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## SILVER FOX PELT PRICES AS AFFECTED BY TIME OF PELTING, SEX, AND AGE

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### INTRODUCTION

Silver fox farming as a commercial enterprise has developed only within the past 30 years. Before that, the silver black fox had appeared only infrequently in the fur trade because the supply was dependent upon the trapping of rare wild specimens. A far-visioned Canadian conceived the idea of overcoming Nature's barriers by collecting from widely scattered points the infrequently occurring silver foxes and mating them in pens for the specific purpose of breeding silvers. The sporadic variant in nature then became the regular product in captivity.

After an initial "boom period," characterized by a fantastic financial program of selling breeding stock at fabulous prices, silver fox farming progressed rapidly to the commercial production of pelts on a more reasonable price basis. Today, it has spread to a great many countries, and in some it has become an important industry. The present annual world production of pelts (1937) is estimated at 800,000; the approximate average value of a pelt, at \$40.

### SCARCITY OF STATISTICS

Factual information on such a large new industry is highly important. Some countries have realized this and have passed laws requiring fur farmers to make detailed annual reports, from which valuable fox-farming information is published. The census in the United States, however, does not include questions on fur farming, although the desirability of such inclusion has been urged from time to time by the Bureau of Biological Survey. In the absence of such authentic information, the Bureau has endeavored to make some partial surveys, on which it has issued a mimeographed report, *Classification and Price Trends of Silver Fox Skins* (Leaflet BS-58).

## SOURCE OF MATERIAL

This circular is a statistical review of the prices received at auction of the greater part of the 1935 pelt crop of the Herbert A. Nieman Co., Thiensville, Wis., that operates one of the largest groups of fox farms in the world. It was made possible by the cooperation and aid of the officials of the company<sup>1</sup> and was greatly facilitated by the fact that the company had kept individual records of the more than 14,000 pelts produced during 1935 in such a way as to simplify assembling the information along certain predetermined lines of investigation. Averages derived from such an enormous number of pelts produced by a single organization are influenced in the least possible degree by differences in the strains of foxes, which cause such a wide range in pelt values, even when the pelts carry the same degree of silver. Also, with uniform conditions of feeding, breeding, and management, no influence from widely varying practices enters into the summarization as would be the case if records were from the same number of pelts produced on several hundred ranches.

## METHODS OF HANDLING ANIMALS

Most of the Nieman foxes are whelped and developed on farms near Thiensville, Wis., a short distance north of Milwaukee (pl. 1, *A*). Pair mating in large ground-floor breeding pens is followed exclusively. The young stay with the parents until about the first week in September, when the best of the early whelped pups are selected for breeders. At that time all the animals to be pelted are trucked by night about 200 miles north to Hermansville, in the Upper Peninsula of Michigan, where they are put into densely wooded furring runs—500 to each 20-acre tract (pl. 1, *B*). This transfer is accomplished within about 2 weeks. Pelting operations start shortly after the middle of November. Any dead animals are picked up daily, and the pelts are removed if salable.

## CLIMATIC CONDITIONS IN UPPER MICHIGAN

The climatic conditions in upper Michigan under which these pelts were produced are of interest. Hermansville has an elevation of 887 feet, and snow is on the ground there practically all the winter after December 1.

## TEMPERATURE AND HUMIDITY

Temperatures were estimated for Hermansville by striking an average of the readings of the United States Weather Bureau stations at Iron Mountain and Escanaba, as Hermansville is about halfway between the two towns. Humidity readings were taken from the station at Escanaba, which is on Green Bay, about 30 miles east of Hermansville. Figure 1 shows the estimated high and low temperatures, both extreme and average, for the vicinity of Hermansville for each week of the period that began September 7 and ended December 14, 1935, and the average relative humidity at 7 a. m., 12 noon, and 7 p. m. for Escanaba for each month of the same period.

The extreme high temperature was above 70° F. in only 2 weeks in September, and during November and December it was never above 50°. The weekly average high temperature for November and

<sup>1</sup> Especial credit is due Ronald G. Stephenson, member of the Herbert A. Nieman Co., for reviewing the manuscript of this circular and making valuable suggestions and for supplying the photographs for the two plates.



A, Some of the breeding pens in which the young silver foxes were developed. B, A silver fox furring range at feeding time.



December was 40° or lower except during the first week in November. The weekly average low temperature was below 50° at all times except for the third week in September and was below freezing during November and December except for the first week in November. Below-freezing weather occurred at some time during every week after September 28 except during the third week of October, when the lowest temperature recorded was 40°.

## SUNSHINE

The average percentage of sunshine at Escanaba for September, October, November, and December, 1935, was 53, 50, 25, and 20, respectively.

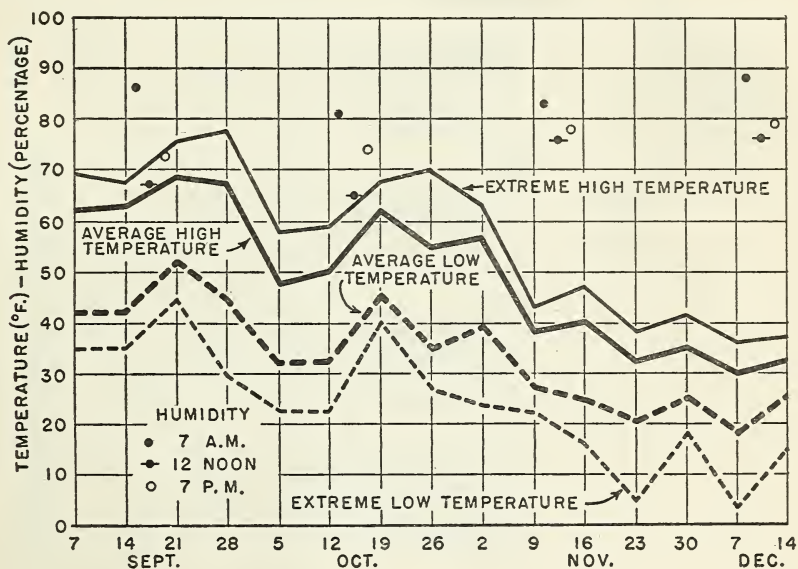


FIGURE 1.—Estimated weekly average and extreme temperatures for Hermansville, Mich. (averages of Escanaba and Iron Mountain U. S. Weather Bureau station reports), and monthly average humidity readings for Escanaba, Mich., September 7 to December 14, 1935.

## SCOPE OF STUDY

Of the more than 14,000 fox pelts taken by the Nieman Co. from the middle of August to the middle of December 1935, the 10,689 sold by the New York Auction Co. in the November, December, January, and February sales of 1935-36 are considered in this special study. The 3,500 unsold at the time of the study are not included. The individual cards on which the company had kept complete detailed information on each pelt were sorted into groups according to the week the pelts were taken, the sex of the animals, whether the foxes were mature or pups, the degree of silver in the pelts, and the month of the auction. Average auction sale prices were computed for each group in order to obtain information on the effect of time of pelting, sex, and age of foxes on the value of pelts. Because of the limited time available it was decided to restrict this study to these particular points. All pelts taken after November 16 were considered "pelted

in season", even though some of the animals (about 1 percent) had died from disease. Pelts taken prior to November 17 were from animals that died as a result of sickness, in most cases of only a few days' duration.

#### EFFECT OF TIME OF PELTING

##### AVERAGE AUCTION PRICES

The number of pelts taken during any given week and their average auction prices are given for pup pelts in tables 1 and 2 and for mature pelts in tables 3 and 4.



