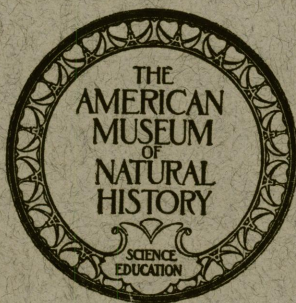


TYPE MATERIAL OF NORTH AMERICAN
MICROLEPIDOPTERA OTHER THAN
AEGERIIDAE IN THE AMERICAN
MUSEUM OF NATURAL HISTORY

BY ALEXANDER B. KLOTS



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Article VI.—TYPE MATERIAL OF NORTH AMERICAN MICROLEPIDOPTERA OTHER THAN AGERIIDAE IN THE AMERICAN MUSEUM OF NATURAL HISTORY

BY ALEXANDER B. KLOTS¹

INTRODUCTION

Following the reorganization and rearrangement of the American Museum collection of Microlepidoptera that has been accomplished in the last three years, the preparation and publication of this paper serves two purposes. First, it affords workers in the taxonomy of the Microlepidoptera a means of ascertaining the location of type material of a great

many North American species. Second, it affords an opportunity to designate lectotypes for a great many names and thus to contribute to the stability of the nomenclature of the group. Most of the older authors neglected to choose single type specimens, and in the majority of such cases no lectotypes have subsequently been designated.

GROUPS OF THE LEPIDOPTERA INCLUDED

This paper covers all of the Microlepidoptera as delimited by Forbes (1923) and McDunnough (1939) with the exception of the family Aegeriidae. In this family a

revision is now being prepared by Messrs. Busck and Engelhardt, so that the present writer prefers to leave it alone for the time being.

AUTHORS OF THE NAMES

Whereas the greater part of the type material in the American Museum is that of a comparatively small number of authors, there is a scattering of a considerable number of others. The following list includes all authors whose material is covered in this paper:

Barnes, W. J., and Benjamin, F. H.	Beutenmuller, W.
Barnes, W. J., and McDunnough, J.	Braun, Annette
	Busck, August
	Butler, A. G.

Dietz, W. G.
Dyar, H. G.
Edwards, Henry
Fernald, C. H.
Fish, Charles
Forbes, W. T. M.
Grossbeck, J. A.
Grote, A. R.
Grote, A. R., and Robinson, C. T.
Heinrich, Carl
Hulst, George

Jones, F. M.
Kearfott, W. D.
Klots, A. B.
McDunnough, J.
Meyrick, Edward
Packard, A. S.
Pearsall, R. F.
Robinson, C. T.
Riley, C. V.
Stretch, R. H.
Walsingham, Lord
Wright, W. H.

TYPE DESIGNATIONS

In nearly all cases the older authors did not designate single specimens as "types" (holotypes) in the strict sense of the word as understood today. The type material of such authors therefore almost invariably consists of "cotypes" alone, except in cases where a name was applied on the basis of a single specimen.

Nor have subsequent workers in the Microlepidoptera done much to improve

the situation. Heinrich (1923, 1926, etc.) has cleared up the Olethreutidae very well. There can be no question that his designations of specimens as types are valid. But Beutenmuller (1892, 1892A and 1904) in three lists of the "types" in the American Museum cannot be regarded as having chosen "types" that can be considered as "lectotypes" in the modern sense. The frequent recurrence in his papers of such phrases as "one male and two females,"

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"three examples," etc., shows that these papers can be considered only as lists of type material and not as valid designations of lectotypes. These lists have therefore

been discounted in preparing the present paper in so far as the possibility of their containing any type designations is concerned.

VALIDITY OF TYPE MATERIAL

A major part of the labor of preparing this paper has been involved in checking carefully the validity of every specimen of so-called type material in the Museum collection. In many cases specimens have been found labeled "type" or "cotype" which prove not to have been part of the original type lots at all. Other problems, too, have appeared, so that in order to avoid repetition in the listing it seems wise to discuss here a number of the outstanding "problem cases" under the headings of the authors involved.

