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THOMAS LINCOLN CASEY AND THE
CASEY COLLECTION OF
COLEOPTERA

(WITH ONE PLATE)

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FOREWORD

The Casey Collection of Coleoptera bequeathed to the United States National Museum by Thomas Lincoln Casey, basis of a lifetime of investigation on the part of one of the foremost coleopterists in America, rich in types, with carefully selected specimens of a high degree of perfection in preparation, contains material that is of constant and permanent value to other systematic workers in the multitude of families that Colonel Casey covered in his extended and painstaking researches. It is the most important single gift that has come to the section to which it pertains in the Division of Insects.

Few words are necessary to explain that a private collection used by one highly trained and careful individual may be kept and handled successfully under an arrangement that is impossible in a public institution where material is consulted by many research workers. To conserve space Colonel Casey pinned his specimens as closely as possible. To conserve time he used a method in labeling that, while safe and effective for his purposes, would certainly lead to disastrous confusion if placed in the hands of many. No one had fuller understanding of these facts than Colonel Casey himself, and usually he handled his specimens personally when examining them with scientific visitors.

The question of safeguarding this collection adequately became paramount at once on its receipt in the National Museum. Dr. J. M. Aldrich, Associate Curator of the Division of Insects, with the advice of S. A. Rohwer, Entomologist in Charge of Taxonomic Investigations, Bureau of Entomology, on March 3, 1925, called a conference of coleopterists and others interested to consider this matter. At this meeting Mr. Rohwer presented a set of resolutions, adopted after due discussion, that indicated the importance of the collection and the necessity of careful labeling and arrangement before the material was thrown open to general consultation and use. The necessary funds for effecting this were a matter for some consideration. The matter rested here until August 12, 1925, when I appointed a committee to consider recommendations for procedure, consisting of Dr. Aldrich as chairman, assisted by W. S. Fisher and H. S. Barber of the Bureau of Entomology, and Dr. E. A. Chapin of the Zoological Division of the Bureau of Animal Industry, United States Department of Agriculture. After due and careful consideration this group rendered a report on September 15 which, with some slight modification, has

served as the method for the handling and installation of the collection. The details of this are described by Mr. Buchanan in the following report and need not be itemized here.

A beginning in labeling and arrangement was made by H. S. Barber, but it was evident at once that definite assistance was required to carry the matter forward. Realizing this need and desiring in every way to hasten the arrangement of the material so that it might be made available as promptly as possible, Mrs. Laura Welsh Casey established a special fund carried in her name under the Smithsonian Institution and made available the necessary money to carry on the work. An agreement was made with the Bureau of Biological Survey, United States Department of Agriculture, whereby Mr. L. L. Buchanan was released for half time employment under this fund for work on the Casey Collection, and the arrangement began on April 1, 1926. This cooperative arrangement was continued later with the Bureau of Entomology following Mr. Buchanan's transfer to that service. Cases for storage also were purchased. In addition to all this, Mrs. Casey, with the advice of Dr. W. M. Mann, supplied an excellent microscope of modern type, and arranged for binding many of the reference works in the special library that accompanied the collection.

That the long task of arranging the collection went forward from this time without delay has been due entirely to the steady interest and encouragement of Mrs. Casey, to whom all thanks are due for furthering this monument to the memory of her distinguished husband.

In addition to supplying funds for the arrangement of the collection Mrs. Casey has by gift to the Smithsonian Institution established a permanent endowment known as the Thomas Lincoln Casey Fund, the income of which is to be used for maintenance of the Casey Collection and for the general promotion of research in Coleoptera. Under this fund there will be published from time to time in the Smithsonian Miscellaneous Collections papers dealing with the Casey Collection and with Coleoptera in general, the present account by Mr. Buchanan initiating this series. All publications appearing under these auspices will be designated as under the Thomas Lincoln Casey Fund.

In closing it is fitting that I should express to Mr. L. L. Buchanan the thanks of the Smithsonian Institution for the careful and conscientious manner in which he has carried forward to completion the exacting task of arranging the Casey Collection. The present installation has aroused the admiration of all who have visited the Casey room since this work has been completed.

