



ACADEMY OF NATURAL SCIENCES
OF
PHILADELPHIA.

ANNUAL REPORTS.

1895.

REPORT OF THE RECORDING SECRETARY.

The meetings of the Academy have been held during the year without any intermission, a quorum being always present even during the midsummer months. The average attendance has been thirty-three. The verbal communications have been of interest and have frequently been followed by animated discussion. The speakers have been Messrs. Goldsmith, Rand, Woolman, Ryder, Ives, Woodbury, Boyer, Holman, Rex, Morsell, Morris, Dixon, Leonard, Daland, Abbott, Allen, Pilsbry, Parvin, Ball, Hopkins, Vaux, Calvert, Oberholtzer, Horn, McCook, Keely, Skinner, Foote, Miller, Lyman, Willcox, Cope, Mercer, Heilprin, Smock, Somerville, Brinton, Schumo and Miss Walter. Several of the most important of these communications have been reported by their authors for publication in the *Proceedings*.

Since the last report 608 pages of the *Proceedings*, illustrated by eighteen plates, have been issued, together with 114 pages and seven plates of the *Journal*, constituting Vol. IX, Part 4. The text of the memoir by the late Andrew J. Parker on the Anthropoid brain has been printed and will be issued as the third part of Vol. X as soon as the plates can be prepared.

The Conchological Section has continued the publication of the *Manual of Conchology*, the sustained value of which is testified to by the undiminished subscription list. 585 pages, illustrated by 85

plates, nearly all of them colored, have appeared during the year, while the Entomological Section and the American Entomological Society have published, during the same period, 340 pages and 15 plates of the *Entomological News* and 316 pages and 6 plates of the *Transactions*. These several issues constitute a total of 1,963 pages and 131 plates, a gratifying evidence of the activity of the Publication Offices of the Academy.

Thirty-nine papers have been presented for publication from November, 1894, to November, 1895, as follows: Samuel N. Rhoads 6, Clarence B. Moore 3, Wm. J. Fox 3, Witmer Stone 2, Henry A. Pilsbry 2, John A. Ryder 2, Theodore D. Rand 1, Gilbert D. Harris 1, J. B. Ellis 1, J. B. Ellis and B. M. Everhart 1, William Kennedy 1, D. D. Baldwin 1, Henry Sutor and H. M. Gwatkin 1, Arnold E. Ortman 1, Emma Walter 1, Charles Morris 1, W. B. Scott 1, Ida A. Keller 1, Thomas Meehan 1, D. W. Coquillet 1, J. Percy Moore 1, Warren M. Foote 1, Edwin Chapin Starks 1, Gerard Fowke 1, Edw. J. Nolan 1, T. D. A. Cockerell 1, Theo. Holm 1. Thirty-four of these have been printed in the *Proceedings*, two others have been accepted for publication, and the remaining three, those by Mr. Moore, will form a portion of Part 4, Vol. X of the *Journal*.

Twenty-three members and three correspondents have been elected. The deaths of fourteen members and of twelve correspondents have been announced; the resignations of four members, Messrs. R. W. Ryerss, B. Alex. Randall, Mayland Cuthbert, and H. N. Rittenhouse, have been accepted, and ten names have been stricken from the roll in consequence of non-payment of dues. It will thus be seen that the elections have not been sufficient to counterbalance the losses and that the number of members on the roll is less than at the close of the year 1894. In another and more important respect the past year has not been a prosperous one for the Academy, because of the loss of five of its most active members at short intervals. Reference is made to the deaths of J. B. Brinton, M.D., Geo. A. Rex, M.D., John H. Redfield, W. S. W. Ruschenberger, M.D., and John A. Ryder. The benefits conferred by these in their several ways on the society have been recorded by grateful resolutions and memoirs in the pages of the *Proceedings*.

The most important administrative event of the year was the signing, June 18th, of the revised articles of agreement between

the Academy and the American Entomological Society, by which it is hoped harmonious coöperation in scientific work has been permanently secured.

The formation of an Anthropological Section was duly authorized April 30th, and the work accomplished during the ensuing months has proven the desirability of such a bond of union among those interested in that department of science.

Mr. Henry A. Pilsbry was elected to the Professorship in the Department of Mollusca; and Prof. Heilprin having resigned the Chair of Invertebrate Paleontology was immediately appointed by the Council to that of Geology.

The deaths of the active members before alluded to, left several vacancies in the Council and Committees. Dr. Brinton was succeeded in the Council by Mr. Chas. P. Perot; Dr. Rex by the Hon. John Cadwalader; Mr. Redfield by Dr. Harrison Allen, while Mr. Henry A. Pilsbry was elected to succeed Dr. Ruschenberger as Curator.

The Committee on the Hayden Memorial Award has this year reported in favor of conferring the medal and balance of the interest of the fund on Prof. Karl Alfred von Zittel of Munich, in recognition of his distinguished services to paleontological science.

The lecture room and hall of the Academy have, as heretofore, been used for meetings and lectures by several scientific societies, including the Geographical Club, the Botanical Club, the Delaware Valley Ornithological Club, the Mineralogists' Club, Wood's Holl Biological Association and the Odontographic Society.

All of which is respectfully submitted.

EDW. J. NOLAN,

Recording Secretary.

REPORT OF THE CORRESPONDING SECRETARY.

The Corresponding Secretary respectfully reports that during the past year, commencing December 1st, 1894, there have been received from ninety-nine societies, museums and private individuals one hundred and ninety-four acknowledgments of the receipt of the publications of the Academy, and from thirty-one societies, editors, etc., thirty-eight notices that their publications have been forwarded

to the Academy, together with six applications to exchange publications for reports, etc., and asking for missing numbers of the regular publications of the Academy.

Eleven letters on various subjects have been received and ten were written. Ten circulars and invitations to the Academy to participate in congresses or meetings and announcements of the deaths of scientific men have been received and answered.

During the year three correspondents have been elected and notified. The deaths of twelve correspondents have been reported.

Seven hundred and twenty acknowledgments of gifts to the library and eighty-four of gifts to the museum have been forwarded.

Respectfully submitted,

BENJ. SHARP,
Corresponding Secretary.

REPORT OF THE LIBRARIAN.

The past year has been a most prosperous one for the library of the Academy. The entire additions amount to 10,389. Of these 6,032 are volumes, 4,111 pamphlets and parts of periodicals, and 10 maps, photographs, etc.

Nearly one-half of these accessions form the James Aitken Meigs Library, bequeathed to the Academy, together with an important pecuniary legacy, by John G. Meigs, the father of Dr. J. A. Meigs. There are many works in the collection which duplicate those already in the library of the Academy. These have not yet been separated from the other volumes. The total of accessions also includes 217 duplicates and miscellaneous works received from Mr. Meehan, in addition to 182 volumes included in the statement given below.

The current growth of the library, excluding the Meigs' bequest and the duplicates above alluded to, depended on the following sources of supply:—

Societies,	2,462	Thomas Meehan,	176
I. V. Williamson Fund,	1,090	Charles P. Perot,	32
Editors,	930	U. S. Dept. of Agriculture,	29
Authors,	187	U. S. Dept. of the Interior,	28

Wilson Fund,	18	Iowa Agricultural Collegé,	2
U. S. Dept. of State,	12	Iowa Geological Survey,	2
General Appropriation,	12	British Government,	2
Geological Survey of Russia,	11	Dept. of Mines, New South Wales,	2
Tennessee State Board of Health,	11	Norwegische Commission der Europäischen Grad- messung,	2
Ministry of Public Works, France,	10	Comision Geológica de Mex- ico,	2
U. S. Treasury Dep.,	5	British Museum,	2
Geological Survey of New Jersey,	5	U. S. Coast and Geodetic Survey,	1
Geological Survey of Canada, Geological and Nat. Hist. Survey of Minnesota,	4	U. S. Dept. of Labor,	1
U. S. War Dept.,	4	Massachusetts Commission- ers of Inland Fisheries,	1
Geological Survey of India, Geological Survey of Ala- bama,	3	Dept. of Mines, Nova Scotia, J. G. Whiteman,	1
William J. Fox,	3	Guatemalan Government,	1
U. S. Commissioners of Fish and Fisheries,	3	Illinois State Bureau of La- bor,	1
Illinois State Board of Agri- culture,	3	C. W. Ruschenberger,	1
Smithsonian Institution,	3	Natural History Survey of Illinois,	1
Bureau of Ethnology, U. S. Dept. Interior,	3	Indian Museum Trustees,	1
Bentham Trustees, Kew Gar- dens,	3	H. T. Broadhurst,	1
H. A. Pilsbry,	3	J. Percy Moore,	1
California State Mining Bu- reau,	2	B. B. Valentine,	1
Philip P. Calvert,	2	Kentucky Inspector of Mines,	1
		Manchester Museum,	1

The additions to the library thus credited were assigned to the several departments as follows:—

Journals,	4,059	Anthropology,	18
Botany,	203	Physical Science,	18
Geology,	114	Mineralogy,	14
General Natural History,	86	Encyclopedias,	13
Entomology,	58	Helminthology,	12
Voyages and Travels,	43	Ichthyology,	10
Medicine,	40	Herpetology,	9
Ornithology,	37	Bibliography,	5
Anatomy and Physiology,	30	Chemistry,	3
Mammalogy,	29	Geography,	2
Conchology,	27	Miscellaneous,	44
Agriculture,	20		

The classification of the James Aitken Meigs Library is as follows:—

Anthropology,	913	Geography,	74
Medicine,	708	Physical Science,	70
Literature,	656	Geology,	40
History and Biography,	628	Botany,	32
Anatomy and Physiology,	535	Useful Arts,	28
Journals,	382	Chemistry,	18
General Natural History,	184	Bibliography,	8
Religion,	172	Entomology,	7
Philology,	160	Mammalogy,	6
Philosophy,	154	Mineralogy,	4
Voyages and Travels,	110	Conchology,	2
Sociology,	104	Miscellaneous,	18
Fine Arts,	76		
			5,089

It will thus be seen that an important section of the library is not strictly in place in the Academy, and, as has been already stated, when carefully arranged and catalogued, a large number of duplicates will doubtless be found. The gift, notwithstanding, is the most important the library has received, exclusively, since the I. V. Williamson Library Fund came into the possession of the Academy, and a brief account of the legacy, as a matter of permanent record, may not be out of place.

