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No. 6110

May 26, 1891 — May 11, 1896





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THE

NINETEENTH ANNUAL REPORT

OF THE

BOARD OF DIRECTORS

OF THE

ZOOLOGICAL SOCIETY

OF PHILADELPHIA.

(INCORPORATED MARCH 21ST, 1859.)

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READ AT THE ANNUAL MEETING OF THE MEMBERS AND LOAN-  
HOLDERS OF THE SOCIETY.

APRIL 23d, 1891.

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PHILADELPHIA :  
ALLEN, LANE & SCOTT'S PRINTING HOUSE,  
229-231-233 South Fifth Street.  
1891.









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THE  
ZOOLOGICAL SOCIETY OF PHILADELPHIA.

OFFICE, FAIRMOUNT PARK.

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OFFICERS FOR THE YEAR ENDING APRIL 28th, 1892.

**PRESIDENT,**  
CHARLES PLATT.

**VICE-PRESIDENTS:**  
GEORGE W. CHILDS, J. VAUGHAN MERRICK.

**CORRESPONDING SECRETARY,**  
PROF. HENRY C. CHAPMAN.

**RECORDING SECRETARY,**  
THOMAS HOCKLEY.

**TREASURER,**  
WILLIAM HACKER.

**DIRECTORS:**

WILLIAM H. MERRICK,	GALLOWAY C. MORRIS,
HENRY C. GIBSON,	HENRY T. COATES,
ISAAC J. WISTAR,	FRANCIS W. LEWIS, M. D.,
CHARLES W. TROTTER,	CHARLES M. LEA,
PROF. JOSEPH LEIDY,	CHRISTIAN C. FEBIGER,
FRANCIS T. FASSITT,	WM. L. SPRINGS.

**ACTUARY,**  
CHARLES L. JEFFERSON,

**SUPERINTENDENT OF THE GARDEN,**  
ARTHUR ERWIN BROWN.

**SOLICITORS:**  
SAMUEL WAGNER, WM. W. MONTGOMERY.



REPORT  
OF THE  
BOARD OF DIRECTORS.

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PHILADELPHIA, April 23d, 1891.

THE Board of Directors of the Zoological Society of Philadelphia submit to the members and loan-certificate holders this their Nineteenth Annual Report of the business and operations of the Society from 1st of March, 1890, to 1st of March, 1891.

MEMBERS.

The number of members on the 1st of March, 1891, was:—

Annual members . . . . .	407
Life members . . . . .	1,276
Corresponding members . . . . .	7
Honorary members . . . . .	14
Perpetual members . . . . .	259

Total members (exclusive of loan-holders), 1,963

After careful consideration the Board has resolved to reduce the price of admission to the Garden on Saturdays and legal holidays, except the 4th of July, to ten cents for adults and five cents for children. It is hoped that a largely-increased attendance will be the result, so that the Board will not be compelled to recall this effort made to popularize the Garden.

With the present receipts from all sources it is necessary to practice the strictest economy in order to prevent a deficit at the end of each year. An increase of membership, gifts of the outstanding loan of the Society, or contributions to the Endowment Fund would tend to relieve the Garden from its uncertain financial condition.

The necessities of the Garden for certain additions of permanent buildings and enclosures are becoming more urgent with each year. The need of a new monkey house has been referred to in previous reports, and in the event of the required means being supplied its erection will be of double value, as the present house can then be made use of for a portion of the collection of birds, thus relieving the present overcrowding of the aviary.

Suitable outdoor aviaries for the keeping of pheasants and birds of prey, as well as a series of properly-inclosed ponds for the breeding of water-fowl, are also much to be desired.

The following is a report in detail of the admissions and receipts for the year:—

Adults (paying twenty-five cents at gates) . . . .	101,667
Children (paying ten cents at gates) . . . . .	32,199
Members (including Life and Annual Members, loan-holders' annual, and complimentary annual tickets) . . . . .	3,015
Loan-holders' single tickets . . . . .	53,983
Free admissions (charitable institutions, donors' tickets, &c.) . . . . .	2,899
Coupon tickets . . . . .	3,070
Excursion tickets . . . . .	15,051
	<hr/>
	211,884

*Monthly Record of Visitors for 1890-91, with corresponding account for 1889-90.*