ALEXANDER WETMORE,
Assistant Secretary, Smithsonian Institution.

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Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture

(WITH ONE PLATE)

Thomas Lincoln Casey was both soldier and man of science. Seldom does one lifetime present substantial and valued achievement in two fields as widely separated as were the two provinces of this coleopterist who was also an army engineer.

Born in 1857 at West Point, he was the son of Brig.-Gen. Thomas Lincoln Casey, who as Chief of Engineers of the United States Army was to carry through the construction of the Congressional Library building, and of the upper part of the Washington Monument. One of his grandfathers was Maj.-Gen. Silas Casey, and the other was Robert W. Weir, for 50 years professor of drawing at the United States Military Academy. After a year in the Sheffield Scientific School of Yale University he entered the Military Academy at West Point. There he was a high-stand man through the four years of his course. Upon his graduation in 1879 his position in his class admitted him to the Corps of Engineers, and by the time he retired from active duty in 1912 he had reached the rank of colonel.

Astronomy was the field in which the young lieutenant did his earliest scientific work. His first military assignment took him to the Engineer and Submarine Mining School at Willet's Point, now Fort Totten at one of the entrances to New York harbor; here he made a specialty of theoretical and applied astronomy, to such good effect that in 1882, when Prof. Simon Newcomb led an expedition to the Cape of Good Hope to observe the transit of Venus, Lieutenant Casey was a member of the party and acted as assistant astronomer. He was also a member of the Greer County Commission, which went to Texas in 1886 to mark the boundary lines between a portion of what was then the Indian Territory and the State of Texas.

¹ The writer wishes to acknowledge his deep obligation to Clara Cutler Chapin, who prepared the biographical sketch, and made many helpful suggestions relating to other portions of the manuscript.

In 1898 Captain Casey was married to Miss Laura Welsh, of Philadelphia, and they made their first home in Virginia. Captain Casey had been in charge of construction work at Fort Monroe; upon the outbreak of the Spanish War he was made major and was entrusted with the submarine mine defenses of Hampton Roads.

Early in the present century Major Casey was assigned to duty on the Mississippi River, and here began an interest in conchology which was to continue throughout his life. For 4 years he was a member of the Mississippi River Commission, stationed first at Vicksburg and later at St. Louis. It was at this time that he began to build up the notable collection of recent and fossil shells of the lower Mississippi which served as basis for studies carried on during the later years of his life.

For 40 years Thomas Lincoln Casey was an eager and devoted student of Coleoptera. Half a dozen of his papers on North American beetles appeared in the year 1884, and from then on they were frequent. The 50 or more publications which came out before 1910 were confined to Coleoptera of North America, but with the "Memoirs on the Coleoptera" (1910-1924) he enlarged his field to include Central and South American species as well. Every paper was the fruit of careful and accurate study.

By field work and by extensive purchases, the young officer was carefully building up a collection of American Coleoptera and a library of the publications dealing with them, which were to excite the admiration of all who were privileged to examine them. The constant shifting of base which was involved in his army career enabled him to do field work and make additions to his collection in almost every section of our country, for he was stationed successively on Long Island, in Philadelphia, in California, in Texas, in Rhode Island, at New York, in Virginia, at Vicksburg, at St. Louis, and finally at Washington, D. C., where he continued to make his home after his retirement in 1912.

His studies were based on specimens in his possession, and were a regular feature of his early schedule. Two hours of the leisure left by his military duties were devoted to entomology. In this daily period he put his specimens under his binocular compound microscope and subjected them to an examination that was detailed and thorough to the last degree. Measurements, when taken, were painstakingly accurate, and every fine point of habitus and sculpture was covered in his notes. Many of his papers were privately printed and were distributed so as to put their findings at the disposal of all students to whom they would be of value.

Colonel Casey died February 3, 1925, and the microscope he had used throughout his long entomological career was buried with him. His large and valuable entomological and conchological collections, each with its comprehensive library, were left to the United States National Museum. His other property was left to Mrs. Casey for life, the estate to be given eventually to three scientific societies, the National Academy of Sciences, the New York Academy of Sciences, and the Astronomical Society of the Pacific. Mrs. Casey was named sole executor.

