

ALBERTA RECREATION, PARKS AND WILDLIFE  
FISH AND WILDLIFE DIVISION

BIOLOGICAL OBSERVATIONS OF WOLVES FROM THE  
1975-76 WOLF CONTROL PROGRAM

J. R. Gunson, Wildlife Biologist  
P. J. Cole, Wildlife Technician  
W. A. Johnson, Wildlife Technician

December 2, 1976

## SUMMARY

Biological data were collected from wolves taken during 1975-76, the fourth winter of intensive wolf control in Alberta. Wolves were taken in areas where proven or probable wolf depredations on livestock had occurred. Techniques of carcass collection, autopsy and biological preparation have already been presented in reports of the 1972-73 and 1973-74 biological investigations (1, 3). This report presents biological observations for reference and comparison to previous data.

Approximately 125 wolves were taken during the 1975-76 program and 106 carcasses were collected for analysis. All wolves in this analysis were taken by strychnine poisoning. Data were recorded from 48 wolves from the Peace River Region and 32, 12 and 14 wolves from Edson, Calgary, and St. Paul Regions, respectively (Table 1 and Figure 1). Although the majority of wolves were taken between January and March, temporal distribution ranged from July 1975 to May 1976 (Table 2).

Of the 101 animals sexed, 44 or 43.6 percent were males (Tables 3 and 4). Age ranged from pups to 7½ years. Sex ratios did not differ significantly from 1:1 in any age cohort (Table 4). During 1975-76, 24.8 percent of the wolves aged were pups, 21.8 percent were yearlings and 53.5 percent were adults. {Pups constituted 44.6% of wolves taken in 1972-73, 37.1% in 1973-74 and 11.9% in 1975-76 (2)}.

Data concerning reproductive performance of female wolves is incomplete in 1975-76 because most tracts could not be "read" following an error in preparation. A mean of 6.3 corpora lutea was recorded in 10 pairs of ovaries.

Testis weight (with epididymus) appeared to increase somewhat during the last part of February (Figure 3).

Stomach contents of 75 wolves reflected bait used at poison stations. Beef remains predominated in stomachs where known bait was excluded (Table 7). In 17 non-bait food items examined, beef occurred 23.5 percent compared to 11.8 percent for cervidiremains (Table 8).

Mange infections occurred in 12.4 percent of the 97 pelts examined in 1975-76 (Table 9). This compares to 27.3 percent in 1974-75. Yearlings had the highest infection rate; 17.4 percent (Table 10) (pups had the highest infection in 1974-75). Most wolves were recorded as being in good to excellent condition, and no diseases other than mange was observed. Two wolves had foot damage, one the result of trap injury. Mean xiphoid fat weights were recorded (Table 11) for future reference and were greater in 1975-76 over 1974-75 in most cohorts.

Of 104 pelts, 73.1 percent were classed as grey (Table 12). Whole weight, total length, hind foot and tail length measurements are also summarized (Table 13).

## References Cited

1. GUNSON, J. R. 1973. The 1972-73 wolf control program. Alberta Fish and Wildlife Division. Unpublished Progress Report. 25 pp.
2. \_\_\_\_\_, P. J. Cole and W. A. Johnson. 1976. Biological observations from the 1974-75 wolf control program. Alberta Fish and Wildlife Division. Unpublished Progress Report. 24 pp.
3. SCHOWALTER, D. B. 1975. Biological investigation of the 1973-74 wolf control program. Alberta Fish and Wildlife Division. Unpublished Progress Report. 18 pp.

Table 1. Source of wolf carcasses for biological examination; by Region and method of collection.

Region	Poison	Shot	Snared	Total
Peace River	48	-	-	48
Edson	32	-	-	32
Calgary	12	-	-	12
St. Paul	14	-	-	14
Total	106	-	-	106

Table 2. Monthly distribution of 104<sup>1)</sup> wolves taken in the 1974-75 wolf control program.

Month	n
July	4
October	1
November	7
December	19
January	20
February	27
March	21
April	4
May	1

1) kill date recorded on 104 of 106 carcasses

Table 3. Numbers of wolves taken by Region, sex and age in the 1975-76 wolf control program.