TABLE 1.—Numbers and average auction prices of silver fox pelts taken each week from pups that died Aug. 17 to Nov. 16, 1935, and sold in November and December auctions, 1935

Week pups died	Full silver				Three-fourths silver				Half silver				One-fourth silver			
	Male		Female		Male		Female		Male		Female		Male		Female	
	Total Number	Aver- age price Dollars	Total Number	Aver- age price Dollars	Total Number	Aver- age price Dollars	Total Number	Aver- age price Dollars	Total Number	Aver- age price Dollars	Total Number	Aver- age price Dollars	Total Number	Aver- age price Dollars	Total Number	Aver- age price Dollars
Aug. 17-31	4	36.75	1	20.00	1	37.00	1	30.00	1	26.00	1	31.00	1	26.00	1	26.00
Sept. 1-7	4	21.25	2	19.50	1	32.40	5	32.40	1	30.00	1	30.00	1	30.00	1	26.00
Sept. 8-14	4	27.75	3	27.34	1	31.18	12	29.17	5	30.20	3	34.67	3	34.67	1	26.00
Sept. 15-21	11	26.00	3	25.34	3	32.34	14	31.25	18	32.72	9	32.56	11	33.45	1	26.00
Sept. 22-28	20	29.50	13	28.08	17	32.48	40	30.23	26	33.45	20	34.95	20	30.70	5	31.60
Sept. 29-Oct. 5	38	32.80	47	34.04	64	34.55	51	30.43	68	34.43	57	36.81	20	36.74	9	33.78
Oct. 6-12	53	42.64	88	38.75	93	38.37	93	37.70	54	37.70	53	38.74	18	36.39	10	30.70
Oct. 13-19	90	45.02	144	44.88	108	42.26	98	40.32	60	41.12	60	41.12	29	38.14	12	35.25
Oct. 20-26	149	52.40	172	53.88	177	53.88	177	53.88	57	46.04	57	46.04	29	38.14	13	31.85
Oct. 27-Nov. 2	206	63.03	209	56.82	175	55.16	77	45.54	52	43.35	52	43.35	29	38.14	12	35.25
Nov. 3-9	200	65.40	175	55.16	77	45.54	52	43.35	52	43.35	52	43.35	29	38.14	12	35.25
Nov. 10-16	948	56.51	906	49.86	505	40.65	345	36.80	250	37.60	94	35.56	40	31.70	7	30.00
Total	948	56.51	906	49.86	505	40.65	345	36.80	250	37.60	94	35.56	40	31.70	7	30.00

TABLE 1.—Numbers and average auction prices of silver fox pelts taken each week from pups that died Aug. 17 to Nov. 16, 1935, and sold in November and December auctions, 1935—Continued

Week pups died	Slightly silver and dark				Undescribed, <sup>1</sup> male and female		Total, male and female	
	Male		Female		Total	Average price	Total	Average price
	Total	Average price	Total	Average price				
Aug. 17-31.....	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Sept. 1-7.....	4	22.00	54	17.48	58	16.47	38	16.47
Sept. 8-14.....	2	22.00	33	18.52	35	17.54	47	12.70
Sept. 15-21.....	4	24.00	26	28.00	30	14.54	57	16.26
Sept. 22-28.....	6	29.83	1	27.00	7	14.68	88	16.88
Sept. 29-Oct. 5.....	1	26.00	2	28.00	3	14.80	113	21.57
Oct. 6-12.....	2	22.00	1	28.00	3	17.11	201	27.13
Oct. 13-19.....	2	22.00	4	22.00	6	18.42	241	31.38
Oct. 20-26.....	4	24.00	1	28.00	5	17.48	366	36.08
Oct. 27-Nov. 2.....	6	29.83	2	27.00	8	18.52	574	41.97
Nov. 3-9.....	1	26.00	1	28.00	2	22.12	633	49.48
Nov. 10-16.....	2	22.00	1	28.00	3	27.15	758	50.73
Total.....	19	25.10	4	27.50	23	32.03	3,811	51.10
					693	21.53		

<sup>1</sup> Includes culls and damaged skins. A few sold in the February auction.

<sup>2</sup> Based on total pup pelts for week.

<sup>3</sup> Based on average price of all pup pelts taken in normal pelting season (table 2).

TABLE 2.—Numbers and average auction prices of silver fox pelts taken each week from pups killed in normal pelting season, Nov. 17 to Dec. 15, 1935, and sold in December, January, and February auctions, 1935-36

Week pups were killed and month of auction	Full silver				Three-fourths silver				Half silver				One-fourth silver			
	Male		Female		Male		Female		Male		Female		Male		Female	
	Total	Average price	Total	Average price	Total	Average price	Total	Average price	Total	Average price	Total	Average price	Total	Average price	Total	Average price
Nov. 17-23:																
December	108	62.61	102	59.23	31	46.31	23	43.35	13	37.46	5	37.20	5	30.60	1	29.00
January	1	88.00	1	73.00	8	50.62	4	47.50	1	46.00	1	46.00	1	29.00	1	29.00
February																
Total	109	62.84	104	59.55	39	47.20	27	43.96	14	38.07	5	37.20	6	30.34	1	29.00
Nov. 24-30:																
December	45	66.24	28	60.64	1	43.00	1	45.00	12	37.83	4	37.50	4	35.84	1	29.00
January	163	74.32	179	68.47	131	52.74	104	48.86	187	44.43	104	40.50	45	35.84	13	34.92
February	165	67.15	150	61.98	131	52.74	104	48.86	5	45.00	15	40.67	15	40.67	15	40.67
Total	373	70.18	357	65.13	132	52.67	105	48.82	204	44.05	123	40.42	45	35.84	14	34.50
Dec. 1-7:																
January	170	66.69	205	61.36					265	46.83	165	41.10	44	37.66	18	33.83
February	114	67.04	134	62.35	141	52.67	115	48.86	7	40.67	7	40.67	3	39.34	1	37.00
Total	284	66.83	339	61.75	141	52.67	115	48.86	273	46.66	165	41.10	47	37.76	19	34.00
Dec. 8-14:																
January	170	67.59	145	62.25	60	51.85	60	47.84	96	45.78	61	40.95	12	39.83	8	37.00
February	170	67.59	145	62.25	60	51.85	60	47.84	98	45.54	62	41.00	12	39.83	8	37.00
Total	340	67.59	290	62.25	120	51.85	120	47.84	194	45.66	123	41.00	24	39.83	16	37.00
Dec. 15:																
February					1	59.00	1	44.00								
Total					1	59.00	1	44.00								
Grand total	936	67.84	945	62.86	373	51.98	308	46.65	589	45.37	355	40.79	110	36.80	41	34.76

TABLE 2.—Numbers and average auction prices of silver fox pelts taken each week from pups killed in normal pelting season, Nov. 17 to Dec. 15, 1935, and sold in December, January, and February auctions, 1935-36—Continued

Week pups were killed; all auctions	Slightly silver and dark				Undescribed and culls, male and female			Total, male and female	
	Male		Female		Total	Average price	Total	Average price	Total
	Total	Average price	Total	Average price					
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Dollars
Nov. 17-23.....	1	23.00			18.9	31.68	376	53.32	97.6
Nov. 24-30.....	13	26.31			4.9	30.07	1,449	55.77	104.0
Dec. 1-7.....	20	27.75	9	26.11	6.5	30.06	1,503	53.65	98.2
Dec. 8-14.....	7	30.86	2	32.50	11.2	30.00	703	53.53	98.0
Dec. 15.....					89.5	26.24	19	28.89	
Grand total.....	41	27.76	12	27.08	338	30.08	4,048	53.60	

<sup>1</sup> Based on total pup pelts for week.

<sup>2</sup> Based on average price of all pup pelts taken Nov. 17 to Dec. 15, 1935.

