 2d, Longfellow 3d and Surprise Wonder 4th 59693. Each of these boars left his mark upon the herd and upon the Big Type.

Orange Blossom 3d 57650, by Jumbo 3d, is deserving of special mention as the dam of Grand Chief 3d, the sire of Chief Price. Other useful daughters of Jumbo 3d that made an impression upon the herd included Perfect Lady 66860, Wonderful 66838 and M.'s Jumbo M. 2d 57694.

Jumbo 3d Blood Was Prepotent

At first thought, it may seem that the influence of Jumbo 3d has been exaggerated, in view of the fact that he sired but one really good boar and but a small number of sows, excellent producers though they were. This small group of animals, however, was very definitely connected with the production of practically all of the Mouw-bred hogs whose influence has been lasting.

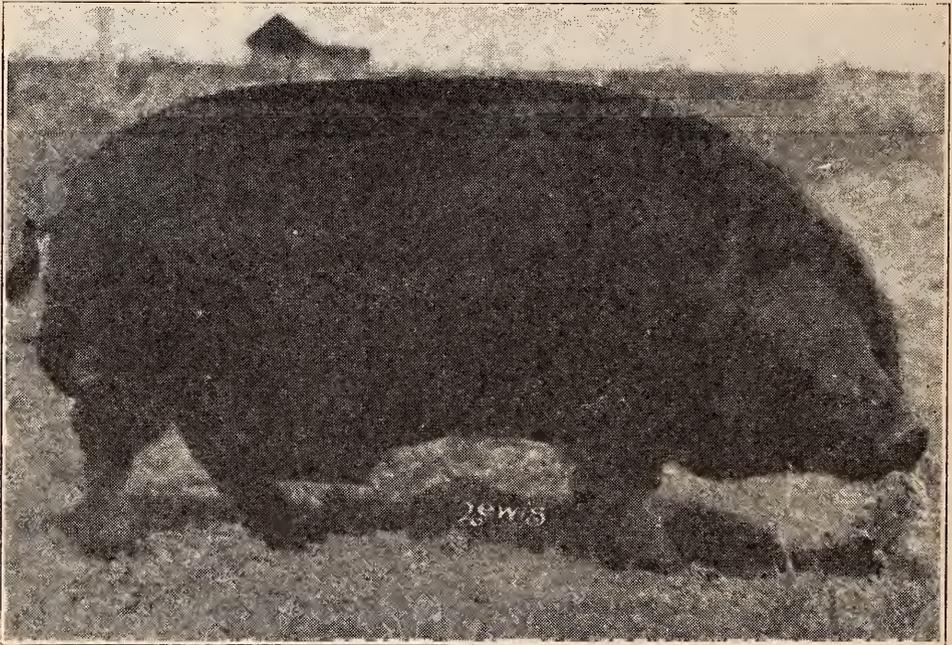
In a previous chapter it has been shown that Chief Price was the foundation sire of foremost importance in the evolution of the modern Big Type Poland Chinas. The pedigree of Chief Price discloses that he owed more to Jumbo 3d than to any other ancestor. Chief Price, it will be recalled, resulted from a combination of Chief Tecumseh 2d and Jumbo 3d breeding. Analysis of his pedigree reveals 21.8 per cent Jumbo 3d and 15.6 per cent Chief Tecumseh 2d.

Most of the other sires important in the Mouw herd from 1898 on were similarly related to Jumbo 3d. The celebrated Surprise Wonder 4th 59693 carried 28.1 per cent Jumbo 3d. Surprise Wonder 3d, Longfellow 2d and Longfellow 3d each had 18.7 per cent of this foundation sire. Other boars bred by Mouw and important

sires in the herds of Gritters, Ellerbroek, W. W. Wheeler and Miller contained extensive infusions of Jumbo 3d. Examples in point are Miller's Chief Price 121195, 23.4 per cent; Surprise Wonder 5th 103067, 21.1 per cent, and Long Wonder 85533, 20.3 per cent.

Although Jumbo 3d left comparatively few offspring, the breeding ability of these few was sufficiently impressive to result in extensive use of his blood by Mouw and his neighbor breeders. Ten years after the time of Jumbo 3d, a great many of the Big Type sires in use contained significant amounts of Jumbo 3d blood. Ever since, the Jumbo 3d blood has been represented in the Big Types, in many cases to an important degree.

The average Poland China of 1923 contains about nine per cent Jumbo 3d, using the analyses of the twenty leading sires of the



BIG BOB 212613

That the pedigree of Big Bob contains a great deal of Mouw breeding is indicated by its analysis of 21.1 per cent Chief Price and 12.2 per cent Jumbo 3d.

National Swine Show in 1920-1922 as a base. Animals which come largely from Mouw sources will show a higher per cent, but the average of the breed is probably hardly more than nine per cent, because of the effect in recent years of the mixing of Expansion blood, small type breeding and other foreign strains with the Chief Price, Tecumseh and Longfellow blood of the Mouw Big Types.

Of the twenty recent showring sires, F.'s Big Jones has the most Jumbo 3d breeding, with 13.9 per cent. There have been ani-

mals during comparatively recent years, however, which carried higher amounts. Big Ben, with 17.6 per cent, and Big Orange, with 16.6 per cent, afford two notable instances of concentrated Jumbo 3d breeding. Wonder 137411, 16.8 per cent, and Long Big Bone 227069, 16.1 per cent, are also included in the roster of animals rich in Jumbo 3d blood. The Mastodon herd of Poland Chinas developed by W. W. Wheeler during the years from 1900 to 1910, possessed much Jumbo 3d blood. One of the boars which brought prestige to this herd was Mastodon Chief 129083, 19.7 per cent Jumbo 3d, and Mastodon Wonder 195691, a son of Mastodon Chief, was 17 per cent Jumbo 3d.

Poland Chinas which come in part from strains which are alien to the Mouw breeding usually have from six to nine per cent Jumbo 3d breeding. The Clansman and Orange Boy, both of which were relatively low in the other Mouw sires, have less than seven per cent Jumbo 3d. The pedigrees of Liberator and Giant Buster show from eight to nine per cent Jumbo 3d, while Hawkeye Giant, Masterpiece and The Rainbow each have contained from nine to ten per cent Jumbo 3d blood in their ancestry.

Jumbo 3d Blood an Index of Mouw Breeding

The determination of Jumbo 3d blood in a Poland China is another means of checking the extent to which Mouw breeding has influenced that animal. A high percentage of Jumbo 3d in a 1923 Poland China shows that it has been extensively influenced by the best of the Big Type sires of a comparatively recent period, including such boars as Big Ben, Big Orange, Big Jumbo, Chief Price 2d, Big Jones and others of similar breeding. In this respect, the Jumbo 3d content of an animal's pedigree tells about the same story as the percentage of Chief Price and Longfellow.

The Jumbo 3d percentage, however, has one relation which is distinct from those of other foundation sires. A high amount of Jumbo 3d breeding in a Poland China signifies the maximum number of generations of Big Type breeding behind that animal. Animals which are low in Jumbo 3d have fewer crosses of Big Type blood. The real foundation of the Big Type dates back to the use of the massive Jumbo 3d in the herd of Peter Mouw, and when 10 per cent or more Jumbo 3d blood is found in a Poland China of today, it is a guarantee that that particular animal's Big Type ancestry, in most lines at least, extends back to the period from 1890 to 1900. A high content of Jumbo 3d breeding means Big Type breeding in its purest form.

CHAPTER 27

POLAND CHINA FOUNDATION SIRES—III

CHIEF PRICE 61861

BREEDERS commonly refer to Chief Price 61861 as the “Father of the Big Types.” The title is well deserved, since no other boar had quite so extensive a part in the formation of the large type Poland China which has been the breed ideal since 1910. The Big Types of today are almost all the result of the blending of the blood of Chief Price with that of Longfellow, Chief Tecumseh 2d and Jumbo 3d, and of this combination the Chief Price element stands out as the most important.

The boar that was destined to become the Big Type's greatest sire was a product of the Peter Mouw herd. Price's Maid 162560, the dam of Chief Price, was sold by Mr. Mouw when she was carrying the litter containing the great sire, to W. H. De Voe, Rock Valley, Iowa. Chief Price was one of a litter of seven farrowed on April 10, 1898. During the next three years the boar was owned successively by W. J. McLean and John Miller, both of Rock Valley, Iowa. In October, 1901, he was purchased by his breeder and thereafter was the chief herd sire in the illustrious group in service in the Mouw herd.

The Bloodlines of Chief Price

The sire of Chief Price was the good boar, Grand Chief 3d, that had resulted from the mating of a son of Chief Tecumseh 2d and a daughter of Jumbo 3d. Price's Maid, Chief Price's dam, was a daughter of Orange Price 34825, a boar that inherited the blood of Black U. S. 18345, Black Chief 21567, George Wilkes 14487 and other good sires. The dam of Price's Maid was a Mouw-bred sow which carried two crosses of Jumbo 3d and one cross of Chief Tecumseh 2d through Grand Chief. The valuable Chief Tecumseh 2d and Jumbo 3d blood was thus impressed upon Chief Price through both his sire and dam. The extent to which this combination figured in his pedigree is best shown by analysis, which shows 15.6 per cent Chief Tecumseh 2d and 21.8 per cent Jumbo 3d blood. The subsequent greatness of Chief Price as a sire is one of the strongest proofs of the potency of the Chief Tecumseh 2d

and Jumbo 3d breeding, the dominant elements in his bloodlines.

Chief Price developed into a large boar and is said to have weighed 1,005 pounds when shown at the Illinois State Fair in 1902. He possessed smoother finish than was true of many of the extremely large hogs of his time, and he is credited with having improved the smoothness of the Big Types, at the same time maintaining their size. He had a long period of service in the Mouw herd, and his sons and daughters were an improving influence in practically all of the Big Type herds of the time.

When Chief Price was introduced into the Mouw herd, a large portion of the sow herd consisted of the daughters of the three sons of the boar, Longfellow. Upon the daughters of these boars, Longfellow 2d (29675), Longfellow 3d (30301) and Longfellow Jr. (31464), Chief Price made one of the most remarkably successful crosses in Poland China history. From this cross came nearly all of the best sons of Chief Price, as well as many good daughters. Some of the best producing sows by Chief Price, however, resulted from dams by Mollie King Jr. 28009, a son of Jumbo 3d. This mating served to concentrate still further the Jumbo 3d line in the Mouw herd.

Chief Price Mated With Longfellow Sows

The list of sons of Chief Price includes many names that are famous in Big Type history. Long King 85927, farrowed in 1902, from a Longfellow Jr. dam, ranks as one of the most useful sons of Chief Price. In the herds of F. E. Ballard and Spencer Jones, of Nebraska, and J. W. Pfander & Sons, of Iowa, Long King became an important power in Big Type advancement.

Orange Chief 82233, sired by Chief Price and out of a Longfellow 3d dam, made a highly creditable record in the Mouw herd. Among his progeny was the celebrated sire, Big Orange 145509. Chief Price 2d 93149, by Chief Price, was one of the outstanding sons of the great sire, and by many breeders was considered the greatest of all of them. He achieved a great record as a sire in the herd of M. P. Hancher, Rolfe, Iowa.

Chief Leader 99241, Chief Standard 2d 84681, Surprise Chief 80633 and Jumbo 67409, were a few of the other good sons of Chief Price. These boars had a part in the development of a number of western herds, and did much to extend the Chief Price type.

The daughters of Chief Price were almost all brood sows of exceptional merit. From them came a number of boars that were vastly important in the later development of the Big Type Poland. The really good daughters of Chief Price appear to have been

more numerous than his sons and their records as producers leave no doubt that the Chief Price sows were a vital force in the making of the Big Type.

Miss Price A (113881) was one of the most valuable daughters of Chief Price, giving to the breed the great breeding boar, Chief Price 2d 142681, sire of Big Bob. Price Maid 195768 became the dam of Big Jumbo 153879, considered by Mr. Mouw as the best boar he ever used, barring Chief Price. Maid B. 2d (138131), a representative of the Chief Price-Longfellow cross, was a most valuable brood sow, having to her credit the boars, Big Wonder 160349, a celebrated sire of sows, and Mouw's Wonder 161477.

Orange Maid D. 209504 deserves mention among the best daughters of Chief Price. She was the dam of Wonder (41551) and other useful Big Types. Mollie Queen (103521) was also an outstanding producer sired by Chief Price. Miller's Chief Price 121195, a successful sire bred and used by John Miller, was among her progeny.

The production records of many other daughters of Chief Price might profitably be cited to show how the influence of this great sire was perpetuated through his daughters. In addition to the sows mentioned, such daughters as Extra Long 4th 195772, Mollie Jones 2d (115778), Miss Longfellow A. (101800), Mollie Surprise (93556), Miss Longfellow (130581), Long Mollie 2d 231574, and Mollie M. 2d 232954, were among the foremost dams of the breed during the decade from 1900 to 1910. There are today no Big Type pedigrees which do not repeatedly contain the names of many of these daughters of Chief Price.

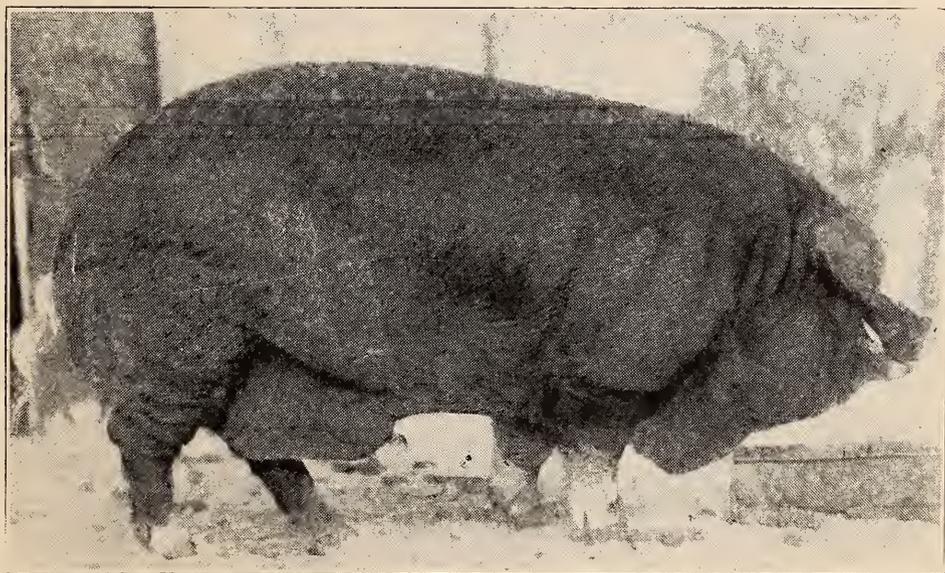
Poland Chinas Have Much Chief Price Blood

Examination of the pedigrees of the boars which have in large part determined the trend of Big Type development since 1910 discloses a large number that were extensively influenced by Chief Price. Big Orange 145509, a boar that figures as an ancestor of many of the best Polands of the present time, was among the most intensely bred Chief Price boars, carrying 37.5 per cent Chief Price breeding. Big Jumbo, the noted Mouw herd boar to which previous reference has been made, was 31.2 per cent Chief Price, and Big Surprise 144749 carried the same amount. Wonder 201127, a very successful sire, farrowed as recently as 1912, carried 35.1 per cent Chief Price blood.

There have been many prominent Big Type sires which had 25 per cent or more of Chief Price breeding. Chief Price 2d and Big Wonder, both from Chief Price dams, each had 28.1 per cent Chief

Price. Many have contained exactly 25 per cent, including Smooth Price 153321, Big Ben 208905, Surprise Wonder 5th 103067, Miller's Chief Price 121195 and Chief Price Again 147523.

Many other animals in which Mouw blood is a predominating factor, although diluted to a greater extent in the case of the boars just mentioned, show from 15 to 25 per cent Chief Price. It is probable that Poland Chinas, generally, will average not far from 20 per cent Chief Price. Analyses of the pedigrees of the twenty principal sires of prize winners at National Swine Shows of a recent period show an average of 15.1 per cent. A number of these sires have considerably more than the average. Big Bob and W.'s Giant each show 21.1 per cent; The Rainbow has 20.3 per



BIG BEN 208905

Big Ben presents an excellent example of the inbred Mouw strain of Poland Chinas. His pedigree contains 25 per cent Chief Price, 17.6 per cent Jumbo 3d and 17.2 per cent Longfellow.

cent, and Disher's Giant contains 18.7 per cent. The Giantess boars, including Peter the Great and Columbian Giant, are also above the average in Chief Price blood, with 18.9 per cent.

The Chief Price blood has apparently been modified in the production of some of the most successful sires of recent winners in Poland China showrings. Liberator shows but 13.2 per cent Chief Price, while the pedigree of The Clansman has but 9.3 per cent. Orange Boy was rather below the average, with 12.1 per cent Chief Price. Grandmaster, 7.8 per cent, and Caldwell's Big Bob, 8.1 per cent, were two notable exceptions to the rule that the best

Poland Chinas are high in Chief Price. An even more extreme case is found in Smooth Prospect, a boar that appears in the blood-lines of many winners. Smooth Prospect was almost altogether lacking in Chief Price blood, carrying but 1.2 per cent.

In the majority of Big Type Poland China pedigrees, Chief Price stands out as the most important common ancestor. There now are no Big Types in which Chief Price has not been a factor, and it is clear that it was not without reason that breeders dubbed him the "Father of the Big Types." While the Big Type as it exists today has come about through a combination of the blood of a number of early sires, it is certain that the type owes more to Chief Price than to any other one boar.

Chief Price Blood Means Good Breeding

The Chief Price percentage in a modern Poland China indicates quite accurately the extent to which that animal has been influenced by the Big Types, although it does not always follow that because an animal is low in Chief Price it is not a Big Type. Animals in which Expansion and some of the larger selections from Chief Tecumseh 2d stock are largely represented will very likely show a low percentage of Chief Price. Reference has already been made to Smooth Prospect as an example of this sort of breeding. This boar and a few others similarly produced were genuine Big Types, although they were very slightly influenced by Chief Price. With the wide use which has been made of Chief Price breeding, however, it is becoming increasingly difficult to find any Poland Chinas which do not show Chief Price as their principal foundation sire.

The greatest meaning which the Chief Price percentage has for the breeder now engaged in breeding Poland Chinas is that it presents a direct measurement of the amount of Mouw and Miller blood in an animal. The correlation between the amount of Chief Price blood in a Poland China and the amount of Mouw and Miller blood is so close that the two terms may be regarded as synonymous. Therefore, the Chief Price percentage at once determines the extent to which an animal has been influenced by the fountain-head of Big Type breeding.

Ample reference has been made to the large number of Chief Price-bred animals which have ranked among the breed's foremost producers. Since 1910, a majority of the best producing Poland Chinas have carried a large measure of Chief Price blood and any animal of the breed that today carries 15 to 25 per cent of Chief Price may be classified as a well-bred Poland China.

CHAPTER 28

POLAND CHINA FOUNDATION SIRES—IV

LONGFELLOW 38611

A SEARCH for the sources of Big Type reveals the boar, Longfellow 38611 as an important foundation sire. While Longfellow did not attain to the eminence of Chief Price as a progenitor of the Big Type, he nevertheless was a sire which contributed to the type to a significant extent. The blood of Longfellow is found universally present in the pedigrees of Poland Chinas of 1923 and in a considerable proportion the percentage is sufficiently high that it carries some meaning.

Little has been recorded of the individual characteristics of Longfellow. Duncan and Davis say of him in their "History of Poland China Swine": "Longfellow 38611, farrowed October 21, 1891; bred by L. D. Stone, Madison, Wisconsin; sold to Peter Mouw, May 9, 1898, was a wonderful big boar, weighing, as Mr. Mouw said, over 1,100 pounds. Unfortunately, he had only a few sows mated to him when he died as the result of an accident incurred in loading him into a wagon."

Longfellow Noted for Extreme Size

Those who are familiar with Poland China history prior to 1900 know that in those years a boar weighing 1,000 pounds or more was a rarity. Longfellow must certainly have been a hog of phenomenal size for his time, and it is probable that he had shown the attributes of a worthy sire, since Peter Mouw purchased the boar when he was nearly seven years old, a rather advanced age for a herd boar. While little service was gotten from the boar, the few pigs that he left so impressed their breeder that at least three sons of Longfellow were used as herd boars in the Mouw herd.

