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A Kentucky Cow-Testing Association and A Cooperative Bull Association

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A Kentucky Cow-Testing Association and A Cooperative Bull Association

By H. F. LINK

This circular reports some results secured thru a Kentucky Cow-Testing Association and a Cooperative Purebred Bull Association.

THE COW-TESTING ASSOCIATION

Part I, a report of production of herds tested during three years, 1920 to 1922 inclusive, in the Campbell County Cow-Testing Association.

THE COOPERATIVE BULL ASSOCIATION

Part II, a report of the production of daughters sired by Campbell County Cooperative Bull Association bulls, in comparison with the production of their dams.

CIRCULAR NO. 212

Part I

THE COW-TESTING ASSOCIATION

A Cow-Testing Association is a group of dairymen, usually 25 or 26 in number, organized for the purpose of employing a tester whose duty is to keep records of the production, feed, and income of each cow in their herds. The tester spends one day each month with each dairyman, arriving at each farm, as a rule, in the afternoon and remaining until some time the following day. He carefully weighs the milk produced and feed consumed by each cow at both the evening and morning milkings. He also secures a composite sample of each cow's milk and tests for percentage of butterfat. All these records for the entire herd are kept in a herd book so that a member can at any time get the record of each cow, or of his entire herd, for each month during the period over which they have been tested. From these figures the profit or loss from each cow can be computed and the dairyman can eliminate those cows that are unprofitable and feed the remainder according to their production.

The farmer can use the information obtained from the Cow-Testing Association in selecting, breeding and feeding his cows. By keeping only high producing cows in the herd from which to raise calves the farmer can soon breed up his herd. The Cow-Testing Association also enables the members to test the prepotency of the herd sires being used, as the production of the daughters of these sires can be compared with the production of their mothers. The Cow-Testing Association also adds to the sale value of all cows making creditable records.

One of the first Cow-Testing Associations organized in Kentucky was the Campbell County Association, organized late in 1919, thru the combined efforts of a number of progressive dairymen of the county and the Extension Division of the College of Agriculture. These leading dairymen, who had learned the value of better feeding and better breeding, felt the need of such an organization for the improvement of their herds.

After several meetings enough members were secured to warrant starting the association, officers were elected and with the help of the Section of Dairying of the College of Agriculture, a tester was selected. The association was financed for some time with the payments by the members at the rate of $4.00 per cow per year, with a minimum of eight cows per member. At first the payments were made quarterly in advance but later the method of payment was changed so that the first quarter was paid in advance and three notes, without interest, were given for the remaining payments. Still later, because of the tendency of too many small cow owners to join the association, the method of financing was changed to $50.00 per member per year with a maximum of 30 cows per day. The tester was paid $100.00 per month and furnished his own transportation. With 26 days' testing per month at the above rate the association had $1,200 per year with which to pay the tester's salary and $100 with which to pay for the sulphuric acid, breakage, publicity and all other incidental expenses necessary for the work for a year.

RESULTS OF THREE YEARS TESTING

When the tester made his first round, the high cow in the association produced 45 pounds of milk in one day, and this record was considered phenomenal. Within three years 60 pound cows were not unusual and one cow had made an A. R. O. (Advanced Registry Official), record of more than 20,000 pounds of milk in one year on twice a day milking.

This report deals chiefly with the production of three herds which were the only herds in the county in both the Cow-Testing and the Cooperative Bull Association for the three years. The owners of these herds, Louis Clark, Alfred Eisen and Joseph Herringer & Sons, all of California, Kentucky, were organizers and leaders of both associations. As was previously explained, a mistake was made in financing the association at the start in that it was financed on a quarterly rather than a yearly basis and a number of the members did not understand that the full benefits could not be obtained in a few months' test and withdrew during the year. While most of these members later came back into

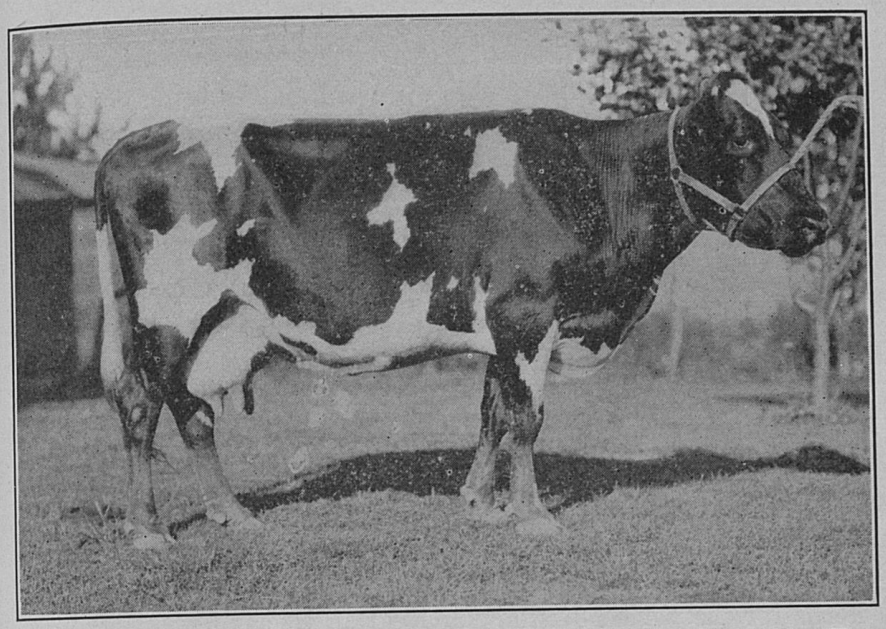

Fig. 1.—This cow produced 7,760 lbs. milk and 263 lbs. butterfat. The cow pictured in Fig. 1, to all appearances, is a good producer. She produced well for a short time but did not hold up long enough to make a good record.