TABLE 3.—Numbers and average auction prices of silver fox pelts taken each week from mature animals that died Aug. 17 to Nov. 16, 1935, and sold in November and December auctions, 1935

Week mature animals died	Full silver				Three-fourths silver				Half silver				One-fourth silver			
	Male		Female		Male		Female		Male		Female		Male		Female	
	Total	Aver- age price	Total	Aver- age price	Total	Aver- age price	Total	Aver- age price	Total	Aver- age price	Total	Aver- age price	Total	Aver- age price	Total	Aver- age price
AUG. 17-31.....	1	23.00	1	22.00												
Sept. 1-7.....	1	22.00	1	30.00												
Sept. 8-14.....			2	48.30	1	25.00										
Sept. 15-21.....	8	50.25	8	42.75	1	35.00	1	38.00								
Sept. 22-28.....	4	36.75	9	33.96	3	31.34	3	26.34								
Sept. 29-Oct. 5.....	8	33.75	15	34.27	4	31.00	3	35.00			1	37.00				
Oct. 6-12.....	11	52.82	12	34.08	5	37.60	8	30.88								
Oct. 13-19.....	10	58.10	16	40.62	12	39.42	9	32.78								
Oct. 20-26.....	23	61.56	26	50.76	14	40.86	15	34.47	4	37.00	2	37.00	2	33.00	1	33.00
Oct. 27-Nov. 2.....	38	69.50	46	59.87	22	50.08	21	40.67	8	36.87	2	36.50	2	36.50		
Nov. 3-9.....	35	67.03	34	57.97	24	47.29	17	44.59	9	38.00	2	43.00	2	43.00		
Nov. 10-16.....	33	60.61	50	56.80	11	47.27	20	43.95	3	38.00	1	37.00				
Total.....	172	60.08	220	51.14	97	44.00	99	38.50	24	37.46	9	38.44	2	33.00	1	33.00

TABLE 3.—Numbers and average auction prices of silver fox pelts taken each week from mature animals that died Aug. 17 to Nov. 16, 1935, and sold in November and December auctions, 1935—Continued

Week mature animals died	Slightly silver and dark				Undescribed, <sup>1</sup> male and female			Total, male and female			
	Male		Female		Total	Average price	Total	Average price	Total	Average price	
	Total	Average price	Total	Average price							
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	
Aug. 17-31.....						10	84.4	9.40	12	11.58	21.5
Sept. 1-7.....						16	88.9	13.69	18	15.06	27.9
Sept. 8-14.....						14	77.8	16.86	18	22.11	41.0
Sept. 15-21.....						19	50.0	16.10	38	29.60	54.9
Sept. 22-28.....						11	36.7	14.27	30	25.96	48.2
Sept. 29-Oct. 5.....						9	22.5	20.67	40	30.90	57.3
Oct. 6-12.....						4	10.0	18.25	40	37.45	69.5
Oct. 13-19.....									48	42.46	78.8
Oct. 20-26.....	1	24.00			2	2.2	2.2	21.00	90	46.80	86.8
Oct. 27-Nov. 2.....			1	26.00	7	4.8	4.8	31.23	145	54.92	101.9
Nov. 3-9.....	2	27.00			8	6.1	6.1	29.75	131	53.90	100.0
Nov. 10-16.....					28	19.2	19.2	31.46	146	49.80	92.4
Total.....	3	24.67	1	26.00	128	16.9	16.9	20.71	756		

<sup>1</sup> Includes culls and damaged skins. A few sold in February auction.

<sup>2</sup> Based upon total mature pelts for week.

<sup>3</sup> Based on average price of all mature pelts taken in normal pelting season (table 4).

TABLE 4.—Numbers and average auction prices of silver fox pelts taken each week from mature animals killed in normal pelting season, Nov. 17 to Dec. 15, 1935, and sold in December, January, and February auctions, 1935-36

Week mature animals were killed and month of auction	Full silver				Three-fourths silver				Half silver				One-fourth silver			
	Male		Female		Male		Female		Male		Female		Male		Female	
	Total	Average price	Total	Average price	Total	Average price	Total	Average price	Total	Average price	Total	Average price	Total	Average price	Total	Average price
Nov. 17-23:	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
December	472	68.88	602	60.06	159	47.74	157	45.76	42	37.69	15	37.13	4	34.25	4	31.25
January	1	60.00	1	60.00	16	52.02	19	47.68	4	48.75	2	47.50	4	34.25	4	31.25
February	5	82.81														
Total	478	69.01	603	60.06	175	48.19	176	45.97	46	38.65	17	38.35	4	34.25	4	31.25
Nov. 24-30:	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
December	42	65.50	74	57.40	3	54.00	10	45.40	8	40.50	2	31.50			1	36.00
January	15	92.27	17	68.65	35	52.23	15	49.40	5	52.40	4	36.00				
February	25	71.28	46	58.54												
Total	82	72.16	137	59.18	38	52.36	25	47.80	13	45.08	6	34.50			1	36.00
Dec. 1-7:	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
January	8	57.87	10	51.40	4	48.00	1	47.00	2	42.00						
February	6	62.17	11	55.27												
Total	14	59.71	21	53.43	4	48.00	1	47.00	2	42.00						
Dec. 8-14:	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
January	10	61.50	24	55.50	10	51.50	4	51.25	3	44.67	2	49.50				
February	10	61.50	24	55.50	10	51.50	4	51.25	3	44.67	2	49.50				
Total	20	61.50	48	55.50	20	51.50	8	51.25	6	44.67	4	49.50				
Dec. 15:	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
February	1	59.00	1	66.00												
Total	1	59.00	1	66.00												
Grand total	585	69.08	786	59.60	227	49.03	206	46.30	64	40.34	25	38.32	4	34.25	5	32.20

TABLE 4.—Numbers and average auction prices of siber fox pelts taken each week from mature animals killed in normal pelting season, Nov. 17 to Dec. 15, 1935, and sold in December, January, and February auctions, 1935-36—Continued

Week mature animals were killed; all auctions	Undescribed and culls, male and female			Total, male and female		
	Total		Average price	Total		Average price
	Number	Percent <sup>1</sup>	Dollars	Number	Dollars	Percent <sup>2</sup>
Nov. 17-23.....	116	7.2	35.50	1,619	54.61	101.3
Nov. 24-30.....	38	11.2	34.24	1,340	53.06	98.5
Dec. 1-7.....	8	16.0	32.38	50	45.02	84.6
Dec. 8-14.....	10	15.9	29.70	63	46.03	85.4
Dec. 15.....				2	62.50	
Grand total.....	172	8.3	34.74	2,074	53.89	

<sup>1</sup> Based on total mature pelts for week.

<sup>2</sup> Based on average price of all mature pelts taken Nov. 17-Dec. 15, 1935.



Average auction prices of full silver fox pelts are shown graphically in figure 2. There were 5,498 sold, or slightly more than 50 percent of the entire number classified, a sufficiently large number to warrant some definite conclusions.