The breeding of Longfellow did not include any of the popular strains of the day, and was, in fact, obscure in the sense that the strains which figured in Longfellow had no part in the production of other prominent Poland China foundation sires. The fashionable Tecumseh blood and other Ohio strains were not present in his pedigree. Hamlet 2d 13313 was the sire of Longfellow, while his dam was by Nemo 2d 9635. A boar called Prince Tom 7875

was a grandsire of both the sire and dam of Longfellow, showing that a certain amount of line breeding was involved in the production of the boar which in the Mouw herd became a great sire.

Longfellow Jr. 49767, a son of Longfellow, was bred by D. S. & F. Smith, of Belleville, Wisconsin, who sold him to Peter Mouw. The boar replaced his sire in the Mouw breeding herd and was later assisted by his brothers, Longfellow 2d 52999 and Longfellow 3d 58625, both bred in the Mouw herd.

As a sire of sows, Longfellow Jr. proved to be one of the most fortunate selections ever made by Mr. Mouw. From 1900 until 1910, some of the most valuable producers in the herd were daughters of Longfellow Jr. Among them was Long Mollie 157240, which to the service of Chief Price produced the noted breeding boar, Long King 85927. Extra Long 176890, Queen Mollie 157244 and Wonder Maid 2d 157260 were other Poland China matrons of a high order contributed to the Mouw herd by Longfellow Jr.

Longfellow 2d a Credit to the Strain

Longfellow 2d was the offspring of Longfellow and a sow by Grand Chief 3d that also carried some Jumbo 3d breeding. Longfellow 2d, therefore, came of a dam bred very similarly to Chief Price. Longfellow 2d is known first of all as the sire of Longfellow 7th 95747, an exceptional sire in the herd of E. Gritters, Boyden, Iowa. Longfellow 7th was the sire of Longfellow 119997, that in turn produced Chief Price 2d 142681. The name of Longfellow 7th appears in many of the pedigrees of the best Big Types of today.

Longfellow 2d was likewise the sire of a number of valuable sows which have an important place in Big Type history. One of them, Mollie Jones 6th 300686, became the dam of Big Jones 145221, a valuable sire. Other daughters of Longfellow 2d that took high rank as producers were Lady Wonder 5th 178898, Mollie Jones 5th 300686, Nemô M. 178900 and Queen Jones 178892. The Mollie Jones sows were from a dam by Chief Price, while the others were from dams sired by sons or grandsons of Chief Tecumseh 2d.

Longfellow 3d, by Longfellow and also from a Grand Chief 3d dam, had a record in the Mouw herd similar to those of his brothers by Longfellow. In the case of Longfellow 3d also, the Longfellow influence was largely transmitted through the excellent sows sired by the son of Longfellow. One of the daughters of Longfellow 3d, Orange Maid 178886, was probably one of the two greatest producing sows ever owned by Mr. Mouw. Mated to Chief Price, she became the dam of the boar, Orange Chief, and a number of valu-

able sows. In view of the breeding ability of the animals produced by this cross, it is no exaggeration to state that the mating of Chief Price and Orange Maid was the most successful single mating ever made by Mr. Mouw.

Orange Maid 2d 178888, by Longfellow 3d, was also a good matron in the Mouw herd. Longfellow 3d also sired a good boar, Longfellow 4th 74189, that was prominent in Big Type development. The influence of Longfellow 3d, however, was transmitted chiefly through his daughters.

While Longfellow is known principally as the sire of the three useful sons which have been discussed, he gave the Mouw herd at least one of its best producing sows, in Miss Longfellow (74426). To the services of Chief Price and Longfellow Jr., this sow produced many of the best individuals in the herd.

The introduction of Longfellow into the Mouw herd and the subsequent use of his sons was the third step in the development of the Mouw type. The first had been the introduction of Jumbo 3d and the retention of his daughters as a foundation. This was followed by the use of the two sons of Chief Tecumseh 2d. Then came the Longfellow infusion, brought in as an outcross for the Jumbo 3d-Chief Tecumseh 2d foundation. The crossing of the blood of the sons of Longfellow and the great sire, Chief Price, was the fourth step in the formation of the Mouw type and the success which attended this led to the concentration of these lines with the use of little outside blood.

Longfellow Blood Blended With Chief Price

The Longfellow blood was indelibly interwoven with the Chief Price breeding in the Mouw herd and others of the Mouw group, and as a result Longfellow blood has figured to a marked extent in every animal in the production of which Mouw breeding has been a factor. This is best shown by the pedigree analyses of some of the important Big Type animals produced since 1910.

Big Orange 145509, 17.9 per cent Longfellow, was one of the most intensely bred Longfellow boars of a late period. Big Ben 208905, with 17.2 per cent, was similarly bred. Both of these boars will be recalled as among the most valuable sires of their time. Other examples of a liberal content of Longfellow breeding are found in Longfellow 119997 and Long Wonder 131497, each of which had 15.6 per cent, and Big Wonder 160349, with 14 per cent.

Wonder 3d 90541, 21.8 per cent Longfellow, and Wonder 4th 125205, 23.4 per cent Longfellow, were two boars that did much to maintain the Longfellow blood in the Big Types. Other impres-

sive sires that carried much more than the average amount of Longfellow blood were Long Price 133305, 18.7 per cent; Alton Wonder 179661, 20.1 per cent, and Smooth Big Bone 218543, 16.1 per cent.

An average of the pedigree analyses of the twenty foremost sires of Poland China winners from 1920 to 1922 shows 8.2 per cent Longfellow blood. Since this group of boars includes most of the impressive sires of late years and represents the lines of breeding which are most popular, an estimate of the Longfellow blood in the average animal of the breed at the present time may safely be put at between eight and nine per cent.

Among recent boars which have ten per cent or more of Longfellow blood may be listed Disher's Giant, Masterpiece, The Yankee and W.'s Giant. Among those which are relatively low in Longfellow are The Clansman, 6.4 per cent, and Orange Boy, 6.3 per cent. Smooth Prospect, a boar that was almost lacking in Chief Price blood, was also deficient in Longfellow, with but 1.7 per cent.

Longfellow and Chief Price Blood Correlated

The pedigree analyses of leading showring sires which appear at the end of the discussions of Poland China foundation sires show a very close correlation between the Longfellow and Chief Price blood, and this will be found true for the breed at large. In many cases the Longfellow percentage is just about half that of the Chief Price percentage. While the ratio varies in a few animals, there is quite uniformly a close correlation between the influence of the two sires upon Poland Chinas farrowed since 1910, as expressed in terms of blood percentages.

A high Longfellow percentage is a guarantee of genuine Big Type ancestry. From the foundation boar himself, the Longfellow line has been characterized by extreme length and size throughout. Longfellow blood has had an active part in the production of many of the largest animals of the breed, and a Poland China which to-day carries ten per cent or more of Longfellow is quite sure to carry the factor of extreme size.

In terms of present pedigrees, the animals which carry the most Longfellow blood will be found among the descendants of Big Ben, Big Orange, Big Timm, Long Wonder and Longfellow 119997. From another standpoint, animals in whose pedigrees the names of Peter Mouw and his associates appear as breeders will, in almost all cases, be featured by a high percentage of Longfellow blood.

CHAPTER 29

POLAND CHINA FOUNDATION SIRES—V

EXPANSION 57691

EXPANSION blood has long been associated with showring type among Big Type Poland Chinas. A considerable percentage of winners at the principal shows during the first twenty years of the present century have shown an infusion of Expansion blood sufficiently strong to indicate the position of that boar as a foundation sire of significance. Expansion does not now figure in Poland China pedigrees to the extent that was true during the period from 1905 to 1915, and animals carrying a high proportion of this blood are, in fact, rarely to be met with. In view of the past success of a number of concentrated Expansion-bred animals, it seems likely that breeders of Poland Chinas have allowed a valuable strain to become lost through dilution with other elements of the breed. The story of the Expansion strain, while it does not deal with bloodlines which concern the majority of those now breeding Poland Chinas, is, nevertheless, of value, since it illustrates in excellent fashion the results which attend the intensification of the blood of a prepotent sire.

Expansion Stock Marked by Large Size

Expansion 57961 was farrowed on May 22, 1900, in a litter of twelve. He was bred by M. G. Arnold, Strawberry Point, Iowa, who sold him to L. W. Cook, of Nebraska. The next year the boar was purchased by H. C. Dawson & Sons, Endicott, Nebraska, in whose herd he became an illustrious sire. From Expansion the Dawsons bred a large, smooth, heavy-boned, deep-bodied type of Poland that was in direct contrast to the small, fine-boned type then in vogue. The Dawsons were aggressive showmen and they carried the Big Type banner in the western states while Peter Mouw and John Miller were pioneering in the Big Type field in Iowa.

The bloodlines of Expansion differ materially from those of other foundation sires that have been considered. Through his sire, Osborne's Hadley 42639, Expansion traced to the boars, Hadley 19213 and One Price 18871, both of which were regarded as remarkable sires. Hadley was distinguished by great size and this

characteristic was found in many of his descendants. The dam of Expansion was Lady Darkness 94080, by Dakota King 25417. The more remote generations of Expansion's pedigree show a number of elements that were common also to Chief Tecumseh 2d, both sires tracing repeatedly to Tom Corwin 2d.

It seems probable that Expansion was the result of the special selection of large, heavy-boned animals for several generations. Although he came of large stock, Expansion is said to have been so much larger than his litter mates as to be regarded as a freak. When put in service, Expansion so well transmitted the extreme size desired by his owners that they soon realized that they had selected a sire of outstanding value. The Dawsons accordingly determined to use to the fullest extent the merits of their boar by fixing an "Expansion type." This they proceeded to do by mating the boar with his descendants, and the inbreeding of Expansion blood in their herd constitutes one of the most conspicuous examples of inbreeding swine to be found in the history of American swine breeding. Incidentally, the history of the Expansion strain does not confirm the popular idea that inbreeding of swine results in disaster.

Expansion's Best Offspring Inbred

A number of the best sons of Expansion came from mating the sire to his own daughters. Expansion Jr. 71203, produced from such a mating, was an excellent breeding boar, and was retained in the Dawson herd to succeed his sire. Big Ex 129873 and Bell Metal (40388) were among the other good boars resulting from the sire-daughter cross. Some of the best-producing daughters of Expansion were the progeny of other daughters of Expansion.

In many cases the concentration of Expansion blood was continued for a number of generations. This sort of breeding was practiced in the Dawson herd and in a few other Nebraska herds which made extensive use of the Expansion stock. One of the best examples of intense inbreeding appears in the pedigree of the boar, John L. Ex 145203. This hog was sired by Pan Jr. 93993, a boar that had been produced by breeding Expansion to his granddaughter, Whiteface Ex 199006. Pan Jr. was thus 62.5 per cent Expansion, being sired by Expansion out of a sow that was one-fourth Expansion. Lulu 218476, the dam of John L. Ex, was sired by Expansion Jr. (three-fourths Expansion). The dam of Lulu was Lulu B. 202782, also sired by Expansion. Lulu thus carried 62.5 per cent Expansion and John L. Ex, the result of the union of Lulu and Pan Jr., was 62.5 per cent Expansion. John L. Ex had five

crosses of Expansion within four generations of his pedigree, a degree of inbreeding seldom met with in swine breeding.

Dorr's Expansion 152095, sired by Expansion, was out of a dam that carried two crosses of the old sire. The record of this sire in the herd of Henry Dorr, Remsen, Iowa, is familiar to all students of Poland China history. In the Dorr herd the Expansion strain was further intensified in frequent instances by the breeding of Dorr's Expansion to sows possessing the Expansion breeding. In this herd, Nora's Expansion 371770, a daughter of King Dodo 86645, by Expansion, was bred to Dorr's Expansion. The resulting offspring included Big Expansion 183661, a breeding boar of merit, and distinguished as the sire of the dam of Expansion King 309389, junior champion at the 1918 National Swine Show and a boar that made a creditable record as a sire.

Breeders Concentrated Expansion Strain

The disposition among breeders who used the Expansion blood to pile it up through repeated crosses accounts for the extremely large percentage of Expansion blood in those animals which possessed it prior to 1915. In those days if a Poland China had Expansion blood at all, it had it in generous measure. This was due, of course, to the inbreeding policy.

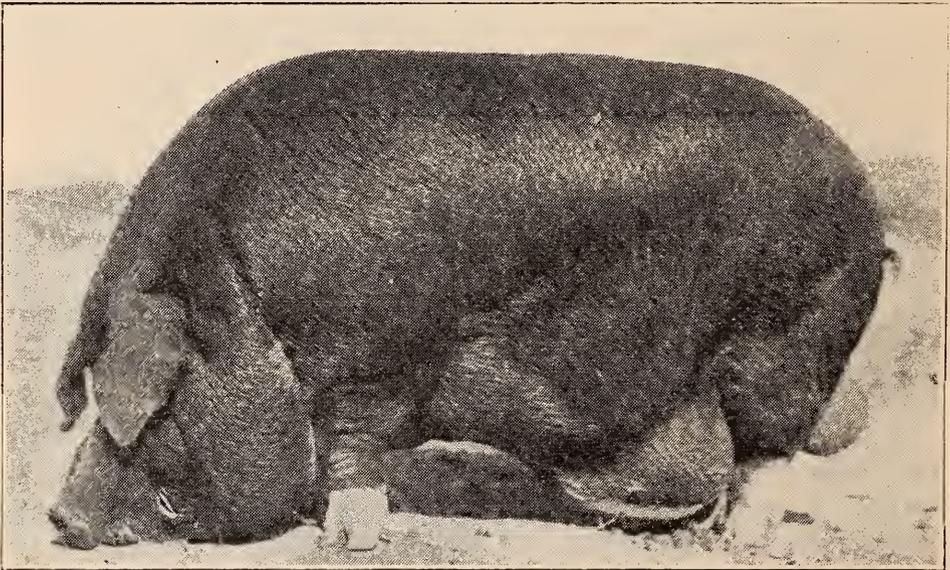
Animals which resulted from the mating of Expansion with his daughters necessarily carried 75 per cent Expansion blood. There were, however, many animals several generations removed from Expansion which had from 25 to 60 per cent Expansion. Such percentages are significant because they show how the blood of this sire was intensified to build up a strain of Polands.

The boars, John L. Ex and Pan Jr. were among the most highly concentrated representatives of the Expansions, each carrying 62.5 per cent. Dorr's Expansion 152095, 59.3 per cent, was similarly bred. Others heavily bred in Expansion included Big Expansion 183661, 42.1 per cent; You Tell Expansion 121889, 37.5 per cent; Expansion Look 257607, 37.5 per cent; Combination Pan 161961, 34.3 per cent; Porter's Hadley Expansion 170631, 29.5 per cent, and Colossal 193441, 28.1 per cent.

The most recent instance of intense Expansion breeding that can be found is Caldwell's Big Bob 272689, grand champion boar at the 1917 National Swine Show. Expansive's Belle 598822, the dam of Caldwell's Big Bob, was over 35 per cent Expansion breeding, while Big Bob Wonder 252987, the sire of Caldwell's Big Bob, was mainly of Chief Price and Longfellow breeding and had merely a dash of Expansion. The percentage of this blood in Caldwell's

Big Bob was 17.9 per cent. It is interesting to note that Caldwell's Big Bob gave ample evidence of his heritage of extreme size, weighing 1,122 pounds at the National Swine Show, where he was grand champion. Showyard observers who saw him in 1917 state that Caldwell's Big Bob was the largest yearling boar that has ever been shown. Caldwell's Big Bob transmitted his size and showyard qualities, and ranks as one of the breed's important sires since 1915.

Expansion King, referred to as junior champion at the 1918 Swine Show, is practically the only other well known boar of late years that has carried more than ten per cent Expansion, his per-



CALDWELL'S BIG BOB 272689

The pedigree of Caldwell's Big Bob contained 17.9 per cent of the blood of Expansion, an exceptionally high amount in such a recent animal. Caldwell's Big Bob resulted from crossing a boar of Mouw breeding on a sow of intense Expansion breeding.

centage being 12.1 per cent. This boar also has been a good producer.

In 1913, it is probable that not more than 10 to 15 per cent of the Poland Chinas had Expansion in their bloodlines. In 1923, at least three-fourths or more of all Poland Chinas carry some Expansion blood. In 1913, however, Expansion influence was found in concentrated form, while in 1923 it is practically never so found. A table on another page shows that 80 per cent of the principal sires of winners at recent National Swine Shows had small amounts of Expansion blood, averaging 2.7 per cent. The four boars whose

pedigrees lacked Expansion were in each case high in the blood of Chief Price and Longfellow. This correlation is found to be general, animals which are low in the Mouw and Miller sires carrying relatively more Expansion blood.

In The Clansman, Orange Boy, Smooth Prospect and Grandmaster, Expansion blood is found to the extent of about six per cent, which, of course, is not a significant percentage, although it is high enough to suggest that Expansion had some influence upon the ancestry of those boars. By far the greater number of present-day Poland Chinas show a negligible quantity of Expansion blood.

Expansion Strain No Longer Available

It may appear that, since Expansion is of little significance as an ancestor of the vast body of the breed as it exists today, he hardly deserves consideration as a foundation sire. This, in a sense, is true. It should be worth while, however, for Poland China breeders to note what was done with the Expansion blood when it was available as an inbred strain. Such boars as Expansion Jr., Dorr's Expansion, Expansive, Colossal and Caldwell's Big Bob stand among the breed's worthiest sires and are a tribute to the potency of the Expansion blood.

It is barely possible that there are still available individuals of the closely-bred Expansion strain. Such animals should prove especially valuable as breeding material. Constructive breeders will do well to look for such animals. If, however, it is no longer possible for breeders to use the Expansion blood, they should profit by experience and be prepared to utilize to the fullest any strain of similar value which appears in the future. For the welfare of the breed, it is to be regretted that the Expansion strain has been allowed to dilute itself with other strains.

CHAPTER 30

POLAND CHINA FOUNDATION SIRES—VI

A WONDER 107353

IT IS probable that no Big Type Poland China boar since the time of Chief Price has been given the recognition as a sire that has been accorded by breeders to A Wonder 107353. Most breeders who are now identified with Polands would unhesitatingly select A Wonder as a foundation sire. Certain it is that A Wonder made a very great contribution to Big Type development, although he does not bear the important relation to the breed at large that is claimed by Chief Price, Longfellow and Jumbo 3d. As a sire that introduced a separate element into the Big Types, however, A Wonder is deserving of credit as one of its foundation boars.

A Wonder Had Many Owners

A Wonder was farrowed September 24, 1904, and was bred by E. Gritters, Boyden, Iowa. In March, 1906, the boar was sold to Peter Ellerbroek, Sheldon, Iowa. In September, 1907, A Wonder was purchased by W. W. Wheeler, Harlan, Iowa, who sold him in February, 1910, to Henry Fesenmeyer, Clarinda, Iowa. Although nearly six years old when sold in 1910, and with many descendants in Big Type herds, A Wonder had not then attained extensive popularity, and he sold for the comparatively small sum of \$360.

A Wonder grew into a very large boar, and his get were marked by great size. Through his sire, Long Wonder 85533, A Wonder inherited the very best of Mouw breeding. Long Wonder was bred in the Mouw herd and was sired by Surprise Wonder 4th and out of a sow by Chief Price. The pedigree of Long Wonder contained much Jumbo 3d blood, analyzing more than 20 per cent.

On the maternal side, however, the pedigree of A Wonder is not exactly of the sort usually associated with extreme Big Type. Mollie Fair 246474, the dam of A Wonder, came altogether from medium and small type sources. Close up in her pedigree are the names of Happy Medium 19913, Chief Tecumseh 3d and Chief Perfection 2d. Mollie Fair had none of the Chief Price, Jumbo 3d or other Mouw strains, and the only part of her pedigree which

may be considered at all related to Big Type breeding is the cross of Chief Tecumseh 3d. She had considerable Chief Tecumseh 2d blood, and it is probable that she was selected for having rather more than the average size in animals of such breeding, as was the case with Grand Chief and Young Jones, the Chief Tecumseh 2d boars used by Mouw.

