



American Museum of Natural History,

THE

CENTRAL PARK, NEW YORK CITY.

(77th Street and 8th Avenue.)

ANNUAL REPORT OF THE TRUSTEES

AND

LIST OF MEMBERS

FOR THE YEAR 1886-7.



NEW YORK: PRINTED FOR THE MUSEUM.

1887.

BOLDEN . WM. C. MARTIN. V M. C. MARTIN. , 2 ł

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ANNUAL REPORT OF THE TRUSTEES

FOR THE YEAR 1886.

The Trustees of the AMERICAN MUSEUM OF NATURAL HISTORY present this their Eighteenth Annual Report to the Patrons, Fellows and Members of the Museum.

The Treasurer's account shows the receipts of the year to have been \$43,960.26, of which the City contributed \$15,039.19. The receipts include \$2,426.16 given by Mrs. Robert L. Stuart towards the Bird Group Collection and the purchase of a rare and unique specimen of crystallized gold; also for completing the binding of the library given to the Museum by Mr. R. L. Stuart; and \$7,500 paid by the Trustees to make up the deficiency in maintaining the Museum.

The expenditures were \$31,584.08 for maintenance, and \$11,109.03 for *improvements and additions to the collections*.

The purchases include the Scott Collection of North American birds, a valuable collection of gold specimens and other rare minerals, 30 mounted specimens of American mammals, 132 specimens of American birds, 15 specimens of monkeys, also a number of geological specimens, all supplementing and making our collections more complete.

There have been added to our Library by purchase 900 volumes; this includes the library of Prof. R. P. Whitfield, which has filled a great vacancy. The additions to our collections by donation have been very gratifying. From the Hon. H. J. Jewett we have received his valuable library of travels, and from the Department of Public Parks, through Dr. Wm. A. Conklin, many important and valuable specimens have been received in the flesh and prepared at the Museum by our taxidermist. A collection of 130 European bird skins has been received from Edward Hargitt, Esq., of London. Also, many other important donations, which will be found in detail in the list of accessions. In former reports attention has been drawn to the need of more exhibition space. During the year a very large amount of material has been accumulated, including a collection of the building stones of America, which remain packed in cases; also 3,000 birds and 150 mammal skins. These specimens, together with other large and interesting collections, cannot be exhibited for want of space.

The Educational Department has made most gratifying progress under Prof. A. S. Bickmore.

The following bill, granting aid to extend the Museum, has become a law, and is herewith given in full.

AN ACT

To provide for enlarging the building situated on Central Park in the City of New York and occupied by the American Museum of Natural History, for the purpose of furnishing proper facilities for giving increased exhibition and public instruction.

The People of the State of New York, represented in Senate and Assembly, do enact as follows :

SECTION I. The Department of Public Parks in the City of New York, with the concurrence of the Board of Estimate and Apportionment, is hereby authorized to erect and equip an addition to the building situated on that part of Central Park, formerly known as Manhattan Square, and now in the possession and occupation of the American Museum of Natural History, in accordance with a contract made in pursuance of chapter 139 of the laws of eighteen hundred and seventy-six. Said addition shall include suitable space for the exhibition of the specimens of the Museum, now stored for want of room to display them to the public, and shall also include a lecture hall, which can be used for the purpose of giving to the teachers of the common schools, and the normal schools of the State, and to artisans, mechanics and other citizens, the instruction provided for them in chapter 428 of the laws of eighteen hundred and eighty-six. The Trustees of said Museum shall select an architect to prepare, under their direction, the plans, and to superintend, under the direction of the Commissioners of Parks, the construction of said addition. Said plans, when completed and approved by said Trustees, shall be submitted to the Commissioners of said department for their approval, and may include any alteration of the present building made necessary by the enlargement, and such improvements and repairs to it as the Commissioners of said department and the Trustees of said Museum may agree are proper and necessary. The Commissioners of said department shall provide for the compensation of the architect out of the fund hereby provided for the erection of said addition. Said equipment shall include all the cases and fittings required for the preparation, exhibition and preservation of the specimens, books and property of the Museum, also furniture and fixed apparatus of the lecture hall, and the other rooms of this building.

§ 2. For the purpose of providing means for carrying into effect the provisions of this act, it shall be the duty of the Comptroller, upon being thereunto authorized by the Board of Estimate and Apportionment, to issue and sell, but not at less than their par value, bonds or stock of the Mayor, Aldermen and Commonalty of the City of New York in the manner now provided by law payable from taxation, but not exceeding in the aggregate the sum of four hundred thousand dollars, bearing interest at a rate not exceeding three per centum per annum, and redeemable within a period of time not exceeding thirty years from the date of their issue.

 \S 3. All acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

§ 4. This act shall take effect immediately.

The annual growth and proper development of your institution necessarily involves yearly increasing expenditures. The arrangement and rearrangement continually necessary in a large and growing scientific department not only occupies much time and care, but demands the employment of gentlemen of notable skill and acquirements.

Our only assured annual income at present is from the City appropriation of \$15,000 and the interest of the \$55,000 invested funds.

It would appear to be very desirable to place the Museum on such a permanent basis of maintenance that the annual contributions of the Trustees and members could be appropriated exclusively to the purchase of objects of science. Valuable collections, which the Museum needs, are continually being offered us for sale, but we are obliged to decline their purchase for want of funds.

The great museums of Europe are chiefly sustained by public fund, through the force of an enlightened public sentiment both as to their educational and economic value.

The value of what you have already accumulated in your halls rises to a large figure commercially, but it is a difficult task to estimate the money value of what belongs to science and scientific institutions. To their value must be added their ameliorating power, their educational force, and the scope they afford the higher faculties of man to apprehend the wonderful phenomena of nature, and to master and utilize her great forces.

To the multitude shut up in stone walls, to whom are afforded an acquaintance with the beauty of natural objects, or to study them in their usual aspects and conditions, the advantage of your Museum is, that it affords opportunity; and out of a great number who look only vaguely and experience only the healthful excitement of a natural curiosity, one here and there may be found endowed with special aptitudes and tastes. Perhaps some child of genius, whose susceptibilities and faculties, once aroused and quickened, will repay in the field of discovery and science, through the force of some new law in its manifold applications or relations, all your expenditure a hundred fold.

