

UNIVERSITY OF MISSOURI

COLLEGE OF AGRICULTURE

AGRICULTURAL EXPERIMENT STATION

BULLETIN 217

A Comparison of Holstein-Friesian Sires

Based on the Average "Mature Equivalent" Fat Production of the Daughters



Ten daughters of King Fayne Ormsby, University of Missouri Herd Sire, whose first eleven daughters to freshen produced on official test an average of 20,668 pounds of milk containing 691 pounds of fat when converted to a mature basis.

COLUMBIA, MISSOURI

JULY, 1924

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A Comparison of Holstein-Friesian Sires

Based on the Average "Mature Equivalent" Fat
Production of the Daughters

C. W. TURNER AND A. C. RAGSDALE

ABSTRACT.—This bulletin reports a comparison of 229 Holstein-Friesian sires with reference to their ability to transmit the capacity for butterfat production as indicated in the Advanced Registry records of their daughters. In order to place records made at various ages on a comparable basis the authors worked out the relation between age and fat production and used this factor to reduce all records to a "mature equivalent" production. The bulletin also includes genealogical charts showing the pedigrees of all the 229 sires compared. Supplementing these charts is an alphabetical list of the dams of the sires included in the genealogical charts together with their sires and dams.

The inheritance of visible characters such as coat color and the various factors that govern conformation among dairy cattle is fairly easy to determine, but characters such as the ability to produce large quantities of milk and fat which cannot be accurately judged by sight are more difficult to study.

In the case of milk secretion, many factors affect the total yield and only when kept under favorable conditions of feeding and management is the maximum inheritance of the lactating dairy cow fully realized.

The desirability of recording the milk and fat production of Holstein-Friesian cows was recognized by the early breeders. The seven-day test became popular and was used extensively at an early date, but it was not until the eighteenth volume of the Advanced Register published in 1907 that yearly records were included. Since that time the number of entries of yearly records has increased rapidly. These records offer an opportunity for a study of the potential inheritance of the ability to produce milk and fat by individuals and families of the breed.

In comparing yearly records made during a period of almost twenty years, it should be pointed out that undoubtedly cows making records 15 and 20 years ago were not kept under the same favorable conditions of feeding and management as are cows making records at the present time. Therefore, the older sires are at a disadvantage in comparison with sires whose daughters have made records in recent years. This factor cannot be measured but should be considered in studying the data to follow.

Because of the influence of feeding and management on production, certain sires may not have shown their real transmitting ability due to the fact that the daughters were not properly cared for. In general, however, cows are well fed and cared for when on test.

The influence of the dam on the production of the daughters is believed to be of equal importance to that of the sire. The daughters of a sire may show

a high average production due to the fact that he was bred to cows of large productive ability. The comparison of the records of the dams with those of the daughters of the sires, while of the greatest importance in indicating the real merit of both dams and sires, is not entirely satisfactory at present because very few yearly records on the dams are available for comparison. This is especially true of the older animals. At a later date it may be possible to secure sufficient pairs of dams and daughters to make such a comparison reliable.

It is evident that there are many factors which may depress the potential inheritance of the ability to produce milk and fat and, therefore, the data may not represent the actual inheritance or transmitting ability of the sires considered. On the other hand sires which stand high in the list, indicating that the average production of their daughters is relatively large, must either themselves possess the quality of transmitting producing ability to their daughters, or they were bred to cows of exceptional ability, or both.

Until information on the dams is available it is suggested that consideration be given to the number of daughters included. The larger the number of daughters the less will be the possibility that the dams were selected and above average ability.

THE FACTOR OF AGE

It is well known that the production of cows kept under the same conditions change with age. Because of the change of production with age, the minimum requirements for entrance to the advanced registry have until recently varied from 250.5 pounds of fat at two years, to 360 pounds of fat at five years. The minimum requirements were simply arbitrary standards and were not based on actual records showing the relation between age and fat production. The records of production now included in the Advanced Registry are made at all ages ranging from less than 2 to more than 18 years.

To determine the actual change of fat production with age, the average yearly production of fat throughout the entire productive life of the Holstein-Friesian cow was determined from the Advanced Registry. These data are subject to the objection that the minimum requirements eliminate the poor producers and, therefore, the results may not be representative of the breed as a whole. It is also true that due to declining productive ability cows as they grow old enter the Advanced Registry with increasing difficulty. The result is that the cows of advanced ages are more or less selected since only cows of exceptional ability as producers are usually tested at advanced ages. It may be said, however, that the data at least represent the change with age of Advanced Registry cows.

The results of this study are shown in Table 1. These values are also plotted in figure 2. Due to the irregularity of the values for Holsteins after nine years caused by the comparatively small number of animals the position of the declining segment of the curve in figure 2 was determined by the use of the average yearly records of all breeds as shown in Table 1 when converted to a percentage basis.

The data presented show that fat production gradually increases up until about seven years of age and then gradually decreases with the onset of old age.

The records of yearly fat production of the daughters of the sires included in this study, made at varying ages were converted to their mature equivalent

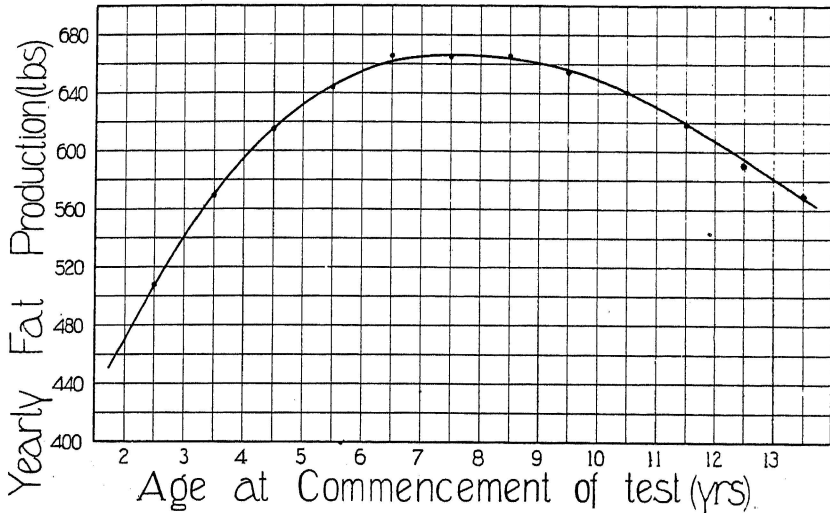


Fig. 2.—The relation between age and fat production of Holstein-Friesian cattle. Points are the observed values.

TABLE 1.—THE RELATION BETWEEN AGE AND YEARLY FAT PRODUCTION OF HOLSTEIN COWS

Age (years)	365-day Records		Weighted Average of all Breeds—		
	Number of cows included	Fat 365 days (lbs.)	Number of cows included	Average yearly fat production (lbs.)	Fat expressed as per cent maximum production
1.7	----	---	1,275	355.4	64.6
2.5	2,454	508	15,001	404.9	73.6
3.5	1,523	570	8,184	462.0	84.0
4.5	1,238	615	6,349	497.1	90.4
5.5	1,116	644	4,823	424.7	95.5
6.5	835	666	3,609	544.8	99.1
7.5	583	665	2,579	549.4	100.0
8.5	396	659	1,776	544.9	99.1
9.5	232	654	1,121	533.2	97.0
10.5	111	652	609	526.4	95.8
11.5	59	650	333	507.9	92.4
12.5	37	595	179	485.3	88.3
13.5	11	569	91	469.8	85.5
14.5	4	550	33	440.7	80.2
15.5	4	475	22	434.8	79.1
16.5	2	500	10	463.6	----
17.5	----	---	5	432.4	----
18.5	----	---	2	412.0	----
19.5	----	---	0	----	----
20.5	----	---	1	375.0	----
Totals	8,605		46,002		

*Compiled from the records of Register of Merit Jersey, Record of Merit Shorthorn, Advanced Register Ayrshire, Guernsey, and Holstein cattle.

by multiplying the actual yearly record of the cow by the age-conversion factor for the age the record was made.

The age-conversion factors were determined as follows: figure I shows the average production at $2\frac{1}{4}$ years, (average of 2 to $2\frac{1}{2}$ years) to be 487 pounds of fat and at $7\frac{1}{2}$ years (time of maximum production or maturity) to be 667 pounds of fat. The ratio of $\frac{667}{487}$ is 1.365 or the age conversion factor for Holstein heifers between 2 and $2\frac{1}{2}$ years of age. In the same way, by determining the ratio between maximum production and production at six-month age intervals, conversion factors for all ages were determined. The results are shown in Table 2.

TABLE 2.—AGE CONVERSION FACTOR HOLSTEIN-FRIESIAN COWS

Age	Factor	Age	Factor
Under 2 years	1.473	8 - $8\frac{1}{2}$ years	1.003
2 - $2\frac{1}{2}$ years	1.365	$8\frac{1}{2}$ - 9 years	1.005
$2\frac{1}{2}$ - 3 years	1.269	9 - $9\frac{1}{2}$ years	1.011
3 - $3\frac{1}{2}$ years	1.196	$9\frac{1}{2}$ - 10 years	1.018
$3\frac{1}{2}$ - 4 years	1.140	10 - $10\frac{1}{2}$ years	1.031
4 - $4\frac{1}{2}$ years	1.099	$10\frac{1}{2}$ - 11 years	1.046
$4\frac{1}{2}$ - 5 years	1.066	11 - $11\frac{1}{2}$ years	1.064
5 - $5\frac{1}{2}$ years	1.041	$11\frac{1}{2}$ - 12 years	1.085
$5\frac{1}{2}$ - 6 years	1.023	12 - $12\frac{1}{2}$ years	1.106
6 - $6\frac{1}{2}$ years	1.009	$12\frac{1}{2}$ - 13 years	1.131
$6\frac{1}{2}$ - 7 years	1.003	13 - $13\frac{1}{2}$ years	1.156
7 - $7\frac{1}{2}$ years	1.000	$13\frac{1}{2}$ - 14 years	1.204
$7\frac{1}{2}$ - 8 years	1.000	14 - $14\frac{1}{2}$ years	1.227

THE FACTOR OF STAGE OF LACTATION

During recent years, the 305-day test has become popular and many long-time tests are closed at that time. A few other records for one reason or another are not completed, but sufficient fat is produced for the cow to gain entrance to the Advanced Registry. In order to compare such records with

TABLE 3.—CONVERSION FACTOR FOR COWS MILKED LESS THAN 365 DAYS—FAT BASIS

Lactation month	Days on test	Conversion factor
1	30	10.21
2	60	5.05
3	90	3.39
4	120	2.59
5	150	2.10
6	182	1.78
7	212	1.56
8	243	1.39
9	274	1.26
10	305	1.15
11	335	1.07
12	365	1.00

365-day records, a conversion factor was used for all records of less than 365 days. A study of the rate of decline of fat production with the advance of the period of lactation indicates that fat production declines in an orderly way

after maximum production is reached. The conversion factors presented in Table 3 are based on the average rate of decline of over 3000 lactation periods. The conversion factor is the ratio of the total production during 365 days to the production at monthly intervals.

To determine the estimated 365-day production of fat for cows on test for less than that period, the actual production in 305 days for example, is multiplied by the factor 1.15 or the conversion factor corresponding to the number of days on test.

STUDY OF HOLSTEIN-FRIESIAN SIRES

Using the methods described the daughters of all Holstein-Friesian sires having ten or more daughters with long-time records, were converted to a "mature equivalent" 365-day fat production. The results are presented in Table 4.

The year of birth of the sires is given to enable the reader to determine the approximate time during which the records of the daughters were made. While it is impossible to properly evaluate the significance of the number of daughters on the "mature equivalent" of the sires listed in Table 4, consideration should be given the sires with large numbers of daughters. However, the probable error of the average "mature equivalent" record decreases as the square root of the number of daughters. Therefore, the probable error in the average of a sire with 16 daughters is only twice as great as that of one with 64 daughters.

The effect of the minimum entrance requirements in eliminating certain of the daughters of sires can be seen in the distribution of the records of the daughters of each sire. The normal distribution of daughters where selection is not practiced, should be symmetrical about the average. Thus the 51 daughters of King of the Pontiacs show a symmetrical distribution with 5 in the 400-to-600 pound class, 22 in the 600-to-800 pound class, 21 in the 800-to-1000 pound class, and 3 in the class over 1000 pounds. This distribution would indicate that the minimum entrance requirements had little effect on the entrance of the daughters of King of the Pontiacs.

In contrast, the distribution of the 52 daughters of Woodcrest Tehée, indicates that the minimum entrance requirements prevented many of his daughters from being admitted to the Advanced Registry. Instead of the records of the daughters being symmetrically distributed there were in the class from 400-to-600 pounds 30 individuals, in the 600-to-800 pound class 21 individuals, and the 800-to-1000 pound class, only 1, and none in the class over 1000 pounds. According to the normal expectation there would be a considerable number of animals under 400 pounds. These daughters either failed to meet the requirements or were not tested perhaps because it was expected that they would be unable to meet the requirements. In such a case when there are a reasonably large number of daughters which do not show a normal distribution it indicates that the average mature equivalent production of the sire is higher than it would be if the minimum requirements were not in effect. The distribution of the daughters of the sires in the latter part of Table 4 should especially be studied in this connection.

GENEALOGY TABLES

In order to study the transmission of the character "fat production" from one generation to the next, genealogy charts have been prepared show-

ing the pedigrees of all sires included in Table 4. Starting at the left the succeeding generations of animals on the sires' side are given. The name and registry number of each sire is included followed in parentheses by the number of yearly record daughters with their average "mature equivalent" fat production. Directly below each sire is placed the name and number of his dam with her highest "mature equivalent" yearly fat production if she has been tested. Supplementing the information in Table 4 the average production of daughters of sires included in the genealogy table with less than ten daughters is also given. While it is recognized that these figures are of less value due to the limited number of animals included, they are helpful in studying the transmission of production from generation to generation as shown later in the case of the progeny of King Segis.

Because the dam makes an important contribution to the inheritance of her son and through him to her granddaughters it is important to study the genealogy of the dam. No satisfactory method of presenting this information in chart form has been found. Instead, in Table 5 there are presented in alphabetical order a list of the dams of sires included in the genealogy chart with their sires and dams. By cross-reference through the dam's sire back to the genealogy chart many interesting relationships between the various families can be found.