Age	<u>Peace River</u> <sup>1)</sup>		<u>Edson</u> <sup>2)</sup>		<u>Calgary</u>		<u>St. Paul</u>		<u>Total</u>	
	M	F	M	F	M	F	M	F	M	F
$\frac{1}{2}$	5	5	5	4	2	3	1		13	12
$1\frac{1}{2}$	8	4	2	2		2	1	3	11	11
$2\frac{1}{2}$	5	5	1	3	1		1	4	8	12
$3\frac{1}{2}$	2	5		2		3		1	2	11
$4\frac{1}{2}$	2	3	2	3	1		1		6	6
$5\frac{1}{2}$	1		1	1				1	2	2
$6\frac{1}{2}$			1	2			1		2	2
$7\frac{1}{2}$		1								1
Total	23	23	12	17	4	8	5	9	44	57

1) Two unsexed wolves and

2) three unsexed wolves omitted

Table 4. Sex proportions of wolves taken in the 1975-76 wolf control program in Alberta; by age.

Age	Number Sexed	Number Males	% Males
$\frac{1}{2}$	25	13	52.0
$1\frac{1}{2}$	22	11	50.0
$2\frac{1}{2}+$	54	20	37.0
Total	101	44	43.6



Table 5. Age proportions (%) of wolves taken in the 1975-76 wolf control program in Alberta; by sex.

Sex	n	Proportion (%)		
		$\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{2}+$
Male	44	29.6	25.0	45.5
Female	57	21.1	19.3	59.7
Both	101	24.8	21.8	53.5

Table 6. Numbers of embryos, placental scars and corpora lutea of wolves taken in the 1975-76 wolf control program.

	n	r	$\bar{x}$
Embryos	1	6	6 <sup>1)</sup>
Placental Scars	- <sup>2)</sup>	-	-
Corpora lutea	10	4-10	6.3

1) Embryos in very early stages

2) Scars could not be "read" due to an error in preparation

Table 7. Contents of stomachs of wolves taken in the 1975-76 wolf control program.

Contents	Stomachs (78)			
	with bait	%	without bait	%
Beef	19	24.4	4	5.1
Cervid	42	53.9	2	2.2
Beaver	3	3.9	0	-
Grouse	1	1.3	1	1.3
Sheep	2	2.6	0	-
Coyote/Wolf	2	2.6	1	1.3
Dog	2	2.6	2	2.6
Vegetation	1	1.3	1	1.3
Raven <sup>1)</sup>	4	5.1	0	-
Other <sup>2)</sup>	1	1.3	1	1.3
Liver/Meat Only <sup>3)</sup>	6	7.7	1	1.3
Unidentified	4	5.1	4	5.1

1) Probably from poison stations

2) Garbage related items

3) No identifiable hairs found in sample

Table 8. Occurrence of non-bait dietary items in stomachs of wolves taken in the 1975-76 wolf control program.

Dietary Item	n Occurrences	% Occurrences
Beef	4	23.5
Cervid	2	11.8
Grouse	1	5.9
Coyote/Wolf	1	5.9
Dog	2	11.8
Vegetation	1	5.9
Other <sup>1)</sup>	1	5.9
Liver/Meat Only <sup>2)</sup>	1	5.9
Unidentified	4	23.5
Total	17	100.1

1) Garbage related items

2) No identifiable hairs found in sample

Table 9. Incidence of mange in wolves in the 1975-76 wolf control program in Alberta; by Region.

Region	Wolves Examined	Number With Mange	% With Mange
Peace River	43	8	18.6
Edson	28	1	3.6
Calgary	12	3	25.0
St. Paul	14	0	0
Total	97 <sup>1)</sup>	12	12.4

<sup>1)</sup> Nine wolves not examined due to decomposition, etc.

Table 10. Incidence of mange in wolves in the 1975-76 wolf control program in Alberta; by age<sup>1)</sup>.

Age	Wolves Examined	Number With Mange	% With Mange
$\frac{1}{2}$	23	2	8.7
$1\frac{1}{2}$	23	4	17.4
$2\frac{1}{2}+$	51	6	11.8

<sup>1)</sup> Nine wolves not examined due to decomposition, etc.

Table 11. Weights of xiphoid fat body in wolves taken in the 1975-76 wolf control program in Alberta.

Cohort	n	r	$\bar{x}$
Pups ( $\frac{1}{2}$ )	21	0.6-158.7	74.5
Yearlings ( $1\frac{1}{2}$ )	17	39.3-241.1	117.8
Adults ( $2\frac{1}{2}+$ )	42	22.7-492.0	179.8
Male Adults	17	56.0-492.0	229.6
Female Adults	25	22.7-351.1	145.8
With Mange (all ages & both sexes)	11	0.6-287.8	125.8
With Mange (Adults)	6	96.9-287.8	177.6

Table 12. Primary color of wolves taken in the 1975-76 wolf control program in Alberta.