Commercial values and purely scientific values meet often on common ground; but their essential life belongs to opposite poles. To some it appears necessary to vindicate the employment of large amounts of public money in such an institution as that which you control, from the charge of extravagance; their ideas of value appear to be limited to that which is exchangeable in the current coin of the market; but the highest results of character and life offer something which cannot be weighed in the balances of the merchant, be he ever so wise in his generation.

The work accomplished and the general improvements in the collections may be seen by the following extracts from the reports of the Curators :

DEPARTMENT OF PUBLIC INSTRUCTION AND ETHNOLOGY.

[Under the charge of Prof. A. S. BICKMORE.]

In order to render to this department a properly stable character, so that carefully considered plans could be made in advance for the more economic and effective preparation of the photographic illustrations, which are necessary in this new mode of visual instruction, the last Legislature passed a bill providing for the maintenance of the lectures to teachers in the Museum, and for continuing aid to the Normal Schools of the State for a period of two years, commencing October 1, 1886. In accordance with the provisions of this law, the Museum entered into a contract with Hon. A. S. Draper, the State Superintendent of Public Instruction. The Museum and the public owe much of the gratifying development of this popular department to the appreciative coöperation of Judge Draper, from whose annual report, transmitted to the Legislature, January 5, 1887, is the following important extract :

"The system is new, but is undoubtedly destined to have an important part in future educational work. The course of lectures in progress is eminently attractive and practical, and teachers and those preparing to teach are thus given the advantages of foreign travel and opportunities for scientific research, which they could obtain in no other way.

"The need of a much larger lecture hall at the Museum is sorely felt. If it is provided, the information now being supplied to teachers can be extended to mechanics, artisans, and others, as is contemplated by the second section of the law under which we are proceeding. Much of it would be of peculiar interest to this class of our city population. Such lectures as the four upon 'Food Fishes,' and those upon 'Coal and Petroleum,' 'Iron and Lead,' 'Tea and Coffee,' 'Indian Corn and Tobacco,' 'Wheat and Rice,' 'Sugar and Salt,' and many others, would prove of great value to them. The City of New York ought to provide accommodations for carrying on this work, and very likely will."

The rapidly increasing interest in this illustrative method of promoting public education is strikingly manifested in the following statement of the number of teachers who have attended the first lecture in the Spring Course during the past four years :

January	12,	1884,					• .		121
February	14,	1885,			•	•			140
February	20,	1886,						• •	286
January									

The present lecture hall is designed to seat 275. On January 8, the opening of the present course, 390 teachers were crowded into the little hall—of whom nearly fifty were ladies who were obliged to stand after having taught all the week—and 114 went away, unable to get inside the doors.

During the past summer, at the suggestion of Judge Draper, Prof. Bickmore traveled at his own expense in Norway to the North Cape and throughout the sublimest scenery of Switzerland, to gather illustrations and data for his lectures on those countries.

GEOLOGICAL DEPARTMENT.

[Under the charge of Prof. R. P. WHITFIELD.]

PALEONTOLOGICAL COLLECTIONS.—In this collection much has been done during the past year, in providing labels; a large number of explanatory labels having been added. The vertebrate remains of the *Holmes Collection*, from the Phosphate beds of South Carolina, have been determined and permanently labeled, as far as they have been described; and the invertebrate Miocene collection has also been permanently labeled with species labels. Early in the year we received a large collection of European fossils from Prof. Karl Zittel, of the University of Munich, Bavaria, in exchange for one of the collections of the Hall duplicates. These have been placed on exhibition, and all the more prominent forms provided with permanent labels. In order to provide room for this collection in the cases, many changes were necessary, owing to their crowded condition, and caused the expenditure of much time. Several other additions were made to this collection during the year, the most prominent of which has been placed in case B, sections 9, 10 and 11, in the Chazy, Birdseye and Black River formations. This was a donation, on condition of early publication, from Prof. H. M. Seely, President E. Brainerd and other members of the faculty of 'Middlebury College, Middlebury, Vermont, and forms the basis of Bulletin No. 8, recently published. The collection is a very valuable one, as it comprises mostly new forms now become types of their species.

MINERALOGICAL COLLECTION.—The catalogue of this collection has been completed as far as the collection affords material, and might now be printed for use from the manuscript book if desirable, after some slight revision. A number corresponding to the species number in *Dana's System of Mineralogy* has been placed on each specimen, so that by reference to that number in the catalogue or in the *Manual* all particulars can be learned. Many valuable additions have been made to this collection during the year, among which is an extremely interesting group of native golds and silvers, obtained partly by purchase by the Museum authorities, and partly by donation from a most liberal patroness. Many other additions, both by exchange and donation, are appended in the lists under their several heads.

A great necessity of this collection is *want of space*, and this necessity becomes the more pressing year by year, as additions are made. The collection now contains about 400 species, or about half the known number; but as additions are made it becomes necessary to remove the less conspicuous forms to drawers in the attic rooms, where they are entirely inaccessible to students or the public, unless under the direct personal attendance of one of the Curators. In the present building there is no way in which this can be remedied except by placing drawers beneath the present cases, in which the overflow of the table cases can be placed, and where they will be somewhat more easily examined than in the attic.

ECONOMIC COLLECTION—Building Stones. The Museum has lately received a duplicate series of the building and ornamental stones of the United States, collected and studied under the direction of the Tenth Census Commission. This collection contains 1,053 nicely dressed, four-inch cubes of rock, accompanied each by a microscopical section for study. It has also over 200 larger blocks of American and foreign building stones and marbles, many of them twelve-inch cubes. For the proper exhibition of the Census Commission series it will require certainly not less than 50 linear feet of shelf room for each hundred blocks, or, with maps, charts and other explanatory matter, not less than 600 linear feet of shelf. While for the larger blocks there would be required not less than 150 linear feet, equal to 750 feet in all. At the present time there is not available a single foot of case room in this department in which this collection can be exhibited.

The Census Commission series is packed in twenty-four large rough boxes, stored on the lower hall stairway, and the other blocks are strewn along the stairways through two and a half stories of the building, exposed to dirt and injury, and are rapidly deteriorating in quality and beauty. If this entire collection were properly cared for and protected, it would make a very interesting, instructive and attractive collection, particularly for the artisan class of our city.