Since his dam was derived from sources alien to the prevailing Big Type strains, A Wonder had only about half as much of the Mouw Big Type blood in him as was contained in the average Poland China of his time. His percentage of Chief Price was but 12.5, and he had but 6.2 per cent Longfellow and 10.1 per cent Jumbo 3d. In other words, A Wonder had less of the real Big Type blood than the average of the Poland Chinas farrowed twenty years after his time.

The unrelated blood in Mollie Fair apparently made a most fortunate combination with the Big Type heritage of Long Wonder. The successful results of this "nick" are found in the manner in which the blood of A Wonder has been perpetuated. The wide demand for sons and daughters of A Wonder has led to the use of his descendants in practically every Big Type herd. Viewed from the standpoint of its effect upon the breed, the result of A Wonder's remarkable career has been to introduce into Big Type Poland Chinas an element which, although partaking to a degree of Mouw blood, was to a considerable extent independent of it.

A Wonder Influence Diluted Mouw Blood

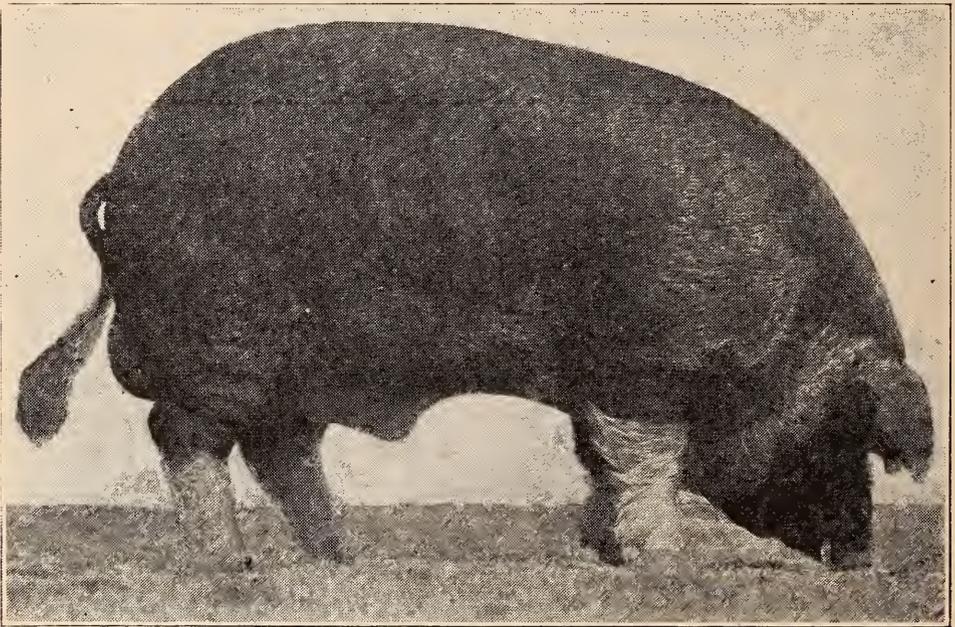
The wide use of A Wonder blood in some herds and the crossing of Expansion-bred animals upon others have been the two causes of the gradual decline in the average amount of Chief Price, Longfellow and Jumbo 3d blood in the Poland China. This decline, while not abrupt, has nevertheless been in progress since 1910.

Breeders regarded A Wonder as a great boar sire, and justly so. His son, Big Bone 137161, was without question one of the most valuable Big Type sires used since 1905. Big Bone sired Big Columbus 151313, that in turn was the sire of The Big Orphan 171013 and Columbus 176435. Big Bone also sired Big Jumbo, considered by Mr. Mouw as second only to Chief Price among his herd boars, and Big Jones, an impressive sire in Northwestern Iowa herds.

King of Wonders 205757, by A Wonder, made a highly creditable record in the Pfander herd. Smooth Wonder 2d 145501, Smooth Wonder (54056), M. Wonder 256945, A Wonder A. 176989 and Fesenmeyer's A Wonder were among the other valuable sons

of A Wonder. The last named was more than 50 per cent A Wonder, coming from a dam that carried two crosses of A Wonder. This was one of a very few efforts made in the direction of inbreeding the A Wonder blood.

The daughters of A Wonder were not far behind their brothers as Big Type producers. One of them, Topsy 492666, gave the breed two great boars, in Mc's Big Orange 293865 and Mankato Wonder 245891 or Korver's Orange Wonder. Uneeda Wonder 371596 ranks among the breed's great sows as the dam of Jumbo 185275. Smooth Lady 375170, the dam of Mastodon Wonder



HAWKEYE GIANT, 323785

Hawkeye Giant affords an example of concentrated A Wonder breeding, his pedigree containing 21.5 per cent A Wonder blood.

195691, and Mollie A. 359356, were two other daughters of A Wonder that were notable producers.

The best offspring of A Wonder were in most cases from sows considerably richer in Mouw breeding than A Wonder himself. The dam of Big Bone, for instance, was by Surprise Wonder 5th, of the choicest Mouw breeding. A Wonder also crossed especially well with sows by Wonder 2d 82481 and Long King's Equal 177373, both of them rich in Mouw blood. The success with which A Wonder mated with these representatives of concentrated Mouw breeding lends further support to the theory that the foreign blood introduced through A Wonder's dam was a distinctly valuable outcross for the Mouw breeding.

There are now comparatively few Poland Chinas which do not have at least some A Wonder blood in their pedigrees. Jumbo 185275, 31.2 per cent, and Hawkeye Giant 323785, 21.5 per cent, are two prominent sires of a recent period which have carried noteworthy amounts of this blood. The Giantess boars, Columbian Giant, Grant's Great Giant and Peter the Great are also well above the average, with 16 per cent. The Yankee was 12.5 per cent A Wonder. Big Bob, Orange Boy and Liberator were each between 5 and 10 per cent A Wonder, while The Clansman had but 1.6 per cent and Giant Buster and Disher's Giant were altogether lacking in A Wonder breeding.

Except in the case of a few animals, among them Fesenmeyer's A Wonder, 65.5 per cent A Wonder, and Hawkeye Giant, little has been done to intensify the A Wonder blood. Judging from the auspicious results secured by mating A Wonder's get with animals of straight Mouw breeding, it seems highly probable that the immediate descendants of A Wonder might have been bred together to form a highly valuable inbred strain. As a matter of fact, it is not yet too late for breeders to attempt something of this kind. Those who own animals that carry 20 per cent or more A Wonder breeding should mate them to other such animals with the idea of getting a concentrated A Wonder strain to mate with richly bred Mouw animals such as are found among the descendants of Big Ben, Big Bob and Big Orange. History shows that the best of the A Wonder stock was produced in this manner.

**PEDIGREE ANALYSES OF LEADING POLAND CHINA
SIREs AT THE NATIONAL SWINE SHOW, 1920-1922**

	Chief Tec. 2d	Chief Price	Jumbo 3d	Long- fellow	Ex- pansion	A Won- der
Liberator 356319.....	14.3	13.2	8.7	9.1	3.8	5.5
The Clansman 306669.....	13.8	9.3	6.2	6.4	6.2	1.6
Giant Buster 240657.....	12.0	14.5	8.6	7.4	2.0	.....
Grand Big Orphan 251923.....	14.5	10.1	8.2	9.4	4.3	3.1
Disher's Giant 240655.....	14.4	18.7	11.5	10.6	.....	.....
The Rainbow 329731.....	13.5	17.3	9.2	9.0	1.6	6.2
Masterpiece 257345.....	14.6	14.8	9.7	11.1	2.7	.....
Revelation 401801.....	13.6	13.2	8.2	7.7	3.0	6.6
Orange Boy 230167.....	13.2	12.1	6.5	6.3	5.5	7.8
Hawkeye Giant 323785.....	14.6	14.6	9.2	8.0	1.2	21.5
Big Bob 212613.....	14.0	21.1	12.2	9.6	.....	9.4
The Yankee 298157.....	13.0	20.3	10.6	10.2	1.8	12.5
Peter the Great 406277.....	14.2	18.9	11.4	8.8	2.0	16.0
F.'s Big Jones 320555.....	13.6	24.9	13.9	9.6	.....	12.5
W.'s Giant 251175.....	13.1	21.1	11.0	10.5	.....	.....
Smooth Prospect 304389.....	9.7	1.2	1.3	1.7	5.9	.....
Kool's Orange 209749.....	13.0	18.7	8.3	9.0	7.0	.....
Jumbo 185275.....	13.7	10.9	9.2	7.0	3.1	31.2
Columbian Giant 374229.....	14.2	18.9	11.4	8.8	2.0	16.0
Just A Buster 281171.....	12.7	8.8	5.6	4.5	1.2	12.5
Average of twenty boars.....	13.5	15.1	9.0	8.2	2.7	8.1

From this table it appears that the two chief foundation sires of the modern Poland China, as revealed by the analysis of pedigrees, are Chief Tecumseh 2d and Chief Price. Longfellow and Jumbo 3d also are important factors in nearly all pedigrees of recent Poland Chinas.

The pedigrees analyzed in this table show a remarkable uniformity in the relationship between the amounts of the blood of the four sires responsible for the Mouw strain of Poland Chinas. This is illustrated by the correlation coefficient of .91 between the percentages of Chief Price and Jumbo 3d in the pedigrees which comprise this table. Relationships between the other sires are also close, with correlation coefficients of .82 between the percentages of Jumbo 3d and Longfellow, .78 between the percentages of Chief Price and Longfellow, .79 between Chief Tecumseh 2d and Longfellow, and .74 between Jumbo 3d and Chief Tecumseh 2d. This illustrates the definite formula upon which Poland China pedigrees are built. In practically every case, a Poland China that is high in one of these four sires is high in the other three.

PEDIGREE ANALYSES OF PROMINENT POLAND CHINA BOARS

	Chief Tec. 2d	Chief Price	Jumbo 3d	Long- fellow	Ex- pansion	A Won- der
Pawnee Lad 97491.....	17.2	.....	.....	.....	.....	.....
Meddler 99999.....	12.5	.....	.....	.....	.....	.....
Longfellow 119997.....	17.0	6.2	11.3	15.6	.....	.....
Long Wonder 131497.....	16.5	6.2	11.3	15.6	.....	.....
Big Bone 137161.....	12.3	12.5	10.1	6.2	.....	50.0
Chief Price 2d 142681.....	15.9	28.1	15.0	10.9	.....	.....
Big Orange 145509.....	15.5	37.5	16.6	17.9	.....	.....
Smooth Price 153321.....	18.4	25.0	13.3	9.4	.....	.....
Big Jumbo 153879.....	16.3	31.2	14.5	9.4	.....	25.0
Big Wonder 160349.....	16.1	28.1	15.0	14.0	.....	.....
The Big Orphan 171013.....	13.8	9.4	8.0	7.8	6.2	12.5
Grand Master 183879.....	13.3	7.8	5.6	7.0	5.5	.....
Big Timm 190903.....	15.5	13.3	10.4	11.3	3.1	6.2
Big Ben 208905.....	15.0	25.0	17.6	17.2	.....	.....
Smooth Big Bone 218543.....	15.6	21.8	14.6	16.1	.....	6.2
Gerstdale Jones 244187.....	14.3	24.0	13.8	9.2	.....	12.5
Fessy's Timm 256027.....	16.2	10.6	7.8	8.4	4.7	3.1
Caldwell's Big Bob 272689.....	12.2	8.1	5.5	4.1	17.9	6.2
Mc's Big Orange 293865.....	12.3	21.8	11.3	10.6	.....	25.0
The Pathfinder 406701.....	12.5	11.9	6.5	6.4	3.2	5.3

Data concerning the pedigrees of twenty noteworthy Poland China boars is afforded by this table. Many of the pedigrees included represent the richest Mouw breeding, among them being those of Chief Price 2d, Big Orange, Big Jumbo, Big Wonder and Big Ben. Descendants of these boars are, of course, higher than the average in their percentages of such Mouw sires as Chief Price, Jumbo 3d and Longfellow. The analyses of the Mouw-bred boars in this table show the same close relationship among the percentages of Chief Tecumseh 2d, Chief Price, Jumbo 3d and Longfellow that were found in the table on page 202.

Pawnee Lad was a large boar for his time, although Mouw strains were not present in his pedigree. Meddler was a well known "hot blood" boar. He had less Chief Tecumseh 2d blood than had the majority of the hogs of his type. However, he showed the high content of Chief Perfection 2d blood that was characteristic of the "hot bloods," having 25 per cent. The analysis of Caldwell's Big Bob differs from the others because of the high Expansion content. The pedigrees of The Big Orphan, Grand Master and a few others show the Expansion influence, accompanied by relatively small percentages of the Mouw sires.

CHAPTER 31

FACTORS IN POLAND CHINA BREEDING

PRIOR to 1890, Poland Chinas were quite generally of one type. The Polands of that period were not as large as the present-day breed, although they were by no means as small as the "hot blood" sort became a few years later. The typical Poland China of 1890 very likely corresponded rather closely to the sort of Poland that was known some years ago as "medium type." The Poland of 1890 undoubtedly had less length of leg and less arch of back than the Poland China of 1923. The early-day Poland Chinas were vigorous, however, and quite prolific, although not extremely so.

Since 1890, Poland Chinas have run the gamut of types. It is doubtful whether so many distinct types as to size and body conformation have been differentiated in any other one breed of animals. Another chapter has discussed the rise and fall of the small type, or "hot blood," as it was nicknamed. This represented one extreme, while the other extreme was developed a little later as the "Big Type." The Big Types, in turn, may be subdivided. There are, first, the heavy-boned, lengthy, rugged animals which have come from the Mouw foundation and trace many times to Jumbo 3d, Chief Price and Longfellow. A second portion of the Big Type includes the descendants of Expansion. These hogs differed somewhat from those of the Mouw type. As a rule, the Expansion Polands were the deepest-bodied hogs to be found, and most of them were smooth, with a finish which found favor in the showing.

The Giantess Strain of Big Types

Since 1920, breeders distinguish a third subdivision of the Big Type in the so-called Giantess strain. The term is commonly used to apply to the descendants of the famous sow, Preston Giantess. The strain, however, is not a separate strain in bloodlines, but represents Mouw breeding in a concentrated form with only a trace of other blood. Selection of the "Giantess type" has, however, obtained a type of Poland that differs quite definitely from other Big Types, having as a rule greater length of leg, less depth of chest and greater length and height than other Polands.

At different times since 1890, there have also been Poland

Chinas classified as "medium type." In some cases, these animals represented crosses of the small and large type bloodlines and were a fairly representative mean of the breed. In many other cases, however, the term has been loosely used to cover Big Types that had degenerated in size.

To those unfamiliar with Poland China pedigrees, it no doubt seems surprising to say that all of these variations in type are, broadly speaking, identical in blood. This, however, is the truth, for all Poland Chinas, irrespective of size or classification, have carried a large measure of the blood of one, and in most cases, two common ancestors.

Tom Corwin 2d, farrowed in 1878, is the common foundation sire to which all Poland Chinas trace. This boar was recognized as a great sire in his time, and the demand for his stock was so general that it was used in almost every herd and ultimately came to influence every animal of the breed. Tom Corwin 2d was a boar of great vigor and is said to have been still in service when past ten years of age. He was black with white points, and was the animal which, more than any other, fixed this marking upon the breed.

Tom Corwin 2d a Potent Factor

From 1880 to 1890, practically every Poland China sire of more than ordinary note was a son or grandson of Tom Corwin 2d. His blood became universally distributed and appears to an important degree in the lineage of each of the six foundation sires that have been considered under separate heads in preceding chapters. Chief Tecumseh 2d and Expansion were particularly rich in this breeding and Chief Price and Jumbo 3d had much of it. Longfellow, however, had rather less than the other foundation sires.

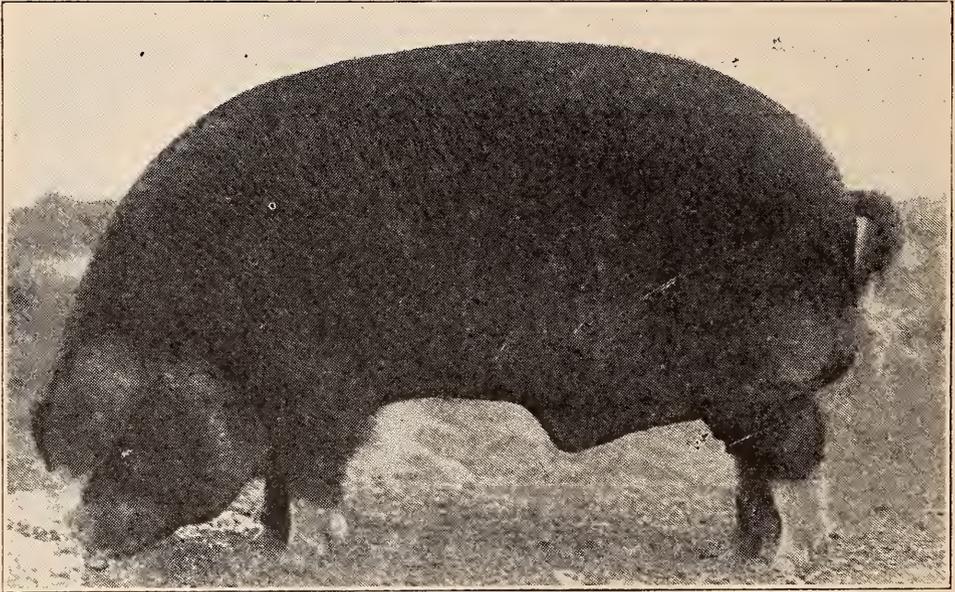
From an historical standpoint, an analysis of Poland China pedigrees on the basis of Tom Corwin 2d blood would be interesting. Such an analysis would not, however, have the practical meaning for breeders which is conveyed in an analysis of the pedigree of a Big Type animal in terms of Chief Price or Expansion, or a small type in terms of Chief Perfection 2d.

In the chapter on Chief Tecumseh 2d, reference was made to the fact that he was a common ancestor of both the "hot bloods" and the Big Types, the two strains containing about equal amounts of his blood. The "hot bloods" were evolved by selecting the small, fine-boned descendants of Chief Perfection 2d, a grandson of Chief Tecumseh 2d. The Big Types owed much to Chief Tecumseh 2d through his three sons, Grand Chief, Young Jones and

Chief Tecumseh 3d, that were an important part of the foundation of the larger type.

All of these distinctly varying types of Poland Chinas have thus come about through a process of selection. Chief Price, Jumbo 3d, Expansion, Longfellow and A Wonder were each the result of selection for size of frame and heavy bone. Selection was continued in their descendants and a uniform type sought. The latest example in selection is, of course, afforded by the Giantess strain, which is different from the Mouw Big Type in conformation, although not appreciably so in bloodlines.

The theory has been advanced that the peculiar type associated with the Giantess strain, as it is known, is due to the famous sow,



COLUMBIAN GIANT 374229

Columbian Giant was one of the most important representatives of the Giantess strain.

Giantess 225094, a rather remote ancestress of these animals. Giantess, however, is removed by seven generations of ancestry from such animals as Columbian Giant and Peter the Great, which precludes any possibility that she shaped their type, inasmuch as she appears but once in their pedigrees. If this were true, Disher's Giant should by all odds have been an extreme Giantess, since he contained about ten per cent of the blood of the original Giantess, while Columbian Giant has only about one per cent. Inquiry into their pedigrees reveals that the ancestors of the "Giantesses" for several generations have been selected for a certain kind of extreme length and height, as a result of which many of these hogs

are now different in type from the rest of the breed, although in bloodlines they are practically identical with the vast majority of present-day Poland Chinas.

Peter Mouw, whose breeding operations affected the development of Big Type Poland Chinas more than those of any other man, bred hogs scientifically. Examination of the earlier generations of the Mouw-bred stock reveals this at a glance. The first sire in a Mouw pedigree, so far as Big Type significance is concerned, is almost invariably Jumbo 3d. Following him comes either Grand Chief or Grand Chief 3d. The next sire in the pedigree is nearly always Longfellow or one of his sons. The Longfellow cross is followed by Chief Price. In the later generations, a variety of boars may be distinguished, all of which combine the bloodlines named. Almost every Mouw pedigree conforms exactly to these specifications, and the general structure is invariably the same.