Region	n	Proportion (%)			
		Grey	Black	White	Blue
Peace River	47	76.6	23.4		
Edson	31	64.5	32.3	3.2	
Calgary	12	66.7	33.3		
St. Paul	14	85.7	7.1		7.1
Total	104	73.1	25.0	1.0	1.0



Table 13. Standard measurements of wolves taken in the 1975-76 wolf control program in Alberta; by sex and age.

Age	Whole Weight			Total Length			Tail			Hind Foot		
	n	r	$\bar{x}$	n	r	$\bar{x}$	n	r	$\bar{x}$	n	r	$\bar{x}$
Male												
½	11	71.0-108.0	87.9	11	158.0-182.5	168.3	11	35.5-53.5	45.9	10	26.5-31.5	28.8
1½	10	84.0-112.0	99.1	11	161.5-192.0	172.6	11	35.5-61.5	45.5	10	28.5-30.5	29.4
2½+	16	90.0-133.0	109.0	13	148.5-190.0	170.9	13	41.0-49.0	44.1	13	27.5-32.0	29.3
Female												
½	8	54.0-88.0	68.6	12	142.0-171.0	158.7	12	38.5-50.5	42.7	13	26.0-30.0	27.4
1½	9	63.0-98.0	82.7	10	144.0-174.5	165.9	10	40.0-53.5	46.2	8	26.5-30.0	28.3
2½+	26	68.0-110.0	90.1	23	142.0-179.0	166.5	23	40.0-54.0	44.7	24	25.0-33.0	28.3