MONTH.	1889-90.	1890-91.	COMPARISON.
March . . . . .	11,179	6,501	Decrease . . 4,678
April . . . . .	16,759	17,488	Increase . . 729
May . . . . .	21,541	22,759	" . . 1,218
June . . . . .	22,443	23,018	" . . 575
July . . . . .	25,299	29,124	" . . 3,825
August . . . . .	39,240	35,935	Decrease . . 3,305
September . . . . .	27,615	25,357	" . . 2,258
October . . . . .	16,272	18,101	Increase . . 1,829
November . . . . .	10,946	15,970	" . . 5,024
December . . . . .	10,544	5,237	Decrease . . 5,307
January . . . . .	6,919	4,561	" . . 2,358
February . . . . .	6,846	7,833	Increase . . 987
	215,603	211,884	Decrease . . 3,719

Average daily admissions . . . . . 581  
 The greatest number of visitors on any one day was  
 on Friday, July 4th . . . . . 4,765

*Monthly Record of Receipts from Admission for 1890-91, with corresponding account for 1889-90.*

MONTH.	1889-90.	1890-91.	COMPARISON.
March . . . . .	\$2,105 98	\$1,213 59	Decrease . \$892 39
April . . . . .	2,974 15	2,954 19	" . 19 96
May . . . . .	3,679 47	3,366 70	" . 312 77
June . . . . .	3,661 66	3,331 91	" . 329 75
July . . . . .	3,936 55	4,325 82	Increase . . 389 27
August . . . . .	5,970 72	4,846 12	Decrease . 1,124 60
September . . . . .	4,579 81	3,600 74	" . 979 07
October . . . . .	2,766 49	2,624 67	" . 141 82
November . . . . .	1,808 92	2,204 01	Increase . . 395 09
December . . . . .	1,763 62	873 57	Decrease . 890 05
January . . . . .	1,264 79	855 80	" . 408 99
February . . . . .	1,240 27	1,275 07	Increase . . 34 80
	\$35,752 43	\$31,472 19	Decrease, \$4,280 24

Average daily receipts from admissions . . . . .	\$86 22
The largest amount of receipts at the gates on any one day was on Friday, July 4th . . . . .	691 34

*Total Receipts on the several days of the week, and their  
respective averages, for 1890-91.*

RANK.	DAYS.	TOTAL RECEIPTS.	AVERAGE.
1	Sunday . . . . .	\$13,721 29	\$263 87
2	Saturday . . . . .	3,744 52	70 65
3	Friday . . . . .	3,217 84	61 88
4	Thursday . . . . .	2,883 59	55 45
5	Monday . . . . .	2,784 48	53 55
6	Wednesday . . . . .	2,750 08	52 89
7	Tuesday . . . . .	2,370 39	45 58
		\$31,472 19	

The financial condition of the Society is fully shown in the Treasurer's statement, Appendix A, and the report of the General Superintendent, Appendix B, shows the present condition of the menagerie and the details attending the operation of the Garden during the year.

The Board desires to express its thanks for the many donations of animals which have been received.

By order of the Board,

THOMAS HOCKLEY,  
*Secretary.*



# INCOME AND EXPENDITURES.

For fiscal year ending March 1st, 1891.

## INCOME.

Members' fees and dues . . . . .	\$1,085 00	
Admission receipts . . . . .	31,472 19	
Rents at Garden, on account of . . . . .	600 00	
Sale of Guide-books . . . . .	199 35	
Interest, discount, &c. . . . .	829 90	
Sundry receipts . . . . .	779 15	
	\$34,965 59	

## EXPENDITURES.

(Exclusive of Permanent Improvements, &c.)

Salaries . . . . .	\$17,954 43	
Office expenses . . . . .	191 32	
General expenses . . . . .	17,234 69	
	\$35,380 44	
Estimated loss and depreciation on animals . . . . .	6,270 06	
	\$41,650 50	
Balance to debit of profit and loss for year . . . . .	6,684 91	
	\$34,965 59	

# CAPITAL.

Receipts and expenditures for the year ending March 1st, 1891.

## RECEIPTS.

Legacy, estate of George S. Pepper, deceased . . . . .	\$14,287 50	
Life membership . . . . .	50 00	
Sales of animals . . . . .	141 50	
Add the following amount charged to profit and loss for estimated loss and depreciation on animals . . . . .	6,270 06	
	\$20,749 06	

## EXPENDITURES.

Permanent improvement and animals as per items in Treasurer's statement (Appendix A) . . . . .	\$5,776 30	
Balance credited to capital . . . . .	14,972 76	
	\$20,749 06	

# APPENDIX A.

## TREASURER'S STATEMENT.

From March 1st, 1890, to March 1st, 1891.