It would take too much space to give a full discussion of the transmission of production through the sons of the large number of the famous cows of the breed or of those which have held world's records. But as an example, Colantha 4th's Johanna with a mature equivalent record of 1,001 pounds of fat, is the dam of two famous sires, Colantha Johanna Lad who has 28 daughters with an average of 764 pounds of fat and Colantha Johanna Champion with 16 daughters showing an average of 688 pounds of fat. Finderne Pride Johanna Rue, a former world's champion, with a production of 1225 pounds of fat (mature equivalent), is the dam of Finderne Pride Fayne, sire of 22 daughters with an average of 788 pounds of fat, and Finderne Pride Johanna Korndyke, sire of 24 daughters with an average of 778 pounds of fat. The sons of Tilly Alcartra, Duchess Skylark Ormsby, and many other famous cows might be compared in a similar manner.

The genealogy tables make possible the study of the prepotency of certain famous sires. Are the breeders of Holstein cattle constructive breeders? Is each succeeding generation better than the last? The progeny of King Segis offers an opportunity for the study of these questions. The average production of the 253 granddaughters of King Segis through his 15 sons is 682 pounds of fat. In the next generation 24 grandsons are the sires of 399 great-granddaughters with an average production of 694 pounds of fat. In the fourth generation from King Segis there are 19 great-grandsons the sires of 268 great-great-granddaughters with an average of 733 pounds of fat. Thus it will be seen that the breeders of this family, which of course includes the blood of many other families, are making steady progress in each succeeding generation.

The greatest problem of the constructive breeder of dairy cattle is to increase the production of his herd and maintain the true type of the breed. This is done principally through the careful selection of a sire to mate to the cows in the herd. It is hoped that a careful study of the data contained in this bulletin will make the selection of a herd sire which is truly bred-for-production less difficult.

TABLE 4.—COMPARISON OF THE MATURE EQUIVALENT FAT PRODUCTION OF THE DAUGHTERS OF HOLSTEIN-FRIESIAN SIRES

Name and registry number of sire	Year of birth	No. of yearly record daughters	Av. mature equivalent fat prod. (lbs.)	Daughters with mature equivalent record of			
				400 to 599 lbs.	600 to 799 lbs.	800 to 999 lbs.	Over 1000 lbs.
Sir Ormsby Skylark, 47010.....	1907	14	920	0	2	9	3
Dutchland Creamelle Korndyke Lad, 112174.....	1912	17	901	1	9	5	2
Sir Pietertje Ormsby Mercedes 37th, 110160.....	1912	36	883	1	12	14	9
Beets Walker, 109385.....	1912	11	861	0	3	7	1
King Korndyke Pontiac 20th, 188174.....	1916	10	857	0	4	5	1
Ormsby Korndyke Lad, 102469.....	1910	30	840	*2	10	9	8
King Segis Pontiac Count, 93999.....	1911	27	834	3	8	10	6
King Segis Pontiac Konigen, 97988.....	1912	27	833	1	9	15	2
King Mutual Korndyke, 136329.....	1914	11	826	0	6	4	1
Sir Korndyke Ormsby Piebe, 132720.....	1914	14	816	1	7	2	4
Vanderkamp Segis Pontiac, 157331.....	1915	10	815	0	5	4	1
King Valdessa Pontiac, 189344.....	1916	13	814	0	8	4	1
Avon Pontiac Echo, 203055.....	1913	20	813	1	6	12	1
Colantha Johanna Lad 8th, 77686.....	1910	24	810	0	14	7	3
Sir Veeman Korndyke Pontiac, 156051.....	1915	13	806	0	8	3	2
Fairview Pontiac Beets Korndyke, 94943.....	1912	14	798	0	8	4	2
King Quality, 88237.....	1911	11	796	1	5	5	0
King Segis Alcartra Prilly, 192705.....	1915	15	795	3	5	5	2
Sir Johanna Ruth Fayne, 53055.....	1907	12	793	1	5	5	1
Matador Segis Walker, 148839.....	1913	42	790	4	19	15	4
Prince Riverside Walker, 112081.....	1913	10	790	1	4	4	1
Pontiac Aggie Korndyke, 58291.....	1905	30	788	3	12	11	4
Finderne Pride Fayne, 84452.....	1911	22	788	1	10	9	2
King Segis 10th, 71153.....	1910	26	785	2	13	10	1
King Korndyke Pontiac Lass, 115585.....	1911	15	781	0	10	5	0
Dutchland Governor Sir Colantha, 90477.....	1911	17	779	1	7	9	0
Finderne Pride Johanna Korndyke, 136330.....	1914	24	778	2	14	7	1
King Walker, 40358.....	1905	17	775	2	9	4	2
King Pontiac Artis Sadie Vale, 113975.....	1912	11	772	0	7	4	0
Sir Pietertje Ormsby Mercedes 14, 81142.....	1911	11	767	2	5	3	1
Hollywood Lilith Palmyra, 118678.....	1912	17	766	2	9	5	1
King of the Pontiacs, 39037.....	1905	51	765	5	22	21	3
Maplecrest Application Pontiac, 132652.....	1914	14	765	0	9	5	0
Colantha Johanna Lad, 32481.....	1903	28	764	3	16	7	2
King Segis Pontiac Fayne Star, 159553.....	1915	13	764	1	7	5	0
Sir Pietertje Ormsby Mercedes, 44931.....	1907	70	763	9	38	17	6
King Hengerveld Pietertje Ormsby, 115308.....	1913	10	763	0	7	3	0
Piebe Laura Ollie Homestead King, 110474.....	1913	34	762	2	21	10	1
Pietertje Hengerveld Sir Korndyke, 60966.....	1909	10	760	2	3	5	0
Spring Farm King Pontiac 6th, 103899.....	1911	13	756	2	5	6	0
Sir Korndyke Pietertje Hartog, 97346.....	1911	17	753	4	6	7	0
King Pontiac Netherland Segis 3d, 155988.....	1914	15	753	3	5	7	0
King Watson Segis Pontiac, 134193.....	1914	13	751	3	5	4	1
King of the Alcartras, 164800.....	1915	14	748	2	6	5	1
Duke Pietertje Korndyke Ormsby, 138441.....	1913	12	746	1	7	3	1
Colonel Piebe Segis Pontiac, 132097.....	1914	13	743	1	7	5	0
Judge Segis, 80912.....	1910	43	742	6	23	14	0
Sir Veeman Hengerveld, 36158.....	1904	17	742	2	9	6	0
King Segis Matador Walker, 172052.....	1915	10	742	3	3	4	0
Aaggie Pontiac Grahamsolm Lad, 160480.....	1915	12	741	2	7	3	0
Paul Aaggie Butter Boy, 161118.....	1914	15	737	1	9	5	0
King Pietertje Ormsby Piebe, 165947.....	1915	15	735	2	8	5	0

*Indicates one or more cows under 400 lbs. of fat.

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Name and registry number of sire	Year of birth	Yearly record daughters	Av. fat mature equiva. (lbs.)	400 to 599 lbs.	600 to 799 lbs.	800 to 999 lbs.	Over 1000 lbs.
Friend Hengerveld DeKol Butter Boy, 29303	1901	14	735	5	3	3	3
Sir Jewel Parthena Doede, 38639	1904	10	733	0	7	3	0
DeKol 2d's Butter Boy 3d, 23260	1897	10	732	1	5	4	0
Sir Hengerveld Model Johanna, 40338	1905	10	731	2	4	4	0
Segis Pontiac DeKol Burke, 97472	1912	22	730	4	14	2	2
Sir Aaggie DeKol Acme, 185724	1914	11	730	1	7	3	0
Lothian King DeKol Korndyke, 116785	1912	35	727	3	25	6	1
Sir Johanna Piebe, 53257	1907	21	727	4	12	5	0
King Pontiac Champion, 53418	1908	75	725	12	40	19	4
Sir Gerben Pauline, 55118	1908	11	722	1	8	2	0
Sir Pietertje Ormsby Mercedes 38, 110161	1913	12	721	0	10	2	0
Colony McKinley Segis DeKol, 170837	1913	16	720	*3	6	5	1
King Mead of Riverside, 50290	1908	26	718	*4	16	4	1
Prince Hengerveld Fayne, 77461	1910	11	718	3	4	4	0
Aaggie Cornucopia Pauline Count, 13, 44293	1906	11	718	1	8	2	0
Homestead Girl DeKol Sarcastic Lad, 32558	1903	22	716	4	14	4	0
King Segis Pontiac Superior, 121833	1913	20	715	4	12	4	0
King Korndyke Sadie Vale, 86215	1911	16	715	5	6	5	0
Korndyke Segis Johanna, 127132	1913	29	712	4	17	7	1
Maplecrest King DeKol, 91584	1911	16	712	1	12	3	0
Pontiac Lunde Korndyke Prince, 43201	1906	11	711	*2	4	4	0
Juliana King of Riverside, 38446	1904	14	708	3	7	4	0
Emblagaard Tritomia Homestead, 62924	1909	26	706	6	13	7	0
Sir Winnana Beets Segis, 52927	1908	15	705	2	11	2	0
Sir Hengerveld Korndyke Ormsby, 139700	1913	13	705	2	8	3	0
Sir Pietertje Ormsby Mercedes 41, 132723	1914	23	704	4	15	3	0
Bessie Fobes Oak Homestead, 118202	1913	20	703	1	16	3	0
Admiral Urmagel Burke, 113524	1913	11	702	7	0	3	1
Prince Gelsche Walker, 81663	1910	33	700	10	18	4	1
Pietje 22nd Son, 58314	1909	15	700	3	9	3	0
Spring Farm King Pontiac, 66664	1909	14	700	3	11	0	0
Sir Colantha Prilly, 106062	1912	10	700	2	5	3	0
Colantha Sir Walker Korndyke, 95460	1912	33	699	5	24	4	0
King of the Ormsbys, 178078	1916	13	697	1	9	2	0
King Abbekerk Pontiac Segis, 132098	1914	11	697	1	8	2	0
King Cornucopia Sadie Vale, 83371	1910	10	697	3	6	1	0
King Walker Johanna Lad, 173733	1915	28	696	2	23	3	0
Maplecrest Korndyke Hengerveld, 84478	1911	25	696	6	13	6	0
Aaggie Cornucopia Newman, 80744	1910	19	696	*4	9	5	0
Admiral Walker Pietertje, 35269	1902	15	696	4	8	3	0
Maplecrest Pontiac Hartog, 62178	1908	28	695	7	18	2	1
Johanna McKinley Segis, 44367	1906	25	695	6	11	7	0
King Walker Clothilde, 111314	1912	22	693	7	10	5	0
King Pontiac Konigen, 75348	1910	12	692	4	5	3	0
King Pontiac Parsons, 155430	1914	10	692	1	8	1	0
King Fayne Ormsby, 237602	1917	11	691	2	8	1	0
Prince Alcartra Korndyke, 88318	1911	18	689	6	7	5	0
Pontiac Korndyke, 25982	1898	13	689	*2	5	4	1
Dutchland Creamelle Pontiac Lad, 143837	1914	11	689	0	10	1	0
Ormsby DeKol Korndyke, 115954	1912	10	689	2	7	1	0
Colantha Johanna Champion, 45674	1906	16	688	7	6	3	0
Pontiac Apollo, 38547	1905	11	686	4	5	1	1
Piebe Champion, 60577	1908	11	686	2	8	1	0
Terracelawn Hengerveld Segis, 80273	1910	19	683	4	13	2	0
King of the Pontiacs Son, 118129	1913	15	681	2	12	1	0
Ignora DeKol, 23538	1897	14	681	3	9	2	0
Homestead Superbe Vale, 120831	1913	11	679	2	7	2	0
Korndyke Abbekerk, 34503	1904	10	679	3	5	2	0
King Korndyke Colantha Ormsby 2d, 150699	1914	10	679	1	8	1	0

*Indicates one or more cows under 400 lbs. of fat.