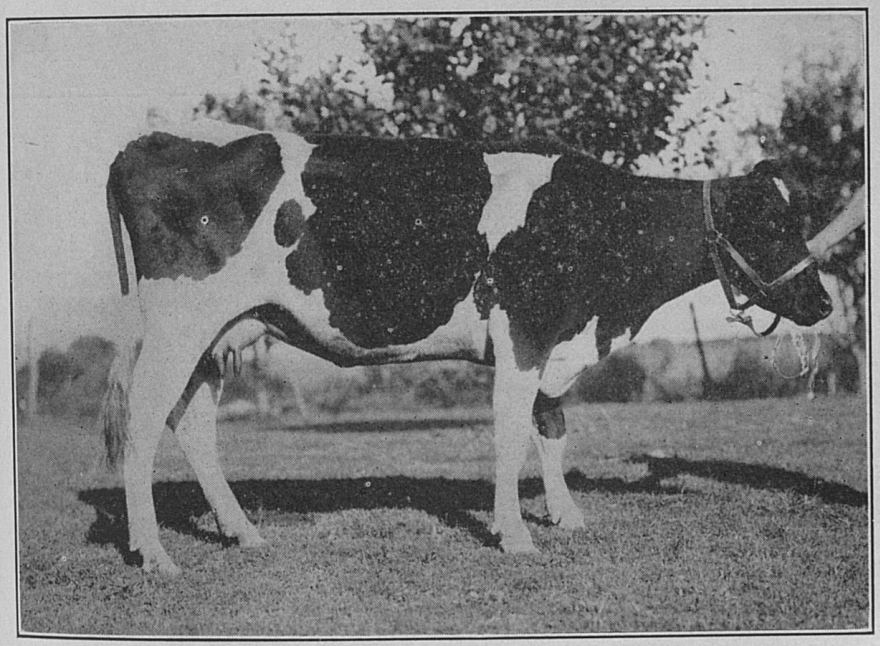

Fig. 2.—This cow from the same herd produced 11,627 lbs. milk and 381 lbs. butterfat under the same conditions of feed, care and management. The cow pictured in Fig. 2 shows poor dairy conformation and probably would have been culled out on her looks. While not a good type to be used for breeding, her production record would easily justify keeping her in the herd. This is one of the reasons why a Cow-Testing Association pays.

the association they do not have a complete record on their herds, so that it was not possible to include them in this report. Even after the association was financed on a yearly basis difficulty was experienced with a few members who, believing that they had obtained all the information necessary about their herds, withdrew after completing a year's test.

Records are given from the beginning of the Cow-Testing Association. No records were available previous to the organization of this association. These records are for the calendar year in each case. Records of cows eliminated because of low production, cows purchased or heifers freshening during the year, and cows not having a complete year's record for other reasons are not included in this report. These herds were composed of about one-half registered Holsteins and the other half grades, for the most part Holsteins. Following are the records of the three herds for the period January 1, 1920, to December 31, 1922.

AVERAGE YEARLY PRODUCTION PER COW OF EACH HERD

Herd Owner	1920		1921		1922	
	Lbs. Milk	Lbs. Fat	Lbs. Milk	Lbs. Fat	Lbs. Milk	Lbs. Fat
Louis Clark	7,604	239.93	8,666	302.95	*8,243	294.84
Alfred Eisen	7,293	261.64	8,478	301.38	8,777	310.06
Jos. Herringer	5,923	213.46	6,502	235.38	7,386	247.36
Average production, all herds	6,846	250.36	7,794	277.44	8,198	286.47
Total No. cows tested		63		59		62
Total No. cows tested, 12 mos.		39		38		39

Ave. production, 1st yr. of test, 1920—39 cows—6,846 lbs. milk; 250.36 lbs. butterfat.

Ave. production after 1st yr. of test, 1922 and 1923—77 cows—7,999 lbs. milk; 282.02 lbs. butterfat.

Ave. increase last 2 years over 1st year (1921 and 1922 over 1920), 1,153 lbs., or 16.85% in milk production; and 31.66 lbs., or 12.64%, in butterfat production.

*This decrease from the 1921 figures was due to five heifers being added to the herd to replace cows previously sold. Two of these heifers proved such low producers that they were sold for slaughter at the end of the year. Without the records of these two heifers the herd average for 1922 was 8,977 lbs. milk and 321.46 lbs. butterfat.

RESULTS ACHIEVED THRU THE COW-TESTING ASSOCIATION

As will be noted from the foregoing table, a very substantial increase in production was secured after the Cow-Testing Association had been in operation for one year. This increase amounted to an average of 1,153 pounds of milk and 31.66 pounds of butter fat per cow over the 1920, or the first year's records, or an average increase during the next two years, 1921 and 1922, of 16.85% in milk and 12.64% in butterfat over 1920. The following chart gives the average yearly production of the three herds during the three years' test.