DR.

To Balance March 1st, 1890 . . . . .	\$5,813 79
“ Collateral loan . . . . .	5,000 00
“ Legacy, estate of George S. Pepper, deceased . . . . .	14,287 50
“ Sales of animals . . . . .	141 50
“ Life membership . . . . .	50 00
“ Members' fees and dues . . . . .	\$1,085 00
“ Admission receipts . . . . .	31,472 19
“ Rents at Garden . . . . .	600 00
“ Sunday receipts . . . . .	779 15
“ Interest, discount, &c. . . . .	829 90
“ Sale of Guide-books . . . . .	199 35
Transferred to credit of profit and loss . . . . .	34,965 59
	\$50,258 38

CR.

By warrants paid for:—

Salaries and wages . . . . .	\$17,954 43
Office expenses . . . . .	191 32
Subsistence . . . . .	7,016 47
Advertising . . . . .	2,520 58
Insurance . . . . .	225 04
Fuel and lights . . . . .	1,023 10
Printing . . . . .	415 08
Expressage . . . . .	164 40
Repairs . . . . .	2,051 93
Extra labor and jobbing . . . . .	1,927 95
Hardware and tools . . . . .	310 64
Lumber . . . . .	437 38
Water-rent . . . . .	150 00
Carried forward . . . . .	\$34,388 32

Brought forward . . . . .	\$34,388 32	
Uniforms and equipments . . . . .	200 50	
Commissions on collections . . . . .	141 40	
Sundries . . . . .	650 22	
	<hr/>	
Transferred to debit of profit and loss . . . . .	\$35,380 44	
Purchase of animals . . . . .	\$5,701 56	
Horticulture . . . . .	74 74	
Investment account . . . . .	4,000 00	
	<hr/>	9,776 30
Collateral loan . . . . .		3,000 00
Balance on hand March 1st, 1891 . . . . .		2,101 64
		<hr/>
		\$50,258 38
		<hr/> <hr/>

WILLIAM HACKER,  
*Treasurer.*

Examined and found correct,  
F. T. FASSITT,  
HENRY T. COATES,  
*Committee on Audit.*

BALANCE-SHEET.

Dr.

Zoological Society, March 1st, 1891.

Cr.

Cash	\$2,101 64
Collateral loan	3,000 00
Investment account	21,500 00
Water supply and drains	11,583 37
Animal account	46,608 00
Eagle aviary	2,744 19
Bear pits	6,618 48
Monkey house	7,926 80
Cages	4,252 94
Fencing	3,843 75
Vulcanite walks	33,156 96
Deer parks and enclosures	5,056 20
Prairie-dog village	890 64
Gate houses	11,705 21
Buffalo house	1,494 15
Horticulture	8,184 89
Lake	10,447 50
Walks, roads, and grading	64,924 96
Houses for sundry animals	6,525 71
Carnivora house	55,638 48
Greenhouses	4,622 47
Barn	3,557 12
Elephant house	40,672 08
Seal ponds	4,749 75
Carriage sheds	3,681 11
Restaurant	14,341 96
Settees and chairs	2,124 00
Photograph stand	699 20
New aviary	12,525 75
Deer house	20,624 71
Reptile house	7,000 00
Camel house	886 82
Small mammal house	1,659 00
Music stand	1,583 65
Permanent enclosure	9,150 84
Yard and store-room	2,203 04
<b>Total</b>	<b>\$438,285 37</b>

Loan	\$309,900 00
Donations	11,855 74
Life membership	9,885 00
Permanent fund	26,687 50
Profit and loss	79,957 13

\$438,285 37

## APPENDIX B.

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*To the Board of Directors of the Zoological Society of Philadelphia.*

GENTLEMEN:—I submit to you my report for the year ending on the 28th of February, 1891.