Name and registry number of sire	Year of birth	Yearly record daughters	Av. fat mature equiva. (lbs.)	400 to 599 lbs.	600 to 799 lbs.	800 to 999 lbs.	Over 1000 lbs.
Johanna DeColantha Champion, 60574	1909	18	677	6	9	3	0
Pabst King Pontiac Lad, 129298	1913	12	675	4	5	3	0
Johanna Bonheur Champion, 94984	1911	29	674	9	15	5	0
Sir Prilly Segis, 51510	1907	15	672	3	10	2	0
Sir Johanna Glen Ormsby, 175856	1916	11	670	4	5	2	0
Aaggie Cornucopia Johanna Lad Jr., 36974	1904	15	669	5	9	1	0
Mutual Fobes Longfield DeKol, 82959	1911	12	669	2	8	2	0
Allenvail Cornucopia Paul, 85221	1911	11	669	4	6	1	0
Cedar Lawn Canary Paul, 113333	1913	10	668	3	6	1	0
Gorden Glen Hengerveld DeKol, 52410	1907	10	668	3	4	3	0
King Lunde Pontiac Korndyke 4th, 120189	1913	21	667	6	12	3	0
Alcartra Polkadot Corrector, 30624	1902	14	667	3	10	0	1
King Korndyke Colantha Ormsby, 96546	1912	22	665	*9	9	2	1
King Segis Pontiac Alcartra, 79602	1910	19	665	5	11	2	1
Beauty Pietertje Prince, 56435	1908	12	665	*1	8	2	0
Sir Pietertje Ormsby Mercedes 22d, 86032	1907	10	665	3	6	1	0
King Ona, 142038	1913	15	664	7	5	3	0
Pietertje Hengerveld Segis, 44781	1907	15	662	5	9	1	0
Colonel Abbekerk Pontiac Segis, 163549	1915	12	658	5	7	0	0
Colantha Pietertje Sir Aaggie, 82392	1911	12	658	2	7	3	0
Maplecrest Highlawn Cleveland, 139636	1914	10	658	4	4	2	0
King Pontiac Reliance, 154063	1914	16	657	3	12	1	0
Sir Johanna Bess Segis, 187607	1916	10	657	3	6	1	0
Chimacum Spring Farm King Pontiac, 150830	1914	29	656	11	13	5	0
Johanna Colantha Sarcastic Lad, 38402	1904	27	656	8	16	2	0
Unecda King Alcartra, 182646	1915	17	656	5	12	0	0
Sir Korndyke Bess, 110157	1912	16	656	*7	3	5	0
Sir Bessie Homestead Johanna Fayne, 84536	1910	10	654	4	5	1	0
King Veeman Sadie Vale, 134223	1913	13	653	2	11	0	0
King Pontiac Walker Boon, 172442	1915	12	653	4	8	0	0
Sir Clothilde Concordia, 113343	1912	16	652	*5	8	2	0
Sir Ormsby Banostine Champion, 166276	1914	12	652	4	7	1	0
Johanna Woodcrest Lad, 52145	1907	11	652	5	4	1	1
Spring Brook Hengerveld Parthena, 68946	1910	14	651	*4	5	2	1
Gem Pietertje Paul DeKol 3d, 44658	1906	11	651	3	7	1	0
Hengerveld Homestead DeKol, 93149	1911	13	650	4	8	1	0
Johanna King Segis, 71964	1909	12	650	3	8	1	0
King Segis DeKol Mead, 132363	1913	16	649	6	9	0	1
Sir Piebe Aaggie Hengerveld, 32492	1902	12	649	2	10	0	0
Sir Paul Veeman Hengerveld, 94217	1911	29	648	6	15	3	0
Sir Mooie Oak DeKol, 41220	1906	15	646	5	9	0	0
Rag Apple Korndyke 8th, 73416	1909	10	646	11	3	2	0
Sir Johanna Fayne, 42147	1905	64	645	18	42	4	0
King Segis Hengerveld Vale, 60344	1909	10	645	4	5	1	0
Sir Willowbridge Korndyke, 45763	1907	10	644	4	6	0	0
K. P. B. A. Fedora King, 140889	1914	12	643	6	4	2	0
King Segis Griselda Grahamholm, 146949	1914	13	642	5	8	0	0
DeKol Creamelle Pontiac Butter Boy, 48498	1907	10	642	4	5	1	0
Sir Urmagel Burke, 58219	1909	10	641	6	3	1	0
Dutchland Colantha Sir Inka, 50999	1908	46	640	18	23	5	0
Segis Lyons DeKol, 55037	1908	19	640	6	12	1	0
Canary Mercedes Pietertje Hartog 6th, 78123	1910	13	640	5	7	1	0
Pinehurst Champion, 83168	1911	11	639	4	6	1	0
King Hengerveld Model Fayne, 66374	1910	11	638	3	7	1	0
Pontiac Hengerveld Parthena, 39972	1905	10	638	3	6	1	0
Walker Copia Champion, 101262	1911	11	636	6	4	1	0
Toyon Fayne Valdessa, 198738	1916	11	636	4	7	0	0
Lothian Korndyke DeKol Pietertje, 96633	1911	13	633	6	6	1	0
Sir Johanna Korndyke Gladi, 94942	1911	12	633	5	6	1	0

*Indicates one or more cows under 400 lbs. of fat.

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Name and registry number of sire	Year of birth	Yearly record daughters	Av. fat mature equiv. (lbs.)	400 to 599 lbs.	600 to 799 lbs.	800 to 999 lbs.	Over 1000 lbs.
Oak DeKol Ollie Homestead, 85529	1911	14	632	6	6	2	0
King Segis Pontiac Hero, 78210	1910	22	630	10	10	2	0
Virginia Korndyke Butter Boy, 128445	1913	19	630	7	11	1	0
Sir Inka Prilly Segis, 80914	1910	50	627	22	25	3	0
Johanna Colantha Paul Parthenea, 109888	1913	13	627	7	5	1	0
King Hengerveld Palmyra Fayne, 83784	1911	11	627	8	1	2	0
Fobes Tritomia Mutual DeKol, 40534	1905	13	625	5	7	1	0
DeKol Burke, 22991	1896	13	623	6	6	1	0
Hygeia Veeman Butter Boy, 43697	1906	12	623	7	3	2	0
Sir Cornucopia Prince, 48663	1906	11	623	*5	3	2	0
King Korndyke Sadie Vale 24th, 163939	1915	11	623	6	3	2	0
Mutual Piebe DeKol, 44554	1906	12	620	5	6	1	0
Pearl of the Dairy's Joe DeKol, 23450	1897	12	620	6	4	2	0
Colantha Sir Korndyke DeKol, 141211	1914	12	619	8	4	0	0
Korndyke Queen DeKol's Prince, 26025	1899	12	619	5	6	1	0
SirFayne Concordia, 35227	1904	11	619	6	3	2	0
Spring Farm Lady Korndyke, 77171	1910	10	619	5	5	0	0
Star Farm Johanna Lad, 45224	1907	13	617	5	8	0	0
King Segis Pontiac, 44444	1906	24	616	13	7	3	1
Pontiac Hesseltje Korndyke, 31438	1903	10	614	5	3	2	0
Princess Mercedes Piebe Champion, 98024	1912	10	613	7	3	0	0
Sir Johanna DeKol, 25467	1898	18	610	8	10	0	0
Denton Colantha Sir Rag Apple, 87426	1911	28	609	14	11	3	0
Johanna DeColantha Champion 6th, 80603	1911	11	608	4	7	0	0
Pietje Ormsby Burke, 49751	1907	11	605	5	6	0	0
Cloverlawn Johanna Piebe, 162456	1915	21	603	11	9	1	0
Woodcrest Hengerveld DeKol, 46514	1907	11	599	*4	6	0	0
Woodcrest Tehee, 74219	1910	52	596	30	21	1	0
Beryl Pontiac Korndyke, 84123	1910	18	595	9	8	1	0
Sir Walker Segis, 50672	1907	14	591	7	7	0	0
Sir Ormsby Hengerveld DeKol, 31212	1902	21	590	*11	8	1	0
Sir Waldorf Lad Jr., 56663	1906	12	588	7	5	0	0
Bonnymeads Pietertje DeKol, 103456	1912	10	588	6	4	0	0
Sir Korndyke Queen, 55993	1908	15	587	10	5	0	0
King Segis Pontiac Neta, 72528	1909	10	586	6	4	0	0
Woodcroft Pontiac Sir Gerben, 98871	1912	11	584	7	4	0	0
King Belle Segis, 136516	1914	12	582	*4	7	0	0
Sir Korndyke Hengerveld DeKol 41266	1905	32	581	*21	6	2	1
Sir Woodland Lyons, 137276	1914	16	578	11	5	0	0
Johanna DeKol's Lad, 26938	1899	22	576	14	8	0	0
M. & P. Model King Glista, 184303	1916	11	571	6	5	0	0
Cedar Lawn Sir Johanna, 104002	1911	17	569	12	5	0	0
Rag Apple Korndyke DeKol, 67211	1909	14	568	11	3	0	0
Sir Bess Ormsby Mercedes, 184275	1916	15	562	11	4	0	0
Tina Clay Johanna, 38214	1904	11	561	8	3	0	0
Model King Segis Koningen, 131819	1914	18	560	13	5	0	0
Paul Frenesta DeKol, 41206	1906	24	555	*14	7	1	0
Woodcrest Lyons Lad, 122445	1913	10	553	7	3	0	0
Sir College Colantha, 136107	1913	15	551	9	6	0	0
Aaltje Salo Mercedes DeKol Prince, 39357	1905	12	547	8	4	0	0
King Oak Grove, 42235	1905	10	543	*7	1	1	0
King Cornucopia Sadie Vale, Jr., 115900	1913	12	535	*7	3	1	0
Beauty Walker Pietertje Prince 2d, 107658	1912	12	531	9	3	0	0
King Lyons Spofford 3d, 75034	1910	13	521	11	2	0	0
King Hengerveld Pondyke, 47843	1907	12	521	10	2	0	0
King Pontiac Dione, 82505	1910	24	519	22	2	0	0
Sir Beets Cornucopia Netherland, 38460	1904	18	515	14	3	0	0
Buffalo Aquinaldo Doede, 102224	1912	16	498	15	1	0	0
Sarcastic Lad, 23971	1897	13	486	*9	1	0	0

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Dams of sires	Sire of dam	Dam of dam
Aaggie Acme of Riverside, 93957	Juliana King of Riverside, 38446	Romeo Aaggie's Acme 2d, 71415
Aaggie Acme of Riverside 2d, 164467	King Mead of Riverside, 50290	Aaggie Acme of Riverside, 93957
Aaggie Cornucopia Pauline, 48426	DeKol 2d's Paul DeKol, 20735	Aaggie Cornucopia, 21127
Aaggie Pauline Abbekerk, 69473	Hartog Pauline DeKol Count, 28433	Aaggie Leila Abbekerk DeKol, 54455
Aaggie Tehee DeKol, 52809	Paul Beets DeKol, 22235	Aaggie Tehee 3d's Artis Clothilde, 35089
Aaltje Salo Erna, 53933	Prince Inka Pietertje DeKol 2d, 22699	Aaltje Salo Princess 2d, 36464
Abby Hartog Clothilde, 62154	Clothilde Goudgeld Hugo, 27525	Margaret Rouble Hartog, 53688
Addie DeKol Hartog, 87199	Teddy DeKol Burke Spofford, 31994	Abby Hartog Clothilde, 62154
Agnes DeKol's Ellen, 30228	Pietertje 2d's Koningin, 10625	Agnes DeKol, 26200
A. & G. Inka McKinley, 55163	Billy McKinley, 23378	Segis Inka, 36617
Alberta Abbekerk 2d, 12702	Sir Mechthilde, 2224	Alberta Abbekerk, 9579 H. H. B.
Albino, 2654 H. H. B. Imp.		
Albina Vernon DeKol, 53670	Homestead Vernon DeKol, 23969	Albina DeKol, 41277
Alcartra Polkadot, 50798	Pearl of the Dairy's Joe DeKol, 23450	Alcartra 2d's Rose, 44430
Alice D. 3d, 14004	Duke of Fair Haven, 4650	Alice D. 731
Alma Kuperus 2d, 2690	Harold, 381 D. F. H. B.	Alma Kuperus, 35 D. F. H. B.
Annie DeKol Koningin, 113317	Sir Ormsby Koningin, 37206	Annie DeKol Butter Girl, 72910
Aralia DeKol, 55194	Ignaro DeKol, 23538	Aralia, 43106
Beatrice Korndyke Pontiac Veeman, 124503	Sir Korndyke Pontiac Artis, 46301	Countess Veeman Beryl Wayne, 99282
Beauty Pietertje, 53334	Lebanon Pietertje Prince, 23469	Prilly, 40082
Beauty Rauwerd DeKol, 67817	Pietertje Hengerveld's Count DeKol, 23224	Beauty Rauwerd 2d, 48021
Belle Korndyke, 13913	Silvan Hartog, 8161	Kate Korndyke, 238 D. F. H. B.
Belle Korndyke's Daughter, 54085	DeKol 2d's Butter Boy 3d, 23260	Belle Korndyke, 13913
Belle Model Johanna, 59986	Johanna Rue 3d's Lad, 26939	Belle Model, 39852
Belle Netherland Johanna, 62304	Johanna Rue 3d's Lad, 26936	Belle Netherland Clothilde, 33836
Belle Sarcastic, 23039	Sarcastic, 4729	Belvisia 2d, 4553
Belle Segis, 86647	King Segis, 36168	Inka Netherland of Wayne 2d, 43869
Belle Terzool Mechthilde, 50119	Mechthilde's Sir Henry of Maplewood 6296	Belle Terzool, 41122
Bess Pietertje Ormsby Mercedes, 154367	Sir Pietertje Ormsby Mercedes, 44931	Spring Brook Bess Burke, 98734
Betta Lyons Netherland, 69247	Konig Blanche Lyons, 26525	Blanche Lyons Netherland, 61122
Blanche Lyons DeKol, 60549	Pietertje Hengerveld's Count DeKol, 23224	Blanche Lyons, 39974
Bloomingdale Hengerveld Aaggie, 88652	Hengerveld DeKol, 23102	Susie Aaggie Rue, 70941
Bloomingdale Hengerveld Edith, 92459	Hengerveld DeKol, 23102	Edith Prescott Pauline DeKol, 58104
Bloomingdale Hengerveld Model, 100745	Hengerveld DeKol, 23102	Belle Model, 39852

Dams of sires	Sire of dam	Dam of dam
Bloomington Hengerveld Palmyra, 98725	Hengerveld DeKol, 23102	Johanna Palmyra Clothilde, 67380
Bonnie Lass Pauline, 96724	May Paul DeKol, 31957	Flossie Fairlawn Mechthilde, 53285
Brightest Promise Colantha, 42751	Sir Jewel Echo Colantha, 19050	Brightest Promise, 16360
Brookside Jannek DeKol, 107895	DeKol 2d's Butterboy 3d, 23260	Janek Albina DeKol 3d, 16908
Brookside Pontiac Abbekerk, 85857	DeKol 2d's Mutual Paul, 25700	Pontiac Abbekerk, 56972
Buffalo Aaggie Beets, 121152	Paul Beets DeKol, 22235	Aaggie Johanna Rue, 95524
Burton High-lawn 2d's Hartog, 70231	Clarion Velthius, 31072	Burton High-lawn 2d, 63235
Canary's Mercedes, 12586	Antje Vriend's Mercedes Prince, 2865	Canary, 4284 H. H. B.
Canary's Mercedes' Brightest, 49131	Bewunde Champion, 23711	Canary's Mercedes, 12586
Copia Hengerveld 2d's Buttercup, 93139	DeKol 2d's Butter Boy 3d, 23260	Copia Hengerveld 2d, 64773
Capitola, H., 13050	Marve Hill, 4599	2d Lady Heegstra, 1102 D. F. H. B.
Carlotta Clothilde, 40675	Pasha Clothilde, 20513	Sir Clothilde's Carlotta, 34567
Caroline Paul Parthenea, 77784	Aaggie Parthenea Bryonia, 29775	Caroline Paul, 77783
Cascade Princess, 42188	Romeo Aaggie, 21970	Ruda 2d's Faithful, 38762
Changeling, 57628	Cadillac Mercedes, 22977	Early Sunrise, 14164
Chloe Artis Netherland, 20229	Netherland Statesman, 3280 H. H. B.	Chloe Artis, 4843
Clarissa Clothilde Pietertje, 64860	Clothilde Pietertje Romeo, 29182	Clara Pietertje M., 49409
Clothilde 3d, 2091 H. H. B.	Uncle Tom, 163	Clothilde, 1308
Clothilde 5th, 8466 H. H. B.	Netherland Prince, 716	Clothilde, 1308
Clothilde Nellie, 73897	Clothilde 5th's Sir Netherland, 23186	Anna 5th's Pietertje, 37310
Colantha 4th's Johanna, 48577	Sir Johanna, 23446	Colantha 4th, 35028
College Belle Wayne, 98497	Beppo Jewel Lad, 30634	Leda Gerben Wayne, 51737
Cornucopia Twisk Pauline, 90240	Aaggie Cornucopia 3d's Count, 28435	Manor Maid of Twisk, 51910
Daisy Douglas Albino Beets, 125374	DeKol Beets Segis, 43911	Daisy Douglas Albino, 85040
Daisy Mercedes DeKol Ormsby, 78056	Sir Ormsby Hengerveld DeKol, 31212	Daisy A. Mercedes 4th's DeKol, 53641
Daisy Queen DeKol, 84455	Sir Daisy Mercedes DeKol, 28982	Spring Hill Daisy, 25173
DeKol Creamelle, 59158	Pietertje Hengerveld's Count DeKol, 23224	Creamelle 2d's Topsy Ann, 35164
DeKol 2d, 734	Willem III., 190 N. H.	DeKol, 6245 H. H.
DeKol 2d's Alban's DeKol, 36714	DeKol 2d's Alban, 17064	Miss Barnum, 20400
DeKol 2d's Queen, 6324	Forster, 2771 H. H. B.	DeKol 2d, 734
DeKol of Valley Mead, 51218	DeKol 2d's Alban, 17064	Lady Valencia, 6382 H. H. B.
Diona Konigen Pietertje, 95986	Drucilla Pietertje, 32080	Diona Konigen, 54687
Duchess Clothilde, 24893	Aaggie Cornelia 5th's Clothilde Imperial, 11822	Duchess of Springvale 3d, 12717
Duchess Manor Beets Aaggie DeKol 2d, 121391	King Walker, 40358	Duchess Manor Beets Aaggie DeKol, 86816