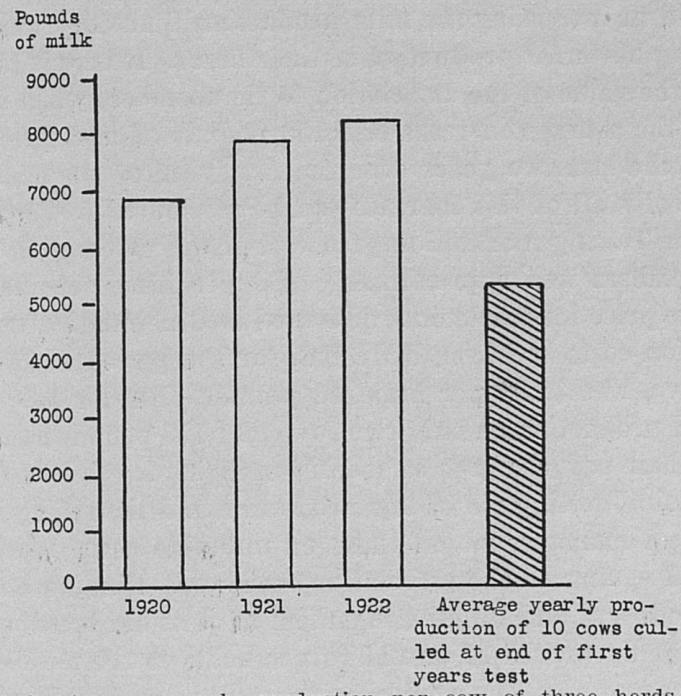

Fig. 3.—Average yearly production per cow of three herds in Cow-Testing Association, 1920-1922.

When one considers that these three herds were among the best in the county at the start of the testing and that all three owners were good feeders and started feeding according to the recommendations of the tester on his first visit, the increases in production secured demonstrate the value of a Cow-Testing Association. These three owners all attribute their increases primarily to weeding out low producers and breeding up the herds

thru the use of purebred bulls on their highest producing cows. Better management, under the supervision of the tester, was also an important factor in this increase. Since a very substantial increase was secured from the three herds considered, the association undoubtedly was responsible for larger increases among some of the other members.

Most of the milk produced in Campbell County is sold in greater Cincinnati as whole milk. Practically all the members of the Cow-Testing Association were producers of whole milk and because of the method of payment then in use were more interested in increasing the milk production than they were in increasing butterfat production of their herds. It is easy to understand the value of the association to the members when one considers the average increase of 1,153 pounds of milk per cow received the last two years over the first year of the association. Practically all of this increase can be attributed to the work of the Cow-Testing Association. The cost of this cow testing work to the members was approximately $50 per herd per year. The average price for whole milk delivered at Cincinnati, after transportation costs had been deducted, for the period 1920 to 1922 inclusive, was $2.34 per hundred pounds. At this rate the increased production on only two cows of 1,153 pounds each would more than pay the cost of testing each herd. From another standpoint, getting rid of low producers, and the saving in feed, care, and management on these unprofitable cows, represented the real saving to the association members. Finding out these low producers and eliminating them as possible breeding stock undoubtedly proved of untold future value to the members and to the community. As would be expected, when Cow-Testing Association records are used to weed out the low producers, the greatest increase over the preceding year occurred the second year of the operation of the association. From the foregoing tables it will be noted that the heaviest culling occurred shortly after the first year's records had been completed on the herds.

It is interesting to note the effect the association had on weeding out boarder cows. It will be noted that in practically every case low producers were soon disposed of. While an aver-

age of only 13 cows per herd made complete years' records each year, there was a total of 20 cows per herd each year in each of the three herds considered in this report. While part of this difference was due to young animals just coming into milking during the year, most of it, especially during the first two years, represented low producers being weeded out. In some cases poor cows were not weeded out as soon as they should have been. This was especially so with low producing purebreds. That the association aided in weeding out low producers is shown by the following table giving the production of the cows sold after one year's test as compared with the production of each herd, both the first and second years of the test.

As a result of the first year's test 10 low producing cows were sold for slaughter; an even larger number was sold during the first year because of low production but their records are not included because of the short time these cows were on test. This was 25% of the total number of cows having a full year's record the first year of the test. The average production of all the cows in these three herds the first year of the test was 6,846 pounds of milk and 250.36 pounds of butterfat. The second year of the test after these 10 poor producers had been weeded out the production of the three herds rose to 7,794 pounds of milk and 277.44 pounds of butterfat. These figures indicate that the owners of these herds made good use of the Cow-Testing Association records in culling their herds.

The value of a Cow-Testing Association was manifested in the general dairy improvement thruout Campbell County which followed its organization. This improvement consisted of increases in numbers of purebred cattle, general weeding out of low producers and the adoption of better methods of feeding, care, and management.

Effect of Culling on Production of Milk and Butterfat.