CONCHOLOGICAL COLLECTION.—The Wolfe Collection of Shells. Since the last annual report this collection has been very greatly improved in condition, and at the present time more than three-fourths of that part of it which is on exhibition is neatly arranged systematically, and provided with proper specific labels, so that now it begins to present a very attractive appearance. This collection is now more constantly used for the identification of species by visitors to the Museum than any other collection in the building, from the fact that the shells are not only attractive, but more easily obtainable in New York than any other class of natural objects. Consequently it is desirable that this collection should be as full and complete as possible. Still, for want of space, there will be a large amount of the collection necessarily stored in the drawers in the attic, and inaccessible to the public; unless, as in the case of the minerals, drawers can be placed beneath the present cases, accessible to students and amateurs wishing to identify species, under the supervision of a Curator.

BULLETIN No. 8, containing two Palæontological articles, the principal one based upon some new Birdseye limestone fossils from Fort Cassin, Vt., was prepared in this department during the autumn, and published just at the close of the year. The collection upon which it is based was a donation, for that purpose, from parties in Vermont, and forms a very valuable addition to the Palæontological Collection at a point where it was particularly deficient. This Bulletin ought properly to constitute the end of Vol. I of the Museum publications, and, with the others preceding it, be indexed, so that it might be bound into a single volume—the next one issued beginning Vol. II.

DEPARTMENT OF MAMMALS AND BIRDS.

[Under the charge of Mr. J. A. ALLEN.]

MAMMALS.—The collection of monkeys, numbering 120 species, represented by 166 specimens, has been carefully identified, catalogued, and labeled, thus completing the work of cataloguing and labeling the collection of mammals. There have been added to the mounted collection 15 species of monkeys and 30 species of North American mammals. Other additions, not yet mounted, include an Indian rhinoceros, a yak, several kangaroos, a capybara, two monkeys, and various smaller species, many of them received in the flesh from the Central Park Menagerie. A large collection of Arizona mammals, most of them presented by Dr. E. A. Mearns, has been added to the Study Collection.

About thirty species are still wanting to complete the mounted collection of North American mammals. These, it is hoped, may be added at the earliest opportunity.

The great need of this department is a study collection of North American mammals, in which each species shall be represented by a good series of both skins and skulls, collected at many different localities, in order to show their phases of geographical variation, as well as the differences depending upon sex and age. Many of the smaller species, as the mice, shrews, moles and bats, should also be represented by specimens preserved in alcohol. Such a collection is absolutely necessary for purposes of study and scientific investigation, and it is of the utmost importance that measures be taken at once to secure the requisite material. At present we have not more than a dozen or twenty skins, and about the same number of skulls—hardly enough to be considered as even a nucleus for such a collection.

BIRDS.—About one-half of the mounted collection of North American birds has been catalogued and relabeled, in accordance with the new system of nomenclature recently adopted by the American Ornithologists' Union. About one-half of the mounted European birds have also been provided with exhibition labels. These together number about 2,200 specimens, or about twofifths of the exhibition collection.

The Study Collection has been rearranged, and about 600 specimens catalogued and labeled. This collection now numbers about 4,000 skins of North American birds, and about 2,000 skins of foreign birds. The Study Collection of North American birds requires the addition of 10,000 specimens to bring it up to the proper standard of completeness. The mounted collection of North American birds still requires the addition of about ninety species to render it complete.

The additions during the past year number about 200 mounted birds and 3,250 skins, nearly all North American. The additions to the nests and eggs number about 600 specimens, and include many of great rarity and value.

Four cases, combined with cabinets for storage, have been placed in the Hall of Birds, to which the collection of nests and eggs has been transferred, and in which a selected series of nests and eggs has been placed on exhibition. The removal of the collection to its new quarters, and the selection of specimens for exhibition, has been kindly made by Mr. W. B. Bailey, who has also, during the year, contributed many valuable specimens to this department.

Early in the year a department of Taxidermy was established, with Mr. Jenness Richardson, formerly of the U. S. National Museum, as taxidermist. Many specimens received since in the flesh have either been mounted or properly prepared for mounting; nearly the whole collection of bats has been remounted, and repairs have been made on many specimens already in the collection.

In May, Mr. Richardson began to collect materials for a series of groups illustrative of the nesting habits of the birds found in the vicinity of New York City. Each group will consist of a pair of birds and their nest and eggs or young, with their natural surroundings of characteristic vegetation and other accessories. About twenty of these groups are well under way, and will be ready for exhibition early in May. A skilled modeler of plants, Mrs. Mogridge, formerly at the South Kensington Museum, of London, has been employed to prepare the vegetation required. The results thus far attained are highly satisfactory, leaving little to be desired in point of effectiveness and truthfulness to nature.

Under the new law for the protection of song and native birds recently enacted by the State of New York, the Museum has been called upon to issue permits in the interest of collectors of birds for scientific purposes; a few only have been granted, and these only to well-known ornithologists.

In September a Bulletin (Bulletin No. 7) was issued for this department, consisting of a colored plate and 94 pages of text. It included five papers, one on mammals, two on birds, and two on batrachians.

DEPARTMENT OF INVERTEBRATE ZOÖLOGY, FISHES AND REPTILES.

[Under the charge of Dr. J. B. HOLDER.]

The Secretary of the Smithsonian Institution having intimated to the Executive Committee of the Museum that he was at liberty to present to them a series of casts of reptiles and fishes, I was directed to visit Washington for the purpose of negotiating for their preparation and transfer. This series embraces carefully prepared casts of the food fishes of North America. The casts are taken from fresh examples, and have been colored by an expert, under the eye of a scientist. In most respects this method of exhibiting fishes and reptiles is superior to any.

The list of fishes thus offered embraces the names of 88 species, and that of reptiles 14 species; the cost being, when ready for transportation, \$727. This collection has been received, with the exception of four fishes, which are very large, and require more deliberate attention. All prove most excellent and important acquisitions to our cabinets.

During the year the collections of specimens in alcohol have received special attention. The fishes and reptiles have been carefully examined with reference to classification and nomenclature in accordance with present accepted forms. This work has been completed, and permanent record made of the same. Printed labels are being prepared for these collections, and the specimens, both wet and mounted, will be presented for public exhibition.