KEARFOTT.—In 1915 W. D. Kearfott sold his collection of "Tortricidae" (in the broad sense) to the American Museum. At the time he stated that it contained his types and cotypes (letter on file in the Museum). He did not, however, deliver the entire collection to the Museum but retained a considerable part of it, most of which he sold to Dr. William Barnes of Decatur, Illinois. This latter material, containing many cotypes, passed to the United States National Museum with the rest of the Barnes Collection. Much Kearfott type material was also distributed among smaller, mostly private, collections.

Kearfott marked many of his cotypes with handwritten labels but in many cases did this to only a part of each type series. He apparently followed no consistent rule in the use of these handwritten labels. In some cases all of the specimens of a name so marked were designated simply "cotype." In other cases one specimen was labeled "type" and the others "cotype." Again, at times one specimen was labeled "type ♂," another "type ♀," and the others "cotype." In some instances a number of specimens were marked "type." Kearfott also used the term "paratype" interchangeably with "cotype."

In addition to these handwritten labels, which, be it again noted, were not placed on nearly all type-lot specimens, Kearfott also

used a printed label on red paper reading "TYPE, Collection of W. D. Kearfott" which was placed on most of the type-lot specimens but not on all.

In the majority of cases, study of the variously labeled type-lot specimens shows nothing wrong. In quite a number of instances, however, specimens have been found bearing the printed, red paper "TYPE" label that obviously were not part of the original type-lot at all. In one case a specimen was found bearing one of the handwritten "Type" labels that had been caught years after the original description was published. In fairness to the entomologists of the American Museum it must be pointed out that these errors in labeling were unquestionably the work of Kearfott himself; for, until the recent reorganization of the collection, much of the Kearfott material has been left as received, and in no cases has any of it been relabeled.

There are, then, many so-called Kearfott "types" and "cotypes" that are not type material at all. All such instances are included in the listing here, being designated "pseudotypes." The specimens have been so labeled by the present author.¹

In many cases, Kearfott neglected to put any distinguishing labels at all on type-lot specimens. Where such specimens are clearly recognizable by their data as parts of the original type-lots, they have been so listed here and so labeled.

Kearfott also very evidently did not always accurately read the dates on the labels of his specimens and therefore published incorrect dates in some of his original descriptions. He might, for example, state in the original description that the name was based on six specimens dated

¹ Because of war hazards all insect type material has been removed from the American Museum to a place of greater safety. The type material of Microlepidoptera has not yet, therefore, been labeled in accordance with the designations, etc., of this article. This will be done as soon as conditions permit.

July 11 to August 29. In some cases, of course, he intended to exclude some of the specimens which he possessed from the type-lot, but there is proof that in other cases he erred. Too strict an interpretation would exclude from the type-lot specimens that really should be, and originally were, included. The writer has had to use his judgment in a number of such cases in preparing the list. Such instances have been noted in detail in the list.

In his revisions of the Olethreutidae, Heinrich (*loc. cit.*) designated lectotypes for Kearfott's names in that family. In a very few cases it has been necessary in this paper to correct errors by Heinrich. This has been done with his approbation and after consultation with him.

Kearfott left another legacy of trouble in the form of a number of unpublished names for which, however, he had labeled as "type," "cotype," etc., specimens in his collection. Some of these names have since been validated, sometimes unintentionally, by Forbes and Heinrich. These are discussed and listed in this paper under the names of those authors.

Another matter connected with the Kearfott names that is worthy of special mention concerns a great number of substitute names proposed by Meyrick (1912). Disapproving of the Kearfott "nonsense names" (*bomonana*, *domonana*, *fomonana*, etc.) and considering these invalid in scientific nomenclature, Meyrick proposed substitutes for them. Under the present Rules, Meyrick's names all must be placed as synonyms of the respective Kearfott names, except in a few instances where the Kearfott names were actually homonyms. In any event, the types of the Kearfott names are, of course, also the types of the Meyrick names. The Meyrick substitute names have not been included in the listing in this paper. Convenient reference to them may be had in the McDunnough Check List (1939).

WALSINGHAM.—In 1880, Lord Walsingham donated to the American Museum a small lot of specimens, representing a number of species described by him. At present these specimens bear small, printed labels reading "cotype," and small, numbered

labels that evidently referred to the lot. One specimen of each species bears a handwritten name label. These name labels make no mention of type status. They are suspected to be in the handwriting of Durrant, Lord Walsingham's assistant. Except for the Pterophoridae, none of the specimens bears other data. The "cotype" labels were obviously put on the specimens at the American Museum, for they are identical with those on other Museum specimens.