MR. JOHN G. MEIGS was born in Philadelphia in 1801. He was engaged during his active life in the manufacture and sale of shoes, his place of business being on the west side of Fifth Street above Chestnut. He was so well regarded by his friends and customers, because of his honorable dealing, as to have acquired the enviable name of "Honest John Meigs." By strict attention to his work and judicious investments in real estate, he laid the foundation of a fortune which enabled him later to retire from the cares of business life. While not himself a man of college education, he was fully aware of the desirability of intellectual training. His son, James Aitken Meigs, was therefore encouraged to take advantage of the public school system of education, culminating in the Boy's Central High School, from which he graduated in 1848. He then matriculated in Jefferson Medical College, from which he obtained his diploma as Doctor of Medicine in 1851. He was elected a member of the Academy the following year, and was immediately placed

under those influences which were so important in determining his future distinguished career. He served as Librarian from August, 1856, until May, 1859, when he was compelled to resign the office in consequence of the increase of his professional engagements.

After his retirement from business, Mr. Meigs and the Doctor were much more intimately associated than is usually the case even with father and son. The mother having died July 28th, 1870, at the age of sixty years, the two men kept house together, during the latter years of their lives at No. 1408 Spruce Street, where they accumulated the library which is now in the possession of the Academy. Notwithstanding the old gentleman's lack of literary and scientific training, there was a sufficient community of tastes between the two to establish a close fellowship, the son's pursuits being encouraged and his successes gloried in by the father. The premature and unexpected death of Dr. Meigs occurred November 9th, 1879, in his fiftieth year.

Appreciative biographical notices of Dr. Meigs have been published by Dr. H. C. Chapman in the Transactions of the College of Physicians of Philadelphia, 3d Ser., Vol. V, and by Dr. George Hamilton in the Transactions of the Medical Society of the State of Pennsylvania for 1880, so that it is not necessary to dwell further on the incidents of his career. The character of the library, as indicated by the classification here given, is sufficient evidence of the extraordinary catholicity of his tastes.

After the sad bereavement, his father, with a natural desire to remain surrounded by objects to which were attached such tender associations, declined to part with either books or instruments. The latter were carefully packed away, and the library remained just as the son had left it, until the death of Mr. Meigs.

Early in 1893 your Librarian was informed that a zealous but indiscreet member of another society had assured Mr. Meigs that the Academy not only did not desire possession of the library but, on account of its miscellaneous character, would decline to receive it were it offered. A statement of the utterly erroneous nature of this assertion was immediately sent to Mr. Meigs, and in an interview the following day he was assured that possession of at least the scientific portion of the collection was earnestly desired, and that its proper arrangement in connection with the Academy's library would be a memorial of Dr. Meigs most in harmony with his own desire

and eminently fitting in view of his interest in the society and the substantial benefits he had derived from his association with it.

Mr. Meigs warmly expressed his sympathy with these views, but at once stated that the library would not be given to any society except on condition that it would be kept intact. His attention having been called to the fact that the books were entirely unclassified and that their usefulness would be greatly increased if properly grouped, he not only conceded this point but expressed his willingness that the scientific works should be arranged in connection with the appropriate sections of the main library, if the gift were made to the Academy, but that before considering farther the propriety of making such gift or bequest he must be assured that none of the volumes would be parted with by sale or otherwise, but that, apart from the conceded arrangement of the scientific works, the rest of the collection should be kept together permanently as the James Aitken Meigs Library. This condition was accepted on behalf of the Academy by your Librarian in the presence of Mr. Meigs' friend, Dr. R. K. Hinton, and his housekeeper, Miss Lizzie Rogers.

A few days later the will was made, leaving to the Academy the books, scientific instruments and the sum of \$20,000, one-half of which is for the exclusive benefit of the library. The other half is left without restriction or condition and has not yet been specifically appropriated by the Council. Mr. Meigs died May 10th, 1895, and the library was shortly after removed to the Academy. It is confidently believed that the legacy depended on the agreement made with Mr. Meigs regarding the custodianship of the library. It is therefore held to be incumbent on the Academy to act in conformity with this understanding, although the wording of the will grants a greater degree of liberty.

The scientific portions of the James Aitken Meigs Library have been placed, as far as the present supply of case-room will permit, with the appropriate sections of the general library, the volumes being appropriately labelled; while the works on literature, philosophy, history, religion, etc., have been arranged temporarily in the Council room. The duplicates will ultimately be placed in the main library, when the Academy will, of course, be at liberty to dispose of the works replaced by them.

The late John H. Redfield, as a farther evidence of his long-continued interest in the botanical department of the Academy, directed

by will the sale of his scientific library and collections, the receipts to be invested for the benefit of the Botanical Section. The books have been disposed of at auction. The duplicates included in the Meehan gift were sold at the same time by direction of Mr. Meehan, the sum realized to be applied to the same object: the increase of that which, by resolution of the Botanical Section, is to be known as the John H. Redfield Fund.

Through the foresight of the Corresponding Secretary a new section, which cannot fail to be of importance to the Department of Instruction, has been added to the library during the year. It consists of a collection of lantern slides, for the purpose of lecture illustration. Those now in the possession of the Academy have been derived from the following sources: John G. Meigs' bequest 135, Prof. Alfred Bickmore 100, Dr. Benjamin Sharp 45, Prof. E. D. Cope 26, Dr. H. Skinner 16, and Prof. D. G. Elliott 4. The collection has been classified and catalogued by Dr. Sharp and is now ready for use.

Acknowledgment is again due Mr. Wm. J. Fox for the faithful and intelligent discharge of his duties as assistant to the Librarian during the past year.

All of which is respectfully submitted.

EDWARD J. NOLAN,
Librarian.

REPORT OF THE CURATORS.

The Curators report that the various collections in their charge are in a still more satisfactory state of preservation than at the time of their last annual report, while great progress has been made during the year in the rearrangement and cataloguing of the several departments and many valuable additions have been received.

Although the first floor of the new museum building is practically ready for exhibition, it has not yet been thrown open to the public, as the work of arranging and labelling, which yet remains to be done, would be very much hindered thereby. Mr. Clarence B. Moore has presented three additional cases for the display of the rich additions he has made to the Moore Archæological Col-

lection, and his collections from the Florida Indian mounds and a series of aboriginal pottery specimens from the mounds of Ohio and Tennessee have been arranged in them. A large clay altar from Ohio has been mounted in a special case, and several maps and photographs, illustrating the collection, have been placed upon the walls.

The Professor of Ethnology and Archæology having been unable to devote any time to the arrangement of the collection in his department, Professor Putnam, of the Peabody Museum, Cambridge, has been engaged to classify and label the Mexican archæological specimens, and has already completed a portion of the work. Much additional archæological material has been transferred during the year to the new building, three additional cases and six large tables being provided for its reception.

A boiler has been erected in the engine-house and the heating plant of the new building is thus rendered practically complete.

The west end of the main floor of the old museum has been separated by a partition of glass and woodwork, thus forming a commodious apartment which will soon be occupied by the Entomological Section. New radiators have been provided for heating the same, while radiators have also been placed in the rooms formerly occupied by the Wm. S. Vaux Collections, east of the library gallery.

Early in the year the entire collection of bird skins was removed from the cramped quarters in the library and cellar and placed in the southeast room, formerly devoted to the Wm. S. Vaux Collections, which now forms an excellent study room for those engaged in ornithological investigation, while the adjoining room has been used as a general work room for the taxidermist and others engaged in the preparation of specimens. The northeast room on the same floor has been devoted to the use of the artists and transient workers. The basement of the new building has also been fitted up for the use of the taxidermist, and all the larger work has been done there. The transfer of the west end of the main floor of the old museum to the Entomological Section has necessitated considerable rearrangement of cases, and the removal of the osteological collections to the second floor of the new building, while the mammal and fossil cases are necessarily much crowded. This condition is, however, only temporary, and as soon as cases can be provided the entire series of mammals will be

transferred to the new building, leaving ample room for the display of the palæontological collections.

Rev. Dr. L. T. Chamberlain has generously provided a second fine case for the Lea Collection of Eocene Fossils, and has employed Prof. G. D. Harris during the year to make a careful study of the original Lea type collection, with the result that the whole is now entirely rearranged on specially printed labels, and all the type specimens carefully designated.

Mr. C. W. Johnson has been engaged, also by the Rev. Dr. Chamberlain, on another expedition to the Eocene formation in Louisiana and Texas in the interest of the Lea Collection, and has brought back a valuable series of additions. Dr. Chamberlain has also had a handsome wainscoting erected in the vestibule of the new building, above which are to be placed the slabs of fossil foot-prints presented by the late Dr. Isaac Lea.