The number and value of the animals forming the collection are as follows:—

303 Mammals . . . . .	\$40,721
454 Birds . . . . .	4,958
205 Reptiles . . . . .	787
58 Reptilians . . . . .	142
1,020	\$46,608

The accessions during the year were:—

MAMMALS:—

Purchased . . . . .	64
Presented . . . . .	74
Bred . . . . .	38
	— 176

BIRDS:—

Purchased . . . . .	94
Presented . . . . .	116
	— 210

REPTILES:—

Purchased . . . . .	388
Presented . . . . .	158
Bred . . . . .	125
	— 671

AMPHIBIANS:—

Purchased . . . . .	111
Presented . . . . .	9
	— 120
	— 1,177

The additions which are deserving of especial note were:—

MAMMALS:—

1. A specimen of the red-bellied spider monkey (*Ateles rufiventris*), Sclater, received on the 12th December from Bocas del Toro, Columbia. The animal is young, and is closely similar to the type specimen figured by Dr. Sclater (Proceedings Zoological Society of London, 1872, pl. LVII.), but would appear to have come from the westward of the Atrato River, from whence that specimen was derived.

2. On the 27th of February another spider monkey was received, which I have little hesitation in referring to *Ateles vellerosus*, Gray. Unfortunately, the animal had passed through several hands before reaching the Garden, and it has been impossible to determine the exact locality from whence it came, but it is almost certain to have been somewhere on the east coast of Central America. The species is of great rarity, and in the uncertainty which has attended all attempts to classify the monkeys of this variable group, the acquisition of this and the preceding specimen—two of the least-known forms—is of much interest. It is much to be regretted that the poor accommodations offered by the present building render it next to impossible to keep alive the rare specimens of monkeys which from time to time come into the possession of the Society.

3. Some lemurs purchased in September from Charles Jamrach, of London, were of two kinds—the black and white lemur (*Lemur varius*) and the white-fronted lemur (*L. albifrons*).

4. A specimen of the North-African jackal (*Canis anthus*) was presented in June.

5. Three pine martens (*Mustela martes*) were received from Germany in August.

6. Two small squirrels in bad condition were purchased in April from a dealer. They were said to have come from Japan, but comparison with the collection in the British

Museum renders it probable that they are *Sciurus plantani*, a species from Java.

7. On the 12th of April a pair of nyllghaie (*Boselaphus pictus*) were received by purchase. This species, the largest of Indian antelopes, does well under confinement, and usually breeds freely.

8. Three reindeer (*Rangifer tarandus*) were procured in June, by exchange, from the Zoological Gardens at Copenhagen. Though probably identical with the caribou of northern America, the reindeer has been domesticated for so long a period in its native home that it was hoped they would better endure the unfavorable climate and food of this latitude than is usually the case with our native specimens. The female, however, died shortly after arrival, and the youngest male some months later. The old male still appears to be in fair health, but it has been found necessary to supply him constantly with moss from the Adirondacks as a substitute for that which forms their main food in their native range.

9. A Merian's opossum (*Didelphys dorsigera*) from South America, was presented on September 19th, by the "Eight O'clock Club" of the *Times*.

#### BIRDS:—

1. A pair of silver-blue tanagers (*Tanagra cana*) from Mexico and Central America, purchased March 1st.

2. A pair of paradise weaver birds (*Vidua paradisica*) of South Africa.

3. A specimen of the red-backed hangnest (*Cassicus hæmorrhous*) of South America. A closely related species (*C. persicus*), also represented in the collection, is said to have the strange habit of attaching its long, hanging nest to the under side of a branch in close proximity to the similarly hanging nest of a species of fiercely stinging wasp commonly found in the Guianas, the association serving to protect the eggs and young birds from their worst enemy—the monkey.

4. The European roller (*Coracias garrulus*).

5. A specimen of the beautiful Tabuan parrakeet (*Pyrrhulopsis tabuensis*), from the Fiji Islands, was purchased in October.

6. A black-headed conure (*Conurus nanday*), native of Paraguay, was added in the same month.

7. Several representatives of the golden-crowned conure (*C. aureus*) of Brazil were also procured by purchase.

8. A great horned owl, purchased from a dealer in December and said to have come from the extreme northwest, is, without doubt, *Bubo virginianus arcticus*—the northern form of the common American species.

9. An interesting contribution was received in July from Mr. Herbert Brown, of Tucson, in a specimen of the flammulated screech-owl (*Scops flammeola*), found from Mexico northward to Colorado.

10. A pair of Pondichery vultures (*Vultur calvus*), from India, were received in February by purchase.

11. A number of Greek partridges (*Caccabis saxatilis*), purchased in December.

12. In January a specimen of the boat-billed heron (*Cancroma cochlearia*) was received from South America, and has attracted considerable attention in the aviary.