Some of the labels were sent to Mr. Roger Washbourn of the British Museum in an attempt to establish the authenticity of this material. Mr. Washbourn, after comparing these with labels on authentic Walsingham types, believes (and I am inclined to agree with him) that, although the specimens are undoubtedly at least "homotypical," they are not to be considered as true cotypes. The specimens of Pterophoridae, which bear printed labels such as "California" and "Oregon," form a possible exception to this and may be true cotypes. All of these Walsingham specimens have, however, been included in the following listing.

ROBINSON.—Shortly before his death, Coleman T. Robinson presented a set of his specimens to the Academy of Natural Sciences of Philadelphia and gave the remainder of his collection, including the majority of the specimens, to the Central Park Museum in New York City. This institution later grew into The American Museum of Natural History. In both the Academy of Natural Sciences of Philadelphia and The American Museum of Natural History specimens are at present labeled "type" for most of the names. There has, however, been no formal designation of lectotypes for the majority of the names, so that the present paper would seem to be the place for this. The surviving Robinson material in both institutions has been studied, and the writer has endeavored in each case to choose the best specimen, regardless of which institution it is in.

HULST.—The American Museum possesses a considerable number of Hulst's "types," all labeled "Type" by Hulst him-

self. In most cases it has been possible to show that these specimens were really parts of the original type-lots. In some instances, however, they were not. Hulst was notoriously free in his use of the word "type," often employing it as merely a synonym of "typical" or "compared with type." The Hulst material in the American Museum all was a part of the Henry Edwards Collection.

HEINRICH.—The Museum possesses a considerable number of Heinrich types and paratypes, mostly material from the Kearfott Collection which was studied by Heinrich in preparing his revisions of the Olethreutidae. In some cases Heinrich validated Kearfott manuscript names by publishing them under the synonymy of already established names. The names, of course, become attributable to Heinrich as author. The Kearfott manuscript types of these names automatically become the types of the validated Heinrich names.

FORBES.—Forbes likewise (1923) validated some Kearfott manuscript names, apparently being under the impression that they had been published. In doing so he gave no exact indication of what material he had studied. It seems logical, in such a case, to treat as type material all Kearfott specimens of the names, at both the United States National Museum and the American Museum, which Forbes studied. In two such cases (*Peronea robinsonana* Forbes and *P. clemensiana* Forbes) McDunnough (1934) has labeled parts of the Kearfott material as "cotypes." While agreeing with this action, the present writer feels that there is no valid reason for restricting the type-lot to a few specimens arbitrarily chosen. In this paper therefore all of the Kearfott material studied by Forbes has been regarded as type material of the various names and has been so labeled.

TYPE DESIGNATIONS AND NOMENCLATURE

As previously pointed out, a great many lectotypes are designated in this paper. It has been considered unwise, however, to do this in all cases where the American Museum possesses cotype material of a name. In many cases where the American Museum material consists of females only and there were males in the type-lot or where the material is in poor condition, designation of a lectotype has been deferred in the hope that a more suitable specimen may exist in another institution.

Specimens in other institutions have not been designated as lectotypes, except in the case of the Robinson Tortricidae and Phalonidae in the Academy of Natural Sciences of Philadelphia and the Kearfott Phalonidae in the United States National Museum.

The nomenclature of types is at present a weirdly complex mess, lacking definite rules. To clarify the situation, at least

with regard to this paper, the terms used are listed and defined:

"Type" and "holotype" are regarded as synonymous.

"Cotype" is used to refer to one of a series of specimens on which an author based a name, and so stated in the original description, without designating any one of them as the "type" or "holotype."

"Lectotype" refers to a cotype chosen, subsequent to the original publication of the name, as the type and so designated unmistakably by publication.

"Paratype" refers to each specimen of the original type-lot other than the type, when the type was chosen by the author in the original description.

"Lectoparatype" refers to each of the cotypes remaining after the designation of one cotype as the lectotype.

"Pseudotype" refers to a specimen wrongly labeled as being a part of the original type-lot.

It will be noted that "lectoallotypes" have not been designated. It is felt that this is best left to subsequent students of the groups involved.