The catalogue of fishes, as now completed, embraces the names of 221 species of mounted specimens, and 194 in alcohol. The 88 species of casts of fishes, being representatives of North American food fishes, added, makes a total of 403 species.

Besides this summary the department has received large donations during the year, which will be examined and classified in due time.

Additional to this we have lately arranged to receive from the U. S. Fish Commission, from time to time, examples of all the fishes of this continent, both marine and fresh water. As this implies large numbers, the specimens will be sent at intervals, in certain groups, to enable a prompt and proper arrangement for exhibition.

At present, in the Department of Reptiles and Batrachians, there are permanently recorded : reptiles, 349 species ; of batrachians, 72 species. Besides, numerous specimens of both groups have been received during the year as gift, and by purchase.

In the Department of Invertebrate Zoölogy much valuable material has been added.

Through the Smithsonian Institution, two cases containing invertebrates have been received. These consist of a share of the valuable results of the deep-sea dredgings by the U. S. S. "Albatross," under the management of the Fish Commission. The collections largely embrace objects new to science, ranging from mollusca, crustaceans, through the several lowest branches of the animal kingdom—all of intense interest and value to students of invertebrate zoölogy, as well as highly curious to the passing visitor.

Among the more valuable gifts received during the year are seven glass-covered preparations of crustaceans, including prominent typical forms, for purposes of study. These are separated in their several numerous parts to show the articulated structure. The Museum is indebted for this gift to Messrs. F. B. Thurber, of New York, and Thomas Higgins, of Liverpool.

In view of lack of space in the halls for the suitable exhibition of specimens of the several departments, the collections in alcohol have been arranged and exhibited in the Curator's rooms. During the past year many students and others have had the privilege of visiting the rooms, and it will continue to be a pleasure to the Curator to extend all possible assistance to any desiring to gain acquaintance with the collections.

ENTOMOLOGY.

This department has, since July 1st, 1886, for its preservation and extension, been under the care of Mr. E. B. Southwick.

The work of classification, determining, and placing on exhibition, has been for the past six months continued to the best advantage of the collection now in possession of the Museum.

The collection on the first of July, 1886, numbered about twenty-two thousand (22,000) specimens, to which were added by Mr. Southwick five thousand six hundred (5,600) specimens, collected in and about New York City and State, and New Jersey.

Seven hundred and fifty (750) specimens were presented to the collection, making the addition for the half year six thousand three hundred and fifty (6,350) specimens, making the total number now in possession of the Museum twenty-eight thousand three hundred and fifty (28,350) specimens.

As a large number are duplicates, these will be utilized for exchanges, and to supply with fresh specimens the exhibition collection.

The collection of insects now in possession of the Museum embraces many valuable specimens, as types from Osten Sacken, and are invaluable in the determination of many difficult species.

The arrangement of the orders in the Museum has been according to A. S. Packard, Jr., and in the Hymenoptera, a portion of the Lepidoptera and Diptera, and nearly all the Coleoptera, the insects are classified, named, and on exhibition.

The present need of the department is to complete the collection of North American insects, and collect and exhibit, as far as is possible, the insects of the Central Park, their manner of living and destructive working, their variations in size and color, all of which will add to the intelligent study, as to the destruction of enemies and preservation of friends.

As a large number of insects feed upon trees, shrubs and plants, a collection of these food-plants, together with the life history of each insect would not only be of great value to science, but would give the general public an idea of the ravages of "noxious insects," and as to the best means for their destruction, and the preservation of valuable plants.

It is proposed that during the coming year the work of collecting, mounting and exhibiting, shall be carried out as completely as is possible, to show the life history of our local insects, and no opportunity will be lost that will further such an end.

In addition to the exhibition collection, one for study and comparison will be arranged in cabinets, from which duplicates can be obtained to replace faded and broken specimens in the exhibition class.

As far as is possible, insects of this locality will be collected and used for exchanges.

There seems to be no reason why this collection cannot be made one of the finest in the world, and no more important center for its study and exhibition can be found than in New York City.

Many of the finest collections of North American insects have been purchased by the European museums, and while they at present lead us in this department, there seems to be no reason why this Museum should not soon step in the first ranks and lead the world.

When it is known and established that the collection is being cared for, and an interest shown in its extension, the public will have more confidence in its management, and many collections now in obscurity will be presented to it as the best means for their preservation and exhibition, and as a lasting monument to many an earnest man's industry.

LIBRARY.

[Under the charge of Mr. A. WOODWARD.]

The additions to the Library this year, through various means, have exceeded any previous year. The books and pamphlets received have amounted to : volumes, 1,559; Nos. and parts, 516; pamphlets, 1,149.

By Application (Librarian) 191 Vo		Nos. and Parts	s. 57 F	amphlets.
Exchange (Bulletin) 36 '	' 182		90	ā
" (Duplicates) 10 "	' 2	" "	Í5	"
Donations	ʻ 135	" "	75	"
Purchase	·		912	"
		" "		
Total 1,559	516	" "	1,149	"

These additions include books, transactions, memoirs, periodicals, pamphlets and maps; also the Palæontological and Geological Library of Prof. R. P. Whitfield, by purchase. Mr. Hugh J. Jewett has donated 350 beautifully bound volumes on voyages and travels, many of which are rare and difficult to obtain now.

The Conchological Library, the gift of Miss Catharine Lorillard Wolfe, has received, up to date, 150 additional volumes.

Number of volumes in Library,	Bound.	Unbound.	Nos. and Parts.	Pamphlets.
January 1st, 1886	3,694	1,229	1,981	3,052
Added during the year	1,398	161	516	1,149
Total to date	5,092	1,390	2,497	4,201

The books have been much used this year, especially by those not employed in the Museum. Since the middle of May to date, the number of visitors, who came to consult books, 395.

The Curators have had in use, in their rooms, about 1,000 volumes.

One thousand volumes have been bound, through means generously provided by Mrs. Robert L. Stuart, Miss Catharine Lorillard Wolfe, and the Trustees.

There are still, however, a large number that require to be bound before they can be made available for use.