#### REPTILES :—

1. A specimen of the rough-eyed caiman (*Caiman sclerops*), received in August from South America.

2. In January several Le Suer's terrapins (*Malacoclemmys lesueri*) were received from Missouri in exchange.

3. The eastern representative of the above species is *M. geographicus*, a specimen of which, from Lake George, was presented in June by Mr. Galloway Morris.

4. On the 4th of April a number of iguanas were received from Fortune Island, West Indies. They appear to be of a little known species—the low-crested iguana (*Cyclura basileophis*), Cope.

5. A specimen of the spiny lizard, from near Tucson, Arizona, presented in April by Mr. Herbert Brown, is probably *Sceloporus spinosus clarkii*.



6. A horned lizard (*Phrynosoma orbiculare*), from Mexico, contributed in June by Miss Stewart, added another to the long series of these lizards which have been shown in the collection.

7. In April several specimens of *Uta elegans*, one of the small lizards of the Pacific coast, were received from Mr. F. R. Whiteside, having been collected near Los Angeles, Cal., and a subsequent collection from the same locality contained some Skilton's skinks (*Eumeces skiltonianus*).

8. On April 15th a tree boa (*Xiphosoma canina*) was received from the West Indies.

9. In August a small collection of snakes was received from Trinidad in exchange. Among them were the thick-necked tree boa (*Epicrates cenchria*) and the carinated tree snake (*Herpetodryas carinatus*).

10. A small boa received on September 1st from an unknown locality proved to be the emperor boa (*Boa imperator*).

11. On the 27th of the same month another boa was purchased, said to have come from the island of St. Kitts, West Indies, which appears to be *Boa divinieloquax*, a species rarely met with.

12. Among a collection of snakes from Lake Kerr, Florida, made by Mr. N. P. Fry early in the summer, was one belonging to the colubrine group, which it was not possible to refer to any previously defined genus. It was described by me, under the name of *Stilosoma extenuata*, in the Proceedings of the Academy of Natural Sciences of Philadelphia, 1890, page 199. The Society has received many reptiles from this locality during the past three years, and as that portion of Florida is fairly well-known zoologically, the species must be of great rarity.

13. A small snake, known as the crowned tantilla (*Tantilla coronata*), was also received from Florida.

14. The California form of king snake (*Ophibolus getulus boylii*) was presented in May by Mr. Whiteside from Pasadena, and was accompanied by Hammond's garter snake (*Eutaenia hammondi*).

15. Several specimens of Couper's indigo snake (*Spilotes couperi*) were purchased during the summer.

16. On the 8th of August a dusky rat snake (*Spilotes pul-latus*) from South America was also received.

17. The dark-green snake (*Zamenis atrovirens*) was represented by several specimens in a collection brought from Europe in September by Mr. Fred Moesler.

18. Specimens of Allen's snake (*Liodytes alleni*) were procured in May from Lake Kerr, Florida; they are among the little known species of that region.

#### AMPHIBIA:—

1. The collection above referred to, brought from Europe in September, included specimens of the fire-bellied toad (*Bombinator igneus*), the common European tree-toad (*Hyla arborea*), the crested newt (*Molge cristata*), the smooth newt (*M. vulgaris*), and the Alpine newt (*M. alpestris*).

2. The sole species of amphibia belonging to the American fauna, which was added during the year was the spotted salamander (*Amblystoma punctata*).

Other additions of interest, though not new to the collection, were a pair of lions, about fifteen months old, purchased in March. The female of this pair was bred at the Zoological Garden of Cologne, and the male at the Garden at Breslau, Germany. In May a pair of young wolverines (*Gulo luscus*) were procured from northern Minnesota. The shy and retiring habits of this animal renders it uncommon in living collections, and as these were the first which had reached the Garden in condition for exhibition, they formed a welcome addition. Specimens of Agassiz's gopher tortoise and the Mexican pine snake (*Pityophis sayi mexicana*) were among a number of contributions made during the year by Mr. Herbert Brown, of Tucson.

Three unusually fine amphiumas were presented by Mr. Harry McCall, of Louisiana; these were of the three-toed form, sometimes known as *Amphiuma tridactyla*. In August a pair of Himalayan bears were purchased, the female

being a pure albino. In this month three young wild boars and several badgers were received from Germany.