Duchess Ormsby, 16004	Uncle Hicks 6th, 6154	Piebe 2d, 7402
Duchess Ormsby 2d, 35439	Tritomia's Netherland Carl, 16406	Duchess Ormsby, 16004
Duchess Skylark Ormsby, 124514	Sir Ormsby Skylark, 47010	Oakhurst Duchess Clothilde, 106988
Dutchland Aaggie Cornucopia, 97795	Pietertje Hengerveld's Count DeKol, 23224	Aaggie Cornucopia Pauline, 48426
Dutchland Colantha Vale, 132794	Colantha Johanna Lad, 32481	Creamelle Vale, 73357
Dutchland Rag Apple Aaggie, 120761	Dutchland Sir Pontiac Rag Apple, 47282	Dutchland Aaggie Grace Pietertje, 87382
Edith DeKol Beets 2d, 93228	Aaggie Lily Pietertje Prince, 27566	Edith DeKol Beets, 50489
El Terpstra, 681 D-F. H. B. (Imp.)	(Not recorded)	
Elzevere Barnum DeKol 3d, 177604	King Segis DeKol Korndyke, 56110	Elzevere Barnum DeKol, 69764
Empress Josephine 3d, 1995	Major Pel, 2763 H. H. B.	Empress Josephine, 429 D. F. H. B.
Esther Piebe DeKol 2d, 66791	Homestead Jr. DeKol, 28400	Esther Piebe DeKol, 56942
Faforit Tritomia, 61615	Boliver, 30813	Favorit 3d, 31380
Fairview Beets Korndyke, 97917	Pontiac Korndyke, 25982	Winana Beets DeKol, 44887
Fairmont Pontiac Calamity, 143877	Pledge Spofford Calamity Paul, 44726	Pontiac Netherland DeKol, 56967
Fidessa, 43105	Parthenea Sir Mechthilde, 21847	Sontag, 42190
Finderne Miriam Fayne, 160396	King Hengerveld Aaggie Fayne, 56635	Finderne Wayne Miriam DeKol, 121077
Finderne Mutual Fayne, 183215	King Hengerveld Aaggie Fayne, 56635	Finderne Hengerveld Mutual, 128868
Finderne Pride Johanna Rue, 121083	Johanna Rue 3d's Lad, 26939	Jondine Pride, 60247
Flora Korndyke, 75835	Korndyke Queen DeKol's Prince, 26025	Topsy Whiteface, 63774
Friend Hengerveld DeKol, 49905	Mutual Friend 3d's Paul, 23200	Pietertje Hengerveld's Lady DeKol, 37060
Frenesta Hengerveld DeKol, 60550	Pietertje Hengerveld's Count DeKol, 23224	Cora Frenesta, 41332
Gelsche Walker, 111678	Admiral Walker Gelsche, 44227	Mary Walker Pietertje, 77790
Gerben Abbekerk Maid, 180387	Sir Skylark Ormsby Hengerveld, 39138	Shadybrook Gerben Abbekerk Ononis, 77927
Gerben Queen Johanna, 85580	American Johanna Lad, 33078	Gerben Queen, 68164
Gerster Clothilde Pauline, 50792	Pauline Paul's Grandson's Clothilde, 19645	Gerster Clothilde, 2d 43801
Glen Canary DeKol, 131389	Sir Johanna Canary DeKol, 44034	Glen DeKol Artis 3d, 68827
Glen Canary DeKol 2d, 227232	Sir Pietertje Ormsby Mercedes, 44931	Glen Canary DeKol, 131389
Glista Eglantine, 118000	Prince Ybma Spofford 6th, 47135	Glista Omicron, 69034
Grace Fayne 2d, 44124	Aaltje Salo 3d's Tritomia Netherland 19856	Grace Fayne, 37840
Grace Fayne 2d's Homestead, 68828	Homestead Jr. DeKol, 28400	Grace Fayne 2d, 44124
Grace Greenwood 3d's Kate Spofford, 76841	Katy Spofford Corona's Son, 29521	Grace Greenwood 3d, 506464
Grace P. M. DeKol, 62234	DeKol 2d's Paul DeKol No. 2, 23366	Lady Flossy's Grace 2d, 984 W. H. F. A.
Greenwood Johanna Spofford, 122857	Prince Ybma Spofford 2d, 47406	Claudia Johanna, 86690
Griselda Inka, 101742	Sir Hengerveld Clothilde, 38373	Inka Ruth Eraklia, 69770
Gudultje Gerben, 65003	Gerben Mechthilde Sir Josephine, 477 W. H. F. A.	Gudultje, 31483

Dams of sires	Sire of dam	Dam of dam
Gypsy Hengerveld, 104455	Judge Hengerveld DeKol, 43964	Gypsy Queen Clothilde, 51401
Hazel Burke, 136621	Vale Gem Burke, 51038	Hazel Pietertje Vale DeKol, 89800
Helena Burke, 22916	Lord Burke, 11731	Sicha, 733
Hesseltje 3d, 32787	Judge Moore, 18894	Hesseltje, 963 D-F. H. B.
Hillside Vashta, 33192	Netherland Duke Clothilde, 14100	Hillside Aaggie, 24877
Homestead Heroine DeKol, 46490	Pietertje Hengerveld's Paul DeKol, 22128	Heroine DeKol, 41387
Homestead Girl DeKol, 48423	DeKol 2d's Paul DeKol, 20735	Homestead Girl, 16275
Inka Clothilde, 50275	Prince Clothilde, 22269	Inka 2d's Pietertje Queen, 20330
Inka Prilly, 87559	Prilly Princess Sir Inka, 37218	Prilly Princess, 42752
Jacoba Hartog, 2 M. R.		
Janek Albina DeKol 3d, 69108	Korndyke Queen DeKol's Prince, 26025	Janek Albina DeKol, 50851
Jenny Wren Korndyke Hengerveld, 131385	Sir Korndyke Hengerveld DeKol, 41266	Jenny Wren Lassie 2d, 62509
Jessie Fobes Bessie Homestead, 100742	Fobes Tritomia Mutual DeKol, 40534	Bessie Piebe Homestead, 66788
Jessie Fobes Ormsby Burke, 71050	Duchess Ormsby Piebe Burke, 29328	Maud Burke, 62165
Jessie Fobes 2d's Tritomia, 44130	Aaltje Salo 3d's Tritomia Netherland, 19856	Jessie Fobes 2d, 28772
Jessie Lamb Pietertje DeKol, 56680	Lamb DeKol Pietertje, 22218	Jessie Lamb 4th's Pietertje, 44020
Jessie Maida, 48805	DeKol Burke, 22991	Jessie Fobes 6th, 41722
Jessie Veeman A., 36579	Pietertje Paul, 18458	Jessie Veeman 2d, 9606
Jessie Veeman Hengerveld, 50093	Manor DeKol, 21226	Jessie Veeman A., 36579
Jewel Echo, 7744	Echo's Prince of Wayne, 31	Jewel 2d, 1119 H. H. B.
Jewel 2d, 1119 H. H. B.	Ebbo, 236 H. H. B.	Jewel, 668 H. H. B.
Jifke, 481 D. F. H. B. (Imp.)	(No. record)	
Johanna Aaggie, 36477	Aaggie Cornelia 5th's Clothilde Imperial, 11822	Johanna 4th, 2129
Johanna Bonheur, 60987	Sarcastic Lad, 23971	Johanna DeKol 2d, 42168
Johanna Colantha, 48578	Paul Colantha, 23447	Johanna 5th's Clothilde, 30836
Johanna De Colantha, 52253	Paul Colantha, 23447	Johanna DeKol 3d, 45167
Johanna DeKol, 36478	Paul Mutual DeKol, 18726	Johanna Rue, 21223
Johanna DeKol 2nd, 42168	Sir DeKol Mechthilde, 21506	Johanna DeKol, 36478
Johanna DeKol Van Beers, 75131	Sir Johanna DeKol, 25467	Netta Netherland Van Beers, 31401
Johanna de Pauline 4th, 60992	Sarcastic Lad, 23971	Johanna de Pauline, 42169
Johanna 5th, 9343	Oakland Chief, 3259 H. H. B.	Johanna, 344 H. H. B.
Johanna Fayne Star, 121474	Sir Johanna Fayne, 42147	Star Watson, 71898
Johanna May, 16596	Harmka's Oakland Chief, 4373	Johanna 4th, 2129

Johanna Piebe White, 139495	Sir Johanna Piebe, 53257	Piebe White, 77492
Johanna Rue 2d, 33788	Aaggie Cornelia 5th's Clothilde Imperial, 11822	Johanna Rue, 21223
Johanna Rue 3d, 42167	Paul Mutual DeKol, 18726	Johanna Rue, 21223
Johanna Ruth, 52256	Paul Colantha, 23447	Johanna Rue 2d, 33788
Johanna Vernon DeKol, 70943	Johanna Rue 3d's Lad, 26939	Susie Vernon DeKol, 53671
Josephine Piebe, 90158	Beechwood Sir Josephine, 26734	Rigtje Piebe DeKol, 72846
Juliana DeKol, 55792	Ignaro DeKol, 23538	Minnewawa Juliana, 48632
Kakenstein, 43974	Wartena Netherland Prince, 22326	Piebe 5th, 35246
Korndyke Queen DeKol, 41934	Manor DeKol, 21226	Belle Korndyke, 13913
K. P. Alcartra, 99163	King of the Pontiacs, 39037	Alcartra Polkadot Ormsby, 66334
K. P. Diona Pietertje, 125799	King of the Pontiacs, 39037	Diona Koningen Pietertje, 95986
K. P. Lilith Clothilde, 110228	King of the Pontiacs, 39037	Lilith Clothilde Boon, 78841
K. S. P. Netherland, 110973	King Segis Pontiac, 44444	Buckeye Clothilde Netherland, 84119
K. P. Pontiac Lass, 203938	King of the Pontiacs, 39037	Tweede DeKol Lass, 83182
Lady Fay, 4470 H. H. B. (Marie 106 N. H. B.)		
Lady Korndyke Pauline DeKol, 69174	Pontiac Korndyke, 25982	Cornucopia Pauline DeKol, 60556
Lady Longfield 4th's Homestead Lass, 100738	Homestead Jr., DeKol. 283400	Lady Longfield 4th, 44125
Lady Lyons DeKol 2d, 142525	King Walker, 40358	Lady Lyons DeKol, 86236
Lady Netherland, 1263 H. H. B. (Imp.)		
Lady Oak Grove Burke, 63950	Piebe DeKol Burke, 25368	Maid of Oak Grove Pietertje, 45691
Lady Oak 2d, 39947	Aaltje Salo 3d's Tritomia Netherland, 19856	Lady Oak, 32285
Lady Oak 2d's Homestead DeKol, 89107	Homestead Jr, DeKol, 28400	Lady Oak 2d, 39947
Lady Princess Beets, 83340	Inka Princess' Canada Prince, 30513	Inka Pietertje Netherland Beets, 28453
Lillian Walker, 38944	Pietertje Waldorf, 20383	Bessie Welsrijp's Beauty, 35159
Lillian Walker DeKol, 63667	Admiral Walker, 25755	Pansy DeKol, 47716
Lillian Walker Pietertje, 64169	Admiral Walker, 25755	Beauty Pietertje, 53334
Lillian Walker 3d, 73170	Sir Korndyke Manor DeKol, 28133	Lillian Walker, 38944
Lilith Queen Pauline, 110568	Lilith Pauline DeKol's Count, 28430	Queen DeKol Beryl, 83039
Lily Netherland DeKol, 52069	Paul Beets DeKol, 22235	Lily Netherland, 39453
Lily Netherland of Riverside, 59984	Paul Beets DeKol, 22235	Lily Netherland, 39453
Lottie Walker Spofford, 87436	Teddy DeKol Burke Spofford, 31994	Isabella Clothilde Walker, 64855
Lottie Walker Spofford 2d, 166550	King Colantha Clothilde, 60403	Lottie Walker Spofford, 87436
Lunde Korndyke, 75838	Korndyke Queen DeKol's Prince, 26025	Lunde DeKol 2d, 59847
Mabel Pietertje Hartog 2d, 111699	Goldstone Hengerveld, 43060	Mabel Pietertje Hartog, 48414
Mabel Segis Korndyke, 161784	King Segis DeKol Korndyke, 65116	Cassie Koningen Pietertje DeKol, 61054