Bulletin No. 7, issued July, 1886; of these and the other Bulletins, during the year 1886, from January 1st to December 31st, 602 copies were distributed; 475 were distributed in the United States and Canada; the remainder 127 were sent as exchanges to scientific and literary institutions and individuals in Europe, India and Australia.

The Library of the New York Academy of Sciences, was removed during the month of September, the room being far preferable for the accommodation of books, our library was moved to the room it now occupies, displaying it to better advantage.

THE AMERICAN MUSEUM OF NATURAL HISTORY, in account

RECEIPTS.

1886.

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Balance from	n 1885 account	,	-		-		-		\$2, 466	o 8
From Mrs.	Robert L. Stua	rt,		-		-		-	2,426	
" Oswal	d Ottendorfer,		-		-		-		1,000	00
" J. Ha	mpden Robb,	-		-		-		-	1,000	00
" Morri	s K. Jesup,	-	-		-		-		600	00
" James	M. Constable	, -		-		-		-	600	00
" Adria	n Iselin,	-	-		-		-		600	00
" Percy	R. Pyne, -	-		-		-		-	600	00
" D. O.	Mills,	-	-		-		-		600	0 0
" H. R.	Bishop, -	-		-		-		-	600	00
" John I	B. Trevor,	-	-		-		-		600	00
" C. Va	nderbilt, -	-		-		-		-	600	00
" J. Pie	rpont Morgan,		-		-		-		6 0 0	00
" Josepl	h H. Choate,	-		-		-		-	300	00
" Wm.	E. Dodge,	- '	-		-		-		300	00
" Oliver	Harriman,	-		-		-		-	300	00
" Abran	n S. Hewitt,	-	-		-		-		300	00
" Charle	es G. Landon,	-		-		-		-	300	00
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" Joseph	h W. Drexel,	-		-		-		-	300	00
" D. B.	Ivison, ·	•	-		-		-		500	00
" Miss (Oliva P. Stokes	s, · -		-		-		-	100	00
" Chanc	ller Robbins, -		-		-		-		100	00
" The S	ale of Guides,	-		-		-		-	175	00
" Collec	ting Permits, ·	-	-		-		-		14	00
" Intere	st on Invested	Fund	s,	-		-		-	2,300	00
" State	Superintendent	of Pu	ıblio	: Ins	truc	tior	n, -		7,839	83
-	tment of Publ I Annual Mem		ks	}		-		-	18,539	19

\$43,960 26

Examined and approved, CHARLES LANIER, Committee.

with J. PIERPONT MORGAN, TREASURER.

EXPENDITURES.

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1886.

Paid for	Salaries,	-		-		-		-		- \$	\$19,789	50		
**	Labor,	-	-		-		-		-		6,132	05		
**	Fixtures a	nd Re	epairs	on	Bui	ildi	ng,	-		-	975	45	•	
"	Coal,	-	• -		-		-		-		584			
"	Tools and	Supp	lies,	-		-		-		-	662	-		
"	Publishing	g Bull	etin a	nd A	Ann	ual	Rer	ort,	-		668			
**	Printing a	nd St	atione	erv.		-		-		-	256	72		
**	Reception		-		-		-		-		467	•		
"	Labels,	· -		`		-		-		-	995			
• ••	Postage an	nd Ca	r Fare	э,	-		-		-		260			
"	Expressag			-		-		-		-	314	-		
**	Advertisin		-		-		-		-			75		
" "	Poison an	0,	dries.			-		-		-		45		
"	Traveling				ouse	e Ex	kpen	ises.	-			51		
"	Cash on h						•	-		-	100	-		
46	Interest of	n debi	it bala	ance	s, I	886			_		255	76		
							•		'		<u></u>	<u> </u>	\$31,584	o 8
	up C o llecti			-		-		-		-	\$1,304	21		
	i Mammal				-		-		-		2,337	74		
-	al and Min	-	-	-	ime	ns j	purc	hase	ed,	-	1,681	50		
•	and Fishes	•			-		-		-		954	98		
Books an	d Periodic	als pu	rchas	ed,		-		-		-	4,800	90		
Ethnolog	rical Depar						(-		
		to	the (Colle	ectic	n,	\$		-		29	70		
													\$11,109	03
	Balance	to 18	87 ac	cour	nt,	-		-		-			1,267	15
													•	
													\$43,960	26

[E. & O. E.] NEW YORK, February 14, 1887.

J. PIERPONT MORGAN, Treasurer.

BY - LAWS.

I.

Patrons giving \$1000 are each entitled to 1 Subscriber's Ticket, 5 Complimentary Season Tickets, and 10 Tickets for a single admission.

Fellows, giving \$500, are each entitled to 1 Subscriber's Ticket, and 10 Tickets for a single admission.

Life Members, giving \$100, are each entitled to 1 Subscriber's Ticket, and 5 Tickets for a single admission.

Annual Members, paying \$10 yearly, are each entitled to 1 Subscriber's Ticket, and 2 Tickets for a single admission.

[NOTE.—A Subscriber's Ticket admits two persons to the Museum every day except Sunday, and to all Receptions and Special Exhibitions, and may be used by any member of the Subscriber's family.

The Single Admission Tickets admit the bearers to the Museum on reserve days (Mondays and Tuesdays) and are issued to Subscribers for distribution among friends and visitors.]

II.

Any Trustee who shall fail to attend three consecutive Regular Quarterly Meetings of the Board, shall cease to be a Trustee, unless excused by the Board.

III.

No gentleman shall hereafter be eligible to the position of a Trustee who shall not be a "Patron" of the Museum, unless by a unanimous vote of a quorum of the Board—excepting Trustees *ex-officio*—nor be eligible unless his name shall be presented by the nominating committee at a Regular Quarterly Meeting prior to the meeting at which said election shall take place.

No indebtedness shall (except for current expenses) be incurred by the Trustees of the Museum, nor by any of its committees, officers, or employees, unless there are at the time sufficient moneys in the Treasury to pay the same.

v.

All bequests or legacies, not especially designated, shall hereafter be applied to the *Permanent Endowment Fund*, the interest only of which shall be applied to the use of the Museum, as the Board shall direct.

ARTICLE XI OF THE CONSTITUTION.