The Constructive Work of Peter Mouw

Viewing his work from the standpoint of foundation strains employed, Mr. Mouw founded his pedigrees upon Jumbo 3d as a base. The blood of Chief Tecumseh 2d was then introduced through Grand Chief, Grand Chief 3d or Young Jones. The next step impressed the Longfellow blood upon the stock. This was followed by the Chief Price cross, which was, of course, the addition of more Chief Tecumseh 2d and Jumbo 3d blood. Every sire used thereafter in the Mouw herd represented a blending of Chief Tecumseh 2d, Longfellow and Jumbo 3d blood, and the value to the breed of the hogs produced from this amalgamation is too well known to require comment.

Breeders of Poland Chinas can now appreciate the soundness of Peter Mouw and his work. He followed his course with scientific exactness and so well did he build a foundation for the Big Type that ultimately almost every breeder introduced hogs of the Mouw breeding into his herd. Today, every Big Type Poland China traces the major part of its ancestry to the Mouw herd and in many cases Mouw breeding is the sole origin.

While Poland China men have come to appreciate the worth of the Jumbo 3d-Longfellow-Chief Price blood and have wisely used it, the same can not be said regarding the history of the Expansion strain. This prepotent sire left a type that was of great value to the breed. The inbreeding of the Expansion blood by the Dawsons of Nebraska is one of the foremost examples of constructive swine breeding to be found. Unfortunately, however,

the work was not continued, and today it is doubtful whether a Poland China of concentrated Expansion breeding can be found.

On the strength of its past performances, an inbred strain of Expansion-bred Poland Chinas would be of the highest value to the breed today. That this blood crossed well with the Mouw blood has repeatedly been proved in the cases of such animals as Caldwell's Big Bob, produced from a sire rich in Mouw breeding and a dam that was 35 per cent Expansion.

Breeders who do happen to own Poland Chinas that are fairly strong in Expansion blood or in the blood of any other good sire not closely related to the Mouw-bred hogs possess strains of high breeding value. Such strains should be kept pure in order to realize their maximum breeding value, providing, of course, that the individuals are of desirable type. Any breeder who has or who can build up a strain of line-bred A Wonder Polands can well afford to do so for the best interests of the breed.

Poland Chinas Have Blood of Many Sires

The tables which preceded this chapter, showing the percentages of foundation sires in modern Poland Chinas, reveal the average animal of the breed as made up largely of Chief Tecumseh 2d, Chief Price, Jumbo 3d and Longfellow. In practically all Polands of the present, there is a trace of Expansion blood. The average Poland China of 1923 is therefore heterogeneous in genetic composition, containing at least some measure of practically all of the elements that have influenced the Big Type.

It is quite possible that the breed, having this standardized hereditary makeup, has gone about as far in the direction of progress as it can now go. It is probable that, if the Poland Chinas are to maintain the size and type which they now possess, they will need some new and potent strains of blood. Were the Expansion blood available in intensified form, it would most certainly supply one of these strains. However, there may now be somewhere within the breed, awaiting development, a strain that will prove as effective in breed improvement as the Chief Price or Expansion. Possibly that strain will be found in a selection of the best Mouw breeding, such as in the descendants of Big Bob or Big Orange.

Whatever the future of the Poland China, it is to be hoped that breeders will overlook no opportunity of thoroughly developing any strain which manifests particular value. Breeders can well afford to inbreed the close descendants of The Clansman or Giant Buster or other sires of certain merit. Men who possess Poland China strains of undoubted value need not be afraid to inbreed.

DUROC JERSEYS

CHAPTER 32

THE DEVELOPMENT OF THE DUROC JERSEY

IN COMMON with the origin of other breeds of swine, the definite beginnings of the Duroc Jersey can not be traced. As a distinct breed, the Duroc Jersey is comparatively young, since its improvement into its present form has practically all taken place since 1880. Prior to that time, red hogs of a number of types were quite common and in some sections of the eastern states, hogs of this color had been bred for many years.

It is impossible to determine the relative importance of the various elements which entered into the Duroc Jersey. A number of thorough students of animal husbandry believe that the Berkshire breed contributed to an important degree in the formation of the Duroc Jerseys. It is known that the early hog stock of the United States contained much Berkshire blood and that a great many years ago many Berkshires were red or sandy colored. Red Berkshire blood is stated to have been introduced into the Duroc strain of Red hogs founded by Isaac Frink, of New York, in 1823.

Agricultural writings of the first part of the nineteenth century frequently refer to the presence in the eastern United States of a red breed of hogs known as the Guinea breed. These were supposed to have come from red pigs brought from Guinea, in western Africa, to the United States during the course of the slave trade. There is also record of importations of red hogs from Spain and Portugal.

Two Types of Red Hogs Preceded Breed

After 1850, two types of red hogs seem to have been prevalent in the eastern United States. One of these was large and rather coarse with heavy bone, and was known as the Jersey Red. The other type was the Duroc, bred principally in New York. The Duroc was smaller and finer-boned than the Jersey Red and was characterized by heavy hams and shoulders.

About 1870, breeders of red hogs set about perfecting a uniform type, and in 1872 a standard for red pigs was adopted at the National Swine Breeders' convention, at Indianapolis. The breeders co-ordinated their efforts and ten years later the red hogs were fairly uniform in type and had been given the name of Duroc

Jersey. At this time, the Duroc Jersey was a hog of less scale than the old Jersey Red had been, while at the same time the new type had a better quality of flesh and bone and was earlier maturing than the Jersey Red.

From 1880 until about 1900, the Duroc Jersey standard called for a somewhat refined, moderate-sized hog. Since 1905, an increase in size in the breed has gradually been brought about, and it now ranks among the largest. In their early years, Duroc Jerseys were largely confined to the states east of the Mississippi river. Since 1890, however, the breed has become very popular in Iowa, Nebraska and other western states and in the south. The United States census of pure-bred live stock in 1920 revealed the Duroc Jerseys as the most numerous breed of swine, with more than 819,000 pure-breds.

Colonel F. D. Curtis, of New York, was one of the principal early improvers of the Duroc Jerseys. He assisted in promoting the establishment of a uniform type and was the first president of the American Duroc Jersey Swine Breeders' Association, formed in 1883. Clark Pettit, of New Jersey; C. H. Holmes, of New York; William Roberts, of Iowa, and a number of Illinois breeders, including A. Ingram, J. M. Browning, G. W. Stoner and Thomas Bennett, were also prominently connected with the early development of the Duroc Jerseys. Also important in shaping the breed was the Ohio herd of S. E. Morton & Company.

Importance of the Perry Duke Blood

The herds of Ingram, Browning and Morton were the more important of these herds, as related to the ultimate development of the breed. In these herds were bred the animals which were most extensively used in laying the foundation for the later Durocs. The boar, Perry Duke 185a, owned by Mr. Ingram, was a valuable boar in the formative period of the breed. His sons, British Wonder 917a and Champion Wonder, were sources of much good breeding stock. The foundations of the Morton herd and others which contributed much to the breed included considerable Perry Duke blood and it was unquestionably the most important single factor in the bloodlines of the breed in its pioneer days. The Perry Duke blood was inbred to a considerable extent in the Browning and Ingram herds, and it is probable that more close breeding was done at this time than at any period since in the history of the Durocs. The Perry Duke strain played a large part in the pedigrees of Protection, Colonel M. and other boars that had a significant relation to later Duroc development.

In the early Nineties, S. E. Morton & Company bred two boars that had a very definite effect upon the trend of Duroc Jersey breeding. One of these, Protection 4697a, bears a more important relation to Duroc Jerseys of the present day than does any other foundation sire. Colonel M. 3285a, the other member of the pair, is considered the founder of the Colonel family, regarded by breeders as one of their most excellent strains. Of the two boars, Protection proved to exert the greater ultimate influence upon the breed.

Ohio Chief 8727a, a boar sired by Protection and from a dam that was a granddaughter of Colonel M., is the central figure in Duroc Jersey history from 1900 to 1910. Ohio Chief was a show boar of note, farrowed in 1900. During the latter part of his life he was owned in Iowa and Nebraska and his descendants were sought after by both western and eastern breeders. In bloodlines he combined the blood of Protection and Colonel M., and was to a considerable degree responsible for the perpetuation of the blood of those two foundation animals.

Other Dominant Sires

King of Colonels 16075a also was an important sire in the Duroc Jersey world at about the same time as Ohio Chief. He was also used by Morton & Company. The get of King of Colonels were widely distributed throughout eastern herds and have been a potent source of improvement during late years.

In the western states there were two dominating sires during the period from 1900 to 1910. Orion 4901a had a remarkably successful career as a sire in Iowa and Nebraska herds, and he ranks as one of the distinctly important factors in Duroc Jersey development. During the same period, Crimson Wonder 26355n, bred by Cantine Brothers, of Iowa, and later owned by Nebraska breeders, affected western herds to a profound extent. For a number of years, Crimson Wonder blood was the principal strain in most herds west of the Mississippi river. At the present time, however, Duroc Jerseys carry little of his blood.

Since 1910, Duroc Jersey history has been concerned with the achievements of several groups emanating from a number of highly prepotent boars. Most of these boars were in large part from bloodlines that had been popular during the preceding twenty years, although in the case of one group, or family as it is known, considerable lesser-known blood has been used.

Orion Cherry King 42475a has been the most noted progenitor of Duroc Jersey showring winners during the past fifteen years.

This boar was farrowed in 1911, and was bred and owned throughout his lifetime by Ira Jackson, of Tippecanoe City, Ohio. Orion Cherry King blood has been universally used in eastern and southern herds during late years, while much of it has also been introduced into the west. Two other sires which have had a marked effect upon Duroc affairs in the east and south during the same period have been Defender 25893a, a son of King of Colonels, owned by McKee Brothers, Versailles, Kentucky, and Walt's Top Colonel 48257a, owned by Charles Wenger, Clayton, Ohio.

Pathfinder 181615n, bred by John W. Davis, of Illinois, and owned until his death by Hanks & Bishop, New London, Iowa, has been one of the outstanding forces in recent Duroc Jersey history in the western states. Great Sensation 228725n and his son, Great Orion Sensation 268979n, both owned by Ed M. Kern, Stanton, Nebraska, have likewise had a marked effect upon the trend of Duroc breeding, especially in the western states. The get of these boars have dominated western showrings and have been in high demand for breeding purposes.

The American Duroc Jersey Breeders' Association was organized in 1883 and published its first herd book in 1885. It is now located at Chicago, Illinois. In 1891, the National Duroc Jersey Record Association was organized, with headquarters at Peoria, Illinois.

Little Inbreeding in the Duroc Jerseys

Except at the very beginning of the breed, Duroc Jersey breeders have inbred their animals very little. In selecting herd sires, the general policy has been to choose animals of breeding distinct from the herd or with only a mild infusion of the same breeding as the balance of the herd. As a result of this procedure, the Duroc Jersey breed does not present quite the material for foundation sire study that is afforded by Poland China hogs or Shorthorn cattle. There is no one foundation sire in the Durocs that is outstandingly important, as is the case with Champion of England in the Shorthorns.

Protection, however, is a common ancestor of all Durocs, and many of them contain a quite significant measure of his blood. Colonel M. is likewise a foundation sire that is common to all individuals of the breed, although to a lesser extent than Protection. Orion is a third boar that figures in all Duroc pedigrees, although the extent of his influence varies more than in the case of the other sires. Succeeding chapters will discuss the relation of these sires to breed development.

CHAPTER 33

DOMINANT DUROC JERSEY SHOWRING SIRES

DUROC JERSEY prize winners of a recent period have for the most part come from five sources. An overwhelming proportion of the principal money-winners at the National Swine Shows from 1920 to 1922, inclusive, were the immediate descendants of Orion Cherry King, Great Sensation, Great Orion Sensation, Pathfinder and Walt's Top Colonel. Two of these boars, Great Sensation and Great Orion Sensation, are sire and son; the others, while having considerable blood in common, are not closely related. No one bloodline has monopolized the Duroc rings during this period, the honors being rather well distributed.

The trend of bloodlines of the principal winners of the breed during this three-year period will be traced in this chapter in a manner similar to the treatment of the showring studies of breeds previously discussed. The data used comprises three-generation pedigrees of the first, second and third prize winners and the points and number of individual winners in which the sires appeared as ancestors have been computed on the basis employed with the other breeds. Of the ninety winners of prizes considered, eight were winners of third or better at two or three of the shows, thus reducing to 82 the actual number of individuals embraced in the study.

The Leading Sires of 1920

	Points	Number Winners
Orion Cherry King 42475a.....	218	13
Great Sensation 228725n.....	120	9
Cherry King 25979a.....	114	11
Great Orion Sensation 268979n.....	112	5
Walt's Top Colonel 48257a.....	108	5
Pathfinder 181615n.....	106	5
Great Wonder I Am 194169n.....	68	10
Cherry King Orion 3d 192435n.....	66	7
Scissors 160137a.....	64	2
Joe Orion 2d 35527a.....	62	6

Orion Cherry King was easily the ranking sire of Duroc Jersey winners at the 1920 National Swine Show, as shown by this table of the ten highest ranking sires. The table shows that he had a

lead of 98 points over his nearest competitor, Great Sensation. From second to sixth place are grouped five boars that were about equally important as sources of the 1920 winners.

Cherry King, the third boar in the table, owes his position quite largely, although not altogether, to the fact that he sired Orion Cherry King. Great Orion Sensation was a young boar whose prestige as a sire was rapidly rising at the time of the 1920 show. Walt's Top Colonel and Pathfinder were instances of seasoned sires that had been favorably represented at previous shows and that upheld their standing among the leaders at this show.

Great Wonder I Am, as the sire of Great Sensation, had a good position in the 1920 table. Following him are Cherry King Orion 3d and Scissors, two sons of Orion Cherry King. Joe Orion 2d, the tenth boar listed, represented the other factor in a cross from which came many of the Orion Cherry King winners.

The Leading Sires of 1921

	Points	Number Winners
Orion Cherry King 42475a.....	202	15
Great Sensation 228725n.....	160	11
Great Orion Sensation 268979n.....	148	7
Walt's Top Colonel 48257a.....	124	6
Great Wonder I Am 194169n.....	114	11
Cherry King 25979a.....	92	11
Cherry King Orion 3d 192435n.....	76	9
Morton's Top Colonel 32591a.....	56	5
Orion King Perfect 160133a.....	56	2
Jack's Friend 30379a.....	52	7

The 1921 table reveals Orion Cherry King again in the lead. In some respects, his showing in 1921 was more remarkable than in the previous year. The second column shows that he figured in 15 individual winners, and since the study is based on ten classes of three prize winners, or thirty animals in all, Orion Cherry King was the sire, grandsire or great-grandsire of exactly half of the principal winners at the 1921 National Swine Show.

Great Sensation also held his rank of second in 1921. His position, however, is quite a bit stronger than in 1920. The 1921 results shifted Great Orion Sensation from fourth to third place, with quite a little higher score than was credited to him in 1920. Walt's Top Colonel likewise improved his position in the table, advancing from fifth to fourth.

One of the striking features of the 1921 table is the absence of Pathfinder from the leaders. Pathfinder's descendants were not in evidence at the 1921 show to the extent to which they have

appeared at other National Swine Shows. As a result, this sire ranked only fourteenth and does not appear among the ten leaders. The last three boars in the 1921 list of leaders were not among the 1920 leaders. Morton's Top Colonel wins his position as the sire of Walt's Top Colonel. Orion King Perfect is a son of Orion Cherry King. The blood of Jack's Friend, the tenth boar, is found combined with that of Orion Cherry King in many of the winners. This combination has been a most productive source of winners.

The Leading Sires of 1922

	Points	Number Winners
Great Sensation 228725n.....	118	13
Great Orion Sensation 268979n.....	116	9
Pathfinder 181615n.....	102	10
Walt's Top Colonel 48257a.....	88	7
Orion Cherry King 42475a.....	86	11
Stilts 179371a.....	72	4
Great Wonder I Am 194169n.....	66	10
Colonel Cherry King 6th 118685a.....	48	4
Major Sensation 305553n.....	48	2
Big Orion Sensation 333431n.....	40	2
Pathmarker 339869n.....	40	2

The tabulation of leading sires for 1922 presents an aspect decidedly different from those of the two preceding years. Orion Cherry King lost his commanding place and fell to fifth place in this ranking. On the other hand, Great Sensation, the most formidable competitor of Orion Cherry King during the three years, went to first place in 1922, although he had a scant lead of two points over his son, Great Orion Sensation.

Pathfinder regained a position close to the top of the list in 1922, ranking third. Walt's Top Colonel was again represented by a number of good winners and held fourth rank. Great Wonder I Am also appeared among the leaders for the third time.

The remaining five boars were not found in the lists of 1920 and 1921. Colonel Cherry King 6th is a son of Walt's Top Colonel, while Stilts is a son of Colonel Cherry King 6th and out of an Orion Cherry King dam. Big Orion Sensation is a full brother to Great Orion Sensation and Major Sensation is a son of Great Orion Sensation. Pathmarker will be recognized as a son of Pathfinder, and the grand champion boar at the 1920 National Swine Show. Among the interesting aspects of the 1922 tabulation is the strength displayed by the Sensation group of boars. Other features are the formidable showing made by Pathfinder and the consistent winnings of the descendants of Walt's Top Colonel.

The Leading Sires of Duroc Jersey Winners at the National Swine Show, 1920-1922

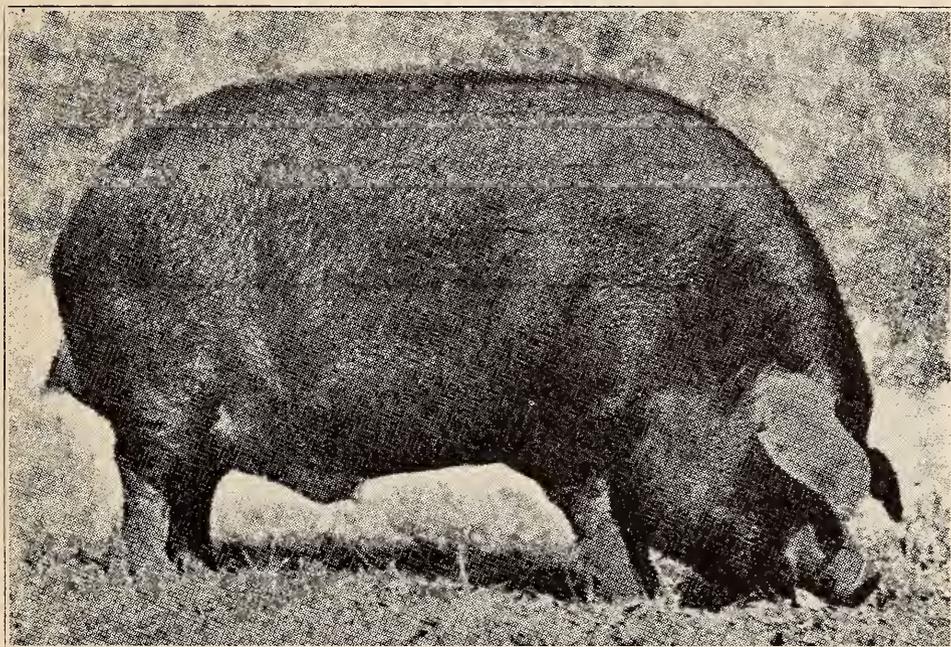
	Points	Number Winners
Orion Cherry King 42475a.....	506	35
Great Sensation 228725n.....	398	29
Great Orion Sensation 268979n.....	376	20
Walt's Top Colonel 48257a.....	320	16
Pathfinder 181615n.....	252	20
Great Wonder I Am 194169n.....	248	27
Cherry King 25979a.....	228	22
Cherry King Orion 3d 192435n.....	180	18
Morton's Top Colonel 32591a.....	146	12
Jack's Friend 30379a.....	118	15
Prophetstown Chief 146389n.....	106	14
Colonel Cherry King 6th 118565a.....	104	6
Joe Orion 2d 35527a.....	96	8
Great Wonder 180989n.....	94	14
Mahaska Wonder 242845n.....	90	8
Big Orion Sensation 333431n.....	88	2
Orion King Perfect 160133a.....	80	3
Scissors 160137a.....	80	2
Cherry Chief 21335a.....	78	7
Giant Originator 332207n.....	72	4
Stilts 179371a.....	72	4

The compilation of pedigrees of the winners for the three years combined, as shown in the accompanying table, gives Orion Cherry King a distinct lead for the three-year period, with 506 points received through 35 animals. Since the total number of individuals concerned in the study is 82, Orion Cherry King was an ancestor within three generations of 43 per cent of the principal winners during the time. He was really a factor in the blood-lines of more than this number, since the period of his active service is now sufficiently in the background that his name does not appear until the fourth or fifth generation in the pedigrees of some of the younger animals at these shows. In a tabulation of this sort, the influence of Orion Cherry King will gradually lessen with each succeeding year as he becomes further removed from the winning generation of animals.