The Casey collection of Coleoptera was transported by automobile from the Casey apartment by H. S. Barber and E. A. Chapin and was stored for a short time in a tower room of the Old Museum building; later it was transferred to a room in the Natural History building where it remains. Casey's entomological library, consisting of about 900 volumes and many separates, accompanied the beetle collection, and the two items now form a compact and accessible unit for research on matters connected with Casey's work.

The collection as received was housed in about 260 boxes of the Schmitt type, contained in wooden cabinets. The specimens themselves were clean, well mounted, and in good condition. In general, the series of the different species were clearly segregated, the first specimen bearing the name label, the others grouped after it in the conventional manner. Because of the uniformity of mounts, the unusually small locality labels, and the precise alignment of material, Casey was able to get an astonishingly large number of specimens in some of the boxes. His manual skill in handling material gave to parts of the collection a deceptive appearance of ample spacing, but the abnormal compression immediately became evident when attempts were made to remove or to replace individual specimens, and showed the impracticability of allowing students the privilege of studying the collection in the original boxes.

The uniformity of mounts, so conspicuous a feature of the collection as a whole, is due to a practice Casey followed for a good many years; besides preparing the considerable quantities of material he himself collected, he remounted all specimens received from correspondents. In Memoir 7, page 35, 1916, he speaks of careful mounting as a "prime necessity", even though such curatorial work "absorbs a very large proportion of all the time available for such [research] studies in the daily routine of life, which flows along and ebbs away with ever increasing speed". Suggestions as to the proper mounting

of small Staphylinidae are given in Memoir 2, page 2, 1911, while in Memoir 1, page 1, 1910, objections are made to the European method of mounting on cards.

The collection contains considerable amounts of exotic material, both named and unnamed, in nearly all the groups monographically studied, especially in the families Scarabaeidae, Staphylinidae, Curculionidae, Tenebrionidae, and Cryptophagidae. The regions represented are chiefly Europe, Mexico, and Central and South America. There is also a quantity of undetermined North American material, the bulk of it in those families not critically studied by Casey.

Here and there throughout the collection stand specimens labeled simply "L". These are part of the old Levette cabinet, concerning which Casey says (Coleopterological Notices, 2, p. 501, 1890): The material is "from the Carolinas, Georgia, Florida, and Colorado, much of which was probably collected by Morrison". In recording locality for those "L" specimens surmised to be from the eastern part of the United States, Casey generally suggests either "Indiana" or "Indiana?"; for those thought to be of western origin, he often gives Colorado. A good many of Casey's specimens bearing label "Ari" or "Ariz" are probably Levette collection material.

The abbreviation "typ.", which frequently appears on the name labels of species of other authors, stands for "typical" (not "type") and shows that Casey regarded the specimen as a typical example because of its agreement with the original description or with the actual type. Considerable reliance can be placed on such determinations, especially in the case of Leconte or Horn species, with the types of which Casey compared much of his material.²

Name labels reversed or folded generally indicate that Casey regarded the specimen as incorrectly determined, or considered the species a synonym. In a few cases name labels were folded for no apparent reason other than to reduce their size.

Compared to most modern collections, the Casey Collection contains a rather small average number of specimens per species, though this condition would naturally follow in the case of a private cabinet where species lines are closely drawn. However, Casey's series were often ample, including from several up to 20 or more specimens, and moreover there is evidence, in the case of certain species, that he examined many more specimens than now appear in the collection. For example,

² In Coleopterological Notices, 5, p. 599, 1893, Casey says that *Centrinus canus* "is the only species not described from the original type or a specimen carefully compared therewith". There are many statements of similar purport in his writings.

in Memoir 7, page 2, 1916, he refers to the study of 275 individuals of *Saprinus lugens* Erichson from Arizona, though at present there are but six Arizona specimens of this species in the collection. Again, among Casey's 16 examples of *Tyloderma foveolata* Say is a pair from Indiana, the smaller of which bears a folded label in Casey's handwriting, "smallest of 65", the larger a similar label, "largest of 65". The greater convenience of small, selected lots for study purposes was no doubt Casey's principal reason for restricting the size of his series, with insufficient storage space a contributory factor. It is not to be supposed that he discarded all the duplicates, as on more than one occasion consignments of excess material were sent to the National Museum and possibly to other institutions or correspondents as well.