Apart from the preparation and arrangement of the accessions, the work in the museum during the year has been mainly confined to the arranging and cataloguing of the departments of Ethnology, Ornithology and Mineralogy.

In the first department, the entire collection of human crania has been consistently numbered and carefully checked off in the printed catalogue of the Morton Collection, a large amount of uncatalogued material systematically entered, and the whole copied into the new catalogue and brought up to date.

In the ornithological collection, over 4,000 specimens have been worked over on the plans previously outlined, and many additional specimens mounted. All the types have been unmounted and placed in air-tight cases. For this purpose, one large additional tin case has been provided, and twenty large packing cases have been procured for the temporary storage of duplicate specimens of large water birds. Fuller particulars in this department are furnished in the report of the Ornithological Section.

In cataloguing the minerals great progress has been made, nearly 4,000 specimens have been entered in the catalogue, and a large portion of the remainder arranged for cataloguing.

In the department of mollusca, a large amount of new material which had accumulated has been mounted, catalogued and placed in the museum, while many valuable accessions have been received

during the year. A large amount of work has been done on the identification and rearrangement of the land mollusca.

The taxidermist, Mr. McCadden, in addition to his work in renovating the ornithological collection, has devoted much time to the mounting and preparation of new material received during the year by gift and purchase, and many valuable specimens have thus been placed on exhibition, especially in the department of Mammalogy and Ornithology.

The gifts of specimens during the year have been so numerous that the Curators have been unable, for want of cases, to properly arrange more than a few of them for exhibition.

One of the most important accessions of the year is a series of specimens obtained by Dr. Benj. Sharp during a summer expedition on board the U. S. Revenue Cutter "Bear." These collections, however, have just been received, and have not yet been studied or prepared for presentation.

Dr. S. G. Dixon and Mr. H. C. Mercer obtained, during the year, additional collections of fossil remains from the Port Kennedy limestone cave. These have been properly prepared, presented and added to the valuable series obtained last year.

During May and June, Mr. S. N. Rhoads made a journey through the State of Tennessee in the interest of the Academy, and obtained valuable collections of the reptiles, birds, mammals and mollusks of this interesting region, all of which have been placed in the museum, and reported upon in the Proceedings of the Academy.

Other valuable accessions during the year have been a collection of Pennsylvania and New Jersey birds, received from Samuel N. Rhoads, with other small collections of birds from T. H. Montgomery, Jr. and A. Sydney Logan.

The Delaware Valley Ornithology Club has continued to add liberally to its interesting collection of local birds. Under the efficient management of Mr. Jefferis, the Wm. S. Vaux Collections have been largely increased and kept in most satisfactory condition.

The botanical collection, during the past year, has been under the care of Messrs. Thos. Meehan and Stewardson Brown, while the Entomological Department has continued under Dr. Skinner's supervision. To all these gentlemen, the Curators desire to express thanks for their valuable assistance, and also to Messrs. Schulze, Boyer,

Woolman and Keely, who have devoted much time to the cataloguing and arrangement of the microscopical collections.

The Curators would also acknowledge the efficient work of their assistants, Messrs. Witmer Stone and Samuel N. Rhoads, to whose earnestness and fidelity the successful progress of the museum work is largely due ; and they also express their appreciation of the work of the taxidermist, Mr. D. N. McCadden, and the valuable assistance of the students of the Jessup Fund, Miss Helen M. Higgins, Messrs. Henry W. Fowler, H. C. Borden, Wm. J. Gerhard and E. G. Vanatta.

The interest of the general public in the museum is shown by the large attendance of visitors during the year, while specialists in various departments have frequently consulted the collections. Specimens have been loaned to Messrs. R. Latchford, F. W. Stokes, O. F. Cook, H. C. Mercer, Professors B. W. Evermann, Chas. E. Bessey, W. B. Cook and R. Ridgway.

HENRY C. CHAPMAN,

Chairman of the Curators.

REPORT OF THE MICROSCOPICAL AND BIOLOGICAL SECTION.

The meetings of the Section during the past year have been regularly held, the attendance averaging slightly more than the previous year. The best communications of the Section have been always reserved for the meetings with the Academy, and consequently our minute-book is not a record of all the work done. Thus, during February last Dr. C. L. Leonard exhibited, under the auspices of the Section, thirty lantern slides showing cell motion. Dr. Dixon, Prof. Ryder, Mr. Woolman, Mr. Holman, Mr. Schumo, Mr. Keely and the Recorder have made communications before the general meeting in connection with the work of the Section. Before the Section itself, Messrs. Woolman, Keely, Parvin, Brown, Schulze, Holman and Schumo made communications of special interest. The Section suffered severely in the deaths of two esteemed members, Dr. George A. Rex and Prof. John A. Ryder, the former of whom was Conservator of the Section at the time of his death. Resolutions of

respect were drawn up, presented to the Academy and printed for distribution among the members.

Mr. F. J. Keely succeeded Dr. Rex as Conservator.

Early in the year a committee was appointed to devise plans whereby teachers of the public schools might be instructed in the natural sciences. The Academy itself acting in the matter, the special committee decided to co-operate with it.

The new rooms for the Section will probably be ready for occupancy in the spring, and it is intended to furnish them so that there will be enlarged facilities for research.

There are at present in the Section sixty members and contributors.

Mr. F. J. Keely, the Conservator of the Section, reports as follows:—

The instruments of the Section are in a serviceable condition, new spring clips on two of the smaller stands having been the only repairs required. In addition to their use at the separate meetings of the Section, at least four of the stands have been regularly on the table at the joint meetings with the Academy, on which occasions interesting slides have generally been provided by members, or when this was not the case, the collection of the Section was drawn upon. The collection of slides is in fairly presentable condition, those that required it having received an extra ring of cement. During the year the following additions have been made:—

An arrangement for cutting sections of minute objects, devised by Mr. Ryder, presented by Mr. Trenner.

One Welsbach Light, one Maltwood Finder. Purchased.

One Beck Binocular Microscope, one Zentmayer Monocular Microscope, one Histological Microscope, one Dissecting Microscope, one Class Microscope, together with a large number of accessories, including twelve objectives and 200 slides, formerly the property of J. Aitken Meigs, M. D., bequeathed by his father, John G. Meigs.

One dozen mounts of selected diatoms, and one dozen strewn slides of diatoms, presented by J. A. Schulze.

Seven slides of nerves, presented by M. V. Ball.

The following officers have been elected for the ensuing year :—

<i>Director,</i>	. . . . .	Benjamin Sharp, M. D.
<i>Vice-Director,</i>	. . . . .	John C. Wilson.
<i>Treasurer,</i>	. . . . .	Chas. P. Perot.
<i>Conservator,</i>	. . . . .	F. J. Keely.
<i>Corresponding Secretary,</i>	. . . . .	John G. Rothermel.
<i>Recorder,</i>	. . . . .	M. V. Ball, M. D.
		M. V. BALL,
		<i>Recorder.</i>

REPORT OF THE CONCHOLOGICAL SECTION.

During the year 1895 specimens have been added to the collection of mollusks from 115 persons, the accessions including a large proportion of species new to the collection and a considerable number of type specimens.

Accessions of special value have been received from Mr. D. D. Baldwin, who gave the types of many new species of *Achatinella*; from W. T. Bednall, who has continued to send us rare and new South Australian Chitons; from C. F. Newcombe, a large series of marine shells dredged near Victoria, B. C.; and from the late Robert Walton, whose collection was presented entire. Other valuable material has been received from Prof. H. E. Sargent, O. A. Nylander, O. A. Crandall, G. H. Clapp C. W. Johnson, Wm. J. Fox and others. Messrs. Ford, Roberts and Van Nostrand have continued to enrich our series with various new and rare species as in former years.

The Conservator has obtained in exchange for duplicate material a considerable number of species new to our collection, including a fine series of Transylvanian shells from E. A. Bielz, with specimens of many of Bielz's own species; a series of Tonquin land shells from M. Ph. Dautzenberg; a large number of North African Helices from M. O. Debeaux, including many species described by him; also a full series of Mr. C. J. Maynard's species of *Strophia*. The Conchological Section has acquired, by purchase, about 150 species of shells, all new to the collection of the Academy.

The collection of alcoholic mollusks has been materially increased by many accessions during the year, among which may be mentioned

the gift by Mr. J. B. Henderson, of Washington, D. C., of a series of Jamaica land mollusca collected by him, and a small but valuable collection of Madeira land mollusks from Rev. R. Boog Watson. A specimen of *Nautilus pompilius* in alcohol has been purchased by subscription of members of the Section and the Academy.

Work in the museum has been confined to the proper placing of new material, it being deemed inadvisable to attempt any extensive work of rearrangement until additional room can be placed at the disposal of the Conchological Department.

With the assistance of Mr. E. G. Vanatta, who has recently been appointed on the Jessup Fund, the Conservator has made good progress toward labelling and cataloguing specimens which have accumulated during the past few years; and, with the same efficient help, it is believed that all arrears of work on material of this nature will be completed during the winter.

The Conservator has been chiefly occupied in the preparation of the several numbers of the *Manual of Conchology*; but no small amount of time has been consumed in the work of identifying specimens for conchologists and in correspondence on conchological subjects. It is believed, however, that the large amount of new and interesting material secured by this means repays for the labor and time involved.