Since a year or two before the establishment of the National Swine Show, in 1916, Orion Cherry King has been a powerful force in Duroc Jersey showrings. A recital of the championship winners which he sired would include many names. Three of his sons have been grand champions at the National Swine Show, and his daughter, My Lady Friend, has twice won that honor. One of his sons and two of his daughters have won junior champion-

ships at the National and on two occasions the winning get-of-sire entry has been sired by Orion Cherry King.

The sensational career of Orion Cherry King is now a matter of history. While he himself will recede into the background in a continuation of this study at future shows, his get promises to be represented in such studies for some time to come. It will be noted that among the twenty leading sires during 1920-1922 are three sons of Orion Cherry King, including Cherry King Orion 3d, Scissors and Orion King Perfect. In addition, Orion Cherry



ORION CHERRY KING 42475a

Orion Cherry King has a distinctive lead as an ancestor of Duroc Jersey prize winners at the National Swine Show, from 1920-1922, inclusive.

King is an ancestor of Great Orion Sensation, Big Orion Sensation, Colonel Cherry King 6th, Giant Originator and Stilts.

Cherry King, in seventh place, holds his title by virtue of being the sire of Orion Cherry King. He was, however, the sire of many other valuable animals, in a period too early to be touched by this study. Cherry Chief appears in the table partly as the sire of Cherry King and partly as the sire of Prophetstown Chief, the sire of Pathfinder.

Two other boars not related to Orion Cherry King may for convenience be considered with him because their bloodlines are found combined with his in a majority of the Orion Cherry King winners at these three shows. The crossing of Orion Cherry King

on the daughters of Joe Orion 2d and Jack's Friend has been one of the outstandingly successful crosses in the history of Duroc Jersey breeding. Such worthy sires as Scissors and Orion King Perfect, and such grand champions as My Lady Friend have resulted from this cross.

Great Sensation is the second boar in the table, both in number of points and in number of individuals in which he appeared. A number of descendants of Great Sensation will be noted in the table, and this group was strongly represented at each of the three shows, particularly in 1922. It is almost certain that the Sensations, as the descendants of these boars are known, will have a large part in the Duroc showring activities of the immediate future.

Sensation Representatives in the Table

Two sons of Great Sensation are found in the table. Great Orion Sensation is a boar that is familiarly known to every one associated with Duroc Jerseys since 1919, when he won grand championship at the National Swine Show. Two years later, he repeated that winning, a feat that no other Duroc Jersey boar has duplicated. His position in third place in this table of sires indicates that this boar is a remarkable instance of showring type and producing ability combined in one animal. Big Orion Sensation, a full brother of Great Orion Sensation, is also among the twenty leaders.

Walt's Top Colonel is a sire that for many years consistently produced winners, and his record at these three Swine Shows entitles him to fourth rank. He is represented in the table by a son, Colonel Cherry King 6th, and a grandson, Stilts. Morton's Top Colonel, the sire of Walt's Top Colonel, likewise ranks among the twenty leaders.

Pathfinder, an important figure in Duroc Jersey affairs for nearly ten years, is the fifth ranking boar. Many of his progeny were prominent winners at the three shows, but none figured to a sufficient extent to place among the leaders.

Both Walt's Top Colonel and Pathfinder are now dead and their importance to new generations of Duroc Jersey winners will lessen, as in the case of Orion Cherry King. However, these boars apparently will hold relatively strong positions for a few years as a result of the showring prowess of their immediate descendants.

Great Wonder I Am, the sixth boar, is connected with the Sensations, as the sire of Great Sensation. Great Wonder, the sire of Great Wonder I Am, figures in the table and is also represented by another son, Mahaska Wonder.

Giant Originator is to a large degree independent in breeding of the other boars in the table. Through his dam, however, he receives a cross of Orion Cherry King.

This study of National Swine Show winners is obviously based upon a small number of winners. These animals, however, are admittedly the choicest of their breed and are truly representative of the general scope of Duroc Jersey bloodlines. Investigation of their ancestry is bound to disclose those sires which have been of maximum importance in breed improvement during a recent period.

CHAPTER 34

DUROC JERSEY FOUNDATION SIRES—I

PROTECTION 4697a

THE names of Protection and Ohio Chief have long commanded respect among admirers of Duroc Jersey swine. Men who have carefully studied Duroc Jersey bloodlines have accorded these two boars, sire and son, positions of prominence among the breed's foundation sires. That breeders have accurately estimated the importance of these sires is borne out by analyses of the pedigrees of the Duroc Jerseys of late years which show them to contain higher percentages of Protection and Ohio Chief than of any other foundation sires.

Protection has not generally received the recognition as a sire that has been awarded to Ohio Chief. To the rank and file of Duroc Jersey breeders, Protection is known principally as the sire of Ohio Chief. As a matter of fact, he means a great deal more than that to the breed. A comprehensive study of the bloodlines of important animals of the breed at the present time shows definitely that the influence of Protection upon the breed has been generally underestimated and that this early-day sire probably contributed more than any other sire to the breed as it stands today.

Pedigrees Average Twelve Per Cent Protection

Analyses of the pedigrees of the twenty leading sires of Duroc Jersey winners at the National Swine Shows from 1920 to 1922 show that these boars carried an average of about 12 per cent Protection blood. Since this list of sires includes most of the boars of note in a recent period, the average is quite representative of the breed and the Duroc of the present generation undoubtedly has about 12 per cent Protection blood. This amount is greater than the percentages of Ohio Chief and King of Colonels blood in present-day animals, altho these two boars are not so far removed from the present generation as is Protection. The Protection blood also outweighs by a considerable margin the amounts of Colonel M. and Orion blood in Durocs of the present time.

Protection was farrowed in 1892 and was bred by S. E. Morton & Company, Camden, Ohio. His sire was Coulongues 3185a, a

boar of considerable note in the Morton herd. The dam of Protection was Tip Ear 8798a, by Hoosier King 3205a. The boar, Dan Voorhis, one of the first sires used in the pioneer herd of Thomas Bennett, appears in a number of places in the pedigree of Protection, although not sufficiently often that Protection can be called an inbred boar. Aside from this strain, the bloodlines of Protection came from many different sources.

The owners of Protection kept him to grow out as a herd sire, and he was never shown. There is little information available as to his type, but it appears that he was not of extraordinary size. Apparently he suited the demands of the time, as he was kept in service for several years in the herd owned by S. E. Morton and his associates, Walter Abernathy and M. Borradaile.

Protection and Colonel M. Blood Crossed

The blood of Protection was not systematically concentrated in the Morton herd. Protection himself was bred to the daughters and granddaughters of Colonel M. and to sows by other boars that had been in the herd. The daughters of Protection were always mated to boars of other breeding. A favorite mating was to cross daughters of Protection with Walt's Colonel, a son of Colonel M. This combination produced Ed's Colonel 8035a, a noted sire.

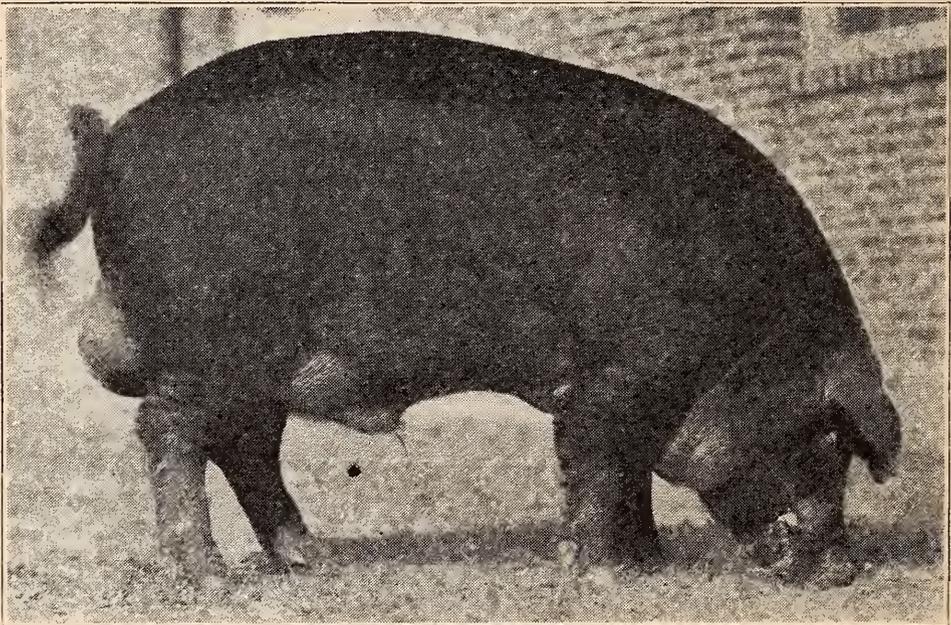
While the Protection blood was subjected to neither inbreeding or line-breeding, the sons and daughters of this sire were extensively used in the Duroc herds that were prominent in the formative period of the breed, and as a result of this wide use, the majority of prominent animals of recent years have carried a considerable proportion of Protection blood.

The greater part of the Protection blood in modern animals has, of course, come through Ohio Chief, Protection's most distinguished son. There are, however, a few other sons of Protection that deserve credit for the perpetuation of his blood. One of these was Chief of Ohio 9775a, a full brother to Ohio Chief. Jumbo Red 7973n, by Protection, was an important factor in early Duroc breeding in Nebraska. Red Chief I Am 7693n and King Jehu 5287a were sons of Protection whose influence can be traced in western Duroc Jersey development. The latter was quite important as the grandsire of Tolstoy 12533n, the boar that sired Crimson Wonder and Glendale Critic.

The daughters of Protection seem to have been a valuable lot, since they appear frequently in the bloodlines of the best animals of today. Among them was Variety 13th 15242a, the dam of the

good boar, Ed's Colonel. Others that figured in the ancestry of modern animals were Variety 15th 15246a, Variety 16th 16450a, Protection Girl 16444a, Jessie M. 14080a and Protection Belle 14042a.

In view of the fact that no particular attempt was made to intensify the Protection blood, its presence in modern pedigrees to a marked extent is due to its universal use in the Duroc herds which are responsible for the breed as it exists today. Notable examples of animals which have carried a significant amount of Protection blood are found in Cherry Chief and Cherry King, each of which had more than 20 per cent Protection blood in his pedigree.



PATHMARKER 339869n

Pathmarker's pedigree is rich in Protection breeding, with 14.4 per cent.

These two boars have had a widespread effect upon Duroc Jersey breeding in late years, and are to a large degree responsible for the high percentage of Protection blood in animals of the present generation.

Nearly all of the other boars that have made a distinct impression upon the breed in late years show more of the Protection breeding than of other foundation sires. Orion Cherry King's pedigree has 13.3 per cent Protection blood, while Pathfinder's shows 14.1 per cent. Walt's Top Colonel, considered by most Duroc Jersey men as a strongly bred Colonel boar, really had nearly twice as much Protection blood as of Colonel M. An analysis of his

pedigree shows 14.4 per cent Protection and 7.9 per cent Colonel M. King of Colonels 16075a, also considered a Colonel boar, had more Protection breeding, with 11 per cent, than of Colonel M., with but 8.2 per cent.

Great Wonder carried 12.9 per cent Protection and Great Wonder I Am had 10.3 per cent. Jackson's Orion King, Orion King Perfect and Scissors each have above 11 per cent of Protection blood. Great Orion Sensation, the noted show boar and sire, has but 8.4 per cent Protection breeding, which is below the average, but exceeds the amount of any other foundation sire in his pedigree.

Jack's Friend was notably weak in Protection, having but 3.1 per cent. The same low percentage appears in the pedigree of Crimson Wonder Again. The pedigree of Joe Orion was altogether lacking in Protection blood. All of these boars carried more Orion blood than of any of the other foundation sires, a fact which possibly may explain the fortunate cross which they made with animals relatively rich in Protection breeding.

CHAPTER 35

DUROC JERSEY FOUNDATION SIRES—II

OHIO CHIEF 8727a

INCLUDED in the progeny of Protection was one boar whose prowess in the showring and in the breeding herd has immortalized his name in Duroc Jersey history. Ohio Chief 8727a, this distinguished son of a worthy sire, was farrowed in 1900, from the mating of Protection with the celebrated producing sow, Duchess 40th 13364a. Ohio Chief became an outstandingly good pig, was excellent as a yearling, and matured into one of the best boars of his time, terminating a successful show career by winning first place in the aged boar class at the St. Louis World's Fair, in 1904.

Writing of Ohio Chief as he appeared in the St. Louis showring, Secretary Robert J. Evans, of the American Duroc Jersey Association, says:

“Ohio Chief was a large hog for that period, and was made, of course, on the wide-ribbed and blocky type. He possibly never reached a weight of more than 800 pounds. He was very smooth and even, with excellent hams and good character in the head.”

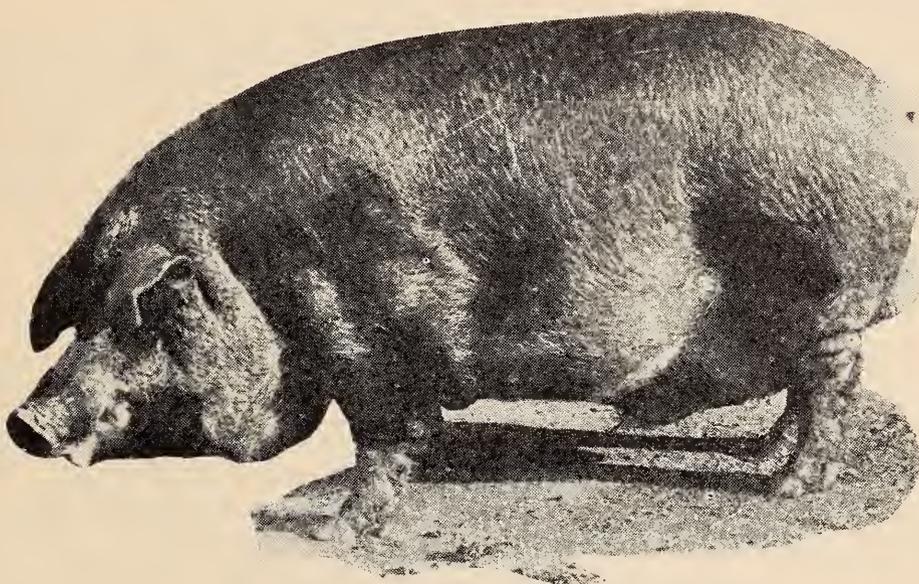
Ohio Chief Used in Several Herds

For six years Ohio Chief was owned by the Morton company, in whose herd he gained a reputation as a highly successful sire. In 1906, Ohio Chief was sold to R. J. Harding and O. E. Osborn, of Iowa, the purchase price being \$2,000. Later, a one-third interest in the boar was sold to J. M. Morrison, of Nebraska, for \$2,000. In his long period of service in Ohio, and later in Iowa and Nebraska, Ohio Chief sired many animals that left their impress upon the breed.

From the standpoint of influence upon modern Duroc Jerseys, the most important son of Ohio Chief was High Chief 13423a. High Chief sired Cherry Chief, that, in turn, sired Cherry King and Prophetstown Chief, the sires, respectively, of Orion Cherry King and Pathfinder. When the tremendous influence of these boars is considered, it is seen that the major part of Ohio Chief's influence was transmitted through High Chief.

Lincoln Wonder 56575n, a son of Ohio Chief used in Nebraska,

was prominent in impressing the Ohio Chief influence upon western herds. Model Chief 11159a, by Ohio Chief, was also of importance in the same connection, and was responsible to a considerable extent for the Protection and Ohio Chief blood in Duroc Jerseys of Golden Model and Crimson Wonder breeding. The Professor 35475n, by Ohio Chief, was a valuable sire in the Illinois herd of Henry Matern. The Professor produced two valuable boars in Instructor 30365a and The Principal 4th 42973a, the latter a highly important sire in the development of the Brookwater herd of Professor H. W. Mumford, of the University of Illinois. Other sons of Ohio Chief that had some influence upon present-



OHIO CHIEF 8727a

The pedigree of the average Duroc Jersey of 1923 contains about 11 per cent Ohio Chief blood.

day animals were Valley Chief 51095n, S. S. Colonel 9765a and Chief Success 17747a.

The daughters of Ohio Chief contributed a great deal to Duroc Jersey improvement. Several of them became the dams of some of the most useful boars of a period a few years after Ohio Chief. Chief's Burketta 46118a, by Ohio Chief, produced to the service of King of Colonels, the two good boars, Chief's Colonel 22875a and Royal Colonel 28237a. Ohio Chief's Variety 33126a, a daughter of Ohio Chief, was the dam of Premier Colonel 26495a, as the result of a mating to King of Colonels. The King of Colonels-Ohio Chief mating was thus productive of a number of highly useful sires. Among the other daughters of Ohio Chief, mention

should be made of Stylish Perfection 32730a and Ohio Queen 211842n, the dam of High Model 125953n.

As a rule, the pedigree of the Duroc of today will show about ten per cent Ohio Chief. The twenty-one highest-ranking sires of winners at the National Swine Shows from 1920 to 1922, inclusive, average slightly over ten per cent of this blood.

The principal channels through which Ohio Chief blood has reached modern animals are identical with those which have brought the Protection breeding. Cherry Chief, with 25 per cent of the blood of Ohio Chief, and Cherry King, with 21.8 per cent, have done more than any other two boars to perpetuate the Ohio Chief influence.

An examination of the bloodlines of Pathfinder shows 14.8 per cent Ohio Chief, and the same content is to be found in the pedigree of Great Wonder. Orion Cherry King and Joe Orion 2d each had 10.9 per cent Ohio Chief. Walt's Top Colonel possessed 13.3 per cent Ohio Chief. Grand Model 161639n also was high in this blood, with 17.2 per cent.

Sensations Low in Ohio Chief Blood

Great Sensation and Great Orion Sensation, boars which were low in Protection, are likewise below the average in Ohio Chief blood, having but about seven per cent. Some boars of a comparatively recent period have had no Ohio Chief blood whatsoever. Examples are Defender, Jack's Friend and King the Colonel 89533n.

In modern animals there are few cases where the Ohio Chief percentage exceeds that of Protection. Usually, the two are about equal, or the Protection is somewhat the larger. Orion Cherry King, with 13.3 per cent Protection and 10.9 per cent Ohio Chief, is a typical instance of the prevailing relation between the amounts of the two foundation sires found in recent pedigrees. Other boars in which this relation has existed include Great Orion Sensation, Walt's Top Colonel, Jackson's Orion King and Scissors. In Pathfinder and Mahaska Wonder, the two percentages are very nearly the same.

It must be remembered, of course, that Protection is further removed than Ohio Chief from the Duroc Jerseys of 1923. Most animals, however, carry as much or more Protection blood as of Ohio Chief, which justifies the view that Protection had more influence upon breed development than his noted son. The average of the analyses of the pedigrees of the sires of recent Swine Show winners supports this hypothesis.

Without minimizing the influence of Ohio Chief, which was

unquestionably important, a study of the influence of Protection and Ohio Chief can not but lead to the conclusion that Protection has the more significance as a foundation sire of present-day Durocs. Protection, however, does not occupy the position of dominance that is held by Champion of England in Shorthorn cattle and Chief Price in Poland China swine. This constitutes evidence that Duroc Jerseys have not been inbred to the extent that may be noted in the Scotch Shorthorns and the Big Type Poland Chinas.