A specimen of Salle's amazon parrot, from San Domingo, was presented by Dr. W. T. Urie, of Chester, Pa. In December a lesser sheath-bill (*Chionis minor*), a bird having a wide range among the islands of the Antarctic seas, and a fine male South African ostrich were purchased. The latter bird is of the form known to some systematists as (*Struthio australis*).

On the 2d of February a fine Esquimaux dog from southern Labrador was presented by Mrs. Balch, of Philadelphia.

The following animals were bred in the collection :—

- 1 Macaque Monkey (*Macacus cynomolgus*), India, 27th January.
- 2 Lions (*Felis leo*), Asia and Africa, 2d April.
- 3 Leopards (*Felis pardus*), Asia and Africa, 22d June.
- 1 Puma (*Felis concolor*), America, 1st September.
- 6 Prairie Wolves (*Canis latrans*), America, 22d April and 8th of May.
- 4 Gray Foxes (*C. virginianus*), North America, 22d April.
- 3 Prairie Dogs (*Cynomys ludovicianus*), North America, May.
- 1 Bactrian Camel (*Camelus bactrianus*), Asia, 1st March.
- 1 Llama (*Lama peruana*), South America, 16th June.
- 1 Bison (*Bison americanus*), North America, 2d May.
- 1 Indian Buffalo (*Bubalus buffelus*), India, 13th February.
- 1 Zebu (*Bos indicus*), Asia, 18th December.
- 1 Gazelle (hybrid between *Gazella subgutturosa* and *G. dorcas* ♀), 21st April.
- 1 Indian Antelope (*Antilope cervicapra*), 3d August.
- 2 Wapiti (*Cervus canadensis*), North America, 14th and 30th June.
- 1 Axis Deer (*C. axis*), India, 26th March.
- 1 Hog Deer (*C. porcinus*), India, 5th February.
- 1 Fallow Deer (*C. dama*), Europe, 14th June.
- 2 Common Deer (*Cariacus virginianus*), North America, 26th April and 3d July.

1 Red Kangaroo (*Macropus rufus*), Australia, February.

2 Brush-tailed Wallabys (*Petrogale pencillata*), Australia, February.

3 Wallabys (hybrid between *Halmaturus derbianus* ♂ and *H. dorsalis* ♀), Australia.

30 Slow Worms (*Anguis fragilis*), Europe, August and September.

23 Banded Water Snakes (*Tropidonotus fasciatus*), United States, 13th July.

20 Brown Water Snakes (*T. taxispilotus*), United States, August.

10 Cyclops Water Snakes (*T. cyclopeum*), Florida, August.

9 Garter Snakes (*Eutænia sirtalis*), United States, August.

3 Garter Snakes (hybrid between *E. hammondi* ♂ and *E. marciana* ♀), United States, 5th September.

16 Dekay's Snakes (*Storeria dekayi*), United States, 7th August.

6 Ground Rattlesnakes (*Crotalophorus miliarius*), United States, September and October.

9 Diamond Rattlesnakes (*Crotalus adamanteus*), United States, August.

Beyond the construction of an enclosure for badgers, at a small cost, no new work has been done during the year. The iron railing along the Thirty-fifth Street boundary of the Garden, and many of the fences and inclosures, have been repainted and put in condition.

The filling of the old forebay, which was ordered by the Board in May, has steadily progressed, and is now almost completed, without any expense to the Society.

The attention of all institutions devoted to zoological pursuits is being directed more strongly each year to the almost unprecedented destruction of many of the more valuable and important animals of our native fauna, and to the need for immediate adoption of every means which can be employed to save them from complete extinction. In furtherance of this important object an increase of enclosures, both in number and in space, is urgently required at the Garden. In number, that the herds may be

separated to avoid improper crossing and inbreeding and in space, that the best conditions may be afforded for favorable development of the young, which are attainable under the limitations of a zoological garden.

With the best efforts of our own and similar institutions existing in this country and the facilities for exchange of specimens, which is growing with the establishment of new ones, as well as the private preserves of a few individuals who are devoting both time and money to the same purpose, it cannot be doubted that valuable services may be rendered to a cause whose importance is denied by few.

Perhaps the most practical demonstration of these possibilities may be found in the statement that in the case of the bison alone, probably nine-tenths of all now surviving outside of the National Park, are comprised in a few herds owned by private individuals and zoological gardens.

Respectfully,

ARTHUR ERWIN BROWN,

*Superintendent.*

ZOOLOGICAL GARDEN, March 1st, 1891.











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