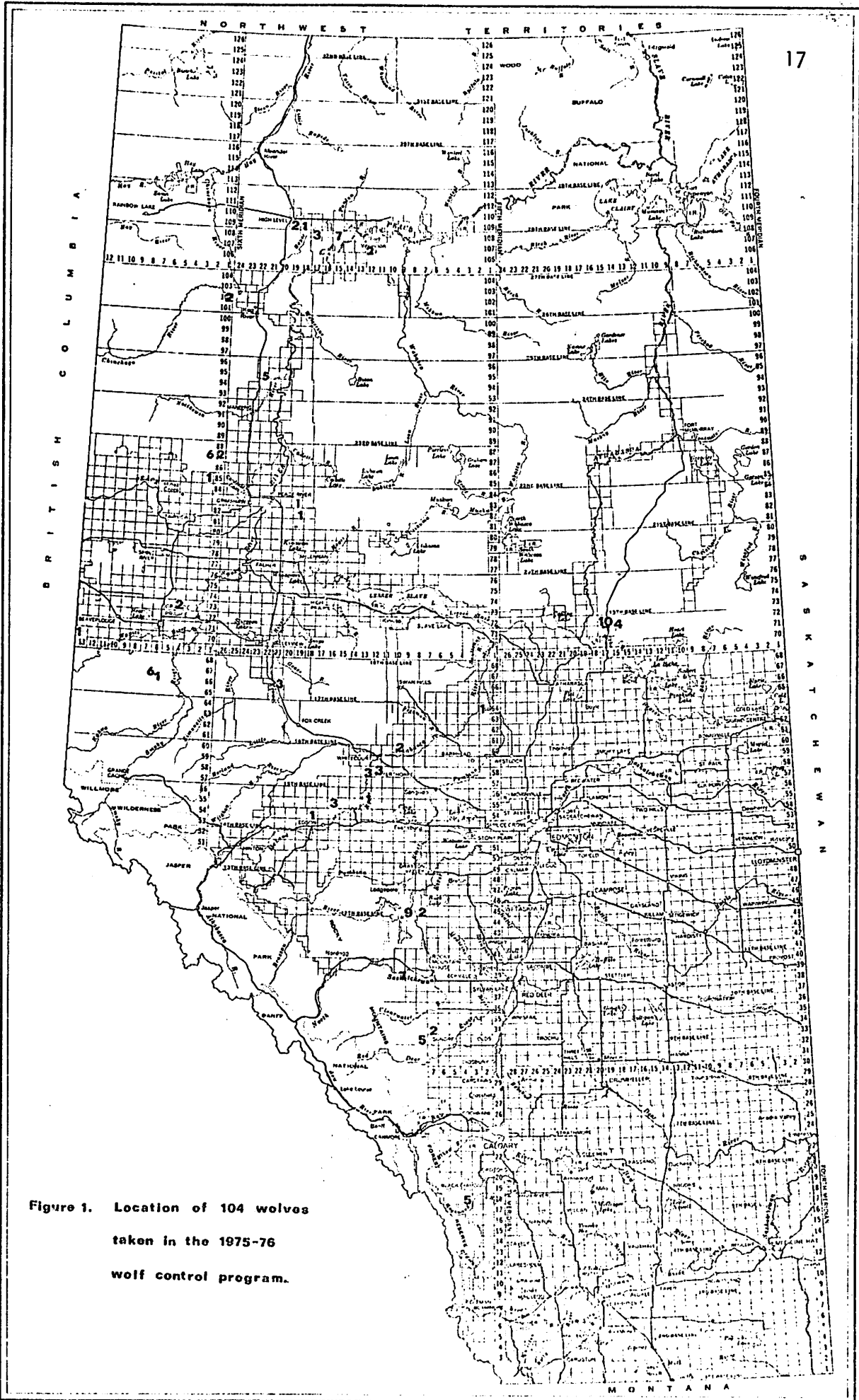


Figure 1. Location of 104 wolves taken in the 1975-76 wolf control program.

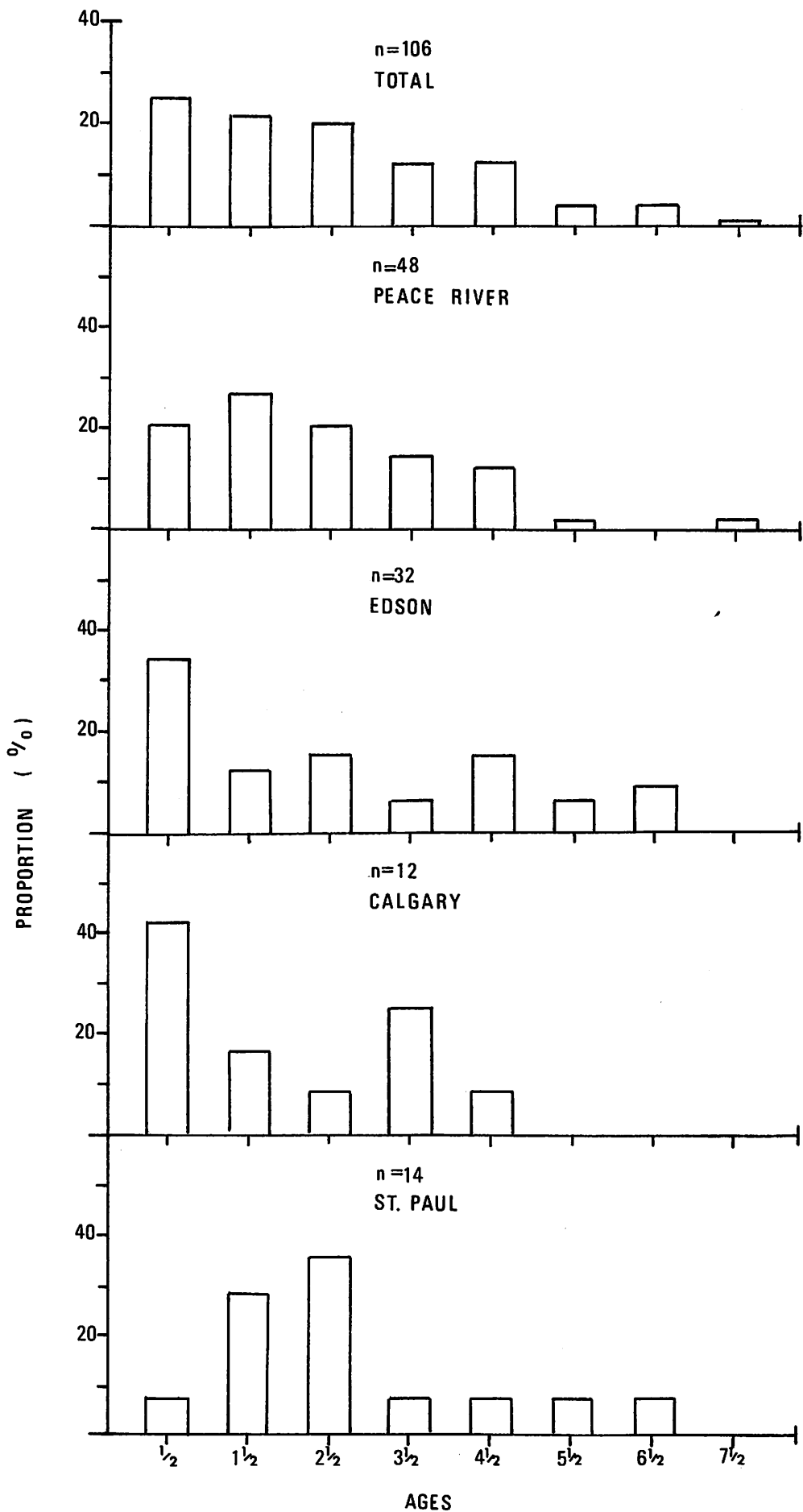


Figure 2. Age structure of wolves taken in the 1975-76 wolf control program.