Herd Owner	Ave. Production of Cows Culled Out After 1st Year's Test.		Ave. Production of Entire Herd 1st Year of Test (Including Those Culled).		Ave. Production Entire Herd 2nd Year of Test.	
	Milk	Butterfat	Milk	Butterfat	Milk	Butterfat
Louis Clark	5,883	225.36	7,604	289.93	8,666	302.95
Alfred Eisen	5,296	198.66	7,293	261.64	8,478	301.38
Jos. Herringer	5,048	206.48	5,923	213.46	6,502	235.38
Ave. of three herds	5,323	208.12	6,846	250.36	7,794	277.44

Part II.

THE COOPERATIVE BULL ASSOCIATION

A Cooperative Bull Association is an organization formed for the purpose of the cooperative ownership, use, and exchange of bulls of better type and breeding than could be afforded in any other way. The association is made up of a number of units or blocks representing the various neighborhoods of a county, where the farmers have shown a willingness to cooperate for the improvement of their herds. A purebred bull is placed in each block of the association and the bulls are exchanged between blocks at the end of two year periods in order to avoid inbreeding. This plan insures several years of breeding for each group or block with an investment in only one bull for each group. Thru the association the purchase price and cost of maintenance are distributed according to the number of cows bred by the members, so as to give each one an opportunity to build up his herd at a minimum expense. By this method, purchasing high record bulls does not cost any one farmer much more than to personally buy a scrub bull.

One of the first Cooperative Bull Associations organized in Kentucky was the Campbell County Association, organized early in 1921. Under the stimulus of the Cow-Testing Association some very high record cows were developed and the owners began to see the advisability of mating such cows to sires with higher records if increased production was to be expected from the offspring. At this time few farmers in the county had large herds of purebreds. These small breeders were not financially able to purchase high record sires individually but were able to do so collectively.

A one block Holstein Bull Association had been in existence in Campbell County for several years and had proved a more successful and economical means of securing the services of better bulls than the members could afford to obtain individually. Having the success of the one block association in mind and with it as a nucleus, two more blocks were added early in 1921. This association was organized in cooperation with the Extension De-

partment of the College of Agriculture and the Dairy Division of the United States Department of Agriculture.*

A short time later a fourth block was added. This organization, called the Campbell County Cooperative Purebred Holstein Bull Association, included nearly all the purebred Holstein herds of the county, as well as a number of grade herds.

The association was financed by an assessment made on each member at the rate of $10 for each cow he wished to breed to an association bull. The funds thus raised were used to purchase the bulls, pay expenses of the committee on selecting bulls, transportation of bulls, veterinary fees, and incidental expenses. The bulls were located as conveniently as possible for the members of each block and placed in charge of competent keepers. The cost of keeping the bulls is pro-rated to each member according to the number of cows bred. Payment for the maintenance of the bulls proved a saving for most of the members since a large proportion were keeping a bull of their own before the organization of the association. Each association bull replaced two or three purebreds and several scrub bulls.

The association is managed by a Board of Directors composed of representatives of each block who elect from their number a President, Vice President, Secretary and Treasurer. The Board of Directors select, purchase and supervise the care and handling of the bulls, and enforce rules made by the association in regard to their use.

SELECTION OF BULLS

The members of the Association realized that the selection of the bulls was one of the most important considerations upon which the organization's success depended. Some of the best bulls available in the state were purchased for the association. Each block was headed by a high record sire, care being used in selecting the sires that were excellent individuals from a long line of high producers. Even with very careful buying during this period of high prices, the bulls cost from $450 to $1,000. At

*For information on organizing such an association see Kentucky Extension Circular No. 122, "The Cooperative Bull Association in Kentucky" by E. M. Prewitt, or Farmers' Bulletin No. 993, "Cooperative Bull Associations" by Joel G. Winkjer.

present prices bulls of this breeding could probably be purchased much cheaper. Considerable criticism was met locally because of paying such high prices for the bulls. That these prices were justified is shown from the results already obtained. A committee was appointed by the Board of Directors to secure the bulls for the association, care being used to have competent judges of dairy cattle on this committee. All bulls were purchased subject to retest for tuberculosis. The milk and butterfat records of the dam and sire's dam were given special consideration, but not at a sacrifice to conformation and general appearance. Another factor considered in selecting the bulls was as to whether the production records were uniformly good or whether there were only a few outstanding records. One of the association bulls is shown in Fig. 4. The picture was taken at the time this young bull was purchased for the association.