The contribution of \$1000 or more to the funds of the Museum, at any one time, shall entitle the person giving the same to be a Patron of the Museum, who shall have the right in perpetuity to appoint the successor in such patronship.

The contribution of \$500, at one time, shall entitle the person giving the same to be a Fellow, who shall have the right to appoint one successor in such fellowship.

No appointment of a successor shall be valid unless the same shall be in writing, endorsed on the certificate, or by last will and testament.

The contribution of \$100, at one time, shall entitle the person giving the same to be a Life Member.

Any person may be elected by the Trustees to either of the above degrees, who shall have given to the Museum books or specimens, which shall have been accepted by the Executive Committee, to the value of twice the amount in money requisite to his admission to the same degree, and the President and Secretary shall issue diplomas accordingly under the seal of the Museum.

The Trustees may also elect Honorary Fellows of the Museum in their discretion.

LIST OF ACCESSIONS, 1886.

DONATIONS.

LIBRARY.

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"	"	"	War Dep't.	1871-72.	Parts I, II.
"	"	"			Dorte I II

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DEPARTMENT OF STATE, Washington, D. C.

Consular Report. Nos. 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 68¹/₂, 69, 70. 1885-86.

DEPARTMENT OF THE INTERIOR, Washington, D. C.

U. S. NATIONAL MUSEUM, Washington, D. C.

Bulletin. No. 23. 1885.

U. S. GEOLOGICAL SURVEY.

Bulletins. Nos. 15-29. 1885, 1886. Mineral Resources of the U. S. 1883-84.

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Monograph IX. Brachiopoda and Lamellibranchiata of the Raritan Clays and Green Sand Marl, N. J. By Prof. R. P. Whitfield. Fifth Annual Report. 1883–84.

BUREAU OF EDUCATION.

Report of the Commissioner. 1883–84.

Report on Education in Alaska.-Jackson.

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BOARD OF INDIAN COMMISSIONERS.

Seventeenth Annual Report. 1885.

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Third Annual Report. 1883–84.

DEPARTMENT OF AGRICULTURE, Washington, D. C.

Annual Report of the Commissioner. 1885.

First and Second Annual Report Bureau of Animal Industry. 1884, 1885.

Fourth Report U. S. Entomological Commission. 1885. Insects affecting the Orange.—Hubbard.

DEPARTMENT OF MAMMALS.

FRANK A. BUTLER, New York City.

3 Red Foxes, living.

Mr. COMSTOCK, New York City.

I red Irish Setter.

DEPARTMENT OF PUBLIC PARKS, New York City, through Mr. W. A. Conklin, Superintendent Central Park Menagerie.

2 young Deer, 2 Monkeys, I young Panther, I Paradoxure, I Coatimundi, I Beech Marten, I Grison, 2 young Tigers; all from the Central Park Menagerie.

- DR. G. FURMAN, New York City. I Italian Greyhound.
- WILLIAM GORDON, New York City.

I black Gordon Setter.

H. HELME, Miller's Place, Long Island, N. Y.
 3 Field Mice, skins, from Washington Territory.

DR. E. A. MEARNS, U. S. A., Fort Verde, Arizona.

4 Beavers, 5 Arizona Squirrels, 7 Ground Squirrels (2 species), 6 Wood Mice (3 species), 4 Pouched Rats (2 species), 4 Civet Cats, 3 Striped Skunks, 6 Spotted Lynxes, 1 Muskrat, 2 common Skunks, 3 White-backed Skunks, 1 Raccoon, 3 Mountain Lions, 2 Antelope Heads, 8 Deer Heads; all from Arizona.

COL. N. PIKE, Brooklyn, N. Y.

7 Mice and Moles, in alcohol, and skins of an Opossum and Raccoon; all from Long Island.

- THOMAS RODMAN and GEORGE RYAN, New York City. 6 Moles, from Central Park, New York City.
- SLOVER & TYLER, 47 South Street, New York City. I skull of Hippopotamus.
- HERBERT H. SMITH, Brooklyn, N. Y. I skull of Lynx, from Northern New York.
- E. S. SOUTHWICK, New York City. 2 Moles, from Central Park, New York City.
- E. E. THOMPSON, Toronto, Canada.
 - I Muskrat.
- ANTHONY WOODWARD, New York City. 4 Red Squirrels.

DEPARTMENT OF BIRDS.

- H. B. BAILEY, South Orange.
 16 skins of North American Birds.
 47 nests and 215 eggs of North American Birds.
- HERBERT BROWN, Tucson, Arizona. 8 skins of Birds from Arizona. 4 living Scaled Partridges.
- MRS. CHARLES CAROW, New York City. 54 mounted birds and 110 skins, mostly North American.
- F. M. CARYL, Franklin, N. J. 3 skins, from New Jersey.
- DEPARTMENT OF PUBLIC PARKS, New York City, through Mr. W. A. Conklin, Superintendent Central Park Menagerie.
 - 3 Brown Pelicans, 3 young Black Swans, I European White Swan, I Stork, I Demoiselle Crane, I Great Blue Heron, I Pea Fowl, I Collared Parakeet, I Indian Parakeet, I Gray Parrot, I Toucan; from the Central Park Menagerie.
- BASIL DUTCHER, New York City. Nests and eggs of the Sharp-tailed and Seaside Sparrows.
- D. G. ELLIOT, New York City. 34 skins of South American Birds, mostly Humming Birds. 5 skeletons of Pheasants.
- Col. N. S. GOSS, Topeka, Kansas. I Snowy Plover.
- A. H. HELME, Miller's Place, Long Island. 5 skins, from Long Island.
- ROBERT B. LAWRENCE, New York City. I Hybrid Duck, mounted.
- ROBERT O. MORRIS, Springfield, Mass. I Florida Gallinule, Springfield, Mass.
- MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge, Mass. 30 skins of Terns and Ducks.
- MRS. N. PIKE, Brooklyn, N. Y.
 - I Australian Parakeet.
 - I Australian Goatsucker.
- F. S. PITT, Stamford, Conn. I Albino Swallow.

JENNESS RICHARDSON, New York City. 3 Mourning Doves, from Florida. WILLIAM WALLACE, New York City. I Kingbird and nest.

GEOLOGICAL DEPARTMENT.