Three general facts about full silvers are at once evident. (1) The average prices of mature pelts were rather erratic until the first week of October, owing undoubtedly to the small numbers. (2) Male and female pelts sold for about the same price until the first week in October, after which male skins, both mature and pup, sold for considerably more than those of females of the same ages. (3) Mature pelts as a rule sold for more than those of pups, skins of males showing a greater difference in this respect than those of females. Inasmuch

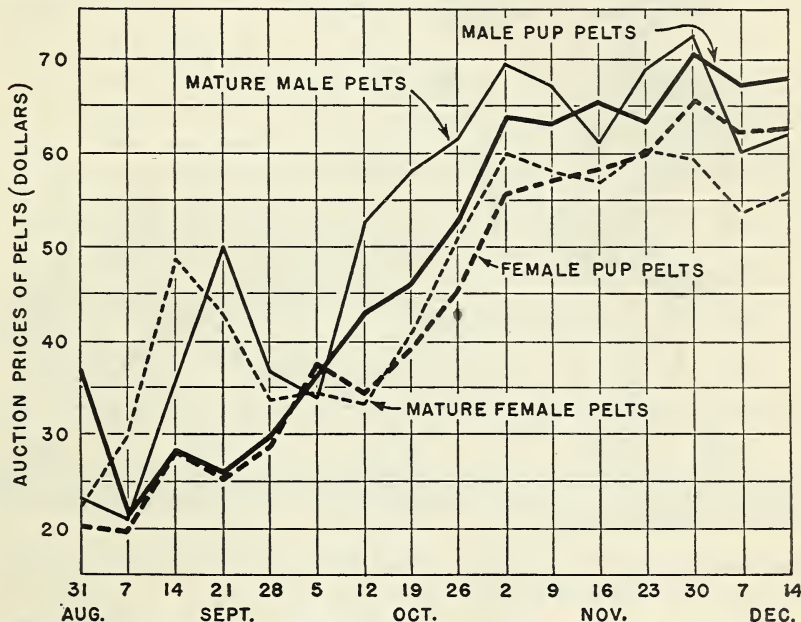


FIGURE 2.—Average auction prices of full silver fox pelts grouped according to week in which pelts were taken. (See also tables 1 to 4.)

as the best foxes are selected as breeders, these mature pelts represent the best quality of preceding years, yet a progressive and selective breeding program should produce a somewhat better pup pelt each succeeding year. Again it should be noted that a substantial number (about 34 percent) of the best fox pups of both sexes were retained for breeders, either as replacements or as an increase of stock, and naturally this would give a lower average value for the pup pelts taken than if all pups had been pelted. The mature pelts taken in December were from breeding animals that had died at the breeding ranch 200 miles south and consequently had never been on the furring range. Such skins are apt to be rubbed and off color. They constituted, however, only about 5 percent of the mature pelts from animals killed and pelted in season.

#### PERCENTAGE VALUES

The prices referred to in the preceding paragraph are for only those pelts classified for the auctions as full silvers. Many early unprime

pelts are thrown into the cull and undescribed groups, as only the better full silvers are classifiable. To obviate this discrepancy and in order to give a somewhat truer picture of the relative value of pelts taken in any week to those taken in another and of early pelts to those taken in the normal season, all undescribed as well as classified pelts were included in the totals used in computing the percentage values given in tables 1 to 4 and illustrated in figure 3. It has been

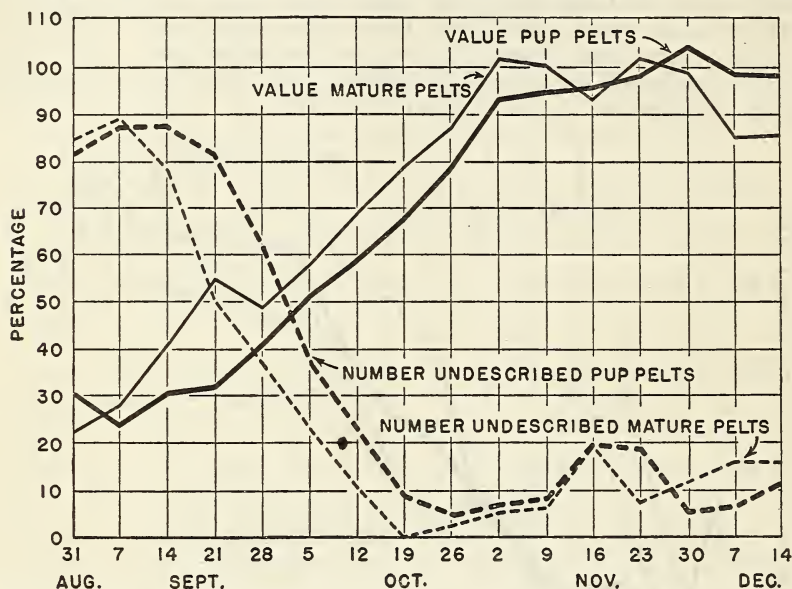


FIGURE 3.—Percentage values of all silver fox pelts taken each week (computed by dividing average price of pelts taken each week by average price of all pelts taken Nov. 17–Dec. 15) and percentage that number of undescribed pelts taken each week is of total number taken that week; pup and mature pelts considered separately. (See also tables 1 to 4.)

determined, as shown in table 5, that early death and degree of silvering were not correlated in any way.

TABLE 5.—Relation of degree of silver in all pup pelts to time of death

Degree of silver	Pelts from pups that died Aug. 19–Nov. 16, 1935						Pelts from pups killed after Nov. 16, 1935	
	Culls <sup>1</sup>		Classified <sup>2</sup>		Total		Number	Average date of death
	Number	Average date of death	Number	Average date of death	Number	Average date of death		
Full <sup>3</sup> .....	205	Sept. 29	1,854	Oct. 27	2,059	Oct. 23	1,881	Nov. 28
Three-fourths <sup>3</sup> .....	164	Sept. 26	850	Oct. 26	1,014	Oct. 21	681	Nov. 29
Half.....	65	do.	344	do.	409	do.	944	Nov. 30
One-fourth.....			47	do.	47	Oct. 26	151	Nov. 29
Slight.....	8	Sept. 27	23	Oct. 23	31	Oct. 17	53	Nov. 30
Undescribed <sup>4</sup> .....	233	Oct. 29			233	Oct. 29	338	Nov. 26

<sup>1</sup> Listed here as to degree of silver, but sold as culls.

<sup>2</sup> Sold on basis of silver.

<sup>3</sup> Many pups carrying this degree of silver were saved as breeders.

<sup>4</sup> Undescribed pelts carry all degrees of silver and may consequently carry a higher relative percentage of the earlier darker skins because of lower value. This would tend to make the death date of the darker silver pups even somewhat earlier. More than half of these skins (127) were taken during the week ended Nov. 16.

Percentage values were found for pup pelts for each week (tables 1 and 2) by dividing the average price of all pup pelts taken during that week by the average price of all pup pelts taken during the normal pelting season (Nov. 17–Dec. 15) and for mature pelts (tables 3 and 4) by the same procedure, using prices relating to mature pelts. One should keep in mind that these percentage values were obtained by dividing average prices of November and December auctions by average prices of pelts most of which were sold in January and February auctions and that many of the best pups were not represented because of retention as breeders. The activity of the markets during these 4 months often varies considerably. It will be recalled that the 1935 fall sales of fox pelts were unusually active, so that these percentage values may be correspondingly higher than for similar pelts taken in other years.

From figure 3 it will be seen that those pup pelts considered to be worth saving through the third week of September had about 30 percent of the value of the pup pelts taken during the normal pelting period. The poor quality of the pelts at this time of year is due in considerable part to the fact that the fur and guard hair have not attained full length and density, so that the furs are flat. For each of the next 6 weeks the average price increased about 10 percent of the price of pelts taken in season, and by the first of November pup pelts attained a value equivalent to 93 percent of the average price of the seasonal skins. The value of pelts taken in November increased slightly to a peak of 104 percent at the end of the month, after which a slight decrease took place until the middle of December.

The same general trend in percentage values applies to the mature skins through September to November, but throughout November there is a rather uniform trend as contrasted with the increased value in pup skins, and this is followed by descending values in December. The December depression is largely due to the fact that the pelts taken during this time are from dead breeders as explained previously (p. 13).

The total number of pup pelts that are undescribed drops rapidly from more than 80 percent the third week of September to 10 percent, a normal figure, about the middle of October. A much higher percentage of the earlier mature skins than of the pup skins are classifiable, owing to the fact that the guard hair and the underfur develop earlier on the mature animals. A satisfactory explanation for the high 18 percent of nondescript pelts taken in part of November cannot be given.

The rise in prices during the season is in direct relation to the percentage of classifiable pelts.

A direct comparison of the effect of the time of pelting on values of pelts taken from animals that died with that on values of skins taken from animals killed in regular season can be made from the figures given in tables 6 and 7 for all degrees of silver and both sexes of mature and pup pelts and is shown graphically in figure 4.