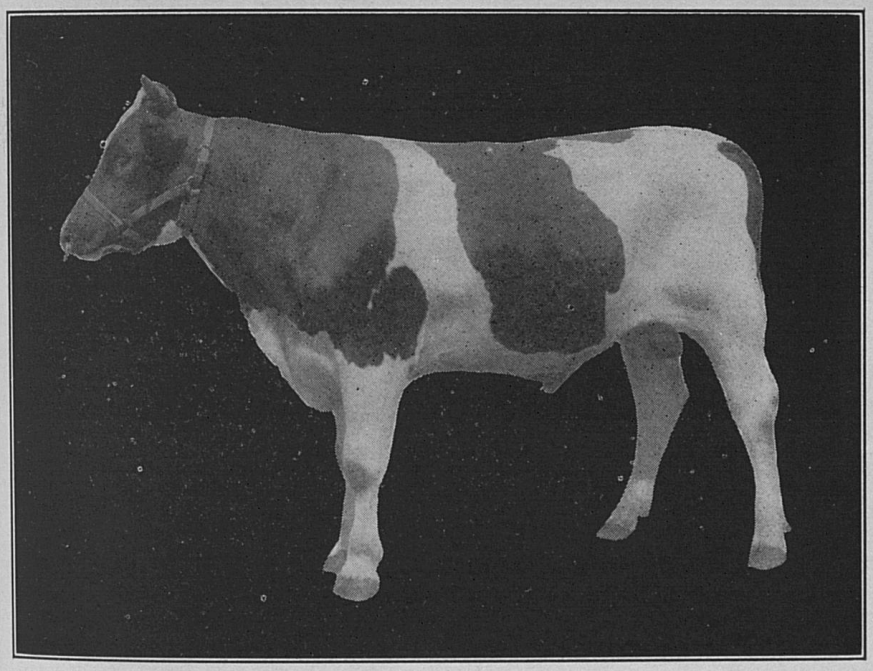

Fig. 4.—King Signet Fayne 313505, does not as yet have any tested daughters. His sire has 28 A. R. daughters and 9 proven sons and his dam made a record at 2½ years of age of 30.38 lbs. butter and 462 lbs. milk in 7 days.

Young bulls just ready for service were selected in most cases in order to obtain a longer period of service from them.

According to the plan of the association the bulls are left two years in each block and then exchanged with another block for two years so that it will require eight years to complete the circuit. The members breed all cows from which calves are to be saved, to these bulls, each bull serving from 75 to 100 cows each year, or a total of at least 300 cows for the four bulls, so that the association has considerable influence on the dairy industry of the county.

As previously stated, a one block bull association had been in existence in Campbell County for some years before the remaining three blocks were added. Two bulls had been used by this association before the larger one was organized and a number of the records given are from daughters of these bulls. Since the organization of the larger association, records have been obtained from the daughters of two of the four bulls.

Daughters of four bulls are considered. The first two bulls, Johanna Aaggie Boon Champion 118660 and Pietje Segis Eden De Kol 211510, belonged to the early one block association, while the remaining two bulls, King Helbon Keyes 310600 and King Veeman Daisy Pieterje 281026, headed two blocks of the four block association organized later. The records of the daughters of four of these bulls, together with the records of the dams of these daughters are given below.

These records are computed to maturity by using 70% as a basis for a mature record for a 2-year-old, 80% for a 3-year-old, and 90% for a 4-year-old, a 5-year-old being considered a mature cow. Where ten-month semi-official records are used they are given on the basis of 85% of a 365 day record.

Sire's Name and Number—Pietje Segis Eden De Kol 211510

Dam's Name and Number	Age	Breed	Milk Lbs.	Butter-fat Lbs.	Daughter's Name and Number	Age	Breed	Milk Lbs.	Butter-fat Lbs.
Shuster	M	G. H.	9,738	325	Allie	3	G. H.	14,434	471
Joe	M	G. H.	12,333	472	Peter	2	G. H.	14,920	559
Zeldenrust Pontiac Artis 229629	6	R. H.	7,669	288	Artis Segis Zeldenrust Pontiac 505664	2	R. H.	15,630	515
Bessie	7	G. H.	7,887	276	Bessie 2nd	2	G. H.	11,703	408
Hilda Pontiac Artis 383251	2	R. H.	10,423	420	Hilda Pontiac Artis 2nd 505665	3	R. H.	13,980	493
Hilda Pontiac Artis 383251	2	R. H.	10,423	420	Hilda Pontiac Artis 3rd 563986	2	R. H.	17,143	590
Sweetie	3	G. H.	6,624	227	Whitie	2	G. H.	14,396	461
7 cows			65,097	2,428	7 daughters			102,206	3,497
Average			9,300	347				14,601	500

His 7 daughters excelled their dams an average of 5,301 pounds, or 57%, in milk production, and 153 pounds, or 44%, in butterfat production.

M.—Mature.
G. H.—Grade Holstein.
R. H.—Registered Holstein.

Sire's Name and Number—Johanna Aaggie Boon Champion 118660
All records computed to maturity by using 70%, 80% and 90%.

Dam's Name and Number	Age	Breed	Milk Lbs.	Butter-fat Lbs.	Daughter's Name and Number	Age	Breed	Milk Lbs.	Butter-fat Lbs.
Joe	M	G. H.	12,333	472	Boone	3	G. H.	10,431	335
Shuster	M	G. H.	9,738	325	Cherry	3	G. H.	12,869	432
Florence	5	G. H.	7,925	285	Lilly	2	G. H.	10,598	343
Florence	5	G. H.	7,925	285	May	2	G. H.	11,767	384
Netherland Kola Concordia 225829	6	R. H.	7,372	243	Netherland Kola Concordia 2nd 563985	2	R. H.	11,627	381
5 cows			45,293	1,610	5 daughters			57,292	1,875
Average			9,059	322				11,458	375

His 5 daughters excelled their dams an average of 2,399 lbs., or 26.5%, in milk production, and 53 lbs., or 16.5%, in butterfat production.

Sire's Name and Number—King Veeman Daisy Pietertje 281026
All records computed to maturity by using 70%, 80% and 90%.