H. A. PILSBRY,
Conservator.

REPORT OF THE ENTOMOLOGICAL SECTION.

The usual monthly meetings of the Section have been held and were well attended by its members and associates. Numerous verbal communications of great interest entomologically have been made by nearly all the members. The collections are in a good state of preservation considering the faulty cases in which some orders are kept. These will gradually be replaced by safe dust- and pest-proof receptacles. The library is growing rapidly, and during the year four hundred and ninety-five entries have been made in the donation book. A large number of insects have also been presented. The present quarters devoted to the Section are entirely inadequate, and it hopes soon to be able to occupy the new room set apart for it by

the Academy. Two members and two associates have been elected. The journal of the Section, *Entomological News*, has been successfully continued and three hundred and forty pages and fifteen plates published during the year just closed. It will be continued in the new year, and an illustrated edition of six hundred copies of thirty-two pages per month will be printed. At the annual election held December 9th the following were elected officers to serve during the coming year:—

<i>Director,</i>	. . . . .	George H. Horn, M.D.
<i>Vice-Director,</i>	. . . . .	Charles S. Welles,
<i>Recorder,</i>	. . . . .	Henry Skinner, M.D.
<i>Treasurer,</i>	. . . . .	Ezra T. Cresson.
<i>Secretary,</i>	. . . . .	William J. Fox.
<i>Conservator,</i>	. . . . .	Henry Skinner, M.D.
<i>Publication Committee,</i>	. . . . .	{ Charles W. Johnson, James H. Ridings.
		HENRY SKINNER, <i>Recorder.</i>

REPORT OF THE BOTANICAL SECTION.

The Botanical Section respectfully reports that the general progress noted in former annual reports still continues, notwithstanding the severe loss sustained by the death last April of its most zealous and untiring member, John H. Redfield, who had been the able Conservator of the Academy's Herbarium since the formation of the Section. His death renders the recommendation of former years, that a permanent Conservator should be employed, still more pressing. It is believed that a fund of \$20,000 would yield enough to make a fair start in this direction. Mr. Redfield perceived this necessity, and generously willed that his scientific books and collections should be sold to form the nucleus of such a fund. To aid in this laudable object some of the members of the Section organized a "Redfield Memorial Herbarium Fund," to which a little less than \$1,000 have been subscribed, hoping to add to it the coming year. It is earnestly hoped that the Academy will lend a vigorous aid in the establishment of this fund. Until the whole amount is subscribed, the interest will go to the purchase of additions to the collection.

It has been estimated that the work of verifying, arranging and fastening down specimens, now going on by the voluntary work of the members of the Section, could not be completed under four or five years, even though there were no new additions. The dire necessity for a regularly employed official is therefore obvious.

The Section is clear of debt and has a balance in the treasury. Meetings are held regularly on the second Tuesday in each month, except during the three summer months, and matters of wide botanical interest have been regularly discussed. Mr. Stewardson Brown has been serving very efficiently as Conservator pending the annual election. His report showing the condition of the Herbarium, is herewith appended.

The officers elected for the ensuing year are as follows :—

<i>Director,</i>	. . . . .	Thomas Meehan.
<i>Vice-Director,</i>	. . . . .	Charles E. Smith.
<i>Recorder,</i>	. . . . .	Charles Schäffer, M. D.
<i>Treasurer,</i>	. . . . .	Stewardson Brown.
<i>Corresponding Secretary,</i>	. . . . .	Joseph D. Crawford.
<i>Conservator,</i>	. . . . .	Stewardson Brown.

THOMAS MEEHAN,
Director.

The Conservator of the Botanical Section reports as follows :—

In presenting this report for the year your Conservator wishes to congratulate the Section on the general good condition of the Herbarium at the present time.

The permanent mounting of the specimens in the general Herbarium, commenced some years ago, has been carried steadily forward during the present year, largely through the untiring efforts of the Director of the Section, Mr. Thomas Meehan; and we can now report the work done as far as Umbelliferæ.

The additions received during the year have been 1,683 species, of which 332 are lower Cryptogams, and 1,351 Phanerogams and Ferns; of the latter, 442 species are from North America, 426 from tropical America, 253 from Asia, and 226 from Australia and Polynesia.

Notable among these are the following collections :—

245 species of Newfoundland plants received from the Howard Herbarium, Cambridge; 111 species of Northern California plants

received from Prof. E. L. Greene ; 425 species of Mexican plant collected in 1894, by Prof. C. G. Pringle, and purchased through the liberality of some of the members of the Section ; 253 species of Asia Minor plants collected by Prof. Bornmuller, and purchased for the Section, and 126 species from the Azores Islands, collected in 1893 by Mr. C. S. Brown, and purchased for the Section.

Of these collections, some 350 species are new to the Herbarium.

It will be seen from the foregoing that a large proportion of the additions during the past year have been acquired through purchase, entailing a considerable expenditure on the part of a few of the members, owing to the lack of funds available for such purposes. While such outlay will undoubtedly be necessary to some extent in the future, yet it is hoped that by a proper system of exchanging, which we expect to effect shortly, much additional material can be acquired. The Section now has in hand a considerable quantity of material which can be readily used for this purpose as soon as adequate space is furnished for its arrangement, which time we hope is not far distant.

The attention of the Section was called to the crowded condition of the present cases, in the report of the Conservator for 1894, and it is hoped before the report for 1896 is made this much-needed room for expansion will have been provided, and the present cases fitted with doors of the best dust-proof construction.

Respectfully submitted,

STEWARDSON BROWN,

Conservator, pro tem.

REPORT OF THE MINERALOGICAL AND GEOLOGICAL SECTION.

Eight meetings of the Section have been held during the past year with an average attendance of about eight members. Papers have been read by Messrs. Goldsmith, Rand and Woolman.

The additions to the cabinet, except to the William S. Vaux Collections, have not been large, but there seems to be a greater interest awakened during the last portion of the year, which it is hoped may continue.

An excursion was made by the Section on May 25th, which seemed to be very satisfactory to those attending it.

The Director would urge, if means can be found for the purpose, the increase of the local collection, which, he believes, could be made of value. The chief expense of this would be in cases, as it is probable that nearly all the specimens needed would be presented; in fact a considerable number have been promised as soon as case-room is provided.

At the meeting of the Section, held December 23d, the following officers were elected for the ensuing year:—

<i>Director,</i>	. . . . .	Theodore D. Rand.
<i>Vice-Director,</i>	. . . . .	Wm. W. Jefferis.
<i>Conservator,</i>	. . . . .	Wm. W. Jefferis.
<i>Treasurer,</i>	. . . . .	John Ford.
<i>Corresponding Secretary</i>	}	Chas. Schäffer.
<i>and Recorder,</i>		

Respectfully submitted,

THEO. D. RAND,

Director.

REPORT OF THE ORNITHOLOGICAL SECTION.

The work of cataloguing and rearranging the Ornithological collection has gone on steadily during the past year; and, although not quite so many specimens have been worked over as in the previous year, this has been more than compensated by the large increase in the labelling and cataloguing.

The Conservator has been enabled to devote a considerable amount of his time to the work, as has also Mr. McCadden, the taxidermist, while valuable assistance has been rendered by Mr. Henry W. Fowler, Miss Helen M. Higgins and Mr. Wm. J. Gerhard.

During the year 4,193 mounted specimens have been worked over, the best of them being remounted and the types and duplicates reduced to skins, and all the material not hitherto named has been carefully identified and catalogued. In addition to this a large number of temporary lists were copied into the regular catalogue, which has now been brought up to date, while a considerable number of labels for specimens in the exhibition cases have been pre-

pared. This work for the year aggregates 4,125 labels written, and 9,979 entries in the catalogue. The groups renovated in the mounted collection comprised the Cathartidæ, Falconidæ, Bubonidæ, Strigidæ, Fringillidæ, Ploceidæ, Laniidæ, Motacillidæ, Alaudidæ, Artamidæ, and Dicaeidæ, while specimens were remounted for exhibition in the Muscicapidæ, Oriolidæ, Dicuridæ, and Campophagidæ.

The accessions during the year have amounted to 1,020 specimens, the most important being a collection of birds from Pennsylvania and New Jersey, presented by S. N. Rhoads, a small collection of Pennsylvania birds from Dr. Thos. H. Montgomery, a small collection from Tennessee made during May and June by Mr. S. N. Rhoads, and a well-mounted collection of game birds from Mr. A. Sydney Logan. A fine pair of Flamingoes has been purchased for mounting, and a number of valuable specimens from the Zoological Society of Philadelphia have been prepared, either as mounted specimens, skins or skeletons.

The southeast room on the gallery floor of the library was placed at the disposal of the Section early in the year, and the entire collection of skins removed to it, where they are much more accessible to the student; while the enlarged quarters furnish increased facilities for work in this department. One large tin case for the preservation of type specimens has been provided during the year, as well as twenty wooden packing cases for the temporary storage of duplicate specimens of large water birds and birds of prey.

The entire collection of skins has been examined during the year and found to be in excellent condition.

The Delaware Valley Ornithological Club has rendered valuable aid to the Section in arousing a lively interest in ornithology in this vicinity. It continues to hold its meetings at the Academy and to contribute many valuable specimens to the collection of local birds, as well as to the general collection.

Much assistance has been rendered during the year to students in the way of identifying material, etc., and specimens have also been loaned to specialists.