CHAPTER 36

DUROC JERSEY FOUNDATION SIRES—III

COLONEL M. 3285a

DUROC JERSEY lore, past and present, is rich in references to the Colonels. The term, Colonel, is commonly used by breeders to denote animals which trace a number of times to Colonel M. 3285a and certain of his descendants, notably King of Colonels 16075a. The "Colonel" blood has long been highly valued and extensively used by breeders of Duroc Jerseys, and although some breeders may not realize it, all Duroc Jerseys as they now exist are to a certain extent Colonel-bred. It is highly improbable that a Duroc Jersey could be found today that would not contain at least some Colonel M. blood.

Colonel M. was farrowed in 1891, and was bred by S. E. Morton & Company, Camden, Ohio. The sire of the foundation Colonel was Troubadour 2255a, the most useful sire in service in the Morton herd during its earlier years, and a boar which probably never got the recognition due him as a sire. The dam of Colonel M. was May Searle 5996a, sired by Sweepstakes Duke Jr. 1713a. For four or five generations back the pedigree of Colonel M. is strikingly free from duplications of ancestry, showing that he was not inbred to any appreciable extent. In the earliest recorded generations of his ancestry there was some inbreeding, as is true of nearly all Duroc Jerseys.

Colonel M. Was of Large Size

The live stock literature of the time states that Colonel M. was a strong-backed, deep-sided boar with plenty of size. It seems probable that he more nearly approached the present type of the breed than most Durocs of his time. As an individual, he was good enough to win the aged boar class at the Columbian Exposition at Chicago, in 1893. After that show, he was retired to service in the herd owned by Mr. Morton and his partners, Walter Abernathy and M. Borradaile.

Colonel M. made an excellent record as a sire, his sons and daughters acquitting themselves creditably as breeding animals. Among the progeny of Colonel M., Walt's Colonel 5795a was considerably

more important than the others in transmitting this blood to present-day animals. Walt's Colonel sired Ed's Colonel 8035a, through which King of Colonels received his Colonel M. blood. Walt's Colonel also sired two other good boars, in Colonel F. 3791n and U. S. Duroc 7905a, the sire of Pilot Wonder 9017a. An important share of the Colonel blood in Duroc Jerseys of the present generation comes through the celebrated daughter of Walt's Colonel, Duchess 40th, the dam of Ohio Chief, Top Notcher and Winchester Chief 10077a.

Two other sons of Colonel M. which figure in the pedigrees of present-day animals to some extent are Cheesman's Choice 4221a and Lord Clinton 4833a. No small part of the Colonel M. blood has come through his daughters. These included many brood sows of sterling merit, such as Colonel M.'s Variety 15170a, Lady M. 10972a, May Alfonso 14022a and the famous Varieties 8th, 9th, 10th and 11th.

The Colonel M.-Protection Cross

Practically no attempt was made to concentrate the blood of Colonel M. in the Morton herd. His daughters were crossed with other boars, and his sons, excepting Walt's Colonel, were sold. The principal use made of the Colonel stock was to breed it to Protection or his get, and it was to the Colonel M.-Protection cross that most of the success of the Morton herd was due. The daughters of Colonel M. and Walt's Colonel were mated with Protection and Protection's daughters were frequently bred to Walt's Colonel. The two bloodlines supplemented one another admirably, producing in the Morton herd such Duroc Jersey notables as Ohio Chief, Chief of Ohio and High Chief.

The Colonel M. blood thoroughly demonstrated its prepotency in the herds of Morton and others, particularly when it was blended with Protection breeding. In view of the undoubted merit of the Colonel strain, an even greater usefulness might have been realized from it, had it been intelligently inbred. The many instances of highly successful inbreeding afforded by the history of live stock breeding suggest that the Colonel M. strain might have yielded greater improvement in the Duroc Jerseys had it been constructively concentrated.

An accurate idea of the influence of Colonel M. upon modern Duroc Jerseys is gained from the average of approximately 6.5 per cent Colonel M. blood found in the pedigrees of the twenty leading sires of Duroc prize winners at the National Swine Shows of 1920, 1921 and 1922. This list includes the boars which are

responsible for a vast majority of the Duroc Jerseys of the present day, and the average of their pedigrees may be considered as truly representative of the breed.

From this list it appears that the majority of the prominent sires of a late period have contained between six and seven per cent Colonel M. breeding. Orion Cherry King, 7.6 per cent, and Walt's Top Colonel, 7.9 per cent, were somewhat above the average. Pathfinder had 6.7 per cent, while Great Sensation and Great Orion Sensation were below the average in this breeding, having, respectively, 4.0 and 4.5 per cent.

Greater extremes appear among animals of a generation or two before the boars just mentioned. Cherry King, sire of Orion Cherry King, was 10 per cent Colonel M. and must be considered one of the principal agencies through which the Colonel M. blood has been maintained in recent animals. King the Colonel 89533n, 10.2 per cent, and Cherry Chief, 9.4 per cent, were likewise factors along with Cherry King. During the period from 1905 to 1910, there were also boars which had only slight percentages of Colonel M. These included Crimson Wonder and Glendale Critic, each 1.6 per cent; Joe Orion, 2 per cent, and Proud Advance, 3.1 per cent.

The Breeding of King of Colonels

King of Colonels is popularly considered to have been the sire that did the most to prove the value of the Colonel blood and to impress it upon the herds of the country. That King of Colonels exerted a profound influence upon Duroc Jersey development is certain, but when his bloodlines are examined, the credit for his success can by no means be entirely attributed to Colonel M. King of Colonels was sired by Prince of Colonels 13571a, that was a great-grandson of Colonel M., through the male line. King of Colonels traced three other times to the original Colonel, but had only 8.2 per cent Colonel M. blood in his entire pedigree. On the other hand, King of Colonels carried 11 per cent Protection blood, so that he might more accurately be termed Protection-bred rather than Colonel-bred, although he was of course a combination of the two. Defender, Walt's Top Colonel and Pathfinder, commonly termed Colonel boars, also have considerably more Protection than Colonel M. blood.

In the strict sense of the term, there are today no line-bred Colonels, in so far as the blood of Colonel M. is concerned. There are probably no Durocs today which contain as much as ten per cent of Colonel M., and in every Duroc the Colonel M. blood is overshadowed by the blood of some other foundation sire, usually

Protection. This limited amount of Colonel M. blood is not sufficient to warrant calling an animal a line-bred Colonel.

In the evolution of the Duroc Jersey breed into its present form, the Colonel M. strain was an element of distinct importance. In this, in fact, lies the chief significance of the Colonel M. blood to the man who is now breeding Duroc Jerseys. There now is no concentrated Colonel M. strain which the breeders may make use of in future work. The history of Colonel M. and his descendants is of value, however, in that it reveals the origin of some of the conspicuously successful breed-building Duroc Jerseys of the past.

CHAPTER 37

DUROC JERSEY FOUNDATION SIRE—IV

ORION 4901a

IN THE spring of 1895, there was farrowed on an Iowa farm a Duroc Jersey boar that was destined to attach his name to more Duroc Jerseys than have carried the name of any other sire. Orion 4901a, the most common single name within the breed for the past twenty years, has perhaps on some occasions been placed on animals where it conveyed a misleading idea as to bloodlines. The greater part of the animals distinguished by this name, however, were in bloodlines really indebted to a worth-while extent to the original bearer of the name.

Orion was farrowed in the spring of 1895, on the farm of N. P. Clark, Monticello, Iowa. As a pig, he was sold to William Roberts, of Paton, Iowa. Orion was undefeated at the Iowa State Fair in 1895, 1896 and 1897, indicating that he was an individual of excellent type. He was used with distinct success for a number of years by Mr. Roberts, who finally sold him to S. E. McCullough, of Iowa. Later, the boar was sold to Manley & Company, Lyons, Nebraska, who owned him at the time of his death, in January, 1906, at the age of eleven years.

The sire of Orion was Ben Hur H. 4539a, a grandson of Thomas Bennett's noted show boar, Cuckoo 3063a. Orion's dam was Nellie C. 2d 9740a, by Ripple 3755a. In the first six generations of the pedigree of Orion there are practically no duplications of ancestors, showing that there was little inbreeding or line-breeding involved in his production. He was largely, although not altogether, of breeding different from that of Colonel M. and Protection.

Orion Blood Comes Through Orion 2d

The major part of the Orion blood in the present generation of Duroc Jerseys has come through his son, Orion 2d 6537a. He was produced by mating Orion with the celebrated brood sow, Ohio Anna 10068a. Orion 2d was purchased at an early age by S. E. Morton & Company, and in their herd he became the sire of two boars that ranked among the foremost sires of their day. The influence of one of these boars, Orion Chief 13333a, has lasted to the present day to a material extent.

Orion Chief was sold as a young boar to Ira Jackson, who showed him at the Louisiana Purchase Exposition, at St. Louis, in 1904, winning first place. In the Jackson herd, the boar achieved a remarkable reputation as a sire of sows. After several years' service there, Orion Chief was sold to Thomas Johnson & Son, of Ohio, for \$3,500.

The daughters of Orion Chief became the dams of some of the breed's valuable sires. Among the sows that he sired were Orion Lady A. 39756a, the dam of Orion Cherry King; Fancy Top Lady 55390a, the dam of Morton's Top Colonel; Lena J. 54360, dam of Defender; Highland Lady 55384a, dam of Highland King 29217a; Chief's Top Lady 54356a, dam of Top Colonel 25211a, and Orion Fannie 55376a, one of the most useful sows ever owned in the Jackson herd.

The names of the boars produced from daughters of Orion Chief are sufficient to establish his position among the builders of the breed. While best known as a sow sire, he also produced a valuable boar in Joe Orion 23833a, the sire of Joe Orion 2d and Jack's Friend, two boars whose blood is found widely distributed throughout the breed today.

The Top Notcher Strain

Top Notcher 8803a, by Orion 2d, was at one time the breed's foremost sire of prize-winning Duroc Jerseys. The most conclusive instance of the winning ability of the Top Notchers occurred at the St. Louis show, in 1904, where seven descendants of Top Notcher were either first or second prize winners and a number of others placed in the money. Tip Top Notcher, by Top Notcher, was grand champion boar, and Top Notcher Chief, by Top Notcher, was reserve.

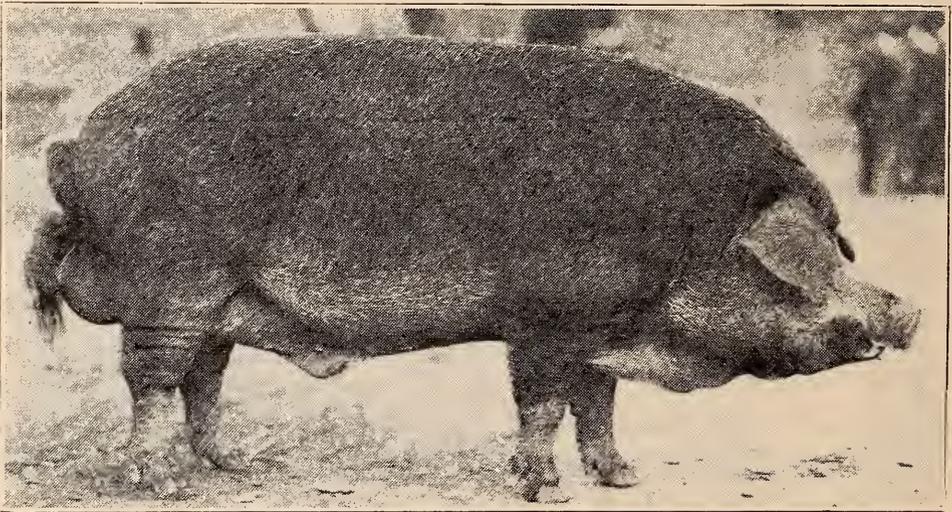
Top Notcher was used in the herd of R. C. Watt, Cedarville, Ohio. Tip Top Notcher also gained a reputation as a successful sire in the herd of George W. Seckman, in Illinois. For a number of years, the get of these two boars and of others of the Top Notcher line were in great demand by breeders. Their influence, however, has not lived to the present day to the degree enjoyed by the Orion Chief line.

Orion R. 6551a and Orion Jr. were sons of Orion that were sold to go to Indiana herds. Orion R. sired Sensation 7393a, a boar that at one time had a considerable influence upon some of the Nebraska herds.

Orion Chief 6601n, by old Orion, sired Duroc Challenger 11163n and Tacoma 7827n. Duroc Challenger was favorably known as

a sire in western Duroc circles, while Tacoma sired Advance 11309n, a noted herd boar used by Johnston Brothers & Newkirk, Brooklyn, Iowa. Advance sired many good Durocs, including the boar Proud Advance 23459n, that produced many good brood sows for western herds.

A number of other sons of Orion frequently appear in the pedigrees of present-day hogs. One of these, Orion Jr. 6497n, was mated to Ohio Anna, producing Ohio Anna 7th 15822a. This sow in turn became the dam of Ohio Anna 8th 24200n, dam of the two good boars, Crimson Wonder and Glendale Critic 33293n. Pericles 4499n, Latest Model 4407n and Orion Chip 10375n were other sons of Orion whose records added to the prestige of the Orions.



GREAT ORION SENSATION 268979n

A prominent sire of winners from 1920 to 1922. The pedigree of Great Orion Sensation has, relatively, a small amount of all the foundation sires except Orion.

Dandy Orion 23213n, by Orion, sired Fancy Orion 101758n, the dam of the noted boar, Crimson Wonder Again 40785n.

The daughters of Orion were of less note than his sons. Aside from Ohio Anna 6th 14116a and Grace Orion 93974n, few of them attained distinction.

The percentage of Orion blood in the great body of Duroc Jerseys today has receded from the point which it reached during the decade between 1900 and 1910. At that time a considerable portion of the breed bore the stamp of Orion blood. Its decline since that time may be attributed to the fact that no effort was made to inbreed it and preserve it in concentrated form. In the Manley herd, the old boar was occasionally bred to his female descendants

in the second or third generations, but beyond this no steps were taken to build up an Orion strain.

The excellence of the progeny of Orion Chief 13333a, and Top Notcher, and their subsequent use in the best herds, has preserved a measure of the Orion blood until the present time, and there is no Duroc today that does not trace at least a limited share of its ancestry to Orion.

The extensive influence of Crimson Wonder Again, 17.9 per cent Orion, also has been one of the factors which has helped to retain the Orion blood. Other sires which have had a notable part in transmitting the Orion blood have been Joe Orion, 12.5 per cent, and Jack's Friend, 10.1 per cent. In these two boars, Orion was a more important factor than any of the other foundation sires.

Durocs Average Six to Seven Per Cent Orion

An average Duroc of 1923 has from six to seven per cent Orion blood, which, it will be seen, is considerably less than the percentage contained of Protection blood. Orion Cherry King strikes an average in Orion blood, with 6.4 per cent. Great Sensation, 7.2 per cent Orion, and Great Orion Sensation, 6.9 per cent, are also near the average. Pathfinder, 4.3 per cent Orion, was somewhat below the general run of Durocs in this breeding.

Defender, Glendale Critic, Crimson Wonder and Top Colonel each had 6.2 per cent Orion, while Orion Cherry King Jr. and Jackson's Orion King showed 7.4 per cent in their pedigrees.

Although Orion was used in western herds, and it was in the west that his line attained its greatest popularity, western-bred animals today show less Orion blood than many eastern animals in which Orion Chief blood has figured. Recent products of western breeding are quite low in Orion blood, examples of which are Mahaska Wonder, 3.2 per cent; Grand Model 161639n, 2.9 per cent, and Pathmarker 339869n, 3.7 per cent.

As a foundation sire, the relation of Orion to the Duroc Jerseys is less significant now than it was in an earlier period of the history of the breed. In the western herds the Orion blood has gradually been diluted by the introduction of other strains. In the herds of the east, the extensive use of Protection, Ohio Chief and King of Colonels blood has reduced the amount of Orion blood. In many of the latter herds, however, the Orion influence is still somewhat apparent, largely as a result of the prepotence of Orion Chief 13333a.

The Orion strain was undoubtedly one which would admirably have lent itself to inbreeding and the formation of a concentrated

strain. It can not be said to have "run out." It was, instead, swallowed up in the mixture of strains which form the Duroc of the present day. Had the Orion blood been fully utilized by inbreeding, it might have been much more valuable than it has been, even though in the past it made notable contributions to the breed. Certain it is that a strain which produced such effective breeding boars as Orion Chief 13333a and Top Notcher was a bloodline which would have been well adapted to inbreeding. While the concentration was never brought about, the Orion blood was sufficiently widely used that it stands today as one of the principal common bloodlines of the Duroc Jersey breed.

CHAPTER 38

DUROC JERSEY FOUNDATION SIRES—V

KING OF COLONELS 16075a

KING OF COLONELS 16075a is a Duroc Jersey foundation sire of a comparatively recent time that has widely influenced the Duroc Jerseys of the present time, and is entitled to a place among the principal common ancestors of the Duroc Jerseys. He does not introduce a new line of breeding into the list of foundation sires; he represents, in fact, a combination of Colonel M. and Protection blood blended with certain other strains.

King of Colonels traced directly to Colonel M. in the male line. Prince of Colonels 13571a, sire of King of Colonels, was sired by Carl's Colonel 10419a, that was by Ed's Colonel, a son of Walt's Colonel, by Colonel M. The dam of King of Colonels was Love 25060a, a sow that carried about 16 per cent Protection breeding. The sire of King of Colonels also had some Protection breeding, so that in the pedigree of King of Colonels himself there was about 11 per cent Protection and only a little more than eight per cent Colonel M.

A Great Sire of Herd Boars

King of Colonels was farrowed in 1905, and was bred by Carl Scott, of Indiana, who also bred his sire and grandsire. As an undeveloped pig, King of Colonels was bought by S. E. Morton, who, in this purchase, once more displayed his astuteness in the selection of herd boars. At the time of his purchase, King of Colonels was regarded as only the third best boar of the litter in which he was produced. His subsequent record in the Morton herd, however, demonstrated the soundness of Mr. Morton's judgment in selecting him. The prowess of King of Colonels exceeded all expectations, and it is stated that at one time forty-eight of his sons were heading Duroc Jersey herds. A syndicate of breeders offered \$10,000 for the boar, but Mr. Morton would not sell him and King of Colonels died his property while still a comparatively young boar.

Probably no Duroc Jersey boar ever sired so many successful breeding sons, as did King of Colonels. These sons and their

progeny were widely used in the eastern and southern herds, and, with the exception of Protection, King of Colonels has probably contributed more to those herds than any other animal. While his blood is not found in such large measure in western herds, King of Colonels has nevertheless had a very real influence on western Duroc Jerseys.

Among the boars which did most to advance the King of Colonels breeding was Defender, a son of King of Colonels out of Lena J. 54360a, by Orion Chief 13333a. Defender was bred by Ira Jackson, who sold him as a yearling to H. E. Browning, of Illinois. In the hands of Browning, Defender was developed into the greatest show boar of his time, winning grand champion honors at several state fairs and at the International Live Stock Show in 1909 and 1910. Defender was noted for extreme size, and in his prime weighed well over 1,000 pounds. He represented the large type toward which breeders were striving, and his get became very popular.

In 1913, Defender was purchased by McKee Brothers, Versailles, Kentucky. His record as a sire in their herd and the manner in which they line-bred his descendants, are notable developments in Duroc Jersey history. When Defender's merit had been demonstrated, the McKees adopted a policy of breeding his descendants together. As a result, they built up a strain in which the blood of Defender was the principal element.

The Line-Bred Defenders

Among Defender's best known sons were Monarch 54241a, a sire of many winners, including Willetta's Monarch 129329a; Highland King Defender 75043a and Sensational Defender, successfully used by McKee Brothers, and Disturber 43639a. The last named boar was bred in the Browning herd.

Chief's Colonel 22875a was another noteworthy son of King of Colonels and is an important factor in present-day pedigrees. This boar left many good offspring, including Panama Special 65383a, a noted sire in the herd of Professor Mumford. Premier Colonel 24965a, by King of Colonels, followed his sire in service in the Morton herd. Premier Colonel is noted as the sire of Pal's Colonel 29167a, Volunteer 32899a and S. E.'s Premier Colonel 117563a. the latter the sire of the dam of Pathfinder.

King the Colonel 89533n, by King of Colonels, made a great reputation in the Iowa herd of O. S. Larson. Through such sons as Valley Colonel 211991n (the sire of Pathmaster) and Colonel Gano 103963n, King the Colonel did much to improve western herds.