It will be noticed, for example, that there is a favorable difference of \$11.33 for male full silver pup pelts taken in season over those taken from male pups that died on an average 1 month earlier, and of \$13 for female pup pelts taken in season over those taken from females that died. The average price of the male full silver pup pelts from animals that died is 83.3 percent of that for those taken during pelting

season. Similar percentage for the early taken female pup pelts is 79.3.

The early taken mature pelts had a much higher value in proportion to those taken at pelting time than did the pup pelts. This also would seem to indicate that the fur on the older animals tends to become prime sooner than that of the pups.

#### EXTENT OF PRIME FUR PERIOD

It is believed by many fox farmers that pelts hold their peak of primeness only a few days. Exact information on this point can be

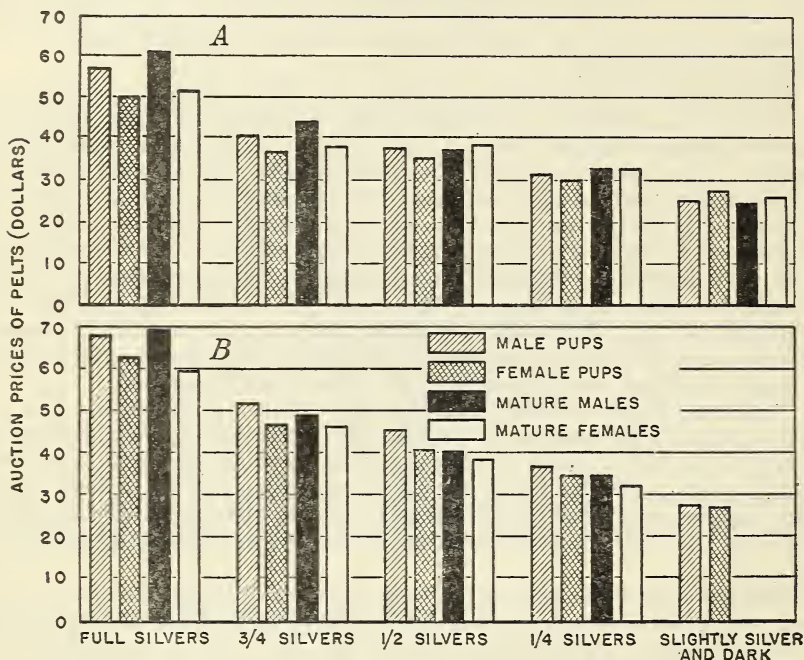


FIGURE 4.—Average auction prices of silver fox pelts: A, from animals that died August 19 to November 16, 1935; B, from animals killed November 17 to December 15, 1935.

obtained only when large numbers of animals of approximately the same age and from other than first litters are pelted over an extended season and the pelts sold in the same auction. Obviously, this procedure is impracticable for a well-managed fox ranch. Another method of acquiring this needed information would be to endeavor to interpret the facts disclosed by the actual sale prices of a large number of pelts, making due allowance for any discrepancies as to age of animals and varying time of sales. From necessity, the latter method is followed here.

#### PUP PELTS

The number and average auction price of pup pelts for each week from November 17 to December 15, 1935, arranged according to degree of silver and sex, are given in table 2 and are shown graphically in figure 5.

The full silver pup pelts taken during the various weeks were sold in three different auctions, but each sale was reported to have carried representative rather than selected skins. Any variability in the market at these different monthly sales as compared with the others would naturally be reflected in prices received. The latest whelped

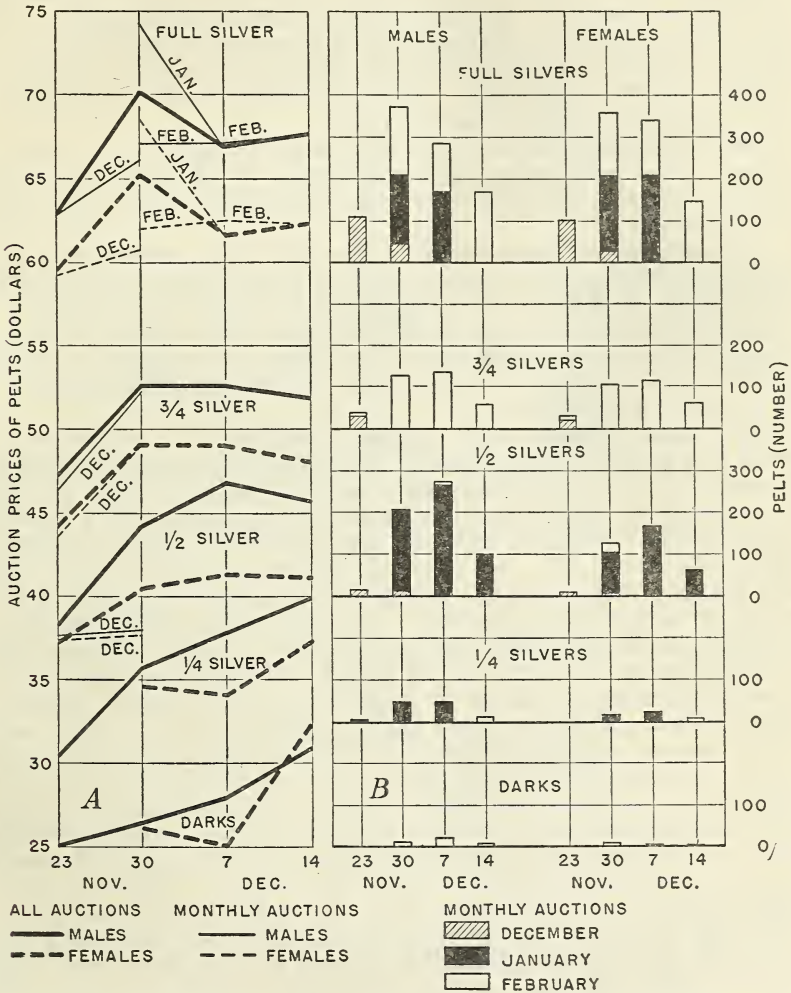


FIGURE 5.—Average auction prices (A) and numbers (B) of all classified silver fox pup pelts taken each week of normal pelting season, by sex, time of pelting, and month of sale. (See also tables 1 and 2.)

pups were pelted last, and though they were not so old as those first pelted, they may have been as well furred out. The pups whelped after May 1 were also largely from first litters. Pelts from animals whelped in May probably constituted 15 percent of the total number of skins after making due allowance for the selection of breeding stock from the early whelped pups.

The peak average price (fig. 5) for full silver pup pelts was found to be for those taken during the week ended November 30, but further analysis of the various sales proves that this peak is not entirely due to time of pelting. More than 150 pelts taken from male pups during the week ended November 30 sold in the January sale at an average of slightly more than \$74, and about the same number taken the following week sold for approximately \$8 less in the same sale. Yet about the same number of skins taken during each of the same 2 weeks and also a later third week sold in the February sale at about the same average price for each week. The same relative scale of prices prevailed for female as for male pup pelts.

The three-fourths silvers were practically all sold in the February auction. The pelts taken the second week of December were considered slightly less valuable by the buyers than those taken the 2 previous weeks.

The same general facts apply to the half silvers, practically all of which were sold in the January auction, except that there is a more definite peak price for the pelts taken the first week of December.

A higher average price for one-fourth silvers and darks was received for pelts taken the second week of December (or last week of pelting) than for those taken at any other time, but the numbers are so few as not to warrant conclusions.