Casey's unusual scheme for indicating the locality of his specimens deserves special mention. The base of this system is a small State abbreviation label to which he added various marks or symbols—dots, dashes, and crosses—in black or red ink. The nature, number, arrangement, and color of these marks on the label gives the clue to the definite locality within the State and sometimes to additional information as to date and collector. For example Ari denotes Sabino Canyon, Santa Catalina Mountains, Arizona, collected by J. F. Tucker. There are altogether about 160 different kinds of these cryptic labels represented in the collection. A complete list of them, together with their more precise locality equivalents, arranged alphabetically by States, is kept on file in the Casey room with the collection, so that the exact locality of any specimen can be quickly ascertained.

In adopting this unorthodox method of labeling, Casey's purpose was to obtain a label which, while giving the essential data or clue to such data, at the same time was small enough to permit unobstructed examination of the ventral surface of the specimen. The short focal distance and high magnification attendant on the use of his old-fashioned binocular compound microscope made small labels a virtual necessity; in the case of minute beetles, such labels had the further merit of conserving space, increasing the available pinning area in his boxes by one-third or more. Casey followed this scheme of labeling for many years, but finally gave it up, doubtless because the growth of his collection rendered the system too complicated for easy use. The conventional locality labels which were attached to later material were reduced to the desired smallness by folding, either once or twice, but always so as to leave the State name uppermost.

Of the 9,400 species described by Casey, the type specimens of most have been located. The types of a few however, some 19 in number,

appear to have disappeared from the collection. These are: *Amara marylandica*, *Amercedes subulirostris*,³ *Bembidion militare*, *Celia ferruginea*, *Celia pallida*, *Epipocus punctipennis*, *Eumononycha opaca*, *Euplectus impressiceps*, *Lathropus pubescens*, *Laemophloeus floridanus*, *L. horni*, *L. schwarzi*, *Phyllophaga subpruinosa*, *Ptilium sulcatum*, *Stenolophus gracilis*, *Stethobaris cicatricosa*, *Tachys occulator*, *Telephanus lecontei*, *Thesium laticolle*. The disappearance of most of these types is referred to by Casey in Memoir 5, page 283, 1914, and in Memoir 8, page 291, 1918. The types of two other species, *Colon decoris* and *Trichopteryx fungina*, which were at one time thought by Casey to have been lost (Memoir 5, p. 283, 1914, and Memoir 11, p. 155, 1924), were located during the progress of the curatorial work on the collection, the former among a lot of small *Silphidae*, the latter in the set of *Acratrichis parallela* Mots. In addition to Casey's own types, the collection contains type material of 100 or more species of various other authors.

Shortly after the public announcement of Casey's bequest of his collection to the National Museum, tentative plans were made looking toward the future care and upkeep of this notable accession. Details of the preliminary arrangements that led finally to my appointment as Specialist for the Casey Collection of Coleoptera under the Smithsonian Institution are outlined in the foreword to this article. The main objective was to transfer the Casey material from the overcrowded original boxes to standard Museum insect drawers, with each species segregated in an individual cork-lined box or tray. Until this transfer of material could be accomplished, the collection remained sealed, as any attempt at unrestricted study of the specimens as they were left by Casey inevitably would have resulted in more or less breakage and confusion. The curatorial work was started by the writer on April 1, 1926, and was continued, half a day at a time, for a period of 5 years.

The cardinal rule guiding the curatorial work was to preserve exactly Casey's concept of each species. Regardless of occasional conflict with accepted synonymy, Casey's arrangement of specimens was strictly followed; furthermore, steps were taken to virtually guarantee the permanent preservation of this arrangement, so that students, both now and in the future, will have equal assurance that before them stand Casey's actual original series of each species, and not a hodge-podge resulting from accidental misplacement of specimens or inter-

³A specimen of this species in the collection bears a label on the back of which appears this statement in Casey's handwriting: "The type is in Carnegie Mus. Pittsburg."

polation of later and irrelevant material. Casey's arrangement was indicated by attaching to each specimen a label giving the specific name of the species and its sequence in the series, as, ^{Casey det.,} *minuta* 1 ^{Casey det.,} *minuta* 2, ^{Casey det.,} *minuta* 3. Each species was then placed in a suitable-sized tray on which appears the full scientific name. No material is to be added to these trays, and none is to be transferred, except in a few special cases.