Top Colonel 25211a, by King of Colonels, must also rank among the best sons of this foundation sire. Top Colonel sired Morton's Top Colonel, that in turn gave the breed three most useful boars, in Walt's Top Colonel, American Top Colonel 47941a and Taxpayer 39041a.

But a few of the most effective sons of King of Colonels have been enumerated. There were others not without a part in influencing the trend of Duroc Jersey breeding. These included King of Colonels 2d 19921a, Colonel S. 17943a, Harding's King of Colonels 81189n and Royal Colonel 28237a.

The daughters of King of Colonels were by no means unimportant in the dissemination of his influence. Stylish Perfection 3d 59436a, as the dam of Cherry King, accounts for no small portion of the King of Colonels blood in modern Durocs. King's Nellie 63480a, another daughter, became the dam of the good sire, Jack's Friend 2d 37533a.

Walt's Top Colonel, 25 per cent King of Colonels; Pathfinder, 15.6 per cent, and Orion Cherry King, 12.5 per cent, present instances of recent boars which were considerably influenced by King of Colonels. Colonel Cherry King 6th and Fannie's Top Colonel 182693a, boars of a late period important in eastern herds, each had 18.7 per cent of this breeding in their pedigrees. Van's Orion Cherry King 217355n, an important sire in the herd of W. H. Van Meter & Son, of Illinois, carried 12.5 per cent King of Colonels.

Western Herds Low in King of Colonels Blood

The newer western lines of breeding, have been scarcely affected by King of Colonels blood. Great Orion Sensation has but 1.6 per cent King of Colonels, while Great Sensation shows no crosses of King of Colonels in his pedigree. Grand Model and Great Wonder I Am were also lacking in King of Colonels blood. With the exception of those animals which come from King the Colonel and Pathfinder, western-bred animals carry but little King of Colonels blood. Duroc Jerseys in eastern and southern herds, however, almost all contain significant amounts of King of Colonels.

There is probably an opportunity for breeders still to do some constructive work with the King of Colonels blood. It ought to be possible, especially among the Defenders, to find animals that trace repeatedly to King of Colonels, having a good measure of his blood in their pedigrees. The best of such animals should be selected and inter-bred to preserve as far as possible the blood of this great sire.

**PEDIGREE ANALYSES OF LEADING DUROC JERSEY
SIREs AT THE NATIONAL SWINE SHOW, 1920-1922**

	Pro- tection	Ohio Chief	Col. M.	King of Orion	Cols.
Orion Cherry King 42475a.....	13.3	10.9	7.6	6.4	12.5
Great Sensation 228725n.....	7.6	7.0	4.0	7.2	.....
Great Orion Sensation 268979n.....	8.4	7.2	4.5	6.9	1.6
Walt's Top Colonel 48257a.....	14.4	13.3	7.9	5.1	25.0
Pathfinder 181615n.....	14.1	14.8	6.7	4.3	15.6
Great Wonder I Am 194169n.....	10.3	11.7	4.8	5.7	.....
Cherry King 25979a.....	20.1	21.8	10.5	.4	25.0
Cherry King Orion 3d 192435n.....	10.8	7.0	6.7	7.3	6.2
Morton's Top Colonel 32591a.....	9.8	.....	6.7	9.4	25.0
Jack's Friend 30379a.....	3.1	.....	4.9	10.1	.....
Prophetstown Chief 146389n.....	14.7	15.6	6.4	3.1	6.2
Colonel Cherry King 6th 118565a.....	14.6	12.1	8.0	5.8	18.7
Joe Orion 2d 35527a.....	10.1	10.9	6.2	6.4	12.5
Great Wonder 180989n.....	12.9	14.8	5.8	4.5	.....
Mahaska Wonder 242845n.....	11.6	11.7	6.1	3.2	6.2
Big Orion Sensation 333431n.....	8.4	7.2	4.5	6.9	1.6
Orion King Perfect 160133a.....	11.3	9.8	6.5	6.9	9.4
Scissors 160137a.....	11.3	9.8	6.5	6.9	9.4
Cherry Chief 21335a.....	20.1	25.0	9.4	.8	.....
Giant Originator 332207n.....	10.9	9.9	5.4	6.0	5.2
Stilts 179371a.....	12.8	10.1	7.4	6.3	15.0
Average, twenty-one boars.....	11.9	11.0	6.5	5.7	9.3

This table, which presents the analyses of the pedigrees of the twenty-one foremost sires of Duroc Jersey winners during a recent period, shows at a glance that present-day Duroc Jerseys have three or four foundation sires that are common to the entire breed. While Colonel M. and Orion figure in all the pedigrees, their influence was relatively small compared to the influence, as determined by blood percentages, of a number of sires in other breeds. Protection and Ohio Chief, however, have had a real influence upon many modern Durocs. This, however, has not come about through any fixed policy of concentrating the Protection blood. It will be noted from the table that of the two sires, Protection figured to a greater extent in the pedigrees of these Duroc Jerseys than did his son, Ohio Chief.

PEDIGREE ANALYSES OF PROMINENT DUROC JERSEY BOARS

	Pro- tection	Ohio Chief	Col. M.	Orion	King of Cols.
Tip Top Notcher 20729a.....	.....	.....	15.6	18.7	.....
Joe Orion 23833a.....	.....	.....	2.0	12.5	.....
Defender 25893a.....	11.7	.....	7.2	6.2	50.0
Crimson Wonder 26355n.....	9.4	.....	1.6	6.2	.....
Crimson Wonder Again 40785n.....	3.1	.....	.6	17.9	.....
Disturber 43639n.....	11.3	6.2	6.4	3.9	37.5
Orion Cherry King Jr. 58113a.....	11.5	8.2	7.1	7.4	9.4
Golden Model 2d 77339n.....	5.1	.....	5.1	2.3	.....
King the Colonel 89533n.....	11.3	.....	10.2	.....	50.0
Proud Colonel 90909n.....	10.9	12.5	5.5	1.6	25.0
Sensation Wonder 102807n.....	5.7	4.7	4.0	9.4	.....
High Model 125953n.....	15.0	25.0	6.8	2.7	.....
Jackson's Orion King 134009a.....	11.5	8.2	7.1	7.4	9.4
Foust's Top Colonel 135929a.....	14.6	12.1	8.0	5.8	18.7
Grand Model 161639n.....	12.9	17.2	7.1	2.9	.....
Fannie's Top Colonel 182693a.....	14.6	12.1	8.0	5.8	18.7
Van's Orion Cherry King 217355n.....	14.8	10.9	8.0	6.4	12.5
Aviator 232713n.....	10.7	8.2	6.9	7.4	9.4
Big Bone Giant 246651n.....	8.0	6.4	5.0	5.1	5.1

These analyses of the pedigrees of twenty Duroc Jersey boars selected for their achievements as sires, reveal a number of things which do not exactly coincide with popular beliefs concerning Duroc Jersey pedigrees. An instance is seen in the analyses of Defender, Disturber and King the Colonel, commonly regarded as Colonel M.-bred boars. Their pedigrees, however, show that they had considerably more of the blood of Protection than of Colonel M.

The analyses of a number of the boars bred in western herds show important amounts of Protection and Ohio Chief. Examples are High Model, Grand Model and Pathmarker. Other western-bred boars, including Golden Model 2d, Sensation Wonder and Big Bone Giant, were below the average in their content of the foundation sires.

The tables on pages 242 and 243 show no close correlations between the various foundation sires as were found in the Poland China pedigree studies.

CHAPTER 39

THE OUTLOOK FOR DUROC JERSEY BREEDING

A RESUME of the foregoing discussions of Duroc Jersey foundation sires brings out with emphasis that the Duroc Jerseys of today are not one common blood. There is no common foundation sire among the Duroc Jerseys whose influence can be compared to Champion of England in the Shorthorns or Anxiety 4th in the Herefords. Duroc Jerseys, on the other hand, represent a blending of several strains in somewhat the same fashion as in the Big Type Poland Chinas. In the Durocs, however, these strains have not been singled out and used so intensively as in the Poland Chinas. As a result, there are no Durocs of the present generation which will show 20 per cent of the blood of Ohio Chief or Protection, although Poland Chinas with 20 per cent or more of Chief Price blood are readily found.

The average Duroc Jersey of today has a relatively large percentage of Protection blood with smaller amounts of Colonel M., Orion and Ohio Chief, and in many cases, King of Colonels, although some animals are higher in King of Colonels than in Protection. The typical Duroc is a mixture of all the elements which have entered into the breed.

Typical Duroc Combines Several Elements

With the exception of the Defenders and certain animals in which Orion Cherry King blood has been inbred, Duroc Jersey breeders have no really distinct strains. There are no animals which can properly be called Colonel M.-bred, because Durocs of the present universally contain more Protection breeding than Colonel M. At the same time, the term Protection-bred, even when applied to animals relatively high in Protection breeding, is a misnomer, inasmuch as such animals also carry noticeable amounts of Colonel M. and Orion.

It is not correct to call King of Colonels a Colonel-bred boar, since his pedigree contains 11 per cent Protection and only eight per cent Colonel M. In like manner, Walt's Top Colonel and Pathfinder can not properly be termed Colonel-bred, since each had twice as much Protection blood as of Colonel M. Many Duroc Jersey breeders recognize this and refer to their animals as com-

bining Colonel, Protection and Orion breeding, which, of course, is the case, as an examination of their pedigrees will show.

Among some breeders, a tendency has prevailed to classify a pedigree according to the line of sires, or the male lines of descent. This, of course, can become as misleading as the system of determining the pedigree of an animal through the female line alone. In the study of the Duroc Jersey, the pedigree analysis again becomes of peculiar value to breeders, since it shows that Durocs throughout the breed are essentially of the same mixture of strains.

The very fact that the Durocs now have no very distinct strains suggests that the time is ripe for the development of some. Duroc breeders of the past have almost universally followed the practice of mating their animals to animals unrelated or only slightly connected by pedigree. Until recent years, practically no inbreeding of Durocs had been done since the earliest days of the breed. In its formative period considerable inbreeding was done in a few herds with the blood of Perry Duke. The inbreeding appears to have brought fruit, since this inbred Perry Duke blood is an important part of the foundation of all modern animals.

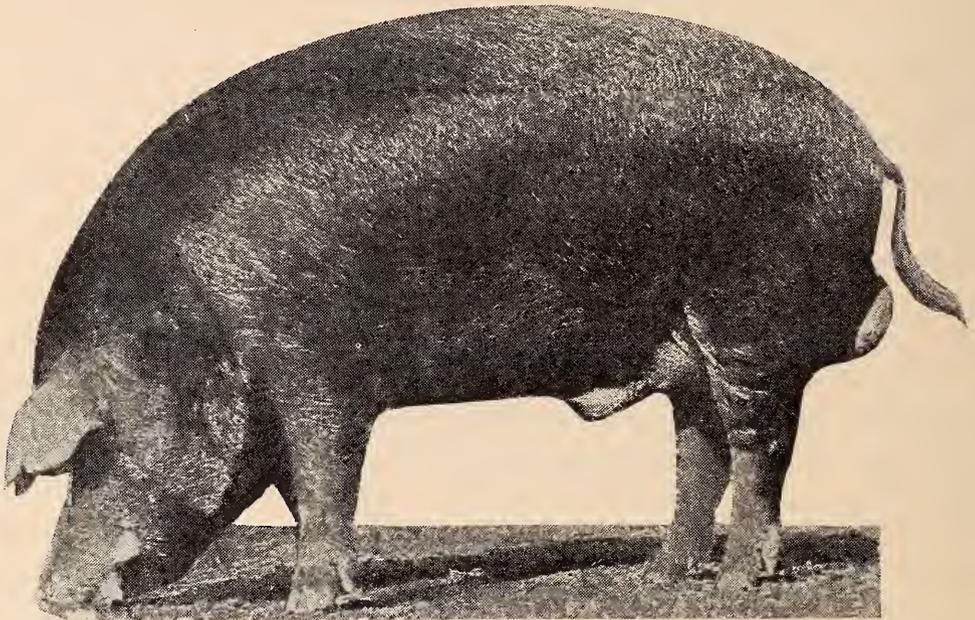
The Defender Strain

The most notable effort in the direction of inbreeding Durocs in late years has been made by McKee Brothers, owners of the boar, Defender, a son of King of Colonels. Defender was a boar of extreme size, that developed into an exceptional sire. In the later years of his service in the McKee herd, the descendants of Defender were inter-bred to form a Defender strain. Animals of this strain have repeatedly proved their worth as showring winners and breeding material.

An illustration of the methods which the McKees followed with the Defender blood is afforded by the pedigree of Pattern Defender 185053a, champion at several fairs in 1920, and a herd boar in the McKee herd. This boar was sired by Dominant Defender 80699a, a grandson of Defender. The dam of Pattern Defender was Model Defendress 179450a, sired by Defender and out of Defender's Dimple 122844a, also sired by Defender. Pattern Defender's pedigree thus carried 50 per cent Defender blood, coming through three crosses within three generations. Other illustrations can be found of McKee-bred animals possessing 50 per cent or more Defender blood, although two and three generations removed from him. The McKee venture into inbreeding was practically without precedent in Duroc Jersey breeding, and stands out as a notable achievement in that field.

In the herds of Ira Jackson and two or three other breeders using the same breeding, some inbreeding has been done, although the practice has not been carried as far as McKee Brothers have gone with the Defender blood. In these herds the blood of Cherry King and Orion Chief has been concentrated in certain animals. Orion Fannie 2d 206584a illustrates this mating. She was sired by Orion Cherry King and out of King Orion Fannie 110760a. Both of these animals were sired by Cherry King out of Orion Chief dams and were therefore three-quarters brother and sister.

This inbred sow, it is of interest to note, became one of the most valuable Duroc Jersey breeding matrons of a recent period. Her



SCISSORS 160137a

One of the twenty leading sires of Duroc Jersey winners from 1920 to 1922. Scissors is sired by Orion Cherry King.

progeny by Walt's Top Colonel have been sensational winners in recent showrings. They include Foust's Top Colonel 135929a, champion at the 1920 International; Fannie's Top Colonel 182963a, junior champion boar at the 1920 National Swine Show, and Fannie's Queen 3d 43478a, junior champion sow at the 1920 National Swine Show. In addition to these, the valuable breeding boar, Colonel Cherry King 6th, was also produced from this inbred sow, bred to Walt's Top Colonel. Few Duroc Jersey sows have a more creditable record than Orion Fannie 2d, produced by inbreeding the Cherry King and Orion Chief blood.

It is of interest further to note that at least two excellent Duroc

Jersey breeding boars of a recent period were produced in exactly the same fashion as Orion Fannie 2d, being the result of the union of two animals sired by Cherry King and out of dams by Orion Chief 13333a. The boars thus produced were Van's Orion Cherry King and Fannie's Orion, both of which had splendid records as sires, numbering among their get a number of state fair champions and many valuable breeding animals. The highly successful records of these two boars and the sow, Orion Fannie 2d, all produced from matings of two animals having three-fourths identical blood, constitute striking evidence of the success which attends the concentration of the blood of meritorious sires.

Inbreeding of Orion Cherry King Blood

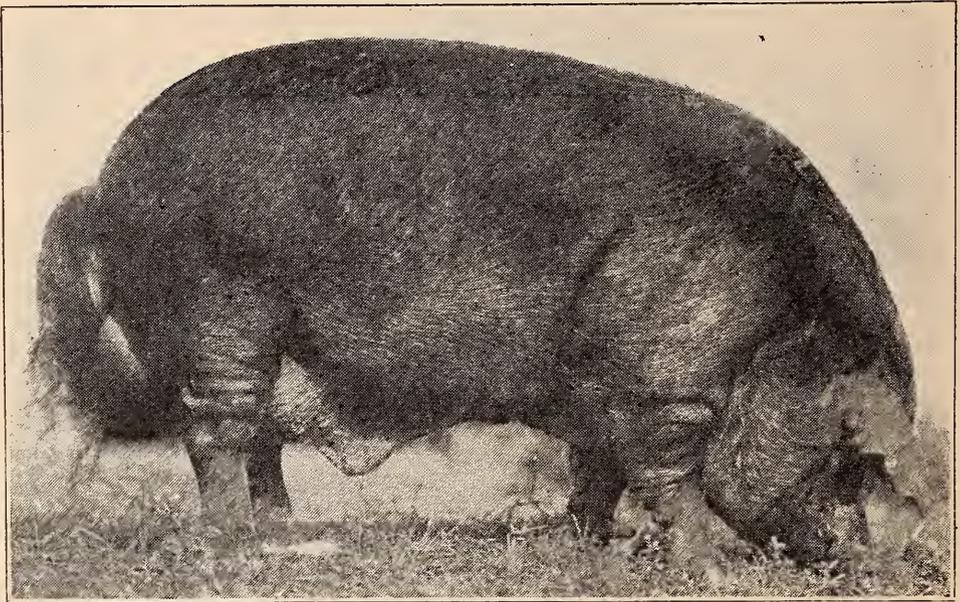
In recent years, a number of excellent Duroc Jerseys have been secured by breeding together the sons and daughters of Orion Cherry King. One of the best known examples of such a mating is the sow, Pine Crest Scissors' Nellie 368840a, first prize sow at the National Swine Show in 1920 and champion at a number of state fairs. Pine Crest Nellie Orion 808430n, a first prize winner at the National Swine Show and at several state fairs, affords another example of inbred Orion Cherry King blood. This sow was sired by Scissors, a son of Orion Cherry King, while her dam was sired by a son of Orion Cherry King.

Here and there an instance can be found of inbreeding among the Sensations, although a systematic effort to inbreed this blood has not yet been made. One of the few examples of Sensation inbreeding is the boar, Giant Sensation 369687n, produced from a son and a daughter of Great Sensation. Giant Sensation proved to be an excellent sire in the Nebraska herd of W. H. Rasmussen.

The examples which have been cited suffice to show that inbreeding is being successfully practiced by a few Duroc Jersey breeders. They indicate an attempt among these breeders to realize the greatest good from the tried bloodlines which they have. There are a number of reasons for believing that these men are headed in the right direction. In the first place, the blood of such eminently successful sires as Orion Cherry King, Pathfinder and Great Sensation is unquestionably of outstanding merit, judged by its performances in many Duroc Jersey herds. It is therefore logical to expect that strains of such value might be made to yield an even greater usefulness were they to be concentrated through inbreeding.

A second reason why Duroc Jersey breeders owning the best animals are now in a position to inbreed lies in the fact that Duroc

Jerseys as a breed are among the least inbred of the common breeds of live stock. It has already been pointed out that there is no one foundation sire which dominates the Durocs. The percentage of common blood in Duroc animals is considerably less than in most breeds. This condition indicates that the Duroc may be expected to respond to inbreeding to a greater extent than breeds in which inbreeding has progressed further. The problem which the breeders of many live stock breeds are facing is that they have but one inbred strain with which to work. This situation prevails in the Shorthorns and is very largely true in the Herefords. The Duroc men, however, have no definitely concentrated strains and are con-



GREAT WONDER I AM 194169n

Great Wonder I Am was a sire of importance in western herds. A valuable inbred strain could very likely have been bred from his offspring.

sequently now in an excellent position to build up a number of them.

The greatest potentialities in Duroc Jersey breeding at present would appear to lie in the direction of developing separate strains from the blood of a number of the best sires of a recent period, selecting for their breeding material the best animals individually which carry a high percentage of such blood. Those breeders who have begun the concentration of an Orion Cherry King strain should continue their work by further intensification. They have every assurance that greater success will follow such a policy, providing inferior animals are not employed.

In like manner, the owners of animals which contain much of the blood of Pathfinder should inter-breed them to secure a Pathfinder strain. Walt's Top Colonel, Great Wonder, Joe Orion 2d and other sires have displayed sufficient evidence of the potency of their blood that an attempt should be made to utilize it more fully through the medium of an inbred strain. This sort of work should be done by men who have the best individuals of these strains. It will, of course, be inadvisable to inbreed any animals that are not carefully selected.