The work of renovating the old mounted collection has advanced so far that it is hoped that it may be entirely completed during the coming year, with the exception of labelling and final arrangement. This cannot be accomplished until new dust-proof exhibition cases

are provided, and the advisability of procuring these at an early date cannot be too earnestly urged.

At the annual meeting of the Section, held December 16th, 1895, the following officers were elected:—

<i>Director,</i>	. . . . .	Dr. Spencer Trotter.
<i>Vice-Director,</i>	. . . . .	George S. Morris.
<i>Recorder,</i>	. . . . .	Stewardson Brown.
<i>Secretary,</i>	. . . . .	William A. Shryock.
<i>Treasurer and Conservator,</i>	. . . . .	Witmer Stone.

Respectfully submitted,

WITMER STONE,
Conservator.

REPORT OF THE ANTHROPOLOGICAL SECTION.

The Anthropological Section of the Academy, the formation of which was authorized by votes of the Academy on April 23d and 30th, 1895, was organized on the evening of April 30th, Dr. Harrison Allen being chosen as Chairman, Charles Morris as Secretary and Treasurer. It has held meetings in May, October, November and December, and has received special communications from Mr. John Ford on Indian grave mounds, from Drs. Mills, Ball and others on brain and skull degeneration, and from Dr. Sharp on the Ethnology of Alaska and Siberia. Twenty-eight members have joined the Section. A meeting for organization was held in December, at which the following officers were elected:—

<i>Director,</i>	. . . . .	Harrison Allen, M.D.
<i>Vice-Director,</i>	. . . . .	Dr. C. N. Peirce.
<i>Recorder,</i>	. . . . .	Charles Morris.
<i>Secretary and Conservator,</i>	. . . . .	M. V. Ball.

CHARLES MORRIS,
Recorder.

REPORT OF THE PROFESSOR OF INVERTEBRATE PALEONTOLOGY.

The Professor of Invertebrate Paleontology respectfully reports that the condition of the collections that were under his charge until

December 1st—when his duties became associated with the Department of Geology—remains much as it was at the time of the filing of the last annual report. As for a number years past, the one great obstacle to arrangement and classification in the deficiency of exhibition-room and cases; indeed, at the present time, there is even less room than heretofore, owing to the necessary division of the main hall into a section devoted to entomological interests. Only with occupancy of the new hall can proper relief be expected.

The usual spring course of lectures has followed as a continuation of the courses of past years, and it is gratifying to be able to report that the attendance has been steadily increasing year by year, the enrolled students for the past season numbering 116. Emphasis is again laid on that portion of the instruction which is associated with field-work, when an opportunity is given to examine practically much of that which is first illustrated in the class-room. In addition to the regular Saturday field-parties, the course included, for a limited number, an examination in the month of August of the Rocky Mountain region, when the practicability of so extended a class-excursion was clearly demonstrated. The region studied comprised sections of Colorado, Wyoming, Utah and New Mexico, and specifically the Pike's Peak district, gold mines of Cripple Creek, "bad lands," Great Salt Lake, cañons of the Price, Grand and Arkansas Rivers, the volcanic masses of the San Juan, etc.

As Professor of Geology, the undersigned would respectfully recommend, the disposition of the geological materials of the Academy, space in the new hall, and that enough of it be given for that form of display which is now a part of the method of almost every new museum. A geological exhibition means not merely a display of rock specimens for themselves, but illustration of the dynamics and economics of the science. Therefore, sections of rock-strata, models of geological structure, well and coal borings, etc., are eminently necessary for a proper or modern exhibition.

Respectfully submitted,

ANGELO HEILPRIN,

Prof. of Invert. Paleontology (to Dec., 1895),

now Prof. of Geology.

REPORT OF THE PROFESSOR OF ETHNOLOGY AND ARCHÆOLOGY.

The Professor of Ethnology and Archæology reports that during the current year a regular course of lectures on his branch was delivered in the Lecture Hall of the Academy. The audience was large, and a growing interest was manifested in the subject.

The collections in this department are in process of installation in the new building and a portion of them is satisfactorily displayed. With proper facilities all the objects illustrating this important branch of natural history in possession of the Academy, can now be grouped together and opened for inspection.

D. G. BRINTON, M.D.,
Professor of Ethnology.

REPORT OF THE PROFESSOR OF INVERTEBRATE ZOOLOGY.

The Professor of Invertebrate Zoology respectfully reports that during the past year he has delivered two lectures, one upon "Corals and the Coral Islands," and one upon "Zoological Gardens."

The additions to the museum during the year have been neither numerous nor important.

The course of lectures planned and mentioned in the report of last year was not delivered owing to preparation for and departure upon an expedition to Bering Sea, the Arctic Ocean and adjacent shores.

Permission was obtained from the Treasury Department of the United States to accompany the U. S. Revenue Cutter "Bear" during her cruise in the Arctic Ocean. The Aleutian and Seal Islands and the northern shores of Siberia and Alaska were visited. Collections were made at all points where it was possible. Collections of plants, birds, marine forms and native implements were among the most important made. The skin of a walrus and the skins of a male, female and young fur seal were obtained. For permission to secure the skins of the fur seals the Academy is indebted to the special favor of the U. S. Treasury Department.

As the collections were not received until after the close of the fiscal year, a report upon them must be deferred.

A course of six lectures on the "Influence of the Environment

upon Animal Life" will be delivered in January and February, 1896, and during the spring two lectures in addition will be given upon the results of the Alaskan and Siberian expedition.

Respectfully submitted,

BENJ. SHARP,
Prof. of Invert. Zoology.

REPORT OF THE PROFESSOR OF HISTOLOGY AND MICROSCOPIC TECHNOLOGY.

The Professor of Histology and Microscopic Technology respectfully reports that he has given laboratory instruction in microscopic technic and carried on, as heretofore, original research in Bacteriology.

The gifts of instruments and slides will be reported by the Biological Section.

SAMUEL G. DIXON,
Prof. of Histology and Microscopic Technology.

REPORT OF THE PROFESSOR OF MALACOLOGY.

The Professor of Malacology reports that there have been added to the museum several thousand species of mollusks; among others, the types of many new forms of Polyplacophora and Achatinellidæ, and an alcoholic specimen of *Nautilus pompilius* may be mentioned. The Tectibranchiata have been studied and identified, and an illustrated monograph of the group has been published. Other museum work has been begun on the identification and classification of the South American Bulimi.

One lecture upon the "Protective Devices of Mollusks" has been delivered. A course of five lectures upon the structure and classification of mollusks, and two lectures upon "Economic Uses of Mollusca" and "Mollusks of the Atlantic Coast" will be delivered during February, March and April of the coming year.

Respectfully submitted,

H. A. PILSBRY,
Prof. of Malacology.

REPORT OF THE CURATOR OF THE WILLIAM S.
VAUX COLLECTIONS.

The Curator of the William S. Vaux Collections reports that the mineralogical cabinet is in good order. There are a number of specimens which, too large to be placed in the present cases, are exposed to the dust and liable to be injured. A special case should be provided for them. Since his appointment as Curator he has added 618 specimens to the collection, bringing the number up to 7,780.

The archæological collection is also in good condition, but no additions have been made to it during the past year.

WM. W. JEFFERIS,
Curator.

REPORT OF THE TREASURER.

The following is a summary of the accounts of the Treasurers of the Academy of Natural Sciences of Philadelphia for the fiscal year ending November 30, 1895, comprising transactions of Charles P. Perot, former Treasurer, from December 1, 1894, to January 3, 1895, and of George Vaux, Jr., Treasurer for the balance of the year.

INCOME ACCOUNTS.

GENERAL FUND.

RECEIPTS.

Balance on hand December 1, 1894	\$1,589.85
Initiation fees from sixteen new members	\$160.00
Annual contributions	2,238.57
Income collected by Fiscal Agency	7,536.39
Wilson Fund appropriations toward Librarian's salary (1894 and 1895)	600.00
Sales of publications	461.32
Duplicate books sold	44.00
Interest on deposit account	120.70
Donations for special purposes	520.50
Receipts from Friday evening lectures	223.15
Receipts from Prof. Heilprin's lectures	171.25
	12,075.88
	\$13,665.73

PAYMENTS.

Fuel, light, water, etc.	\$368.61
Salaries and wages	5,591.00
Curators' expenses	881.78
Museum expenses	329.73
Herbarium expenses	221.90
Secretaries' expenses	305.25
Library expenses	871.86
Repairs, improvements, cases, furniture, etc.	1,446.21
Lectures	615.02
Publications	1,905.76
Treasurer's bond for \$10,000	\$50.00
Treasurer's expenses	55.65
Commissions to Fiscal Agency	76.73
Legal expenses, taxes on Western properties obtained in foreclosure of mortgages, etc.	174.51
	12,894.01
Balance on hand November 30, 1895	\$771.72

I. V. WILLIAMSON FUND.

RECEIPTS.

Income collected	\$1,214.67
Overdraft, November 30, 1895	257.44

PAYMENTS.

Overdraft, December 1, 1894	\$1.37
Books purchased	1,461.75
Commissions to Fiscal Agency	8.99
	<u>\$1,472.11</u>
	<u>\$1,472.11</u>

THOMAS B. WILSON FUND.

RECEIPTS.

Balance on hand December 1, 1894	\$149.18
Income collected	501.00
Overdraft, November 30, 1895	4.83

PAYMENTS.