In addition to the "Casey det." and type labels, used of course only on identified material, a small pin label bearing legend ^{"Casey bequest 1925"} was attached to every specimen in the collection, named or unnamed. Also, a record of all the North American species in the collection was entered in a copy of Leng's Catalog of Coleoptera.

When the work of arrangement had been completed, a manuscript catalog of the entire collection was prepared by Miss Marie Siebrecht, working under my direction, that will serve as an historical record for future reference should any question arise as to any of this material. Data in this catalog are arranged systematically, the order of genera and families being essentially that of the Leng Catalog of North American Coleoptera. The list gives the total number of specimens for each species, with indication of types. A synopsis at the end serves as an index to the families and to the number of specimens that these include. The collection as thus recorded is found to contain 19,245 named forms, with a total of 116,738 specimens, and more than 9,200 holotypes.

It is well known that Casey did not make a practice of marking the types in his collection. The various terms now in common use to distinguish different categories of type material were not uniformly applied by Casey in his writings⁴ and very seldom used on the specimens themselves. However, Casey did make the verbal statement that the specimen bearing the name label was to be considered the true type, as shown in this extract from a letter of November 3, 1927, from J. C. Crawford to Dr. Alexander Wetmore, Assistant Secretary, Smithsonian Institution:

About ten years ago Dr. Hopkins and I visited Colonel Casey at his request to see both his collection and the conditions under which he worked. At that time both Dr. Hopkins and I complained to Colonel Casey of the types in the Casey Collection not being labeled. Colonel Casey made the statement, which

⁴ Memoir 1, p. 20, 1910, "Sexual characters are not evident in the types"; *ibid.*, p. 122, "The types are females"; *ibid.*, p. 136, "The type is from San Diego" (four other localities mentioned); Memoir 2, p. 6, 1911, "*minuta* cotypes"; Memoir 6, p. 330, 1915, "three cotypes".

he said was to be regarded as official and for our information in case he should die without making a similar statement to other people, that the specimen bearing the name label was in all cases to be regarded as the true type. To this he added that the true type was the only specimen with which he was really concerned, and that therefore what we call paratypes were not indicated.

(Signed) J. C. CRAWFORD.

Casey's purpose is disclosed, though less definitely, as early as 1886, (Descriptive Notices, 1, p. 162) where he says, "It will be observed that the descriptions refer in all cases to the single specimen assumed as the type", and "I have preferred, therefore, in the existing state of knowledge, to describe one definite type and give such general remarks as may indicate the variation exhibited by the material at hand."

The type labeling has been carried out to respect this clearly stated intent on Casey's part. A special U.S.N.M. type label was attached to the labeled or first specimen of each of Casey's species—that is, where no discrepancies between specimen and description were noticed—whereas paratype labels were attached to those specimens evidently examined by Casey at the time of the original description. A query sign, preceding the name of the species on the paratype label, as

^{?ruber 2}
Paratype
38669 USNM, indicates that the specimen, though doubtless a paratype, had been set apart slightly by Casey as possibly distinct; while the query mark before the number, but not before the name, shows that the specimen, although clearly placed with the species by Casey, fails to meet the paratype requirements in one way or another. Where the true holotype could not be located with certainty, a neotype label was used. These neotype designations, of course, have no binding value unless published, but they permitted the assignment of a catalog number, which in turn afforded a ready means of recording. The actual types of some of these "neotype" species will certainly come to light sooner or later either in the Casey collection or in the cabinets of other workers or institutions. In the meantime, the neotype label acts as a sufficient warning that this particular specimen probably is not the original type.