Dams of sires	Sire of dam	Dam of dam
Magadora, 29237	Milla's Pietertje Netherland, 7825	Netherland Hengerveld, 13106
Maid Mutual DeKol, 60210	DeKol 2d's Mutual Paul, 25700	Rowena Maid 2d's B., 50163
Manor Kekke 14057	Calamity, 4326	Kekke Bell, 2679
Maple Crest Pontiac Application, 141158	Pontiac Aaggie Korndyke, 38291	Banostine Belle, 89215
Maple Crest Pontiac Belle, 143946	Pontiac Aaggie Korndyke, 38291	Banostine Belle, 89215
Maple Crest Pontiac Flora Hartog, 143950	Pontiac Aaggie Korndyke, 38291	High-lawn Hartog DeKol, 84319
Maple Crest Pontiac Hartog, 141157	Pontiac Aaggie Korndyke, 38291	High-lawn Hartog DeKol, 84319
Maplecroft Gem, 35909	DeKol 2d's Alban, 17064	Fay Barnum, 15681
Maple Farm Lulu DeKol, 93412	Maple Farm DeKol, 36878	Lulu Felling, 45155
Maple Knoll Helen, 151073	King Korndyke Hengerveld Ormsby, 53822	Zeldieka Pieterje 3d, 56195
Margie Newman, 76312	Sir Inys Mercedes, 30331	Netherland Fleta, 34656
Marion Walker Pietertje, 99432	Beauty Pietertje Butter King, 38462	Mary Walker Pietertje, 77790
Mary R. Pietertje, 49308	Gold Boy Pietertje, 23027	Ruth Pietertje, 32321
Matador Twisk Minnette, 4th, 129878	Artis DeKol Walker, 35605	Matador Twisk Minnette, 74398
May Echo Sylvia, 223725	Inka Sylvia Beets Posch, 5563, C. H. B. 122780	May Echo Verbelle, 5320 C. H. B. 223724
May Korndyke 2d, 139970	Beauty Pietertje Prince, 56435	May Korndyke, 103641
Mechthilde, 6718 H. H. B. (Imp.)		
Mercedes Athenia Inka DeKol, 72761	Prince Inka Pietertje DeKol 2d, 22699	Mercedes Athenia Jewel, 43465
Mercedes Julip's Pietertje, 39480	Elaine's Pietertje, 20854	Mercedes Julip, 33403
Mildred DeKol Pietertje 3d, 153898	Lilith Paul DeKol Paul, 50835	Mildred DeKol Pietertje 65834
Mildred Walker 2d, 111681	Beauty Pietertje Butter King, 38462	Mildred Walker, 66239
Miss Fayne Segis Beauty, 170658	Sir Fayne Concordia, 35277	K. S. P. Beauty, 110970
Miss Korndyke Maid Ormsby, 137794	Sir Korndyke Hengerveld DeKol, 41266	Pietertje Maid Ormsby, 78051
Miss Valley Mead DeKol Walker, 250936	Prince Gelsche Walker, 81663	DeKol of Valley Mead 2d, 127017
Model Annie Butter Girl 2d, 178716	Lakeside King Segis Alban DeKol, 57461	Model Annie Butter Girl, 137285
Mulvie's Pauline DeKol, 43433	DeKol 2d's Paul DeKol, 20735	Mulvie 10701
Mutual Friend 2d, 10513	Young America, 1	Mutual Friend, 10139, H. H. B.
Mutual Friend 3d, 28389	Duke Netherland, 1271	Mutual Friend, 10139, H. H. B.
Nellie Alcartra Rue, 100005	Sir Johanna DeKol Rue, 33437	Nellie Alcartra, 63564
Nelly Pricemore, 11476	Robertus 2d, 2043	Pricemore, 10258, H. H. B.
Neta Clothilde Perfection, 65354	Neta Paul's Son's DeKol, 26568	Zeruah Clothilde, 48158
Netherland Hengerveld, 13106	Aaggie Leila's Prince, 4419 H. H. B.	Madame Hengerveld, 1333
Netherland Johanna DeKol, 53131	Johanna Rue 2d's Paul DeKol, 21724	Netherland Bessie, 35997

Novelty Fedora Hengerveld, 183355	Pietertje Hengerveld Sir Korndyke, 60966	Lady Fedora Clothilde, 62748
Oak DeKol 2d, 66793	Homestead Jr. DeKol, 28400	Oak DeKol, 51297
Ollie Watson Prima Donna, 71767	Chief Piebe Oak Duchess, 28176	Ollie Watson 3d's DeKol, 50665
Ona Button DeKol, 115939	Cornucopia Waukesha Prince, 35119	Ona Clothilde DeKol, 70349
Ona Clothilde DeKol 2d, 93157	Aaggie Cornucopia Pauline Count Jr., 36998	Ona Clothilde DeKol, 70349
Onda Crown DeKol, 61642	Homestead Hengerveld Crown DeKol, 26345	Barrington Onda, 44011
Ononis Homestead Cornucopia, 120566	Aaggie Cornucopia Johanna Lad Jr., 36974	Dora Dot Ononis 2d, 86447
Pabst Hengerveld DeFreule, 135438	Sir Hengerveld Model Johanna, 40338	A. & G. DeFreule DeKol 2d, 65482
Parthenea Doede, 53784	Parthenea's Sir Henry, 8132	Doede Binnema 4th, 5048
Pauline Beets Catrina, 77979	Paul Beets DeKol, 22235	Catrina 7th's Clothilde, 77977
Pauline Brightview, 113832	Ophelia Jane 2d's Pietertje, 41209	Pauline Beryl Wayne, 84184
Pauline Ormsby, 74972	Duchess Ormsby Butter King, 30190	Koningin Pauline 3d, 47053
Pauline Parsons, 126905	Pride of the Hall Farm, 45549	Una Pauline DeKol, 77099
Pauline Paul, 2199 H. H. B.	Climax, 204	Johanna Paul, 677
Pauline Paul 2d, 31477	DeKol 2d's Netherland, 11584	Pauline Paul, 2199 H. H. B.
Pearl of the Dairy, 13271	Prince of Cedarside 7th, 3809	Jennie Beebe, 3533 H. H. B.
Piebe Laura, 27248	Lord Carl, 12121	Piebe 4th, 15285
Piebe Longfield Night, 75749	Almeda Luecke 2d's Piebe DeKol, 28660	Lady Longfield's 2d's Night, 59192
Piebe Queen 2d, 37957	Aaltje Salo 2d's Carl, 19484	Piebe Queen, 29065
Pietertje Hengerveld, 24137	Milla's Pietertje Netherland, 7825	Netherland Hengerveld, 13106
Pietertje Maid of Grouw 3d, 53646	DeKol 2d's Paul DeKol No. 2., 23366	Pietertje Maid of Grouw, 42832
Pietertje Maid Ormsby, 78051	Sir Ormsby Hengerveld DeKol, 31212	Pietertje Maid of Grouw 3d, 53646
Pietje 22nd, 70884 (Imp.)	Bosch 3d, 2428 F. H. B.	Pietje 11th, 9054 F. H. B.
Pleasant Hill Lucy Veeman 2d, 127258	Sir Korndyke Pontiac Artis, 46301	Pleasant Hill Lucy Veeman, 101955
Pleasant Hill Veeman Lady, 124507	Sir Veeman Hengerveld, 36158	Lady Wayne Boon, 67185
Pleasant Valley Kate, 37486	Pleasant Valley Mooie, 19308	Pleasant Valley Maid's Pietertje, 18314
Pleasant Valley Kate 2d, 48432	Koningin Sir Rolland, 21559	Pleasant Valley Kate, 37486
Pledge Spofford, 64915	Katy Spofford Corona's Son, 29521	Netherland Pledge, 51893
Pontiac Aaggie, 53439	Hengerveld DeKol, 23102	Pontiac Aaggie Pietertje, 44450
Pontiac Abbekerk, 56972	Hengerveld DeKol, 23102	Hesseltje 5th, 44438
Pontiac Artis, 61114	Hengerveld DeKol, 23102	Pontiac Clothilde Inka, 44452
Pontiac Ascalon, 89059	Pontiac Korndyke, 25982	Hesseltje 4th, 41848
Pontiac Beets Korndyke, 61101	Pontiac Korndyke, 25982	Pontiac Beets, 46919
Pontiac Clothilde DeKol, 49657	Hengerveld DeKol, 23102	Rag Apple's Clothilde Artis, 34741
Pontiac Clothilde DeKol 2d, 69991	Pontiac Korndyke, 25982	Pontiac Clothilde DeKol, 49657
Pontiac Darkness, 65765	Pontiac Korndyke, 25982	Inka's Darkness 2d's Queen, 40182

Dams of sires	Sire of dam	Dam of dam
Pontiac Dione, 61106	Hengerveld DeKol, 23102	Queen Cashe, 32785
Pontiac Gladi, 79904	Hengerveld DeKol, 23102	Detry Belle, 59825
Pontiac Lady Korndyke, 92700	Pontiac Korndyke, 25982	Lady Korndyke Pauline DeKol, 69174
Pontiac Latona, 56962	Hengerveld DeKol, 23102	Pontiac Queen Cashe, 47771
Pontiac Lunde Hengerveld, 51585	Hengerveld DeKol, 23102	Lunde Beauty, 34745
Pontiac Lunde Korndyke, 65771	Pontiac Korndyke, 25982	Lunde Beauty's DeKol, 41866
Pontiac Mechthilde, 49487	Mechthilde's Sir Henry of Maplewood, 6296	Grilla's Echo, 24760
Pontiac Pathenea, 47770	Sir Inka Artis Mechthilde, 22584	Netherland Triumph 3d, 39530
Pontiac Pleione, 61102	Hengerveld DeKol, 23102	Terra, 39607
Pontiac Queen Korndyke, 69713	Pontiac Korndyke, 25982	Inka Darkness 2d's Queen, 40182
Pontiac Rag Apple, 56980	Pontiac Korndyke, 25982	Pontiac Clothilde DeKol, 49657
Polly Posch, 87900	Beryl Posch, 36219	Polyalba 2d, 57996
Prairie Flower Daisy, 78943	Johanna Rue 3d's Lad, 26939	Prairie Flower's Pauline Paul 2d, 37168
Prilly Princess Julia DeKol, 85623	Julius DeKol Paul, 29684	Prilly Princess, 42752
Princess Colantha Fobes, 104440	Jessie Fobes Homestead, 44556	Princess Colantha Jewel 2d, 99074
Princess Hartog Pietertje, 60879	Leonia Pietertje Mignone, 23891	Princess Hartog Twisk 2d, 44618
Princess Hengerveld DeKol, 84540	Hengerveld DeKol, 23102	Princess Johanna Rue, 65203
Princess Hengerveld Johanna, 76055	Brookside Hengerveld Paul 2d, 32285	Princess Johanna Rue, 65203
Princess Mercedes Piebe, 124232	Sir Piebe Aaggie Hengerveld, 32492	Princess Jane Mercedes, 90846
Princess Parthenea, 12691	Prince Wayne Mercedes Echo, 2328	Parthenea 2d, 4589
Princess Pontiac Frenesta Burke, 190788	King Pontiac Pietertje Princess, 63997	Mary Pauline Segis, 113776
Queen Piebe Mercedes, 154610	Sir Pietertje Ormsby Mercedes, 44931	Queen Piebe of Fairview, 71624
Queen Piebe Ormsby Mercedes, 167404	Sir Pietertje Ormsby Mercedes, 44931	Queen Piebe of Fairview 2d, 136752
Queen of the Pontiacs, 104539	Pontiac Korndyke, 25982	Pontiac Lunde Hengerveld, 51585
Rag Apple's Clothilde Artis, 34741	Artis Adiantum's Clothilde, 15202	Rag Apple, 1286
Ridgeway DeKol, 57653	Manor DeKol, 21226	Rosa Korndyke DeKol, 48925
Rissa Prilly, 103643	Joe Gelsche DeKol Burke, 38391	Clarissa Clothilde Pietertje, 64860
Riverside Sadie DeKol Burke, 70708	DeKol Burke, 22991	Pauline Sadie DeKol, 47448
Riverview Fytje DeKol Ormsby, 100148	Duchess Korndyke DeKol, 35133	Riverview Fytje DeKol, 61959
Rosa Bonheur 5th, 11227	Meadowbrook Chief, 1969	Rosa Bonheur, 890 H. H. B.
Rose Goudgeld 2d, 26670	Sethje Lad, 10763	Rose Goudgeld, 13638
Royal Homestead DeKol, 88677	Prince Homestead DeKol, 34944	Royal Queen DeKol 2d, 74007
Royalton DeKol Violet, 86460	Paul DeKol of Royalton, 32899	Bawndale Petunia 2d, 39973
Ruth Pontiac Veeman Korndyke, 157291	Sir Korndyke Pontiac Artis, 46391	Stella Veeman Korndyke, 97765
Sadie Aaggie, 34584	Sir Aaggie Pietertje, 18144	Pearl of Spring Brook, 27736