Inbreeding the Sensations

In the Sensations, Duroc Jersey breeders may have a strain which will adapt itself to inbreeding better than any other, in view of the character of its pedigree. The pedigree of Great Sensation contains little more than half of the foundation sire blood (Orion excepted) that is found in other Durocs. There must have been in this boar certain elements, largely foreign to other Durocs, which are of much value. The concentration of this "cold" blood ought to mean much in ultimate possibilities to the Duroc. It will be recalled that the building of the Champion of England strain involved the concentration of much blood that was alien to the established Shorthorn strains of the day. Black Woodlawn was genetically very different from the bulk of the Aberdeen Angus of his time, a fact which may possibly explain the success with which he and his inbred descendants have been crossed upon Aberdeen Angus of different blood. In the development of the large type Poland China there have been introduced in the Expansion and A Wonder blood two elements which differed markedly from the balance of Big Type breeding. Preceding chapters have dwelt upon the fortunate results which followed the infusion of this alien blood. Since outstanding strains which differ materially from the body of a breed are usually of great value, it would appear that an inbred Sensation strain should be worth much to the Duroc Jersey breed.

The greatest future improvement in the Duroc Jersey and other breeds of swine will undoubtedly come at the hands of breeders who locate the prepotent sires of the breed and then proceed to realize the maximum benefits of the excellence of these sires by concentrating their blood. Among many breeders there seems to be a belief that any intense inbreeding will lead to disaster. Observation of the effects of such inbreeding as has been done does not bear out the predictions of dire results, however. A successful outcome has resulted from inbreeding the Expansion blood in the

Poland Chinas, the Defender blood in the Duroc Jerseys and the Longfellow strain in the Berkshires, indicating that where the inbreeding is practiced with sound stock there is no need to fear disastrous results.

On the whole, the Duroc Jersey breed would appear to have a most promising future. Breeders of Durocs are in a favorable position to develop a number of concentrated strains of great value in breed improvement. There is an excellent opportunity to form such strains from the descendants of Orion Cherry King, Pathfinder and Great Sensation, and a few other sires. Future sires of equal merit may be disclosed. The selection and intensification of such strains and their subsequent crossing should result in the production of Duroc Jerseys of a high order of merit.

Breed Building in the Future

CHAPTER 40

BREED BUILDING IN THE FUTURE

THE analytical consideration of pedigrees describes the mechanics of breed building. At the same time, it is a graphic and comprehensive record of the various significant steps which have transpired in the history of a breed. An analysis of the bloodlines of a breed shows how in the past a few great breeders have utilized bloodlines of proved value in the establishment of definite breeds or strains. No clearer record of the successive phases of the evolution of the Shorthorns has ever been compiled than is afforded by the pedigree analyses of Shorthorns at various points of their breed development, showing in the first era high percentages of the Colling sire, Favorite; in the second era high percentages of the Bates bull, Belvedere, or the Booth sire, Pilot, and in the third and present phase important amounts of the blood of Champion of England, foremost among the sires used by Amos Cruickshank. In like manner, a more eloquent tribute can not be accorded the work of Gudgeon & Simpson than to cite the percentages of the blood of their great bull, Anxiety 4th, in the Hereford herds of today.

Advantages of Analytical System

The analytical consideration of pedigrees in terms of important foundation animals produces a new conception of breed history. It portrays the development of a breed, step by step, marking the introduction of each new element and measuring its importance. The analysis of the bloodlines of a breed has a descriptive quality which admirably supplements the names, dates, places and events connected with breed history.

The best estimate of the pedigree of an animal can be obtained only when the complete ancestry of the animal for a number of generations back is taken into account. The number of generations can not be arbitrarily fixed. In general, however, it may be said that they should extend back to the point where a definite change has taken place in the development of that breed. In the Shorthorns, a knowledge of pedigrees back to the origin of the Scotch type is needed, while in Poland Chinas it is of value to know the relation of modern animals to those sires which were responsible for the large type now bred by Poland China breeders.

The information afforded by the pedigree analysis in terms of foundation sires provides material for genetic study and at the same time supplies information which can be put to practical use by the breeder of live stock. It is worth while for the breeder to know that he has an animal that represents concentrated breeding of a certain strain or that he has animals that are strikingly lacking in the blood of a certain strain. Such knowledge, as well as a knowledge of the two or three immediate generations of ancestry of an animal, has a practical bearing upon the question of breeding policies. Breeders should consider an adequate background of pedigree information an essential part of their equipment.

Breeders Need Pedigree Knowledge

It should be the duty of animal geneticists to work out carefully the analysis of the bloodlines of every useful breed of live stock. Such studies are needed by the men who aim to breed animals rather than merely to multiply them. The few men who do the really constructive work of building and maintaining live stock breeds can apply to advantage the information afforded by studies which embrace more than a superficial knowledge of pedigrees. Every animal of a pure breed represents the cumulative result of many generations of breeding. It is of advantage to the breeder to have a maximum of information relative to the complete ancestry of an animal. This is furnished most conveniently by an analysis of the pedigree in terms of the principal foundation sires of the breed.

A further value of the foundation sire pedigree analysis is that it helps to correct the fallacious pedigree doctrines which have worked havoc in some of the breeds. Comparison of pedigrees by the analytical method effectively discloses the weakness of the too popular method, in certain breeds, of classifying pedigrees according to the direct female line of ancestry. A complete analysis of a pedigree shows that the blood of the much-vaunted foundress of a female tribe is usually found in amounts of less than one per cent in the pedigree of a modern animal, and that in no case has the female ancestress had more than a fraction of the influence of one or more important foundation sires. The pedigree analysis also exposes the misleading tendencies of placing undue emphasis upon the direct male line of descent with little attention to the balance of the pedigree.

Geneticists have long felt the need of a simple means of measuring quantitatively the degree of inbreeding in a pedigree. Students of animal breeding have had inadequate machinery with which to

analyze pedigrees in a uniform manner that would afford results suitable for comparative study.

The method followed in *The Evolution of Breeds*, of analyzing a pedigree in terms of foundation sires, expresses much the same information that is conveyed in the coefficient of inbreeding worked out by Dr. Raymond Pearl, eminent biologist of Johns Hopkins University, formerly of the University of Maine. Pearl's coefficient of inbreeding expresses the relation between the actual number of different ancestors which an animal has in any given generation with the maximum number of ancestors possible in that generation.

The duplication of one ancestor in the third generation of an animal's pedigree in which there are eight ancestors fixes the coefficient of inbreeding for that animal at 12.5 per cent. Similarly, an animal whose pedigree shows 1,580 duplications of ancestry in the twelfth generation, in which the maximum number of ancestors is 4,096, has a coefficient of inbreeding of 38.57 per cent.

Coefficients of Relationship

A later and more satisfactory method of determining the coefficients of inbreeding and relationship has been worked out by Dr. Sewall Wright, senior animal husbandman of the Bureau of Animal Industry, United States Department of Agriculture. Wright's coefficients are more adequate than the Pearl method because they differentiate between the percentages of homozygosis in the irregular systems of mating, as found in actual pedigrees, and in the regular systems of inbreeding, such as brother-sister mating.

Wright's coefficient of relationship in terms of any one animal, while somewhat more scientific than the percentage of blood system which has been used to such an extent in this book, ordinarily gives about the same results in actual practice when the foundation sire begins to appear four or more generations back in the pedigree. In addition to the fact that it expresses practically the same thing as the coefficient of relationship, the blood percentage system has an advantage in that it may be more easily applied and understood by the layman. It is an easier method of expressing practically the same information that is afforded by coefficients of inbreeding and relationship.

Inbreeding is unquestionably the most powerful tool which the breeder of animals has at hand. There is no other method of so fully utilizing the excellence of an individual or a strain. Inbreeding is certain to intensify the characteristics of the blood which is

common to the animals mated. If these characteristics are desirable, inbreeding will assure the transmission of the excellent qualities, while if the characters are bad, the results of inbreeding will be bad and will be reached more quickly than in random breeding. The inbreeding of a good strain will make it possible to produce superior animals much more quickly than can any system of selecting and mating unrelated animals. The behavior of strains when subjected to inbreeding is the surest test of the usefulness of those strains, since inbreeding is a weeding-out process which distinguishes between good and bad strains.

Many Inbred Sires Among Foundation Animals

It will have been noted that many of the sires considered in the chapters on foundation sires in *The Evolution of Breeds* were inbred. Anxiety 4th, Royal Duke of Gloster, Cumberland, Black Prince of Tillyfour and Chief Price were inbred sires, while Champion of England was sired by an inbred bull and was himself inbred to a considerable extent. The inbreeding of the descendants of these sires has likewise received considerable attention in preceding chapters. As illustrations of the effects of inbreeding, these are examples which the breeder can not afford to ignore.

In the development of four of the five breeds considered in this book, inbreeding has had a very considerable part, while in the Duroc Jerseys the concentration of certain bloodlines in a few herds has given rise to the most successful results. The foundation of the Shorthorn was laid with animals that were intensely inbred, as compared to ordinary pure-bred live stock. Among the foundation Shorthorns were animals which contained as much as 93.75 per cent of the blood of the bull, Favorite, while practically all of them had at least 50 per cent Favorite.

The Kladrub breed of horses, widely celebrated in central Europe for beauty and action, has been very closely inbred for centuries, according to the accounts of European students of animal breeding. The Kladrub horses descend from Spanish carriage horses which were taken to the Austrian court in the sixteenth century. For over three hundred years the breed was maintained for the use of the court, and there is practically no evidence of the introduction of outside blood during that time, notwithstanding that the breed probably has never numbered more than a hundred individuals. As might be expected, these horses show a most remarkable uniformity of type.

While there are many instances of successful inbreeding, it must be recognized that some inbreeding experiments have turned

out disappointingly. Lord Derby, of England, is said to have inbred race horses by brother and sister matings for nine generations with bad results, and J. Cossar Ewart, the British investigator, bred a strain of goats as closely as possible for about nine generations with distinctly bad results. In these cases, the inbreeding apparently intensified weaknesses which were present in the stock. The bad results frequently attributed to inbreeding are usually the effect of mating animals having a relationship in defects, rather than a relationship of blood.

Breeders must bear in mind, however, that in a great majority of cases, continued inbreeding will be accompanied by a decline in vigor. Sometimes the decrease will be slight and gradual, and again it may be quite marked. The breeder should not become alarmed when this tendency begins to appear, since a moderate decline in vigor is not in itself a sign that the inbreeding is disastrous. If the inbred strain has merit, the original vigor will reappear when the strain is crossed with foreign blood, particularly another inbred strain. This has repeatedly been proved by the experiments of Wright with guinea pigs and East, Jones, Kiesselbach and many others with corn.

Has Inbreeding Gone Far Enough?

Have the possibilities of inbreeding in the larger animals been fully explored? A consideration of a number of experiments in inbreeding the smaller mammals suggests that, in all probability, breeders of live stock have as yet attained only a small part of the improvement which can be gained through intelligent inbreeding. In laboratory tests with rats and guinea pigs, inbreeding has been carried to lengths which far surpass any inbreeding that has been done with higher animals, with some remarkable results which are worthy of the study of every thoughtful live stock breeder.

An inbreeding experiment of much significance to the field of animal breeding is that undertaken in 1910 by Dr. Helen Dean King, of the Wistar Institute, Philadelphia. The original stock of the King experiment was a litter of four albino rats, two males and two females. From these two pairs more than ten thousand inbred rats were produced during the following six years in twenty-two generations. In every case the matings were of brother and sister in the same litter. The experiment was undertaken for the purpose of determining whether inbreeding alters the sex ratio, and in each generation the breeding stock chosen to produce the following generation was selected with the question of sex determination foremost in mind. In so far as it was possible without con-

flicting with the primary purpose of the investigation, the rats were selected also for size, vigor and prolificacy.

At the end of six years, when the animals had been intensely inbred for twenty-two generations, Doctor King found that not only had there been no decline in vigor, but that on the average the inbred rats were somewhat superior in size and fecundity to the stock rats similar to the originals of the experiment. Careful weighings of the inbred rats and stock rats at the same ages disclosed that growth in both classes was about the same during the first sixty days after birth. After that time, however, the inbred rats exceeded the stock rats in weight at any age. After 150 days, the inbred males were 15 per cent heavier than the stock males, while there was a difference of three per cent in favor of the inbred females over the stock females. The average litter of stock albino rats was found to be seven, while an average of more than 1,200 litters of inbreds was 7.4 young per litter.

It must be remembered that the selection of the breeding stock in the experiment as to size and fecundity was only secondary to the selection for sex determination. In view of this, the showing of the inbreds in the King experiment is the more remarkable. While in other similar experiments the inbreeding has usually been accompanied by a decline of varying extent in vigor and fertility, the King experiments show that inbreeding is not necessarily followed by decreased size, vigor and fecundity, providing the original stock is sound and care is taken to breed only from the best animals.

Wright's Experiment With Guinea Pigs

Another important experiment in the inbreeding of small animals is that performed with guinea pigs by Dr. Sewall Wright, in his research work with the Bureau of Animal Industry of the United States Department of Agriculture. Doctor Wright inbred twenty-three families of guinea pigs, starting with pairs of brothers and sisters and continuing such matings through nineteen generations. His work has now continued for fifteen years, and his experiments have involved more than 34,000 animals. The results of Doctor Wright's work, the most comprehensive and illuminating animal breeding experiment ever undertaken, are published in Bulletins 1090 and 1121 of the United States Department of Agriculture. Every student of animal breeding should be familiar with these experiments.

After about four years of inbreeding in the Wright experiment, the inbred families of guinea pigs began to decline in vigor. In most of the characters studied, this decline became more marked

as the inbreeding progressed. After thirteen years of inbreeding, the control, or unrelated, stock was about 10 to 20 per cent superior in most characteristics, such as weight at birth and at maturity, growth, size of litter, and resistance to disease. In the number of young produced in one year, the inbred stock was inferior to the control stock to a greater degree than in the case of the other characteristics.

While Doctor Wright noted evidences of a genetic decline in vigor as a result of inbreeding, he also observed a marked differentiation between families with respect to their reactions to the inbreeding. He found, for instance, that some inbred families showed a pronounced tendency in the direction of producing small litters, while others successfully reared large litters. Some families raised a large percentage of their young, while in others the mortality rate was high. Certain families maintained their body weight while others declined markedly. The differences in the several characteristics of the various families were too great to be accidental. Moreover, the differences increased as the inbreeding progressed and the families became more homogeneous in blood. In addition, such characters as color pattern became firmly fixed in each family, and in certain families every individual would breed true for a given color and pattern. In a few cases, families showed a tendency to produce abnormalities, such as a fourth toe on the hind feet.

The Crossing of Inbred Strains

While the intensely inbred guinea pigs had less vigor than the original stock of the experiment, Doctor Wright found that when individuals of two of these inbred families were crossed, the resulting animal was superior to either inbred parent. Observation of a large number of such crosses revealed that a larger percentage of the litters from the crossing of two inbred animals of different strains were born alive than was the case in the matings of related animals. A greater proportion of the cross-bred offspring were raised to maturity, the cross-bred young were slightly heavier at birth, and gained more rapidly between birth and weaning time. Moreover, these cross-bred offspring of inbred parents matured earlier, produced larger litters with more regularity and raised more young than the inbreds. In the case of adult weight, the improvement in the cross-breds over their inbred parents was 12 per cent, while in resistance to tuberculosis, the cross-breds had an advantage of 20 per cent. The cross-breds were in every respect superior to either of their inbred parents, and were very nearly equal to the control stock from unrelated ancestry.

The experiment was continued by mating cross-breds, representing two inbred families, to other cross-breds from two other inbreds. Animals from the first cross between two inbreds were also mated to a third inbred. Most of the individuals obtained from this sort of mating were not only superior to their inbred ancestors, but were more fertile and more vigorous in nearly every characteristic than the unrelated control stock, similar to the original animals of the experiment. Especially outstanding animals were secured from the mating of inbred males with cross-bred females produced from the union of two inbred animals of different strains.

The continued inbreeding of these guinea pig families for a number of generations evidently developed a degree of homozygosity which enabled them to fix their characteristics with intensity. When two or more of these inbred families were combined in the same animal by crossing, there was a tendency for the dominant characters of both families to appear in the resultant offspring, thus producing an animal superior to either inbred, and in most cases equal or superior to the offspring of random breeding, as represented in the control stock.

Application to Live Stock Breeding

It would appear that the Wright experiments with guinea pigs have an important bearing upon live stock breeding practice. It would not be practicable, of course, to inbreed the larger animals for twenty generations, as has been done with rats and guinea pigs, but there is every reason to believe that sound strains of any of the larger animals will respond favorably to a greater degree of inbreeding than has been practiced with them heretofore. The numerous instances where moderate inbreeding in domestic animals has proved to be a short cut to improvement are sufficient to suggest that breeders have not yet fully tested the possibilities of the method.

The truly inbred strains now to be found within the breeds of domestic animals are really very few, and these strains are only mildly inbred when compared to the maximum inbreeding possible. In the Scotch Shorthorns, all individuals are a part of the Champion of England strain, and no other inbred strain has been developed. The Anxiety 4th-North Pole strain is the only inbred bloodline in the Hereford breed, although all Herefords are not of this strain. A number of other breeds, examples of which are the Aberdeen Angus and Poland China, represent a combination of elements rather than a single strain. In either case, the constructive breeder has a limited range in selecting animals for

breeding purposes. In the case of breeds with but one strain, he has no other strain for use in crossing, while in a breed which is composed of a heterogeneous mixture of strains, there are no concentrated bloodlines with which to work.

There is a real need for a number of inbred strains in every breed of live stock. The number of such strains should be limited only by the number of outstanding, prepotent sires which appear in these breeds. The need of the Shorthorn breed today is for inbred strains of the blood of Whitehall Sultan, Villager and other sires of notable value. Hereford breeders could well use separate strains concentrated in each of such worthy sires as Beau Brummel, Lamplighter, Beau Donald and Beau Mischief. The Aberdeen Angus people should lose no time in grasping the opportunity open to them of developing an inbred Black Woodlawn strain. Breeders should hasten to preserve and utilize by inbreeding the excellent qualities of every outstanding animal that appears.

Use Prepotent Sires to the Limit

The most direct route to improvement of a breed lies in effecting the maximum concentration of the blood of the most prepotent sires. The fullest use of the prepotency of a sire of assured merit should be secured by inbreeding him to his daughters, granddaughters and other female descendants as long as he lives. When the sire himself is no longer available, the inbreeding should continue with those of his descendants which are most vigorous and most desirable in type, using matings of brother and sister. This procedure should develop inbred strains of the utmost value to their breeds. It will be recalled that this method of breeding a sire to his progeny and then inter-breeding the descendants was employed by Charles and Robert Colling in laying the foundations for the modern Shorthorn.

Future improvement of our live stock breeds will almost surely come through the selection and inbreeding of the best strains. The requirement of future breeders will be for strongly inbred animals, which are pure-breds within pure-breds, and which, in fact, are infinitely more superior to ordinary pure-breds than such pure-breds are to grades. It will be necessary to have a number of such inbred strains in each breed in order that by crossing combinations may be made of valuable characteristics, all of which are not possessed by one inbred strain. First and second crosses among such inbred strains may be expected to show a vigor equal to the stock from which the inbreds were started, while certain crosses which combine the most valuable characters will be found superior to the

original stock. The selection of these best cross-breeds will then provide breeders with seed stock of a higher grade than that with which they started. From this improved cross-bred stock new strains can then be selected and inbred, thus repeating the process. At the same time, however, those breeders who develop the inbred strains should by all means preserve some animals of the inbreds which prove to have the most value. Theoretically, there should be at least two groups of breed improvers within the ranks of the followers of each breed, one of which would inbreed the most desirable strains. The other group would cross the inbred strains and determine the most satisfactory combinations for producing an improved type.

It is not suggested, of course, that these are methods which may safely be followed by the average live stock breeder. They are suited to the breeder who is in a position to do really constructive work. To qualify for this sort of breed improvement, a breeder must first be imbued with patience, because the results will not be realized within a generation or two. He must not become alarmed if his stock decreases in vigor when the inbreeding has progressed for some time, but must remember that the subsequent crossing will restore the vigor, providing the stock is sound. He must, furthermore, be a judge of pedigrees as well as of type and must have the ability to recognize the desired characters which he wishes to incorporate in his inbred strains. The men who are in a position to do this work are probably relatively few. There should be, however, within the ranks of every breed a few men who have the vision and the courage essential to such an undertaking. In the hands of such men lies an opportunity of working great future improvement in our breeds of domestic animals.

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