These data indicate that pelting operations can extend over a period of 3 weeks, the last week of November and the first 2 weeks of December, without materially affecting the prices received, provided the fox pups are pelted in sequence according to date when whelped and that the climatic conditions are similar to those of northern Michigan during 1935. Some breeders claim that the time at which pelts become prime and the extent of the prime-fur period can be materially influenced by feeding. Unquestionably, selective mating for retention of good color over a long period of time will materially influence the extent of the prime period. Definite conclusions as to the effect of time of pelting on values of pup skins taken in normal pelting season cannot be drawn until further studies have been made.

It is shown definitely, however, that silver fox pup pelts taken during the third week of November (quite a few from animals that died) are not yet prime and that fur buyers consider them less valuable than skins taken later. A much higher price was realized for pelts taken the last week of November and the first 2 weeks of December than for those taken the third week of November. This statement is substantiated by all the graphs of the pup pelts classified as to silver.

The highest priced full silver pup pelt of the year was taken from a male the week ended November 30, and the highest priced female pelt was taken the week ended December 7 (table 8, p. 23). The week ended November 30 also provided the greatest percentage of both male and female full silver pup pelts selling for \$80 or more, though a few of these high-priced pelts were taken as early as the middle of October.

## MATURE PELTS

The number and average auction price of mature pelts for each week from November 17 to December 15, 1935, arranged according to degree of silver and sex, are given in table 4 and are shown graphically in figure 6.

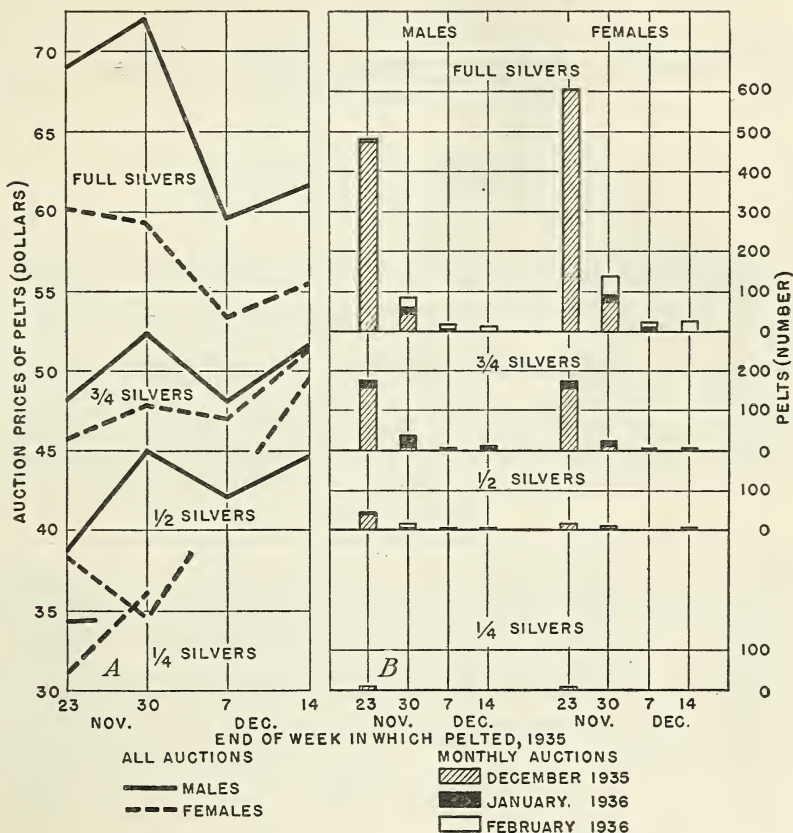


FIGURE 6.—Average auction prices (A) and numbers (B) of all classified silver fox pelts from mature animals, by sex, time of pelting, and month of sale. (See also tables 3 and 4.)

As the mature animals were practically all pelted during the third week of November, it was impossible to obtain information on seasonal influence on prices for mature pelts. The few taken later came from animals that had died at the breeding farms 200 miles south.

## EFFECT OF SEX

It has already been observed that male skins sell for more than female skins. Average figures on this point for entire groups as to time of pelting and age are given in tables 6 and 7.

TABLE 6.—Male pelts compared with female pelts

## PUP PELTS

Degree of silver in pelts and sex of animals	Animals died Aug. 19 to Nov. 16, 1935						Animals killed Nov. 17 to Dec. 15, 1935					
	Number	Average date of death	Average price of pelts <sup>1</sup>				Compared with aver- age price Nov. 17- Dec. 15	Number	Average date of death	Average price of pelts		
			Higher value of male over female		Dollars less Percent of	Higher value of male over female						
			Dollars	Dollars		Percent				Dollars	Dollars	Percent
Full silvers:												
Male.....	948	Oct. 27	56.51	6.65	13.3	11.33	83.3	936	Nov. 28	67.84	4.98	7.9
Female.....	906	do	49.86			13.00	79.3	945	do	62.86		
Three-fourths silvers:												
Male.....	505	Oct. 26	40.65	3.85	10.5	11.33	78.2	373	Nov. 29	51.98	5.33	11.4
Female.....	345	do	36.80			9.85	78.9	308	do	46.65		
Half silvers:												
Male.....	250	do	37.60	2.04	5.7	7.77	82.9	589	Nov. 30	45.37	4.58	11.2
Female.....	94	Oct. 25	35.56			5.23	87.2	355	Dec. 1	40.79		
One-fourth silvers:												
Male.....	40	do	31.70	1.70	5.7	5.10	86.1	110	Nov. 29	36.80	2.04	5.9
Female.....	7	Oct. 29	30.00			4.76	86.3	41	Dec. 1	34.76		
Slightly silver and dark:												
Male.....	19	Oct. 22	25.10	-2.40	-8.7	2.66	90.4	41	do	27.76	.68	2.5
Female.....	4	Oct. 23	27.50			<sup>2</sup> 4.2	101.6	12	Nov. 28	27.08		

## MATURE PELTS

Full silvers:												
Male.....	172	Oct. 27	60.65	9.54	18.6	8.40	87.8	585	Nov. 20	69.08	9.48	15.9
Female.....	220	do	51.14			8.46	85.8	786	do	59.60		
Three-fourths silvers:												
Male.....	97	Oct. 25	44.00	5.50	14.3	5.03	89.7	227	do	49.03	2.73	5.9
Female.....	99	do	38.50			7.80	83.2	206	do	46.30		
Half silvers:												
Male.....	24	Oct. 31	37.46	- .98	-2.6	2.88	92.9	64	Nov. 21	40.34	2.02	5.3
Female.....	9	Oct. 25	38.44			<sup>2</sup> 1.12	100.3	25	do	38.32		
One-fourth silvers:												
Male.....	2	Oct. 21	33.00			1.25	96.4	4	Nov. 18	34.25	2.25	7.0
Female.....	1	do	33.00			<sup>2</sup> 1.00	103.1	5	Nov. 19	32.00		
Slightly silver and dark:												
Male.....	3	Oct. 30	24.67	-1.33	-5.1							
Female.....	1	Oct. 28	25.00									

<sup>1</sup> Minus sign (-) denotes lower value.<sup>2</sup> More.