Sadie Mechthilde, 60968	Chief Josephine Mechthilde, 26483	Aaltje Maid, 51525
Sadie Vale Concordia, 32259	Concordia's America Wayne, 14222	Sadie Vale 2d, 18449
Sadie Vale Concordia 3d's Hengerveld, 100308	Hengerveld DeKol, 23102	Sadie Vale Concordia 3d, 77126
Sadie Vale Concordia 4th, 100314	Duchess Ormsby Piebe Burke, 29328	Sadie Vale Concordia, 32259
Sadie Vale Korndyke, 95127	Pontiac Korndyke, 25982	Inka Sadie Vale, 74256
Sadie Vale Pietertje 79740	Ononis DeKol Paul, 31341	Mabel Elliston, 51605
Segis Betta, 104405	King Segis, 36168	Betta Lyons Netherland, 69247
Segis Pietertje Clothilde Stella, 189484	King Segis 10th, 71153	Abby Pietertje Clothilde, 148424
Segis Woodland Walker, 175771	King Walker Segis, 60778	Woodland Segis 2d, 120501
Sholes Koningin, 72092	Count Arthur Vashta, 23984	Koningin Van Friesland 6th's Crissie 3d, 48703
Skylark Mercedes DeKol, 53644	DeKol 2d's Paul DeKol, No. 2, 23366	Skylark Mercedes, 29048
Small Hopes Piebe, 79030	Gracia Ward Piebe, 31361	Small Hopes Netherland, 32622
Spring Brook Bess Burke, 98734	Wisconsin Bess Chief, 34114	Spring Brook Burke, 52921
Spring Brook Bess Burke 2d, 131387	Sir Johanna Canary DeKol, 44034	Spring Brook Bess Burke, 98734
Spring Brook Hengerveld Duchess, 100974	Aaggie Cornucopia 3d's Lilith, 34467	Hengerveld Duchess DeKol 2d, 61297
Spring Farm Pontiac Lass, 106812	King of the Pontiacs, 39037	Tweede DeKol Lass, 83182
Star Watson 3d, 155173	Sir Johanna Fayne, 42147	Star Watson, 71898
Susie DeKol Paul 2d, 79137	Sir Korndyke Manor DeKol, 28133	Susie DeKol Paul, 56446
Tidy Abbekerk Princess Gisella, 143378	Tidy Abbekerk Prince, 37770	Jewel Wayne DeKol, 67903
Tilly Alcartra, 123459	Alcartra Polkadot Corrector, 30624	Tilly Lou 2d, 82057
Tillie Burr DeKol 2d, 80868	Pietertje Hengerveld's Count DeKol, 23224	Tillie Burr KeDol, 59569
Tina Clay DeKol, 57350	Manor DeKol's Plum, 24777	Tina Clay's Pieterje Bell, 29727
Tirania, 6716 H. H. B. (Imp.)	Jacob Wit, 2662	(Not recorded)
Tirania Johanna, 63475	Johanna DeKol 2d's Lad, 26936	Tirania Careme Mechthilde, 49801
Tweede DeKol Lass, 83182	Pietertje Tweede 2d's DeKol, 29302	Plum DeKol Lass 2d, 60280
Tweede White Lady, 83186	Pietertje Tweede 2d's DeKol, 29302	White Lady of Delburn 2d, 63757
Uilkje, 70886 (Imp. 10191 F. H. B.)	Johan, 2468 F. H. B.	Tetje, 4122 A. F. H. B.
Uneeda Korndyke Abigail, 119465	Johanna McKinley Segis, 44367	Uneeda Netherland Korndyke, 86494
Urmagelsche 2d A., 69967	Sir Clyde, 29236	Urmagelsche 2d, 49818
Vanderkamp Segis DeKol, 220805	Judge Segis, 80912	Maple Grove Cristy DeKol, 140507
Valdessa Scott 2d, 72311	Agatha Netherland Pietertje, 26980	Valdessa Scott, 49997
Virgo Beauty 2d, 18535	Uncle Dan, 2011	Virgo Beauty, 3854 H. H. B.
Waldorf Vernon DeKol, 52515	Homestead Vernon DeKol, 23969	Waldorf Maid, 38938
Walker Beryl Boon, 165627	Matodor DeKol Walker, 59750	Beryl DeKol Boon, 102671
Winana Clothilde Beets, 52812	Paul Beets DeKol, 22235	Winana Clothilde, 44586
Winana Pietertje DeKol, 50734	Pietertje Alban DeKol, 23227	Winana Beets DeKol, 44887
Wisconsin Bess Piebe Laura, 97555	Piebe Laura Ormsby Gem, 36652	Wisconsin Bess Piebe, 71899

CHART I.—Sires descended from De Kol 2d's Butter Boy 21366 (De Kol 2d 734); sired by Sir Abbekerk 19056 (Alberta Abbekerk 2d 12702); by Tirania's Sir Mechthilde 16469 (Tirania 6716 H. H. B.) by Mechthilde Sir Henry of Maplewood 6296 (Mechthilde 6718 H. H. B.)

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|--|---|--|---|--|
| 1. Hengerveld De Kol 23102 (9-678) (Magadora 29237). | 1. Sir Korndyke Hengerveld De Kol 41266 (32-581). (Pontiac Darkness 65765). | 1. Sir Korndyke Hengerveld De Kol 36th 85968 (6-630). (Daisy Mercedes De Kol Ormsby 78056 (555). | 1. Sir Korndyke Bess 110157 (16-656). (Bess Pietertje Ormsby Mercedes 154367 (1029). | 1. King Pietertje Ormsby Piebe 165947 (15-735). (Queen Piebe Mercedes 154610 (1222). |
| | | | | |
| | 2. Pontiac Hengerveld Parthenea 39972 (10-638). (Pontiac Parthenea 47770). | 3. Sir Hengerveld Korndyke Ormsby 139700 (13-705). (Pietertje Maid Ormsby 78051 (607). | Ormsby Korndyke Lad 102469 (30-840). (Polly Posch 87900). | |
| | 3. Hengerveld De Kol 5th 54721. (Belle Netherland Johanna 62304 (836). | | Spring Brook Hengerveld Parthenea 68946 (14-651). (Spring Brook Hengerveld Duchess 100974). | |
| | 4. Pontiac Appollo 38547 (11-686). (Pontiac Mechthilde 49487). | | Hengerveld Homestead De Kol 93149 (13-650). (Royal Homestead De Kol 88677 (670). | |
| | 5. Pontiac Hengerveld Parthenea 39972 (10-638). (Pontiac Parthenea 47770). | | | |
| | 6. Sir Hengerveld Model Johanna 40338 (10-731). (Belle Model Johanna 59986). | | | |
| | 7. Woodcrest Hengerveld De Kol 46514 (11-599). (Pleasant Valley Kate 2d 48432). | | | |
| | 8. Gorden Glen Hengerveld De Kol 52410 (10-668). (Princess Hengerveld Johanna 76055). | | | |
| 2. De Kol Burke 22991 (13-623). (Helena Burke 2916). | 1. Piebe De Kol Burke 25368 (1-707). (Piebe Queen 2d 37957). | 1. Chief Piebe Oak Duchess 28176. (Lady Oak 2d 39947). | Alcartra Polkadot Corrector 30624 (14-667). (Alcartra Polkadot 50798). | Sir Pietertje Beets Segis 46773. (Jessie Lamb Pietertje De Kol 56680). (See below). |
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| | 2. Duchess Ormsby Piebe Burke 29328 (7-560). (Duchess Ormsby 16004). | 1. Jessie Fobes Tritomia Duke 32254 (6-546). (Jessie Fobes 2d's Tritomia 44130). | Gudultje Gerben Sir Fobes 42183 (5-609). (Gudultje Gerben 65003). | Allenvail Cornucopia Paul 85221 (11-669). (Cornucopia Twisk Pauline 90240). |
| | | 2. King Oak Grove 42235 (10-543). (Lady Oak Grove Burke 63950). | | |

3. Pontiac Butter Boy 23154 (2-1047). } De Kol Creamelle Pontiac Butter Boy 48498 (10-642).
 (Rag Apple's Clothilde Artis 34741). } (De Kol Creamelle 59158).
4. Pietertje Hengerveld's Count De Kol 23224 (1-562) (Pietertje Hengerveld 24137). { Clothilde Pauline Count De Kol 36876 (Gerater Clothilde Pauline 50792). } Lyons Hengerveld Count De Kol 40592 (1-730). (Betta Lyons Netherland 69247). } King Lyons Spofford 62053. (Pledge Spofford 64915). } King Lyons Spofford 3rd 75034 (13-521). (Grace Greenwood 3d's Katy Spofford 76841).

Sires descended from Mercedes Mechthilde Pietertje 25795 (1-731) (Mercedes Tulip's Pietertje 39480); sired by Sir Mechthilde of Maplewood 23448 (Mechthilde 6718 H. H. B.); by Mechthilde Sir Henry of Maplewood 6296 (Mechthilde 6718 H. H. B.)

- Jack Mercedes 35077 (1-668) (Sadie Mechthilde 60968). { Sir Pietertje Ormsby Mercedes 44931 (70-763). (Pietertje Maid Ormsby 78051 (607). } 1. Sir Pietertje Ormsby Mercedes 14th 81142 (11-767). (Maple Farm Lulu De Kol 93412). 2. Sir Pietertje Ormsby Mercedes 22d 86032 (10-665). (Riverside Fytje De Kol Ormsby 100148 (859). 3. Duke Pietertje Korndyke Ormsby 138441 (12-746). (Jenny Wren Korndyke Hengerveld 131385 (840). 4. Sir Pietertje Ormsby Mercedes 37th 110160 (36-883). (Spring Brook Bess Burke 2d 131387 (885). 5. Sir Pietertje Ormsby Mercedes 38th 110161 (12-721). (Glen Canary De Kol 131389 (445). 6. Sir Pietertje Ormsby Mercedes 41st 132723 (23-704). (Spring Brook Bess Burke 98734 (885). 7. King of the Ormsby 178078 (13-697). (Spring Brook Bess Burke 2d 131387 (885). 8. King Fayne Ormsby 237602 (11-691). (Miss Fayne Segis Beauty 170658 (854). } Sir Bess Ormsby Mercedes 184275 (15-562). (Daisy Queen De Kol 84455 (445).

Sires descended from Sir Parthena Mechthilde 19667 (Princess Parthena 12691); by Sir Jewel Echo Mechthilde 12863 (Jewel Echo 7744); by Mechthilde Sir Henry of Maplewood 6296 (Mechthilde 6718 H. H. B.)

- Sir De Kol Mechthilde 21506. (De Kol 2d's Queen 6324). { Sir Johanna 23446 (1-1001). (Johanna Rue 2d 33788). } Sir Johanna De Kol 25467 (18-610). (Johanna De Kol 2d 42168). } Sir Johanna De Kol 19th 64143 (7-643). (Mercedes Athenia Inka De Kol 72761 (539). } Cedar Lawn Sir Johanna 104002 (17-569). (Netherland Johanna De Kol 53131).

CHART II.—Sires descended from Pontiac Korndyke 25082 (13-689) (Belle Korndyke 13913); by Manor Josephine De Kol 20779 (Agnes De Kol's Ellen 30228); by Empress Josephine 3d's Sir Meechthilde 20255 (Empress Josephine 3d 1995); by Meechthilde's Sir Henry of Maplewood 6296 (Meechthilde 6718 H. H. B.)

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|--|---|--|
| <p>1. King of the Pontiacs 39037 (51-765).
(Pontiac Lunde Hengerveld 51585).</p> | <p>1. King Pontiac Champion 53418 (75-725).
(Maid Mutual De Kol 60210).</p> <p>2. Spring Farm King Pontiac 66664 (14-700).
(Tweede White Lady 83186 (902).</p> <p>3. King Korndyke Pontiac 106519 (5-670).
(May Korndyke 2d 139970).</p> <p>4. King Lunde Pontiac Korndyke 78699 (3-741).
(Lunde Korndyke 75838 (881).</p> <p>5. King Pontiac Brookside Abbekerk 97989 (3-794).
(Brookside Pontiac Abbekerk 85857).</p> <p>6. King Pontiac Netherland Segis 97984 (2-668).
(K. S. P. Netherland 110973).</p> <p>7. King Pontiac Artis Canada 72294 (1-747).
(Pontiac Artis 61114 (864).</p> <p>8. King Hengerveld Pondyke 47843 (12-521).
(Clothilde Nellie 73897 (541).</p> <p>9. King Pontiac Konigen 75348 (12-692).
(Diona Konigen Pietertje 95986).</p> <p>10. King of the Pontiac's Son 118129 (15-681).
(Pauline Brightview 113832).</p> <p>11. King Pontiac Reliance 154063 (16-657).
(Maple Knoll Helen 151073).</p> <p>12. King Pontiac Parsons 155430 (10-692).
(Pauline Parsons 126905).</p> <p>13. King Pontiac Walker Boon 172442 (12-653).
(Walker Beryl Boon 165627).</p> | <p>{ Pabst King Pontiac Lad 129298 (12-675).
(Pabst Hengerveld De Freule 135438 (759).</p> <p>{ 1. Spring Farm King Pontiac 6th 103899 (13-756).
(Tweede De Kol Lass 83182).</p> <p>{ 2. Chimacum Spring Farm Pontiac 150830 (29-656).
(Princess Pontiac Frenesta Burke 190788).</p> <p>{ King Korndyke Pontiac 20th 188174 (10-857).
(Miss Valley Mead De Kol Walker 250936 (1141).</p> <p>{ King Lunde Pontiac Korndyke 4th 120189 (21-667).
(Greenwood Johanna Spofford 122857).</p> <p>{ K. P. B. A. Fedora King 140889 (12-643).
(Novelty Fedora Hengerveld 183355 (899).</p> <p>{ King Pontiac Netherland Segis 3d 155988 (15-753).
(Gerben Abbekerk Maid 180387).</p> <p>{ Avon Pontiac Echo 203055 (20-813).
(May Echo Sylvia 223725).</p> |
| <p>2. Pontiac Aaggie Korndyke 53291 (30-788).
(Pontiac Aaggie 53439).</p> | <p>{ Maple Crest Pontiac Hartog 62178 (28-695).
(Burton High-lawn 2d's Hartog 70231).</p> | <p>{ King Ona 142038 (15-664).
(Ona Button De Kol 115939 (1080).</p> |
| <p>3. Woodcroft Pontiac Korndyke 64586 (8-745).
(Ridgeway De Kol 57653).</p> | <p>{ Woodcroft Pontiac Sir Gerben 98871 (11-584).
(Gerben Queen Johanna 85580).</p> | |
| <p>4. Pontiac Hesseltje Korndyke 31438 (10-614).
(Hesseltje 3d 32787).</p> | | |
| <p>5. Korndyke Abbekerk 34503 (10-679).
(Pontiac Abbekerk 56972).</p> | | |

6. Pontiac Lunde Korndyke Prince 43201 (11-711).
(Pontiac Lunde Korndyke 65771).
7. Beryle Pontiac Korndyke 84123 (18-595).
(Polly Posch 87900).
8. Fairview Pontiac Beets Korndyke 94943 (14-793).
(Fairview Beets Korndyke 97917).
9. Sir Korndyke Queen 55993 (15-587).
(Pontiac Queen Korndyke 69713).
10. Rag Apple Korndyke 48020 (3-622).
(Pontiac Rag Apple 56980).

1. Rag Apple Korndyke 8th 73416 (10-646).
(Pontiac Lady Korndyke 92700).
2. Sir Rag Apple Korndyke 61626 (1-463).
(Sadie Vale Korndyke 95127).
3. Homestead Superb 84596.
(Jessie Maida 48805).
4. Rag Apple Korndyke De Kol 67211 (14-568).
(Lady Korndyke Pauline De Kol 69174).