Appropriations to Librarian's salary, 1894 and 1895 .	\$600.00
Books purchased	50.00
Commissions to Fiscal Agency	5.01
	<u>\$655.01</u>
	<u>\$655.01</u>

JESSUP FUND (MALE BRANCH).

RECEIPTS.

Balance on hand December 1, 1894	\$706.72
Income collected	790.00

PAYMENTS.

Disbursements to students	\$750.00
Commissions to Fiscal Agency	7.90
Balance on hand November 30, 1895	738.82
	<u>\$1,496.72</u>
	<u>\$1,496.72</u>

JESSUP FUND (FEMALE BRANCH).

RECEIPTS.

Balance on hand December 1, 1894	\$338.27
Income collected	259.40

PAYMENTS.

Disbursements to students	\$240.00
Commissions to Fiscal Agency	2.60
Balance on hand November 30, 1895	355.07
	<u>\$597.67</u>
	<u>\$597.67</u>

F. V. HAYDEN MEMORIAL FUND.

RECEIPTS.

Balance on hand December 1, 1894	\$247.48
Income collected	125.00

PAYMENTS.

Cost of medal	\$4.00
Award to Gabriel Auguste Daubrée, 621.64 francs	121.00
Commissions to Fiscal Agency	1.26
Balance on hand November 30, 1895	246.22
	<u>\$372.48</u>
	<u>\$372.48</u>

MARY REBECCA DARBY SMITH FUND.

RECEIPTS.

Income collected	\$27.00
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PAYMENTS.

Overdraft, December 1, 1894	\$15.06
Commissions to Fiscal Agency27
Balance on hand November 30, 1895	11.67
	<u>\$27.00</u>
	<u>\$27.00</u>

WILLIAM S. VAUX FUND.

RECEIPTS.

Balance on hand December 1, 1894	\$825.40
Income collected	600.00

PAYMENTS.

Minerals purchased	\$615.60
Repairs and alterations to cases	86.19
Commissions to Fiscal Agency	6.00
Balance on hand November 30, 1895	717.61
	<u>\$1,425.40</u>
	<u>\$1,425.40</u>

CONCHOLOGICAL SECTION FUND.

RECEIPTS.

Balance on hand December 1, 1894	\$107.62
Rents collected	1,316.95
Miscellaneous receipts	19.19

PAYMENTS.

Interest and State tax on mortgages on 220 North Second Street	\$608.00
Insurance on 220 North Second Street	426.91
Commissions to Fiscal Agency	13.20
Balance on hand November 30, 1895	395.65
	<u>\$1,443.76</u>
	<u>\$1,443.76</u>

JOHN H. REDFIELD MEMORIAL HERBARIUM FUND.

RECEIPTS.

Donations, all of which are now on hand in cash \$586.00

During this fiscal year the Treasurer has received Annual Dues as follows: For 1892 from one member, from 8 members for 1893, from 22 members for 1894, and from 195 members for 1895, and from one for 1896. During the month of December there have also been received dues as follows: From 3 members for 1893, from 4 members for 1894, from 26 members for 1895 and from one member for one-half of 1896.

The Treasurer has also in his hands \$250, a legacy from Edward Strickland, deceased, and \$100, a Life Membership Fee, both of which will be transferred to the Fiscal Agent for investment.

There are 39 members who have not paid the 1895 dues yet.

Respectfully submitted,

GEORGE VAUX, JR.,

Treasurer.

REPORT OF THE TREASURER OF THE BOARD OF TRUSTEES OF THE BUILDING FUND.

The Treasurer of the Board of Trustees of the Building Fund herewith presents his final report, which has been examined and approved by the Finance Committee of the Academy—and the Contributors to the Building Fund.

The receipts from all sources, including a balance of \$4,919.03, which was on hand April 17th, 1884, amounted to	\$143,449.48
Payments amounted to	143,440.50
Balance on hand	<u>\$8.98</u>

At a meeting of the Contributors of the Building Fund, held December 28th, 1895, he was directed to transfer said balance to the Treasurer of the Academy, which has accordingly been done.

The completion of the Lecture Hall adjoining the Academy was fully accomplished, but owing partly to the financial disturbance of 1893 it was found impossible to collect sufficient contributions to complete the addition to the Museum, particularly as some of the pledges were based on conditions that had not been attained.

The fund being exhausted and debts still unprovided for, the Academy contributed from its General Fund \$12,000, which being found still insufficient, the building was turned over to the Academy in 1894. The Society assumed the debts and attended to the completion of the work.

The valuable services of the Chairman of the Board, Dr. W. S. W. Ruschenberger, who through his untiring energy and zeal in performing a constant supervision of the work until his death at the advanced age of eighty-six years, are hereby referred to with grateful and affectionate remembrance.

Final Account of Isaac C. Martindale, deceased, and Chas. P. Perot, Treasurers of Building Fund, Academy of Natural Sciences, from April 17th, 1884, to date, as stated by Charles P. Perot.

1884.

RECEIPTS.

April 17th.—To balance from George Vaux, treasurer . . .	\$4,919.03
July 25th. " Ten months' rent of lot, Nineteenth and Cherry Streets	250.00
" Interest on deposits from November 30th, 1884, to November 30th, 1890	2,234.55
" Interest on deposits from November 30th, 1890, to November 30th, 1895	1,808.60
" Appropriations by Legislature of State of Pennsylvania	100,000.00
" Appropriations from General Fund, Acad- emy of Natural Sciences	12,000.00
" Cash donations as follows :—	
Isaac J. Wistar	\$5,000.00
Mary K. Gibson, Jr.	2,315.00
Miss Elizabeth Schäffer	2,000.00
Burnham, Williams & Co.	1,500.00
Chas. D. Reed	1,000.00
Estate of Emily T. Eckert	1,000.00
Chas. E. Smith	1,000.00
Henry C. Lea	1,000.00
The Misses Blanchard	1,000.00
Edw. S. Whelen	1,000.00
Eckley B. Coxe	1,000.00
Miss Serena Potts	500.00
" M "	500.00
Dr. W. S. W. Ruschenberger	290.00
John H. Redfield	250.00

Clarence H. Clark	\$250.00
Dr. Chas. Schäffer	200.00
Angelo Heilprin	150.00
Dr. Henry C. Chapman	105.00
Thomas Meehan	100.00
J. Campbell Harris	100.00
Wm. C. Jeanes	100.00
Chas. R. King	100.00
Roberts LeBoutellier (two donations)	200.00
Andrew H. Miller	100.00
W. L. Abbott	100.00
Chas. P. Perot	100.00
Martin Maloney	100.00
W. W. Jefferis	100.00
Joseph Willcox	100.00
Theo. D. Rand	100.00
Dr. J. F. Holt	100.00
Dr. Edw. J. Nolan	100.00
Dr. Isaac Norris	100.00
Dr. Henry Skinner	50.00
Wm. W. Meigs	50.00
John K. Valentine	50.00
Benj. H. Smith	50.00
Oliver A. Judson	50.00
Uselma C. Smith	50.00
S. Raymond Roberts	50.00
Craig D. Ritchie	50.00
Jos. I. Keefe	40.00
F. J. Crilley	25.00
Chas. F. Devenney	25.00
Prof. Benj. Sharp	25.00
M. F. M'Donnough	10.00
"A Friend," through E. J. Nolan	10.00
R. F. Cullinan	10.00
Rev. H. C. McCook, D.D.	9.00
Prof. J. T. Rothrock	8.30
J. C. Trautwine, Jr.	5.00
A Friend of the Academy	5.00
J. H. Worman, per C. B. Moore	5.00
	<hr/>
	\$22,237.30
Total receipts	<hr/> <hr/> \$143,449.48

PAYMENTS.

Repairs to fencing and care of lot from 1884 to 1890	\$243.69
City taxes, 1885, 1886, 1887	132.55
Incidental expenses from 1884 to 1890	56.97
Drawing deed, recording and other expenses in conveying title from Board of Trustees to "The Academy of Natural Sciences," April 12, 1887	49.65
William Armstrong, contractor for excavations and foundation work on proposed buildings	14,290.00
William Armstrong, for Toland Street wall	300.00
J. H. Windrim, architect's fees and drawing plans	2,193.60
W. A. Dougherty, contractor for Hall adjoining the Academy on the south	28,531.63
Ferd. Beamer, steam-pipes, etc., to above	374.00
S. J. Cresswell, iron railing	52.00
Vulcanite Paving Co., paving	231.10
Geo. F. Payne & Co., contractors for New Museum	93,679.75
Wilson Bros. & Co., architects' fees	3,177.18
Incidental expenses from 1891 to 1893	128.38
Total payments	<u>\$143,440.50</u>
Total receipts	\$143,449.48
Total payments	143,440.50
Balance in Penna. Co. for Ins., etc.	<u>\$8.98</u>

CHAS. P. PEROT,
Treasurer.

PHILADELPHIA, Nov. 30, 1895.

The undersigned have examined the above account, vouched it, and find it correct.

USELMA C. SMITH,
CHARLES MORRIS,
CHAS. E. SMITH,
Finance Committee.