H. BOOTH, Poughkeepsie, N. Y. 2 specimens of the Crinoid Ichthyocrinus corbis. IRVIN B. TIEDMAN, Charleston, S. C. Anterior end of the Upper Jaw of a Cetacean from Phosphate Beds on the Wando River, S. C.

JOHN WILSON, New York. Several specimens of the Shell Inoceramus Barabini from the Cretaceous of Colorado Springs, Col.

SPENCER G. PERCIVAL, Bristol, England. Miscellaneous collection of Fossil Shells; all European.

J. S. MCLAURY, Yonkers, New York. I specimen of Stromatopora, Onandaga Co., N. Y.

JNO. EYERMAN, Easton, Pa.

13 Slabs of Triassic Sandstone with reptilian tracks, and two showing ripple markings and fucoidal casts, etc., from Blue Stone Quarry, Milford, Henderson Co., N. Y.

O. A. CRANDALL, Sedalia, Mo.

8 specimens of Conastychus, Fort Smith, Ark.

7 Fossil Shells from Coal Measures, Plattsburg, Mo.

" Lower Carboniferous, Springfield, Mo.

- I Favosite Coral (drift).
- J. F. TONKS, N. Y.

Specimens of Plants (fucoids) from Catskill, Red-Beds, near Delhi, N. Y.

MISS F. M. HITCHCOCK, N. Y.

A block of Utica Slate, with Fossil Sponges, from Holland Patent, N. Y.

PROF. J. J. STEVENSON, N. Y.

10 species of Miocene Fossils, from Yorktown, Va.

- PROFS. BRAINERD, SEELY, BOYCE, and KELLOGG, of Middlebury College, Middlebury, Vt., through Prof. H. M. Seely. Fort Cassin and Isle La Motte Fossils (Birdseye and Chazy Lime
 - stones). Over 200 specimens.

MINERALOGICAL DEPARTMENT.

A. FORBES, Brooklyn, L. I.

I specimen of Serpentine, Hoboken, N. J.

GAUTIER'S BLACK LEAD CRUCIBLE CO., Jersey City, N. J. One large, very handsome specimen of Graphite (480 lbs.), from Ceylon, India.

PHŒNIX PLASTER MILLS, W. 13th St., N. Y.

Five specimens of Gypsum, including cut and rubbed blocks of Alabaster, from Nova Scotia.

INO. CAMPBELL, New York City. One specimen of Pyrite, from Scranton, N. Y. F. A. CALKINS, New York City. Lignite saturated with copper. Arizona. Silver Ore. Nevada. Gold Ore. Eureka Dist., Nevada. Galenite, Silver Sulphuret and Gossan. Mexico. PROF. R. P. WHITFIELD, New York City. One Piece of Gray Calcite, Lake Champlain. H. BOOTH, Poughkeepsie, N. Y. Chalcanthite from Clifton, Arizona. MRS. R. L. STUART, New York City. Large and handsome specimen of Stibnite, from Japan. One large group of gold crystals on quartz, from Eldorado Co., Cal. MRS. CHAS. CAROW, New York City. Specimens of Pyromorphite, Cerussite, Anglesite, Wulfenite, Baryte, from Phœnixville, Pa. SPENCER G. PERCIVAL, Bristol, England. Miscellaneous collection of Minerals ; all European. J. S. MCLAURY, Yonkers, N. Y. Septaria, from Onondaga Co., N. Y. Gypsum ERASTUS WETMORE, New York City. Three pieces of Magnetite. G. B. SENNETT, New York City. 5 specimens of Magnetite, from Montgomery Co., N. C. GREEN SERPENTINE MARBLE CO., Md., through R. McMichael, General Agent. 2 polished specimens of Serpentine, large and handsome. W. W. JEFFERIS, Chester Co., Pa. 65 specimens, comprising Limonite, Pyrite, Heulandite, Chabazite, Diaspore, Smithsonite, Sphalerite, Oligoclase, Orthoclase. D. HAMILTON, New York City. 6 specimens of Cornwall Tin. of Wolframite, Cornwall, England. т DR. A. E. FOOTE, Philadelphia, Pa. Large group of pink Calcite Crystals.

CONCHOLOGICAL DEPARTMENT.

MRS. CHAS. CAROW, New York City. About 50 specimens of Marine and Land Shells.

WALDEMAR KELCH, New York City.

A small collection of Cleaned and Varnished Shells.

ETHNOLOGICAL DEPARTMENT.

DEPARTMENT OF PUBLIC PARKS, through Mr. Wm. A. Conklin. I Esquimaux Skin Canoe.

1 Birch Bark Canoe.

ECONOMIC DEPARTMENT.

SAMUEL L. M. BARLOW, New York City. 70 specimens of Woods from the west coast of Mexico.

DEPARTMENT OF INVERTEBRATE ZOOLOGY.

Six examples of disarticulated crustaceans, and one of fish. Presented by Messrs. Thomas Higgins and F. B. Thurber, namely :

Lobster (Homarus americanus). Stone Crab (Lithodes). Arctic Spider Crab (Lithodes arctica). Spiny Lobster (Palinurus). Armless Lobster (Scyllarus). Horse-foot Crab (Limulus). Cranium of Cod-fish.

EXCHANGES.

LIBRARY.

A. W. VOGDES, New York City.

Report. First and Second Meetings British Association. First Annual Report Geology of the State of Vermont.—C. B. Adams, Second Biennial Report on the Geology of Alabama.—M. Tuomey.

A. WOODWARD, New York City.

"Ueber den Bau von Schale und Schädel bei lebenden und fossilen schildröten, etc."-Rütimeyer.

Palæontologie-spuren des Menschen aus interglaciären Ablagerungen in der Schweiz.-Rütimever.

Mittheilungen aus der herpetogischen sammulung des Basler Museums. —Müller.

Zoologie Einige weitere Beiträge über das zahme Schwein und das Hausrind.—Rütimeyer.

Second Contribution to a knowledge of the Miocene Fauna of Oregon. By E. D. Cope.

Catalogue of the Publications of the Essex Institute.

Notes on the Genera of Gasteropod Mollusca from the Carboniferous Limestone of Central and Western Coal Fields of Scotland.— Young.