11. Dutchland Sir Pontiac Rag Apple 47282 (3-709).
(Pontiac Clothilde De Kol 49657).

- Dutchland Creamelle Korndyke Lad 112174 (17-901).
(Dutchland Colantha Vale 132794 (874).

- Sir Korndyke Pietertje Hartog
97346 (17-753).
(Mabel Pietertje Hartog 2d
111699).
- Homestead Superb Vale 120831 (11
679).
(Hazel Burke 136621).
- Dutchland Creamelle Pontiac Lad
143837 (11-688).
(Pontiac Ascalon 89059 (815).

CHART III.—Sires descended from Paul Mutual De Kol 18726 (Mutual Friend 2d 10513; by Paul De Kol 14634 (Pauline Paul 2199 H. H. B.); by De Kol 2d's Prince 2767 (De Kol 2d 734).

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|--|--|---|---|---|--|
| <p>1. Johanna Rue
2nd's Paul
De Kol 21724
(6-428)
(Johanna Rue
2nd 33788).</p> | <p>1. Mercedes Julip
Pietertje Paul
29830.
(Mercedes
Julip's Pie-
tertje 39480).</p> | <p>King Segis 36168
(2-559).
(A. & C.
Inka McKin-
ley 55163).</p> | <p>1. King Segis
Pontiac
44444 (24-
616).
(Pontiac
Clothilde De
Kol 2d
69991 (1020).</p> | <p>1. King Segis Pontiac Count 93909
(27-834).
(K. P. Lilith Clothilde 110228
(917).</p> | <p>1. King Abbekerk Pontiac Segis 132098 (11-697).
(Tidy Abbekerk Princess Giselle 143378 (710).
2. King Segis Pontiac Payne Star 159553 (13-764).
(Johanna Fayne Star 121474 (760).
3. Colonel Piebe Segis Pontiac 132097 (13-743).
(Wisconsin Bess Piebe Laura 97555).
4. Colonel Abbekerk Pontiac Segis 163549 (12-658).
(Tidy Abbekerk Princess Giselle 143378 (710).
5. King Watson Segis Pontiac 134193 (13-751).
(Star Watson 3d 155173).</p> |
| | | | <p>2. King Segis Pontiac Alcartra
79602 (19-665)
(K. P. Alcartra 99163 (832).</p> | <p>1. Uneeda King Alcartra 182646 (17-656).
(Uneeda Korndyke Abigail 119465).
2. King of Alcartras 164800 (14-748).
(Fairmont Pontiac Calamity 143877).
3. King Segis Alcartra Prilly 192705 (15-795).
(Prilly Princess Julia De Kol 85623).</p> | |
| | | | <p>3. King Segis Pontiac Emperor
72287 (4-684).
(Queen of the Pontiacs 104539)</p> | <p>1. Segis Pontiac De Kol Burke 97472 (22-730)
(Riverside Sadie De Kol Burke 70708 (871).
2. King Segis De Kol Mead 132363 (16-649).
(De Kol of Valley Mead 51218).
3. Aralia De Kol Pontiac Segis 112077 (3-739).
(Aralia De Kol 55194 (972). (See below).</p> | |
| | | | <p>4. King Segis Pontiac Neta 72528 (10-586).
(Neta Clothilde Perfection 65354).
5. King Pontiac Dione 82505 (24-519).
(Pontiac Dione 61106 (556).
6. King Segis Pontiac Hero 78210 (22-630).
(K. P. Lilith Clothilde 110228 (917).
7. King Segis Pontiac Konigen 97988 (27-833).
(K. P. Diona Pietertje 125799).
8. King Segis Pontiac Superior 121833 (20-715).
(K. P. Lilith Clothilde 110228 (917).</p> | <p>Sir Aaggie De Kol Acme
185724 (11-730).
(Aaggie Acme of River-
side 2d 164467 (1075).</p> | |
| | | | <p>2. King Fayne
Segis 46767
(2-736).
(Grace Fayne
2d's Home-
stead 68828).</p> | <p>1. Hengerveld Model Fayne 66374 (11-638).
(Bloomingdale Hengerveld Model 100745).
2. Prince Hengerveld Fayne 77461 (11-618).
(Princess Hengerveld De Kol 84540).
3. King Hengerveld Palmyra Fayne 83784 (11-627).
(Bloomingdale Hengerveld Palmyra 98725).
4. King Palmyra Fayne 72099 (8-
777).
(Bloomingdale Hengerveld Pal-
myra 98725).
5. King Hengerveld Aaggie Fayne
56635 (5-952).
(Bloomingdale Hengerveld
Aaggie 88652).</p> | <p>Hollywood Lilith Palmyra 118678,
(17-766).
(Lilith Queen Pauline 110568
(870).
Finderne Pride Fayne 84452 (22-
788).
(Finderne Pride Johanna Rue
121083 (1225).</p> |

3. King Segis De Kol Korndyke 56110 (5-658). (Pontiac Clothilde De Kol 2d 69991 (1020)).
1. King Korndyke Sadie Vale 86215 (16-715). (Sadie Vale Concordia 4th 100314).
2. King Pontiac Segis Korndyke 84705 (5-670). (Beauty Rauward De Kol 67817).
1. King Pontias Artis Sadie Vale 113875 (11-772). (Ruth Pontiac Veeman Korndyke 157291).
2. King Veeman Sadie Vale 134223 (13-653). (Pleasant Hill Veeman Lady 124507).
3. King Korndyke Sadie Vale 24th 163939 (11-623). (Elzevere Barnum De Kol 3d 177604).
1. King Mutual Korndyke 136329 (11-826). (Finderne Mutual Fayne 183215 (1311)).
2. Finderne Pride Johanna Korndyke 136330 (24-778). (Finderne Pride Johanna Rue 121083 (1225)).
4. Johanna McKinley Segis 44367 (25-695). (Johanna De Kol van Beers 75131).
1. Colony McKinley Segis De Kol 170837 (16-720). (Brookside Jannek De Kol 107895).
2. Korndyke Segis Johanna 127132 (29-712). (Pontiac Lady Korndyke 92700).
5. King Segis 10th 71153 (26-785). (Johanna Vernon De Kol 70943).
- Matador Segis Walker 148839 (42-790). (Matador Twisk Minnette 4th 129878 (870)).
- King Segis Matador Walker 172052 (10-742). (Segis Pietertje Clothilde Stella 189484).
6. Pietertje Hengerveld Segis 44781 (15-662). (Blanche Lyons De Kol 60549).
1. Segis Lyons De Kol 55037 (19-640). (Edith De Kol Beets 2d 93228).
2. Terrace Lawn Hengerveld Segis 80273 (19-683). (Bloomingtondale Hengerveld Edith 92459).
7. Lakeside King Segis Alban De Kol 57461 (2-695). (De Kol 2d's Alban's De Kol 36714). (Pauline Beets Catrina 77979 (656)).
- Model King Segis Koningin 131819 (18-560). (Annie De Kol Koningin 113317).
8. King Segis Beets 48702 (5-716). (Lillian Walker 3d 73170).
- Johanna King Segis 71964 (12-650). (Johanna De Kol van Beers 75131).
9. Walker Korndyke Segis 50347 (2-860). (Winona Clothilde Beets 52812).
- Walker Copia Champion 101262 (11-636). (Copia Hengerveld 2nd's Buttercup 83139 (928)).
10. Sir Winona Beets Segis 52927 (15-705). (Sir Walker Segis 50672 (14-591)). (Lillian Walker De Kol 63667).
- King Segis Griselda Grahamholm 146949 (13-642). (Griselda Inka 101742 (532)).
11. Sir Walker Segis 50672 (14-591). (Lillian Walker De Kol 63667).
12. Sir Prilly Segis 51510 (15-672). (Prilly Princess Julia De Kol 85623).
13. King Segis Hengerveld Vale 60344 (10-645). (Sadie Vale Concordia 3d's Hengerveld 100308).
14. Sir Inka Prilly Segis 80914 (50-627). (Inka Prilly 87559).
15. Judge Segis 80912 (43-742). (Gypsy Hengerveld 104455).
2. Canary Mercedes Johanna De Kol 30251. (Canary's Mercedes' Brightest 49131).
- Inka Clothilde Mercedes Prince 32242 (8-526). (Inka Clothilde 50275).
- Aaltje Salo Mercedes De Kol Prince 39357 (12-547). (Aaltje Salo Erna 53933).
2. Paul Johanna De Kol 21 318. (Johanna May 16596).
- Pearl of the Dairy's Joe De Kol 23450 (12-620). (Pearl of the Dairy 13271).
3. Paul De Kol Clothilde 21198. (Duchess Clothilde 24893).
- Johanna 5th's Paul De Kol 22372. (Johanna 5th 9343).
- Ignaro De Kol 23538 (14-681). (Cascade Princess 42188).

CHART IV.—Sires descended from Paul De Kol 14634 (Pauline Paul 2199 II. H. B.); by De Kol 2d's Prince 2767 (De Kol 2d 734).

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|---|---|--|--|--|--|
| 1. Count Paul De Kol 19108. (De Kol 2d's Queen 6324). | Pauline Paul 2d's Count 22909. (Pauline Paul 2d 31477). | 1. A. & G. Paul De Kol Butter Boy 26648. (Mulvie's Pauline De Kol 43433). | Midessa Butter Boy 32429. (Fidessa 43105). | Julian King of Riverside 38446 (14-708). (Juliana De Kol 55792). | King Mead of Riverside 50290 (26-718). (De Kol of Valley Mead 51218). |
| | | 2. Aaggie Cornucopia Pauline Count 29642. (Aaggie Cornucopia Pauline 48426). | | Aaggie Cornucopia Pauline Count 13th 44293 (11-718). (Tirania Johanna 63475). | |
| 2. Paul De Kol, Jr., 24762 (1-925). (Sadie Vale Concordia 32259). | Homestead, Jr., De Kol 28430 (4-520). (Homestead Heroine De Kol 46490). | 1. Sir Fayne Concordia 35227 (11-619). (Grace Fayne 2d 44124). | 1. Sir Johanna Ruth Fayne 53055 (12-793). (Johanna Ruth 52256). | 1. Johanna De Colantha Champion 60574 (18-677). (Johanna De Colantha 52253). | 1. Johanna De Colantha Champion 6th 80603 (11 608). (Princess Colantha Fobes 104440 (633) |
| | | 2. Colantha Johanna Champion 45674 (16-688). (Colantha 4th's Johanna 48577 (1001). | | 2. King Korndyke Colantha Ormsby 96546 (22-665). (Miss Korndyke Maid Ormsby 137794 (1014). | 2. Princess Mercedes Piebe Champion 98024 (10-613). (Princess Mercedes Piebe 124232 (729). |
| | | | | 3. Piebe Champion 60577 (11-686). (Piebe Longfield Night 75749). | King Korndyke Colantha Ormsby 2d 150 699 (10-679). (Grace P. M. De Kol 62234). |
| | | | | 4. Johanna Bonheur Champion 94984 (29-674). (Johanna Bonheur 60987). | Pinehurst Champion 83168 (11-639). (Josephine Piebe 90158 (563). |
| | | | | 5. Johanna Colantha Paul Parthenea 109888 (13-627). (Caroline Paul Parthenea 77784 (888). | Cloverlawn Johanna Piebe 162456 (21-603). (Johanna Piebe White 139495 (939). |
| | | | | 6. King Lyons 71155 (Segis Betta 104405). | Sir Woodland Lyons 137276 (16-578). (Segis Woodland Walker 175771). |
| | | 3. Johanna Bonheur Sir Fayne 46595 (7-558). (Johanna Bonheur 60987). | | | Sir Bessie Homestead Johanna Fayne 84536 (10-654). (Jessie Fobes Bessie Homestead 100742). |
| | | 4. Sir Johanna Fayne 42147 (64-645). (Johanna de Pauline 4th 60992). | | | |
| | | 5. Sir Clothilde Concordia 113343 (16-652). (Ona Clothilde De Kol 2d 93157 (845). | | | |
| | | 6. Sir Johanna Ruth 42142 (2-567). (Johanna Ruth 52256). | | | Sir Johanna Piebe 53257 (21-727). (Piebe Longfield Night 75749). |
| | | 2. Emblaqaard Tritomia Homestead 62924 (26-706). (Jessie Fobes 2d's Tritomia 44130). | | | |
| 3. Paul De Kol 3d 22394 (2-668). (Sadie Vale Concordia 32259). | | Sir Veeman Hengerveld 36158 (17-742). | 1. Sir Paul Veeman Hengerveld 94217 (29-648). (Pleasant Hill Lucy Veeman 2d 127258). | | |
| | | (Jessie Veeman Hengerveld 50093). | 2. Sir Veeman Korndyke Pontiac 156051 (13-806). (Beatrice Korndyke Pontiac Veeman 124503). | | |

4. Mutual Friend 3d's Paul 23200. (Mutual Friend 3d 28389).
- De Kol 2d's Mutual Paul 25 700 (2-701). (De Kol 2d 734).
1. Mutual Pietertje Paul 31943 (1-475). (Winona Pietertje De Kol 50734).
- Paul Frenesta De Kol 41206 (24-555). (Frenesta Hengerveld De Kol 60550).
2. Mooie Mutual De Kol 32846 (3-507). (Pleasant Valley Kate 37486).
1. Fobes Tritomia Mutual De Kol 40534 (13-625). (Jessie Fobes 2d's Tritomia 44130).
1. Oak De Kol 2d Homestead Fobes 65750 (5-597). (Oak De Kol 2d 66793).
- Oak De Kol Ollie Homestead 85529 (14-632). (Ollie Watson Prima Donna 71767). (See below).
Piebe Laura Homestead King 110474 (34-762). (Wisconsin Bess Piebe Laura 97555).
2. Mutual Fobes Longfield De Kol 82959 (12-669). (Lady Longfield 4th's Homestead Lass (100738).
2. Mutual Piebe De Kol 44554 (12-620). (Esther Piebe De Kol 2d 66791).
3. Sir Mooie Oak De Kol 41220 (15-646).
5. De Kol 2d Paul De Kol 20735. (De Kol 2d 734).
- Pietertje Hengerveld's Paul De Kol 22128. (Pietertje Hengerveld 24137).
1. Gem Pietertje Hengerveld Paul De Kol 23300 (Maplecroft Gem 35909).
1. Sir Ormsby Hengerveld De Kol 31212 (21-590). (Duchess Ormsby 2d 35439).
1. King Hengerveld Pietertje Ormsby 115308 (10-763). (Pietertje Maid of Grouw 3d 53646).
2. Sir Ormsby Skylark 47010 (14-920). (Skylark Mercedes De Kol 53644).
2. Sir Piebe Hengerveld De Kol 27929 (2-511). (Piebe Laura 27248).
- Sir Piebe Aaggie Hengerveld 32492 (12-649). (Sadie Aaggie 34584).
3. Gem Pietertje Paul De Kol 27282 (2-717). (Kakenstein 43974).
- Gem Pietertje Paul De Kol 3d 44658 (11-651). (Belle Terzool Mechthilde 50119).
2. Canary Paul 48328 (7-621). (Canary's Mercedes Brightest 49131).
1. Canary Paul Fobes Homestead 65751 (8-622). (Jessie Fobes Bessie Homestead 100742).
- Bessie Fobes Oak Homestead 118202 (20-703). (Lady Oak 2d's Homestead De Kol 89107).
2. Cedar Lawn Canary Paul 113333 (10-668). (Nellie Alcartra Rue 100005 (716).
6. Paul Mutual De Kol 18726. (Mutual Friend 2d 10513).
- Johanna Rue 2d's Paul De Kol 21724. (Johanna Rue 2d 33788).
- Tina Clay Johanna 38214 (11-561). (Tina Clay De Kol 57350 (384).