The election of Officers, Councillors and Members of the Finance Committee to serve during 1896, was held with the following result:—

<i>President,</i>	Samuel G. Dixon, M.D.
<i>Vice-Presidents,</i>	Thomas Meehan. Rev. Henry C. McCook, D.D.
<i>Recording Secretary,</i>	Edward J. Nolan, M.D.
<i>Corresponding Secretary,</i>	Benjamin Sharp, M.D.
<i>Treasurer,</i>	George Vaux, Jr.
<i>Librarian,</i>	Edward J. Nolan, M.D.
<i>Curators,</i>	Henry A. Pilsbry. Henry C. Chapman, M.D. Arthur Erwin Brown. Samuel G. Dixon, M.D.
<i>Councillors to serve three years,</i>	Uselma C. Smith. William Sellers. Charles E. Smith. John Cadwalader.
<i>Finance Committee,</i>	Charles Morris. Chas. E. Smith. Uselma C. Smith. William Sellers. Charles P. Perot.
<i>Council, to serve for an unexpired term</i>	Isaac J. Wistar.

ELECTIONS DURING 1895.

MEMBERS.

January 29.—R. Shirley Borden, Frank Haimbach.

February 26.—Silas L. Schumo.

March 26.—Edwin S. Dixon, Harry Blake Tyler, J. W. Horter, M.D., Charles L. Brown, Willett E. Rotzell, M.D.

April 30.—Frederick Prime, Sol. R. Fridenberg, Lightner Withermer.

May 28.—H. G. Griffith, M.D., W. J. Gillespie, M.D.

August 27.—Chas. W. Burr, M.D.

October 29.—John M. Justice, Howard W. Du Bois, Charles C. Harrison.

November 26.—Gulielma M. S. P. Jones, Wilfred H. Harned, Seneca Egbert, M.D., Samuel H. Gilbert, W. W. Frazier, John Cadwalader, Jr.

CORRESPONDENTS.

February 26.—P. B. Sarasin, of Basel; D. Estanislao S. Zeballos, of the Argentine Republic.

April 30.—Rudolph Virchow, of Berlin.

ADDITIONS TO THE MUSEUM.

1895.

ARCHÆOLOGY, ETHNOLOGY, ETC.

- Dr. M. V. Ball. Five human brains (criminal).
 Frank Chew. Collection of Indian axes and arrowheads, Maryland.
 John G. Meigs' Bequest. Nine human crania, including five Etruscan skulls from Corneto, Italy.
 C. B. Moore. Large collection of aboriginal mound relics, including implements, pottery, ornaments and human crania and skeletons from central Florida. Two pre-Columbian crania of Huron-Iroquois Indians, Ontario.
 H. E. Sargent. One tray sherds pottery, Tennessee River, Ala.
 Dr. Benjamin Sharp and Prof. Libbey. Ten Kanaka skulls, Sandwich Islands.

MAMMALS.

- Thomas Biddle. Articulated skeleton of *Hylobates mülleri*, Sarawak, Borneo.
 Dr. S. G. Dixon. Ear-bone of seal, Islesboro, Me.
 J. Edward Farnum. Mounted *Cephalophus natalensis*, E. Africa.
 Herman Haupt, Jr. Skulls of *Arctomys* and *Scalops*, Minnesota and Illinois.
 Dr. J. M. McFarlane. Four skulls of *Rangifer caribou*, Quebec.
 C. B. Moore. One skin and skull of *Peromyscus floridanus*.
 Chas. P. Perot. Tympanic bone of whale.
 H. A. Pilsbry. One mounted *Sciuropterus volans*, Philadelphia.
 Purchased. One mounted *Oreammos montanus*, Cascade Mts., Washington (juv.). Skin and skull of *Rangifer caribou*, Maine.
 Mounted specimen of *Alces americanus*, Maine.
 S. N. Rhoads. One mounted *Neotoma magister* and one skin of *Mephitis mephitis*.
 H. E. Sargent. Skull of *Procyon lotor*, Alabama.
 Dr. B. Sharp. Two shrews and one sea otter skin (juv.), Alaska.
 S. Thompson. Mastodon fragment, Mt. Holly, N. J.
 Zoological Society of Philadelphia. Mounted specimens of *Zalophus californianus* (2), *Rangifer caribou*, *Castor fiber canadensis* (2), *Macropus ualabatus*, *Connochetes gnou*, *Felis leo*, *Dasyprocta fuliginosa*, *Tamandua tetradactyla*, *Dasyprocta cristata*, *D. variegata*, *Ursus maritimus*, *Antilope cervicapra*, *Felis viverrina*, *Midas*

rufimanus, *Cynocephalus anubis* and *Atherura africana*. Skeletons of *Macacus ochreatus*, *Paradoxurus* (sp.?), *Capromys* (sp.?), *Mazama temama*, *Kobus defassus* (2), *Bison bison*, *Capreolus capreolus*, *Cervus porcinus*, *Camelus bactrianus*, *Melursus labiatus*, *Vulpes velox* and *Erethizon dorsatus*. Skins of *Paradoxurus* (sp.?), *Dasyprocta* (sp.?), *Lemur* (sp.?), *Macropus* (sp.?), *Capromys* (sp.?), *Dasyprocta acouchy*, *Mazama temama* (2), *Kobus defassus* (2), *Bison bison* (juv.) and *Vulpes velox*. Skulls of *Dasyprocta fuliginosa*, *Hapale aurita*, *Tamandua tetradactyla*, *Dasyprocta cristata* and *D. variegata*, *Mazama temama* and *Cynocephalus anubis*.

BIRDS.

- W. L. Baily. One Acadian owl skin, Pennsylvania.
 A. L. Buckwalter. One parrot.
 Mrs. M. J. Chase. Nine mounted specimens and two skins, California. One hundred and eighteen skins, mostly *Trochilidae*.
 Delaware Valley Ornithological Club. Forty-one mounted birds and seven nests and sets of eggs.
 Dr. S. G. Dixon. Mounted *Meleagris gallopavo*, Virginia.
 Miss Irma F. Hering. One mounted *Olor columbianus*.
 In exchange. One skin of *Nyctea nyctea*, Greenland.
 A. Sydney Logan. Forty-eight mounted specimens of game birds.
 T. H. Montgomery, Jr. Seventy-six skins, Pennsylvania and Maine.
 George S. Morris. Eighteen skins.
 Purchased. Twenty-six skins, California. Two skins *Phœnicopterus ruber*, two skins *Ardea cœrulea*.
 S. N. Rhoads. Six hundred and eighty skins of Pennsylvania and New Jersey birds. Three skins *Dendragapus franklini*.
 Tennessee Expedition; collected by S. N. Rhoads. Fifty-eight bird skins.
 Zoological Society of Philadelphia. Mounted specimen of *Psophia viridis*. Skins of *Psophia viridis*, *Zenaida castanea*, *Dominicella rubra*, and *Psittacus erithacus*. Skeletons of *Struthio camelus*, *Argusianus argus* (2), *Buteo vulgaris*.

REPTILES AND BATRACHIANS.

- James Bradley. One *Dermochelys coriacea*, Asbury Park, N. J.
 I. N. DeHaven. One *Amblystoma punctatum*, Ardmore, Pa.
 J. Hope. One *Naija bungara*.
 H. A. Pilsbry. Fifteen reptiles and batrachians, Florida.
 S. N. Rhoads (Exp. to Tennessee). Two hundred and sixty-six specimens Reptilia and Batrachia, Kentucky and Tennessee. Fifteen reptiles, Florida. Seventy-nine specimens, Somerset Co., N. J.
 Witmer Stone. Four turtles, Chester Co., Pa.

Dr. R. R. Taylor. One rattlesnake, W. Virginia.

———. One *Menopoma allegheniensis*.

Zoological Society of Philadelphia. Alcoholic specimens of *Sternotherus derbianus*, *Uromastix hardwickii*, *Python molurus*, *Naias bungara* (2), *Varanus niloticus*, *Trachycephalus marmoratus* and *Hyla arborea*.

FISHES.

Wm. E. Meehan. Thirteen deformed *Salmo fontinalis*, U. S. Fish Commission, Allentown, Pa.

Dr. T. D. Myers. Two *Hybopsis biguttatus*, Monocacy River, Md.

Messrs. Pilsbry and Johnson. *Achirus lineatus*, Lake George, Fla.

———. *Lophius piscatorius*, lower Delaware River.

CRUSTACEA.

Geo. H. Clapp. Three specimens of *Cambarus virilis*, Canada.

John Thompson. One *Limulus polyphemus*, Cape May, N. J.

INSECTS.

C. W. Johnson. One case of *Diptera*, Pennsylvania and New Jersey.

Miss A. H. Miller. Hornet's nest, Lawrenceville, Va.

S. N. Rhoads. Three *Cychnus*, one *Chalcophorus*, New Jersey and Tennessee.

Dr. H. Skinner. One case of *Lepidoptera*, Pennsylvania and New Jersey. Three *Lepidoptera*.

Miss J. D. Winsor. Three Beetles.

LOWER INVERTEBRATES.

Henry Dixon. Three trays *Diploria cerebriformis*, Bermuda.

John Ford. One *Escharella variabilis* (Inv.), Ocean City, N. J.

Com. Forsyth, U. S. N. Two *Brissus pectoralis*, Bahamas.

C. W. Johnson. One *Melitodes ochracea*, Tonga Isl.

INVERTEBRATE FOSSILS.

A. A. Alexander. One *Ammonites placenta*, Lenola, N. J.

W. W. Jefferis. One *Monticulipara lycoperdon*, Glens Falls, N. Y.

Louis Woolman. Seven trays, Greenwich, N. J.

RECENT MOLLUSCA.

Anastasio Alfaro (National Museum of Costa Rica). Seventy-two specimens, Salinas Bay, Costa Rica.

Dr. Harrison Allen. *Hyalina arborea*, Nantucket Island.