Certain complications in the curatorial work resulted from the inexact citation of type locality in some of Casey's original descriptions. In several places Casey cites a regional locality when the label on the specimen is definite, as, "Southern Shore of Lake Michigan" or "Rocky Mountains", when the labels themselves read "Milw.Co. Wisc." and "Garland Col.", respectively. Again, we may have the exact locality of the second or following specimen of a series, when the type itself (that is, the specimen bearing the name label) carries

only a general or State label. An illustration is found in the staphylinid, *Datomicra surgens* Casey. The type locality of this species is given as Glenora, B. C.; the collection contains two specimens, the first of which, or type, bears the label "Br.C.", the second, or paratype, "Glenora, B.C., Wickham". In this case there can be no doubt that the first example formed the basis of Casey's original description, represented in his eyes the true type, and by any reasonable interpretation must receive the type label, even though the specimen, on visible evidence, does not come from the stated type locality. Any other plan for handling such cases (and it may be said that serious thought was given to other possibilities) leads only to endless and insoluble complications. Bearing directly on this matter are some remarks by Casey himself in regard to *Acmaeops variipes* Casey. In Memoir 4, page 239, 1913, he explains that "The locality Sta. Cruz Co., given under the original description of *variipes* (Annals N. Y. Academy Sciences, vol. 6, p. 38) was taken from a specimen of the series bearing this definite label; others had simply 'Cal' as a label, one of which, the type, I find had a minute label concealed by the other and bearing the initials 'S.D'." In other words, Casey's original set of *variipes* really included three different labels, "S.D,Cal", "Cal", and "Sta.Cruz Co." The original description calls for Sta.Cruz Co. alone, but Casey 22 years later positively states that the real type, (doubtless the specimen on which his description is based) is from "S D (San Diego) Cal". A considerable number of similar discrepancies were met with, but the *Acmaeops* sample happens to be one that Casey comments on in a definite enough way to give an insight into one of his rather free methods of locality citation.

Another puzzling situation grew out of Casey's occasional misinterpretation of locality symbols. For instance, N Y, translated by Casey's list of localities as "Catskill Mts (Shokan)", is more than once confused with N Y, given as "New York City (Brooklyn)" by the same list.

Again, there are instances where Casey evidently had private information as to the exact source of certain specimens that carry a State label only, and we may find "Ia" being published as "Cedar Rapids, Iowa". Also, Casey sometimes gives the locality of the same specimen with a different degree of definiteness in successive treatments; for example, "Pa" in 1900 may be cited as "Philadelphia, Pa." in 1920. One of the more difficult of the curatorial problems resulted from the fact that Casey occasionally shifted the name label from the original type to some other specimen in the series. In all observed cases of such label transfer the specimen bearing the name

label was of course not marked type. If the actual type could be located it was so labeled; if not, a neotype label was attached to the substitute, to serve until the holotype is recognized.

Casey's interpolation of later material among his original series sometimes prevented the assignment of paratype labels. For example, *Euphoria nitens* Casey, described from 10 specimens from Texas, was represented in the Casey box by 14 examples, showing that four specimens were added later to the original lot. All the specimens except no. 1 and no. 3, which are unlabeled but which nevertheless are almost certainly part of the original series of 10, bear Texas labels, and all except one agree with the original description. That is, only one example of the present 14 can be eliminated as a possible paratype; consequently no paratype labels could be added. It may be explained that Casey followed no consistent method of incorporating later specimens, sometimes placing them at the end, but oftener somewhere in the middle, of his original series.

The curatorial work made no pretense at a synonymical review of the field, but aimed simply at the necessary clearing of the ground that precedes critical study. Casey's individualistic methods and voluminous writings have created many zoological and nomenclatural problems that can be solved only by the patient investigations of future students. Many generations must pass before the final verdict is reached, but in the meantime it is hoped that the collection as it now stands, cleared in part of confusing factors, will lend itself more readily to a study of those problems in which Casey was so deeply interested, and concerning which he once said: "These fields of scientific enquiry are all parts of one grand cosmos, and I cannot conceive one of them to be more soul-inspiring than another; they are all equally wonderful, equally beautiful, and equally beyond the ken of finite intellect."

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