Dam's Name and Number	Age	Breed	Milk Lbs.	Butter-fat Lbs.	Daughter's Name and Number	Age	Breed	Milk Lbs.	Butter-fat Lbs.
Hilda Pontiac Artis 2nd 505665	3	R. H.	13,980	493	Pet Artis Pietertje 743543	2	R. H.	15,165	509
Zeldenrust Pontiac Artis 229629	6	R. H.	7,669	288	Daisy Pietertje Veeman 669023	3	R. H.	13,279	421
Hilda Pontiac Artis 383251	2	R. H.	10,423	420	Hilda Pontiac Artis 4th 723440	2	R. H.	15,131	532
3 cows			32,072	1,201	3 daughters			43,575	1,462
Average			10,691	400	Average			14,525	487

His 3 daughters excelled their dams an average of 3,834 lbs., or 35.9%, in milk production, and 87 lbs., or 21.7%, in butterfat production.

Sire's Name and Number—King Helbon Keyes 310600
All records computed to maturity by using 70%, 80% and 90%.

Dam's Name and Number	Age	Breed	Milk Lbs.	Butter-fat Lbs.	Daughter's Name and Number	Age	Breed	Milk Lbs.	Butter-fat Lbs.
Artis Segis Zeldenrust Pontiac 505664	2	R. H.	15,630	515	Beauty Bonheur Segis 723439	2	R. H.	20,497	683

Daughter excelled her dam an average of 4,867 lbs., or 31.1%, in milk production, and 168 lbs., or 32.6%, in butterfat production

Summary of Results of Dams' Records Compared with Daughters'

Sire	Number Dams	Milk Lbs.	Butterfat Lbs.	Number Daughters	Milk Lbs.	Butterfat Lbs.
Pietje Segis Eden De Kol 211510	7	65,097	2,428	7	102,206	3,497
Johanna Aaggie Boon Champion 118660	5	45,293	1,610	5	57,292	1,875
King Veeman Daisy Pietertje 281026	3	32,072	1,201	3	43,575	1,462
King Helbon Keyes 310600	1	15,630	515	1	20,497	683
Total	16	158,092	5,754	16	223,570	7,517
Average		9,881	360		13,973	470

The 16 daughters excelled their dams an average of 4,092 lbs. in milk, or 41.41%, and 110 lbs., or 30.5%, in butterfat production.

Average Production of Dams and Daughters of Each Bull

Name of Bull	Number Daughters	Ave. Production of Dams		Ave. Production of Daughters		Daughters Excelled Dams	
		Milk	Butterfat	Milk	Butterfat	Milk	Butterfat
Pietje Segis Eden De Kol 211510	7	9,300	347	14,601	500	57% 5,301	44.1% 153
Johanna Aaggie Boon Champion 118660	5	9,059	322	11,458	375	26.5% 2,399	16.5% 53
King Veeman Daisy Pietertje 281026	3	10,691	400	14,525	487	35.9% 3,834	21.7% 87
King Helbon Keyes 310600	1	15,630	515	20,497	683	31.1% 4,867	32.6% 168
Average production of dams and daughters of four bulls	16	9,881	360	13,973	470	41.41% 4,092	30.5% 110

It will be noted from the foregoing tables that the greatest increase in production was secured from the daughters of Pietje Segis Eden De Kol 211510. His seven daughters excelled their dams an average of 5,301 pounds, or 57%, in milk production and 153 pounds, or 44%, in butterfat production. One of his daughters, Artis Segis Zeldenrust Pontiac 505644 (Fig. 6), produced 7,961 lbs. more milk and 227 lbs. more butterfat than her dam. A daughter of Artis Segis Zeldenrust Pontiac, Beauty Bonheur Segis 723439, by another association bull, King Helbon Keyes 310600, produced 20,497 lbs. milk and 683 lbs. butterfat, or 4,867 lbs. milk and 168 lbs. of butterfat more than her mother. The production of these three cows is as follows:

	Milk	Butterfat
Dam	7,669 lbs.	288 lbs.
Daughter	15,630 lbs.	515 lbs.
Granddaughter	20,497 lbs.	683 lbs.

It will be noted that the granddaughter excelled her mother's record by 4,867 lbs. of milk and 168 lbs. of butterfat and her grandmother's record by 12,828 lbs. of milk and 395 lbs. of butterfat.

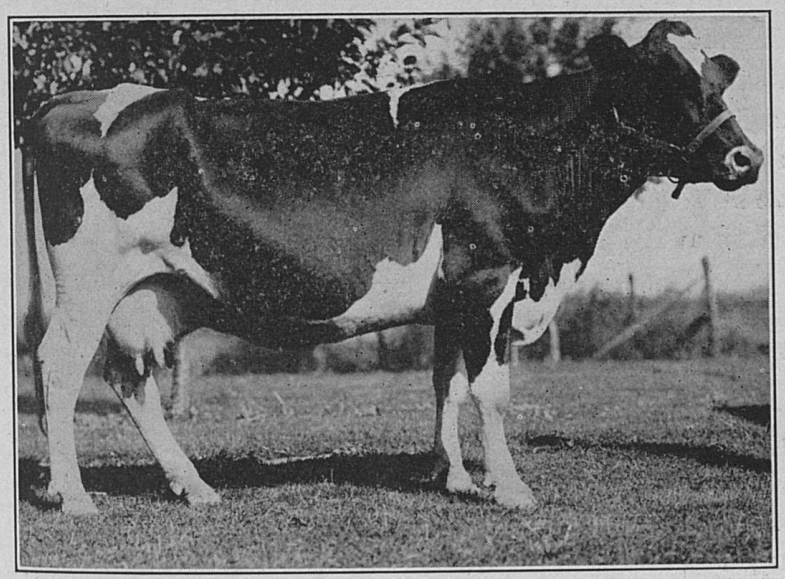

Fig. 5.—The dam, Zeldenrust Pontiac Artis 229629, produced 7,669 lbs. milk and 228 lbs. butterfat.