Mrs. Geo. Andrews. Land shells, Black Mts., with types of two new species.

- A. W. Anthony. Five species (alcoholic).
- D. D. Baldwin. Large collection of *Achatinellidae*, with types of thirty-five new species and eleven species in alcohol.
- E. A. Barber. *Helicodonta obvoluta*, England (alcoholic).
- Mrs. — Beaman. Nine species West Mexican marine shells.
- W. T. Bednall. Twenty-nine species (marine), South Australia.
- E. A. Bielz (in exchange). One hundred and sixty-two species, Transylvania.
- F. E. Blanes. Cuban *Helices* in alcohol.
- H. Clay Borden. *Physa*, Pa.; *Helix aspera*, banana bunch (alcoholic).
- Chas. S. Boyer. *Ostræa*, Japan.
- B. Buckingham. Two species, Bermuda.
- J. H. Campbell. Specimens of *Acanthochites*.
- Mrs. G. W. Carpenter. Forty-three species of marine shells.
- J. E. Chilberg. *Polygyra townsendiana*, living.
- Geo. H. Clapp. Nine species, living *Vitrina limpida*.
- Conchological Section. One hundred and twenty-eight species (purchased).
- M. Cossmann (in exchange). Fourteen species of land and fresh-water shells.
- P. Z. Cox (in exchange). Two species *Zaila*, E. Africa.
- O. A. Crandall. Twenty-two trays of *Physa*; Texan land shells.
- Jas. Crawford. Sixteen species, South Africa.
- W. H. Dall. Twenty-two species.
- Ph. Dautzenberg (in exchange). Thirty species of land shells, Tonquin.
- Rev. A. Dean. Four species, African; three American.
- O. Debeaux. Fifty species of North African land shells, in exchange.
- W. H. De Camp. Two species of fresh-water shells.
- J. M. Delaney. Specimens of *Bulla ovulum*.
- Dr. S. G. Dixon. Four species, Maine.
- Dr. C. S. Dolley. Five species of land mollusks, Italy.
- Mrs. H. E. Dwight. Five species marine shells.
- John Ford. Forty-two species.
- W. J. Fox. Twenty-three species, West Virginia, and other specimens.
- Mrs. E. M. Gaylord. Specimens of *Chama pellucida*.
- Dr. W. D. Hartman. *Melania corporosa*.
- Chas. Hedley. Specimens of land shells, Australia.
- J. B. Henderson. Nineteen species of Jamaica land shells in alcohol.
- A. A. Hinkley. Ten species, *Strophomatidae*.
- Geo. A. Hubbard. *Strobilops* from Minnesota.
- Dr. W. E. Hughes. *Polygyra dentifera*, Canada.
- F. W. Hutton. Specimens of *Chiton sinclairi*.
- J. E. Ives. Three species.
- W. W. Jefferis. *Campeloma* and *Unio*, Ft. Edward, N. Y.

- C. W. Johnson. Twenty-six species.
- I. A. Lapham. Specimens of *Pomatiopsis cincinnatiensis*.
- F. R. Latchford. Collection of Canadian mollusks.
- Roberts Le Boutillier. *Ostraea virginiana*, near Boston.
- Geo. Lichtenthaler. *Lucapina* and *Lucapinella* in alcohol.
- Geo. T. Marston. Four species of fresh-water shells, Wisconsin.
- C. J. Maynard (in exchange). Sixty-six trays of *Cerion*.
- D. N. McCadden and Dr. W. E. Hughes. Seven species of Virginian land shells.
- J. D. Mitchell. *Unio mitchelli*, *Macoma tampaensis* and *Tellina mitchelli*.
- Wm. Moss. A new *Flammulina* from New Zealand, and other shells.
- Miss K. Musson. One species of *Helix*.
- C. F. Newcombe. Eighty species of marine shells dredged near Victoria, B. C.
- Dr. E. J. Nolan. *Helix pomatia* and *arbustorum*, Bavaria.
- A. H. Norton. Three species.
- O. A. Nylander. Collection of shells from northern Maine.
- H. A. Pilsbry. Collection of Planorbis, mainly from Western and Southern States; several species of land and marine mollusks.
- John Ponsonby (in exchange). Thirty-seven species of land shells from Haiti and South Africa.
- L'Abbé Provancher. Eight Canadian species.
- S. N. Rhoads. Mollusks from Washington and Pennsylvania.
- John Richie, Jr. Four trays of shells.
- S. R. Roberts. Several species of land shells.
- E. W. Roper. Types of *Patella kermadecensis*; several land mollusks.
- F. A. Sampson. *Pomatiopsis intermedia*, California, and four species land shells (alcoholic).
- H. E. Sargent. Fifty-five species of shells, Alabama and Minnesota; five species in alcohol.
- M. Schepman. Marine shells from the Bahamas.
- Morris Schick. Seven species of aquatic mollusks.
- Dr. B. Sharp. Twenty-five species.
- Dr. H. Simroth. Soft parts of *Dorcasia alexandri*.
- U. C. Smith. Numerous Jamaica land shells.
- Fr. Stearns. Twenty-two species of Japanese mollusks in alcohol; one species, Oahu.
- R. E. C. Stearns. Five species.
- W. Stone. *Planorbis dilatatus*, Pennsylvania.
- L. H. Streng. *Campeloma* and *Bythinia*, Michigan.
- S. H. Stupakoff. Four species, Pittsburgh, Pa.
- H. Suter. New Zealand and Tasmanian mollusks.
- E. R. Sykes. Seven species of marine mollusks.

- U. S. Department Agriculture. *Amnicola*, *Tryonia*, *Bythinella*, and *Fluminicola* from Nevada and "Death Valley."
- E. G. Vanatta. Ten species of shells.
- H. D. Van Nostrand. Three species of *Cerion*; eleven species of marine shells, Japan.
- Bryant Walker. Several Michigan mollusks.
- Robert Walton. Four hundred and fifty species.
- R. B. Watson. Collection of Madeira mollusks in alcohol.
- G. W. Webster. *Strobilops*, Florida
- A. G. Wetherby. Land mollusks, Tennessee and North Carolina.
- Chas. Le Roy Wheeler. Several mollusks from Cape May.
- Geo. Williamson (in exchange). Collection of Louisiana mollusks.
- Willard M. Wood. *Zonites*, San Francisco, Cal.
- L. Woolman. Two species, fresh-water mollusks, New Jersey.
- Purchased by subscription. *Nautilus pompilius* L., in alcohol.

PLANTS.

- Mrs. Bartol. *Bryophyllum calycinum* and *Bougainvillea glabra*, cultivated, Florida.
- Geo. M. Beringer. Twenty-nine species of *Eucalyptus*, cultivated in California.
- Walter Deane. *Lemna valdiviana*, Randolph, Mass.
- Dr. Geo. E. Davenport. *Aspidium simulatum* and *Aspidium cristatum* x *marginale*, Massachusetts.
- J. B. Ellis. Century Thirty-three, North American Fungi.
- Dr. E. L. Greene. One hundred and eleven species, northern California plants.
- Dr. H. A. Greene (through Geo. M. Beringer). Thirty-three species North American Marine Algæ.
- Wm. Hacker. Forty-eight species North American plants.
- Herbarium of Harvard University. Two hundred and forty-five species of New Foundland plants collected by B. L. Robinson and H. Schrenk.
- Roberts Le Boutillier. Fruit of *Entada scandens* from Jamaica.
- Thomas Meehan. Ravenel's Fungi Caroliniani Exsiccati Fascicles IV and V. Sixty-five species of North American plants. Two hundred and fifty-three species of Asia Minor plants collected by Bornmüller; four hundred and twenty-five Mexican plants collected by C. G. Pringle; one hundred and twenty-six species of Azores Island plants collected by C. S. Brown.
- Mrs. Potts. Two hundred and fifty-three species of plants collected in Asia Minor by Bornmüller.
- John H. Redfield. Seven species of North American plants.
- Dr. Chas. Schäffer. Two hundred and fifty-three species of Asia Minor plants collected by Bornmüller.

- Uselma C. Smith. Seeds of *Entada scandens* from Jamaica and one hundred species of plants from Jamaica.
- Charles E. Smith. Two hundred and fifty-three species of Asia Minor plants.
- Baron Ferdinand Von Müller (through Thomas Meehan). Eleven species of Australian plants.

MINERALS AND ROCKS.

- H. C. Borden. Seven specimens of Pyrite, French Creek, Pa.
- L. T. Chamberlain. One Calcite, Alabama Riv., Ala.
- A. H. Fisher. Two trays, Obsidian and Lazurite.
- Dr. E. Goldsmith. One Dolomite with Quartz, Belvidere, N. J.
- E. A. Groth. One Garnet, Fairmount Park, Pa.
- H. Haupt, Jr. Fifteen specimens, United States and Russia.
- H. G. Ives. One Limonite, Chester Co., Pa.
- Mineralogical and Geological Section. Muscovite, Chester Co., Pa.
- Theo. D. Rand. One each, Talc and Uranophane, Pennsylvania and Georgia.
- Lieut. Ruschenberger, U. S. N. Native Copper, Coquimbo, Chili.
- Jas. F. Sullivan. Petrified wood, 2 spec., Gibbsboro, N. J.
- Students Mineralogical Club. Twenty-four specimens, Pennsylvania.
- William S. Vaux Fund. One hundred and eighty-two specimens for Wm. S. Vaux collection of minerals.