CHART V.—Sires descended from Maurice Bonheur 22394 (Rosa Bonheur 5th 11227); by Maurice Clothilde 17638 (Chloe Artis Netherland 20229); by Clothilde 3d's Netherland 10156 (Clothilde 3d 2091 H. H. B.); by Netherland Statesman 3280 H. H. B. (Lady Fay 4470 H. H. B.); by Netherland Prince 716 H. H. B. (Lady Netherland 1263).

Sarcastic Lad 23971 (13-486). (Belle Sarcastic 23039. (728).	1. Johanna Aaggie's Sarcastic Lad 26935. (Johanna Aaggie 36477).	1. Homestead Girl De Kol Sarcastic Lad 32558 (22-716). (Homestead Girl De Kol 48423).	1. Star Farm Johanna Lad 43224 (13-617). (Albina Vernon De Kol 53670).	2. Pietje 22d's Woodcrest Lad 39849 (4-652). (Pietje 22d 70884).	3. Johan Woodcrest Lad 52145 (11-652). (Uilkje 70886).	4. Woodcrest Tehee 74219 (52-596). (Aaggie Tehee De Kol 52809 (725).	5. Pietje 22d Son 58314 (15-700). (Pietje 22d 70884).	1. Aaggie Cornucopia Johanna Lad, Jr. 36974 (15-669). (Lily Netherland De Kol 52069).	2. Sir Korndyke Cornucopia 43769 (6-658). (Flora Korndyke 75835).	1. Spring Farm Pontiac Cornucopia 77172 (2-718). (Spring Farm Pontiac Lass 106812).	2. Spring Farm Lady Korndyke 77171 (10-619). (Tweede White Lady 83186 (902).	3. King Korndyke Pontiac Lass 115585 (15-781). (K. P. Pontiac Lass 203938).	3. Sir Beets Cornucopia Netherland 38460 (18-515). (Lily Netherland of Riverside 59984).	4. Sir Cornucopia Prince 48663 (11-623). (Small Hopes Piebe 79030).	1. Pietje Ormsby Burke 49751 (11-605). (Jessie Fobes Ormsby Burke 71050).	2. Woodcrest Lyons Lad 122445 (10-553). (Lady Lyons De Kol 2d 142525).	3. Woodcrest Pietje Ormsby 54909 (4-532). (Pauline Ormsby 74972 (664).	Supreme Glista Pietje 135045 (1-756). (Glista Eglantine 118000 (526). (See below).	M. & P. Model King Glista 184303 (11-571). (Model Annie Butter Girl 2d 178716).	1. Aaggie Cornucopia Crown De Kol 43079. (Onda Crown De Kol 61642).	2. King Cornucopia Sadie Vale 83371 (10-697). (Sadie Vale Pietertje 79740 (860).	3. Aaggie Pontiac Grahamholm Lad 160480 (12-741). (Arcady Pontiac Pietertje Beets 108953 (549).	1. King Valdessa 137495 (4-705). (Valdessa Scott 2d 72311).	2. Vanderkamp Segis Pontiac 157331 (10-815). (Vanderkamp Segis De Kol 220805).	1. Toyon Fayne Valdessa 198738 (11-636). (Finderne Miriam Fayne 160396).	2. King Valdessa Pontiac 189344 (13-814). (Mabel Segis Korndyke 161784).	Aaggie Cornucopia Newman 80744 (19-696). (Margie Newman 76312).	King Cornucopia Sadie Vale Jr. 115900 (12-535). (Ononis Homestead Cornucopia 120566).
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|---|---|---|--|--|
| 2. Colantha Johanna Lad 32481 (28-764). (Colantha 4th's Johanna 48577 (1001)). | 1. King Colantha Clothilde 60403 (1-529). (Abby Hartog Clothilde 62154). | 1. King of the Black and White 83354 (7-658). (Marion Walker Pietertje 99432). | 1. King Belle Segis 136516 (12-582). (Belle Segis 86647). | |
| | | 2. King Walker Johanna Lad 174733 (28-696). (Lottie Walker Spofford 2d 166550). | 2. King Walker Clothilde 11314 (22-693). (Lottie Walker Spofford 87436). | |
| | | 3. King Colantha Clothilde 2d 83763 (3-708). (Mildred Walker 2d 111681). | } Sir College Colantha 136107 (15-551). (College Belle Wayne 98497 (623)). | |
| | | 4. King Quality 88237 (11-796). (Addie De Kol Hartog 87199). | | |
| | 2. Dutchland Colantha Sir Changeling 55054. (Changeling 57628). | } Sir Colantha Prilly 106062 (10-700). (Rissa Prilly 103643). | | |
| | 3. Sir Johanna Colantha Gladi 61040 (1-610). (Pontiac Gladi 79904). | | } Sir Johanna Korndyke Gladi 94942 (12-633). (Lady Korndyke Pauline De Kol 69174). | |
| | 4. Colantha Sir Korndyke De Kol 141211 (12-619). (Susie De Kol Paul 2d 79137). | | | |
| | 5. Dutchland Colantha Sir Inka 50999 (46-640). (Lady Princess Beets 83340). | | | |
| | 6. Colantha Johanna Lad 8th 77686 (24-810). (Pontiac Beets Korndyke 61101). | | | |
| | 7. Colantha Pietertje Sir Aaggie 82392 (12-658). (Dutchland Aaggie Cornucopia 97795). | | | |
| 8. Denton Colantha Sir Rag Apple 87426 (28-609). (Dutchland Rag Apple Aaggie 120761). | | | | |
| 9. Dutchland Governor Sir Colantha 90477 (17-779). (Pontiac Latonia 56962). | | | | |
| 10. Colantha Sir Walker Korndyke 95460 (33-699). (Lillian Walker 3d 73170). | | | | |
| 3. Johanna Rue 3d's Lad 26939 (6-824). (Johanna Rue 3d 42167). | } Sir Waldorf Lad 39275 (1-605). (Waldorf Vernon De Kol 52515). | } Sir Waldorf Lad Jr. 56663 (12-588). (Prairie Flower Daisy 78943). | | |
| 4. Johanna De Kol's Lad 26938 (22-576). (Johanna De Kol 36478). | | | | |
| 5. Johanna Colantha Sarcastic Lad 38402 (27-656). (Johanna Colantha 48378). | | | | |

Sires descended from Clothilde Goudgeld Lad 25080 (Rose Goudgeld 2d 26670); by Clothilde Rex 19639 (Alice D. 3d 14004); by Clothilde 5th's Netherland 13105 (Clothilde 5th 8466 H. H. B.); by Netherland Statesman 3280 H. H. B. (Lady Fay 4470 H. H. B.)

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| Clothilde Goudgeld Hugo 27525). (Carlotta Clothilde 40675). | Beauty Pietertje Butter King 38462. (Beauty Pietertje 53334). | Beauty Pietertje Prince 56435 (12-665). (Clarissa Clothilde Pietertje 64860). | 1. Beauty Walker Pietertje Prince 77421 (1-564). (Marion Walker Pietertje 99432). | Beauty Walker Pietertje Prince 2d 107658 (12-531). (Princess Hengerveld De Kol 84540). Prince Riverside Walker 112081 (10-790). (Aaggie Acme of Riverside 93957 (653)). |
| | | | 2. Prince Gelseche Walker 81663 (33-700). (Gelseche Walker 111678). | |

CHART VI.—Sires descended from Manor De Kol 21226 (Netherland Hengerveld 13106); by De Kol 2d Netherland 11584 (De Kol 2d 734); Netherland Alban 4584 H. H. B. (Albino 2654); by Netherland Princee 716 (Lady Netherland 1263).

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| 1. De Kol 2d's
Butter Boy
3d 23260 (10-732).
(De Kol 2d 734). | 1. Friend Hengerveld De Kol Butter Boy 29303 (14-735).
(Friend Hengerveld De Kol 49905). | 1. Maple Crest Butter Boy De Kol 94156 (7-712).
(Maple Crest Pontiac Belle 143946 (841)). | 1. Sir Ormsby Banostine Champion 166276 (12-652).
(Duchess Skylark Ormsby 124514 (1255)). | 2. Paul Aaggie Butter Boy 161118 (15-737).
(Buffalo Aaggie Beets 121152). | | |
| | | | | | 2. Maple Crest Korndyke Hengerveld 84478 (25-696).
(Maple Crest Pontiac Flora Hartog 143950 (1027)). | 3. Maple Crest King De Kol 91584 (16-712).
(Maple Crest Pontiac Hartog 141157). |
| | | | | | 3. Maple Crest Application Pontiac 132652 (14-765).
(Maple Crest Pontiac Application 141158 (1085)). | |
| | | | | | 4. Maple Crest High-lawn Cleveland 139636 (10-658).
(Burton High-lawn 2d's Hartog 70231). | |
| | | | | | 5. Sir Willowbridge Korndyke 45763 (10-644).
(Aaggie Pauline Abbeker 69473). | |
| | | | | | 6. Virginia Korndyke Butter Boy 128445 (19-630).
(Belle Korndyke's Daughter 54085). | |
| 2. Korndyke Butter Boy 38496 (7-697).
(Korndyke Queen De Kol 41934). | 2. Faforite Tritomia Sir Korndyke 36324 (2-524).
(Faforite Tritomia 61615). | Pietertje Hengerveld Sir Korndyke 60966 (10-760).
(Tillie Burr De Kol 2d 80868). | 1. Lothian Korndyke De Kol Pietertje 96633 (13-633).
(Lothian Maggie De Kol 90209). | | | |
| 3. Albina Butter Boy 64755 (4-709).
(Jannek Albina De Kol 3d 69108). | Sir Urmagel Burke 58219 (10-641).
(Urmagelsche 2d A 69967). | Admiral Urmagel Burke 113524 (11-702).
(Daisy Douglass Albino Beets 125374). | 2. Lothian King De Kol Korndyke 116785 (35-727).
(Lothian Maggie De Kol 90209). | | | |
| 4. Hygeia Veeman Butter Boy 43697 (12-623).
(Jessie Veeman A. 36579). | | | | | | |
| 5. Sir Korndyke Manor De Kol 28 133.
(Korndyke Queen De Kol 41934). | | | | | | |
| 6. De Kol Hengerveld Burke 29737 (2-604).
(Helena Burke 22916). | | | | | | |
2. Lorraine Prince 23109. } Korndyke Queen De Kol's Prince 26025 (12-619). } Prince Alcartra Korndyke 88318 (18-689).
(Manor Kekke 14057). } (Korndyke Queen De Kol 41934). } (Tilly Alcartra 123459 (1070)).

Sires descended from De Kol 2d's Alban 17064 (De Kol 2d 734); by Netherland Alban 4584 H. H. B. (Albino 2654).

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| Count Colantha Alban 25148.
(Brightest Promise Colantha 42751). | Canary Mercedes Alban 33475.
(Canary's Mercedes 12586). | Canary Mercedes Pietertje Hartog 44467.
(Princess Hartog Pietertje 60879). | Canary Mercedes Pietertje Hartog 6th 78123 (13-640).
(Royalton De Kol Violet 86460 (1069)). |
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Sires descended from Alma Duke 14241 (Alma Kuperus 2d 2690); by Marve H III 4599 (Jifke 481 D.-F. H. B.); by Mooie Hartog 4th 418 D.-F. H. B. (Jacoba Hartog 2 M. R.)

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| Alph Terpstra 18342.
(Ee Terpstra 681 D.-F. H. B.). | Capitola Duke 21530.
(Capitola H. 13050). | Admiral Walker 25755 (1-815).
(Lillian Walker 38944). | Admiral Walker Pietertje 35269 (15-696).
(Mary R. Pietertje 49308). | 1. Beets Walker 109385 (11-861).
(Duchess Manor Beets Aaggie De Kol 2d 121391 (614)). |
| | | | | 2. King Walker 40358 (17-775).
(Lillian Walker Pietertje 64169). |

Sires descended from Jewel 2d's Crown Jewel 24261 (Jewel 2d 1119 H. H. B.); by Jewel's Prince of Wood Lake 38 W. H. F. A.

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| Virgo Beauty Duke 24528.
(Virgo Beauty 2d 18535). | Sir Mechthilde Jewel 32732.
(Chloe Mechthilde 49535). | Sir Jewel Parthenea Doede 38639 (10-733).
(Parthenea Doede 53784). | Buffalo Aguinaldo Doede 102224 (16-498).
(Buffalo Aaggie Beets 121152). |
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Sires descended from Count Arthur Vashta 23984 (Hillside Vashta 33192); by Sir Count Arthur 21603.

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| Nelly Pricemore Prince 35650.
(Nelly Pricemore 11476). | Sir Dandy Prince Koningin 73159.
(Sholes Koningin 72092). | Bonnymeads Pietertje De Kol 103456 (10-588).
(Mildred De Kol Pietertje 153898). |
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