On the Discovery of Arctic Shells at High Levels in Scotland.-Richardson.

Further Notice of the Tigh-na-eriche Shell-Bed, Loch Tynne, Argyllshire.-Macadam.

Catalog IX Mammalia, Aves, Reptilia, Pisces, Insecta. Museum.-

Godeffroy. Proceedings of the Scientific Association of Trinidad. Part VI. and VII. 1869.

Nassa Semistriata N-costulata del Broechi. By F. Coppi.

Nota di Contribuzione alla Flora Pliocenica Modense. By F. Coppi. Osservazioni Palæontologiche e Nuove Specie. By F. Coppi.

Note sur les Restes de Tortues Fossiles. By Jaccard.

The Structure and Relations of Dinichthys, etc.—Newberry. Nota sul Calcare a Lucina Pomum, Dod. By F. Coppi. Jahresheft des Naturwissenschatlichen Vereins für das Fürstenthum Lüneburg. II. 1886.

Weitere prähistorische Funde bei Lesina. By G. Buccich.

A. C. AUSTIN, Kansas City, Kan.

Transactions. Vol. VII. Kansas Academy of Science.

DEPARTMENT OF THE INTERIOR, Washington, D. C. Patent Office Reports. 1849, '50, '51, '52. Agriculture. Patent Office Report. 1862. Arts and Manufactures. Smithsonian Report. 1854.

DEPARTMENT OF BIRDS.

UNITED STATES NATIONAL MUSEUM, Washington, D. C. 210 specimens, 107 species, skins, mostly North American.

C. B. CORY, Boston, Mass. 15 specimens, 9 species, skins, of West Indian Birds.

A. G. PAINE, JR., New York City. I mounted Arctic Horned Owl.

GEOLOGICAL DEPARTMENT.

WASHINGTON UNIVERSITY, St. Louis, Mo. 36 specimens of Fossils from the Niagara and Chester groups, Coal Measures and the Cretaceous.

MINERALOGICAL DEPARTMENT.

WASHINGTON UNIVERSITY, St. Louis, Mo. 38 specimens of Linnæite, with Asbolite.

DR. A. JULIEN.

8 specimens of Pyrite with associated minerals from Arizona and Pa. 1 specimen of Pyrrhotite. New Jersey.

O. A. CRANDALL, Sedalia, Mo. 19 specimens of Sphalerite, Pyrite, Calamine, from Missouri.

PURCHASES.

LIBRARY.

"

Report of the Challenger. Vol. XII. Zoology.

Vol. XIV.

Third Appendix. Fifth Edition of Dana's Mineralogy.-Dana.

Catalogue of the Asiatic Chiroptera.-Dobson.

The Naturalists' Directory, 1886.-Cassino.

Trow's New York City Directory. 1886.

"

Metropolitan Directory. 1887. Biologia Centrali-Americana. Nos. 11-52.—Godman & Salvin. American Naturalist. 1886.

Science. 1886.

The Auk. 1886.

The Ibis. 1886.

The Zoologist, 1886.

Annals and Magazine of Natural History. 1886.

Nature. 1886.

Neues Tahrbuch Mineralogie, Geologie und Palæontologie. 1886.

Palæontological and Geological Library of Prof R. P. Whitfield. 883 Volumes, 912 Pamphlets.

30 mounted North American Mammals; 15 mounted Monkeys; 2 Kangaroos, I Capybara, I Yak, I Indian Rhinoceros, I Elephant's Head, purchased in the flesh; 2 skins of Bendire's Shrew (*Atophyrax bendirei*), I Shrew and 2 Mice from Washington Territory; a small collection of skins, skulls, and specimens in alcohol, from Arizona.

DEPARTMENT OF BIRDS.

132 mounted North American Birds; 2,500 skins, from Arizona; 30 South American Hummingbirds; 224 skins, from various North American localities; I Cory's Shearwater; I Guan; I Gorget Paradise Bird; 2 Masked Bob-whites; 320 nests and eggs, from Arizona.

MINERALOGICAL DEPARTMENT.

"

Amethyst Crystals on Silicified Wood. Chalcedony Park, Arizona.

Amethyst Crystals. Lake Superior, Mich.

Malachite and Azurite. Clifton, Arizona.

Cerussite. Cochise Co., Arizona.

Adamite (?) Greece.

Cuprite on Limonite. Bisbee Arizona.

Geocronite. Pima Co., Arizona.

Section Jasperized Wood. Chalcedony Park, Arizona. .

2 Garnets. Salides Co., Colorado.

I Fluorite. Alston Moor, England.

I large group of Gold Crystals. El Dorado Co., Col.

 $\mathbf{I} \stackrel{(i)}{\longleftrightarrow} \stackrel{(i)}{\longleftrightarrow}$

I small """"""""

I group of Crystals with leaf Gold "

I "leaf Gold. El Dorado Co., Colorado.

Gold Veins in Quartz Pebble. El Dorado Co., Col.

1 nugget of Gold. Gravel Mine, Oregon.

1 specimen of Moss Gold. Oregon.

1 " " of Silver (wire in calcite.) Chihuahua, Mex.

1 " of Silver. Chihuahua, Mex.

- I "Crystallized reticulated Silver. Chihuahua, Mex.
- 1 "Crystallized Silver in Quartz. Arizona.

1 "Crystallized Silver in Quartz (cut). Arizona.

I " large Orthoclase Crystals (Microcline) with Albite. Pike's Peak, Col.

1 group of Orthoclase Crystal (Microcline) with Albite. Pike's Peak, Col.

- 1 group of Rhodonite Crystals. Franklin, N. J.
- I Calcite Crystal with Sphalerite. Jasper Co., Mo.
- 2 large groups of Marcasite. Jasper Co., Mo.
- I large sphere of curved chains of rhombohedral Calcite. Yellowstone Park, Montana.
- 1 Topaz. Pike's Peak, Col.
- I Astrophyllite. El Paso Co., Col.

DEPARTMENT OF FISHES AND REPTILES.

Two Boa Constrictors.

Three Lizards.

Collection of deep sea objects from Fish Commission.

Casts of Fishes of North America-eighty-eight species.

Casts of Reptiles of North America-fourteen species.

PATRONS.

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