TABLE 7.—*Mature pelts compared with pup pelts*

## MALE PELTS

Degree of silver in pelts and age of animals	Animals died Aug. 19 to Nov. 16, 1935						Animals killed Nov. 17 to Dec. 15, 1935							
	Number	Average date of death	Average price of pelts <sup>1</sup>				Number	Average date of death	Average price of pelts					
			Dollars	Higher value of mature over pup		Compared with average price Nov. 17- Dec. 15			Dollars	Higher value of mature over pup				
				Dollars	Percent	Dollars less				Percent of	Dollars	Dollars	Percent	
Full silvers:														
Pups.....	948	Oct. 27	56.51			11.33	83.3	936	Nov. 28	67.84				
Mature.....	172	do.	60.68	4.17	7.4	8.40	87.8	585	Nov. 20	69.08	1.24	1.8		
Three-fourths silvers:														
Pups.....	505	Oct. 26	40.65			11.33	78.2	373	Nov. 29	51.98				
Mature.....	97	Oct. 25	44.00	3.35	8.2	5.03	89.7	227	Nov. 20	49.03	-2.95	-5.7		
Half silvers:														
Pups.....	250	Oct. 26	37.60			7.77	82.9	589	Nov. 30	45.37				
Mature.....	24	Oct. 31	37.46	-14	-4	2.88	92.9	64	Nov. 21	40.34	-5.03	-11.9		
One-fourth silvers:														
Pups.....	40	Oct. 25	31.70			5.10	86.1	110	Nov. 29	36.80				
Mature.....	2	Oct. 21	33.00	1.30	4.1	1.25	96.4	4	Nov. 18	34.25	-2.55	-6.9		
Slightly silver and dark:														
Pups.....	19	Oct. 22	25.10			2.66	90.4	41	Dec. 1	27.76				
Mature.....	3	Oct. 30	24.67	-43	-1.7									

## FEMALE PELTS

Full silvers:															
Pups.....	906	Oct. 27	49.86			13.00	79.3	945	Nov. 28	62.86					
Mature.....	220	do.	51.14	1.28	2.6	8.46	85.8	786	Nov. 20	59.60	-3.26	-5.2			
Three-fourths silvers:															
Pups.....	345	Oct. 26	36.80			9.85	78.9	308	Nov. 29	46.65					
Mature.....	99	Oct. 25	38.50	1.70	4.6	7.80	83.2	266	Nov. 20	46.30	-3.5	-8			
Half silvers:															
Pups.....	94	do.	35.56			5.23	87.2	355	Dec. 1	40.79					
Mature.....	9	do.	38.44	2.88	8.1	2.12	100.3	25	Nov. 21	38.32	-2.47	-6.1			
One-fourth silvers:															
Pups.....	7	Oct. 29	30.00			4.76	86.3	41	Dec. 1	34.76					
Mature.....	1	Oct. 21	33.00	3.00	10.0	2.10	103.1	5	Nov. 19	32.00	-2.76	-7.9			
Slightly silver and dark:															
Pups.....	4	Oct. 28	27.50			2.42	101.6	12	Nov. 28	27.08					
Mature.....	1	do.	26.00	-1.50	-5.4										

<sup>1</sup> Minus sign (-) denotes lower value.<sup>2</sup> More.

## PUP PELTS

From table 6, for example, it will be seen that in the group of more than 900 full silver pup pelts of each sex whose average date of death was October 27 the male pup pelts sold for \$6.65 (13.3 percent) more than the female. (See also fig. 4.) In an equally large group of full silver pup pelts of each sex from animals killed in season and pelted on the average date of November 28, the male pup skins sold for \$4.98 (7.9 percent) more than the female. A higher price, though decreasing in amount with decrease in silvering, was paid for male than for female pup pelts with the one exception of the few slightly silver and dark skins taken from animals that died.

The relative percentage values of the male pup pelts of all degrees of silver to the female pup pelts having the same degree of silver are

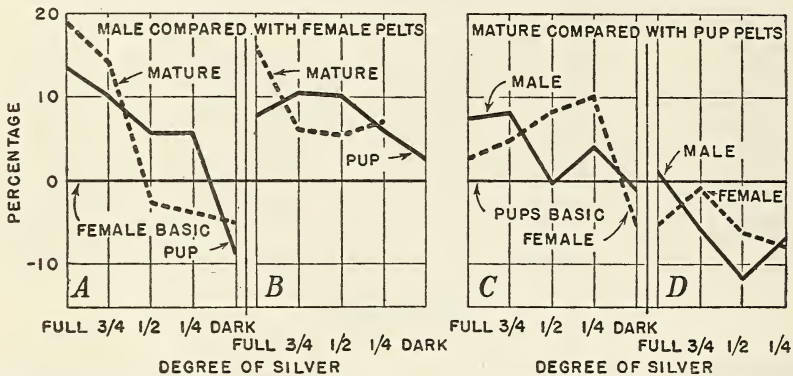


FIGURE 7.—Relative percentage values of silver fox pelts of all degrees of silver, shown for male as compared with female pelts (A, B) and for mature as compared with pup pelts (C, D): A, C, for pelts from animals that died August 19 to November 16, 1935; B, D, for pelts from animals killed November 17 to December 15, 1935.

shown in figure 7; A showing values for pelts taken from pups that died and B, for those taken from pups killed in season.

An interesting comparison as to the relative influence of sex upon the higher priced full silver pup pelts is provided in table 8. A male skin brought the highest price, \$220. The highest price received for a female pelt was only \$140, and there were seven male pelts that sold for that much or more. Whereas 15.2 percent of all the full silver male pup pelts sold for \$80 or more, only 8.2 percent, or a little more than half as large a percentage, of the female pup pelts sold for that.

A person using the polygamous system of breeding foxes will have more male pup skins for sale and thereby increase his revenue.

TABLE 8.—Distribution of select full silver fox pup pelts by value, sex, and week of pelting

## MALE PELTS

Week pups were pelted	Pelts selling for—										Total pelts sold for \$80 or more			
	\$80	\$90	\$100	\$110	\$120	\$130	\$140	\$150	\$160	\$180			\$220	
Died week ended:	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Percent <sup>1</sup>	
Oct. 12.....	1												1	1.9
Oct. 19.....	1		1										2	2.2
Oct. 26.....		2	2		1	2							7	4.7
Nov. 2.....	11	9	7	4	1								32	18.9
Nov. 9.....	13	1	10	4	3	2							33	16.0
Nov. 16.....	10	12	5	4	1		1						33	16.5
Total.....	36	24	25	12	6	4	1						108	11.4
Killed week ended:														
Nov. 23.....	5	5	2				1						13	11.9
Nov. 30.....	25	28	13	12		4	1	1	1		1		86	23.0
Dec. 7.....	15	10	4	8	4	3				1			45	15.8
Dec. 14.....	17	4	7	4	1								33	19.4
Dec. 21.....	1	1											2	
Total.....	63	48	26	24	5	7	2	1	1	1	1		179	19.1
Grand total.....	99	72	51	36	11	11	3	1	1	1	1		287	15.2

## FEMALE PELTS

Died week ended:														
Oct. 19.....	1												1	1.1
Oct. 26.....	1		1	1		1							5	3.5
Nov. 2.....	7	4	1		1								13	7.6
Nov. 9.....	8	2	4	2		1							17	8.1
Nov. 16.....	4	4	1										9	5.1
Total.....	21	10	7	3	2	2							45	5.0
Killed week ended:														
Nov. 23.....	1	4	1	1									7	6.7
Nov. 30.....	24	12	10	4	5								55	15.4
Dec. 7.....	9	5	5	7	3		1						30	8.8
Dec. 14.....	5	3	3	1		1							13	9.0
Dec. 21.....	1												1	
Total.....	40	24	19	13	8	1	1						106	11.2
Grand total.....	61	34	26	16	10	3	1						151	8.2

<sup>1</sup> Percent of all full silver pup pelts of same sex taken during same period.

## MATURE PELTS

The mature male full silver pelts (table 6) taken from animals that died sold for \$9.54 (18.6 percent) more than those of the females from that period. (See also fig. 4.) The mature male pelts taken in season brought \$9.48 (15.9 percent) more than similar female pelts.

Mature male pelts of the various degrees of silver also sold for more than the female pelts, but there is not the gradation in value as was evident with the pup pelts. The dark silvers from animals that died are not sufficient in number to give reliable comparisons.

The relative percentage values of the mature male pelts of all degrees of silver to the mature female pelts having the same degree of silver are shown in figure 7; *A* showing values for pelts taken from animals that died and *B*, for those taken from animals killed in season.