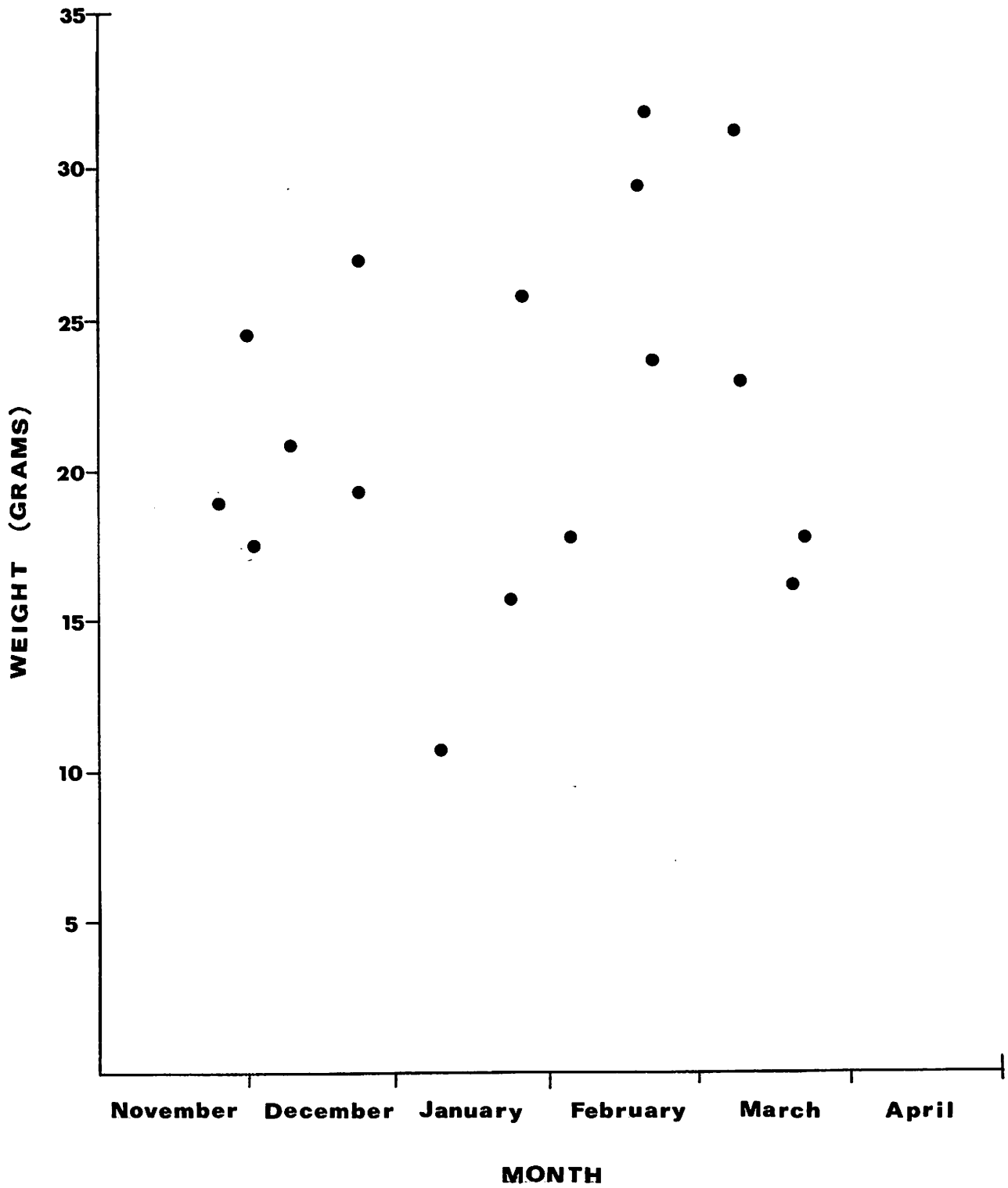


Figure 3. Mean testis weight (with epididymus) of 17 adult wolves taken in the 1975-76 wolf control program.