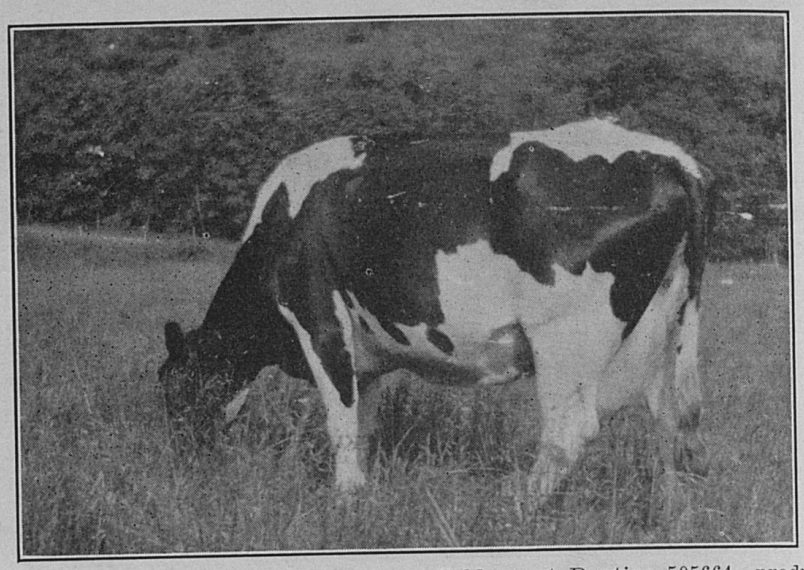

Fig. 6.—The daughter, Artis Segis Zeldenrust Pontiac 505664, produced 15,630 lbs. milk and 515 lbs. butterfat. The daughter produced 7,961 lbs. milk and 227 lbs. butterfat more than her mother. Also a considerable improvement in type will be noted from the photographs. This is shown in the greater depth of body, larger milk veins, and udder development of the daughter.

RESULTS ACHIEVED THRU THE BULL ASSOCIATION

Bulls selected were of excellent type and good blood lines, with production records higher than those of any of the cows on which they were to be used. That this carefulness of selection was justified is shown from the production of the daughters of these bulls in comparison with the production of their dams. The records given include all the daughters of these bulls with records up to the present time.

It will be noted that in every case but one the daughters excelled their mothers in both milk and butterfat production, i. e., 15 of the 16 daughters surpassed their mothers in production. The 16 daughters excelled their dams an average of 4,092 pounds of milk and 110 pounds of butterfat each, or 41.4% in milk and 30.5% in butterfat. The ten dams averaged 9,881 pounds of milk and 360 pounds of butterfat while the 16 daughters averaged 13,973 pounds of milk and 470 pounds of butterfat.

The daughters of each of the four bulls, by a considerable amount, averaged more milk and butterfat than their mothers. This is all the more striking when it is noted that the dams, in nearly every case, were excellent producers to start with, an average yearly production of 9,881 pounds milk and 360 pounds butterfat. Altho only 16 daughters of these bull association bulls have records at the present time it is quite generally stated among members of the bull association that in most cases the other daughters of these bulls show promise of, or are exceeding, their dams in production. Also the improvement in type shown by the offspring over their dams is very noticeable in most instances, particularly where the bulls were used on grade cows.

Aside from this most important result of increased production thru the use of the purebred bulls of the Bull Association, a number of additional benefits, both direct and indirect, have been obtained, because of it. Following the success of the Holstein Association, Cooperative Bull Associations have been organized among the Jersey and Guernsey breeders of the county, with more than one hundred members in the three organizations. Also, with good sires available, little breeding stock is kept that is not sired by a purebred, which should soon result in an increase in the average production for the county. The association has saved considerable money by the use of fewer and better bulls at a lower cost than formerly, since many of the association members, altho they had but a few purebred cows, had previously kept purebred bulls. Now, as members of the association, for a small annual maintenance fee, they have available the services of a much better bull. The breeders have benefited greatly thru the opportunity to practice line breeding, offered by the association, since three of the bulls now in use have somewhat the same line of breeding. This has also helped in establishing well-known blood lines which should eventually give the county a reputation for certain families. The value of these good bulls has been demonstrated already in the sale of their offspring at the annual consignment sales held during the past two years, under the auspices of the Campbell County

Cattle Breeders' Association. Another advantage of the Bull Association which has been demonstrated in Campbell County is the opportunity given by the association of keeping the bulls until their daughters have been tested. Many outstanding bulls have been slaughtered before their worth was known. Since it will require eight years to complete the circuit of the four blocks of the association, ample opportunity will be afforded to try each of the bulls several years before the circuit is completed. Good sires can thus be used to advantage and any that prove unable to transmit production can be disposed of.