The facts that analysis of these data has revealed are that the buyers, without knowing which sex is represented, pay on the average considerably more for the male pelts and that, except for the better skins that are sold singly, the graders at the auction companies when making up their bundles segregate the skins of the sexes without having any information as to the sex of the animals that produced the pelts.

#### CAUSES OF GREATER VALUE OF MALE PELTS

It is the opinion of those who have handled a great many silver fox pelts that larger size is the chief reason for this higher value of the male skins, as the manufacturing furriers naturally desire to obtain as many square inches of fur as possible for a definite price. Mature male foxes weigh about 2 pounds more than mature females, according to the records of the United States Fur Animal Experiment Station, and it is reasonable to suppose that the major part of this difference is due to size. The same records show that male pups in early winter weigh about 2 pounds more than female pups. Some think the characteristic fuller neck of the male may be another contributing cause for the higher value of its pelt. A more detailed study may reveal other factors.

#### EFFECT OF AGE

A summary of the relative values of mature and pup pelts is given in table 7 and is shown graphically in figure 4. As pup pelts are more numerous in the market than mature ones, the comparison has been made on the basis of the value of pup pelts. It will be seen that for the full silver males the average price paid for 172 mature pelts from animals whose average date of death was October 27 was \$4.17 (7.4 percent) greater than the average price received from the 948 pup pelts taken on the same average date. This difference is partly due to the larger size of mature pelts, since well-grown early pups at the United States Fur Animal Experiment Station did not attain the full weight of mature animals until about the 1st of October. This margin is reduced to \$1.24 (only 1.8 percent) for skins taken during the regular pelting season. Apparently the pups increased both in size and fur growth during the later days. It should be noted that the mature pelts were taken an average of 8 days earlier than the pup pelts.

As to the full silver females, mature pelts from animals that died and whose average date of death was October 27 sold for an average of \$1.28 (2.6 percent) more than similar pup pelts, but the mature pelts taken in season sold for \$3.26 (5.2 percent less), than the pup skins. This very definite price discrimination against the full silver female mature pelts in comparison with the pup pelts, which was not found in the male pelts, seems to indicate that the mature females

for one reason or another either had not reached as high a peak of primeness as the mature males at the time of pelting or else had deteriorated more than the males.

The price differences existing between mature and pup pelts having varying degrees of silver can readily be found in table 7. The percentage values of mature pelts as compared with pup pelts are shown graphically in figure 7; *C* showing values for pelts taken from animals that died and *D*, for those taken from animals killed in season. Generally speaking, the mature pelts from animals that died before normal pelting season sold for more than the pup pelts; but the reverse was true for the pelts taken in season.

One experienced silver fox skin dealer expressed the opinion that mature skins are fuller and more heavily furred than pup pelts and that the latter tend to show a clearer color, finer texture of fur, and more life.

#### EFFECT OF DEGREE OF SILVERING

The percentage value of pelts having different degrees of silver compared with that of full silvers is given in table 9. Three-fourths silvers had approximately three-fourths the value of full silvers; half silvers, two-thirds the value; one-fourth silvers, slightly more than half the value; and slightly silver and darker, about two-fifths the value. These relative values are in substantial agreement with those found for the 5-year period, 1932-36, and given in the Biological Survey's mimeographed leaflet (BS-58) previously mentioned.

TABLE 9.—Percentage value of pelts on basis of full silvers

Pelts	Full silver	Three-fourths silver	Half silver	One-fourth silver	Slightly silver and dark
Mature:	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Male.....	100	71.0	58.4	49.6	-----
Female.....	100	77.7	64.3	53.7	-----
Pup:					
Male.....	100	76.6	66.9	54.2	40.9
Female.....	100	74.2	64.9	55.3	43.1

Expressed in another way, full silver pup pelts taken during the regular pelting period (both sexes included) sold for 32.5 percent more than the three-fourths silvers and for 51.7 percent more than the half silvers. This large premium paid for the lighter silvers naturally induces fox breeders to endeavor to produce the maximum number of this kind by proper selective matings. It costs no more to feed a light silver fox than a dark one. The Nieman ranches have been able to produce more than 59 percent full silvers (pl. 2).

In table 10 the entire Nieman pup crop for 1935 has been listed. This includes the animals retained as breeders. Pelts that were damaged or of such inferior quality as to fall within the cull class for sale purposes also have been included in the proper group according to their degree of silver. This procedure naturally makes the undescribed class smaller than would normally be the case in a classification for auction.

TABLE 10.—*Distribution according to degree of silver of all pups for the year 1935*

Degree of silver <sup>1</sup>	Males		Females		Both sexes	
	Number	Percent	Number	Percent	Number	Percent
Full.....	4,839	54.7	5,131	65.4	9,970	59.6
Three-fourths.....	2,521	28.5	1,940	24.6	4,461	26.7
Half.....	1,271	14.3	713	9.1	1,984	11.9
One-fourth.....	155	1.7	51	.6	206	1.2
Slightly and dark.....	75	.8	22	.3	97	.6
Total.....	8,861	100.0	7,857	100.0	16,718	100.0
Undescribed.....	231	2.5	342	4.2	573	3.3
Grand total.....	9,092		8,199		17,291	

<sup>1</sup> Cull pelts, though not actually selling with the various classes according to the degree of silver, were here included in their color class in order to get as complete a picture of relative distribution of the silvering as possible.

Nearly 60 percent of the entire pup crop were full silvers. More than 65 percent of the female and only about 55 percent of the male pups were full silvers. No definite explanation can be given at present for the higher percentage for females, but it has been observed at the breeding ranch that the females are consistently lighter in color than the males. The total number within each class and the percentage relationship of the groups having different degrees of silver can readily be seen in table 10.

#### SUMMARY

The auction prices of 10,689 of the more than 14,000 mature and pup silver fox pelts produced by the Nieman ranches in Wisconsin and Michigan in 1935 under similar conditions of breeding, feeding, and climate were critically studied. About 34 percent of the pups produced were retained as breeders. Naturally they were the best animals, and most of them were full silvers. The number of pelts represented, however, is considered sufficiently large to give accurate information.

The most striking fact disclosed by this study is that pelts of males sell for considerably more than those of females. Pelts taken during the normal pelting season from mature males sold for nearly 16 percent more than those of comparable females; skins from male pups, for 8 percent more than those from female pups. This price differential between the sexes was even greater for those pelts removed from animals that died before regular pelting time. Buyers recognized a commercial difference between the male and female skins, because the prices compared are actual auction values placed upon the pelts by men who had no knowledge of the sex of the animals from which the pelts were taken. The larger size of the male pelts is believed to be the primary reason for their greater valuation.

Pelts from mature animals that died before the regular pelting season sold for more than pup pelts of the same sex, but the pup pelts taken during pelting season brought a higher average price than the mature skins taken during that time. There was considerable variation in prices received for mature and pup pelts, depending upon the degree of silver.

Pelts taken early in fall had a sale value of approximately 30 percent of that of those taken during the regular pelting period, but this relative value increased uniformly and rapidly until about the first of



One of the finer specimens of silver foxes raised by the Herbert A. Nieman Co.





November, when it was 93 percent of that of pelts taken at the regular time.

The extent of the prime-fur period could not be definitely determined from the data, but indications are that pup pelts can be taken over at least a 3-week period without affecting their sale price, providing the late-whelped pups are pelted last.

The full silver pup pelts sold for 32.5 and 51.7 percent more, respectively, than three-fourths and half silvers. These higher values for the full silvers have led the Nieman ranches, by selective mating, to produce full silvers to the extent of 59 percent of the entire pup crop.

Though the prevalence of certain methods and the necessity of doing things at a particular time on a well-conducted commercial fox ranch prevent the exactness of results that would be found in a carefully planned experiment, it is believed that the large number of skins included in this study gives a high degree of validity to the results. It would be almost impossible to produce this number of pelts under rigid experiment.

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