These two organizations, the Cow-Testing Association and the Cooperative Bull Association, were the pioneer dairy organizations of what is coming to be one of the foremost dairy counties of the state. They have been responsible, to some extent at least, for the formation of a number of other dairy organizations, and it is hard to say just how much of this progress can be attributed to these two early associations. However, they can be credited with starting a number of these progressive movements. Moreover, as has been shown in the foregoing tables, they have been directly responsible for some very substantial increases in production, which after all, is the primary reason for their existence.

That these organizations did stimulate interest in better dairying is shown by the rapid increase in the number of purebred cattle brought into the county. When the association was founded in 1919 there were less than 30 purebred cows in the county, all owned by four men. In a survey made in 1924 it was found that 66 Campbell County farmers owned a total of 347 head of purebred cattle. The present County Agent of Campbell County, reports that there are now 650 head of purebred cattle in the county.

The increase in number of purebred bulls has been just as striking, as shown in Fig. 7.

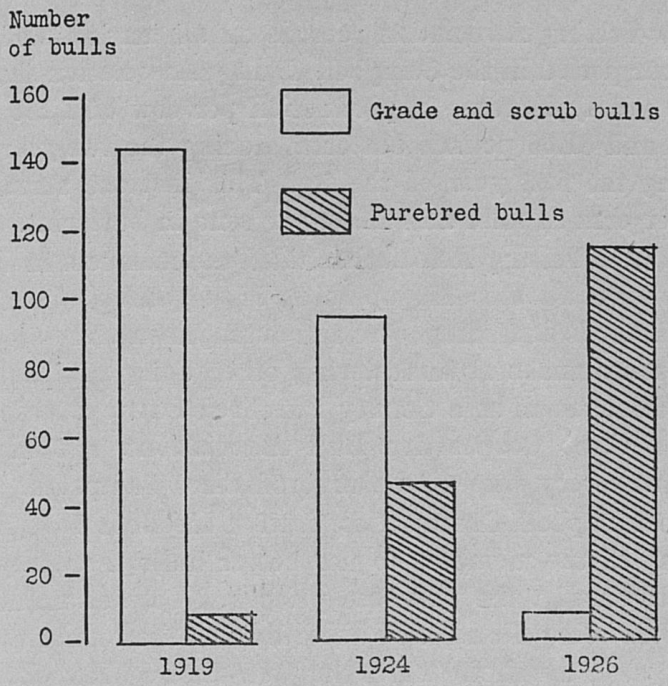

Fig. 7.—Result of a purebred sire campaign in Campbell county.

Only a half dozen purebred bulls were to be found in the county at the time the Cow-Testing Association was organized in 1919. The census for that year gave a total of 144 bulls in the county one year old and over. The organization of this association in 1919 and the Bull Association a little more than a year later stimulated interest in purebreds. In 1924 a Cattle Breeders' Association was organized and a purebred sire committee was selected for the purpose of fostering a campaign to replace all scrub and grade bulls in the county with purebreds. A survey was made previous to starting this campaign and it was found that there were 41 purebred bulls and 97 grade or scrub bulls in the county. Thru the campaign fostered by this and other organizations the number of purebred bulls has been increased to 112 and there are now only 8 grade bulls left in the county. The owners of 4 of these grades have promised to replace them with purebreds.

SUMMARY

Cow-Testing Association records on all herds tested over a three-year period in the Campbell County Association showed an average yearly increase in production per cow of 1,153 pounds of milk and 31.66 pounds butterfat during the two-year period following the first year of the test. This increase amounted to 16.85 per cent in milk and 12.64 per cent in butterfat.

The Cow-Testing Association aided the members in eliminating boarder cows, breeding up better herds, and establishing improved methods of feeding, care and management. The association also was instrumental in fostering other dairy campaigns and organizations such as a County Purebred Cattle Breeders' Association, three Cooperative Bull Associations, a Junior Calf Club, and a very successful Purebred Sires Campaign.

The Campbell County Cooperative Holstein Bull Association enabled the members to use better bulls than they could own individually, the purchase price and cost of maintenance of the bull being distributed according to the number of cows bred by each member. Thru the Cow-Testing Association the members of the Bull Association are able to determine the ability of their bulls to transmit production. By having three or four blocks in the Bull Association all bulls can be kept in the association until thoroly tested.

Many good bulls owned individually have been slaughtered before their worth was known. Records of production so far have been obtained on the daughters of four of these bulls. Records on 16 daughters are available, together with the records of their dams. The mothers averaged 9,881 pounds of milk and 360 pounds of butterfat while the daughters averaged 13,973 pounds of milk and 470 pounds of butterfat. These daughters excelled their dams 41.4% in milk and 30.5% in butterfat. The daughters of each of the four bulls averaged more milk and butterfat than their mothers, the lowest being 26.5% increase in milk and 16.5% increase in butterfat. Daughters of the leading bull excelled their mothers by 57 per cent in milk and 44.1 per cent in butterfat. Fifteen of the 16 daughters excelled their dams in both milk and butterfat production.