ACKNOWLEDGMENTS

The writer wishes to express his indebtedness for their kind co-operation to the authorities of The American Museum of Natural History, the Academy of Natural Sciences of Philadelphia and the United States National Museum, and to

Messrs. G. A. Bisset and Roger Washbourn of the British Museum, J. F. Gates Clarke, E. P. Darlington, W. T. M. Forbes, Carl Heinrich and J. McDunnough, all of whom have aided with information in straightening out tangled situations.

LIST OF TYPE MATERIAL

Hepialidae

- anceps* Hy. Edwards, *Hepialus*. 1881, p. 36. IN A.M.N.H.: lectotype male, hereby designated, Mendocino Co., Calif.; one lectoparatype female; both are Nos. 7486 (original) and 8655, Coll. Hy. Edwards.
- furcatus* Grote, *Hepialus*. 1883, p. 30. IN A.M.N.H.: a pseudotype female, "Cal."; type locality is "Adirondacks."
- inutilis* Hy. Edwards, *Hepialus*. 1881, p. 36. IN A.M.N.H.: lectotype male and lectoparatype female, hereby designated, both Nos. 7485 (original) and 8649 (♂) and 8650 (♀), Coll. Hy. Edwards, "Sier. Nev., Cal."; both lack abdomens.
- McGlashani* Hy. Edwards, *Hepialus*. 1886, pp. 14-15. IN A.M.N.H.: lectotype male and two lectoparatype females, hereby designated, all No. 8676, Coll. Hy. Edwards, "Sier. Nev., Cal."
- matthewi* Hy. Edwards, *Epialus*. 1874, p. 265. IN A.M.N.H.: lectotype male and lectoparatype female, hereby designated, both Nos. 4433 (original) and 8671 (♂) and 8672 (♀), Coll. Hy. Edwards.
- modestus* Hy. Edwards, *Epialus*. 1874, pp. 112-113. IN A.M.N.H.: unique male type, Nos. 7484 (original) and 8651, Coll. Hy. Edwards.
- montanus* Stretch, *Hepialus*. 1873, p. 105, Pl. iv, fig. 7. IN A.M.N.H.: unique male type, Nos. 2300 (original) and 8653, Coll. Hy. Edwards.
- rectus* Hy. Edwards, *Hepialus*. 1881, pp. 35-36. IN A.M.N.H.: one cotype, badly rubbed and lacking abdomen, Nos. 7479 (original) and 8662, Coll. Hy. Edwards. Lectotype not designated.
- tacomae* Hy. Edwards, *Epialus*. 1874, p. 365. IN A.M.N.H.: unique type female,

lacks right wings, "Washington T., Behrens."

Incurvariidae

- taylorella* Kearfott, *Incurvaria*. 1907A, pp. 8-9. IN A.M.N.H.: lectotype female, hereby designated, Mt. Washington, N. H. (Slosson).

Nepticulidae

- variella* Braun, *Nepticula*. 1910, p. 173. IN A.M.N.H.: one paratype.

Eucleidae

- beutenmulleri* Hy. Edwards, *Limacodes*. 1887, pp. 145-146. IN A.M.N.H.: unique type female, Enterprise, Fla., 31 March, 1887. No. 9464, Coll. Hy. Edwards.
- elliottii* Pearsall, *Euclea*. 1887, p. 209. IN A.M.N.H.: type, No. 172, New York City and vicinity, Coll. S. L. Elliot, ex Pearsall Coll.
- inornata* Grote and Robinson, *Limacodes*. 1866, pp. 372-373. IN A.M.N.H.: lectotype female, hereby designated, "Penn.," No. 23057, Grote and Robinson.
- parallela* Hy. Edwards, *Limacodes*. 1886, p. 10. IN A.M.N.H.: unique type male, "Indian Riv., Fla.," No. 9452, Coll. Hy. Edwards.
- pygmaea* Grote and Robinson, *Adoneta*. 1868, p. 189. IN A.M.N.H.: lectotype male, hereby designated, dated $\frac{31}{8}$; two lectoparatype males, dated $\frac{1}{9}$ and $\frac{5}{9}$; all No. 23056, Grote and Robinson.
- slossoniae* Packard, *Eupoeya*. 1893, p. 169. IN A.M.N.H.: lectotype male, hereby

designated, labeled "Florida," collection of Mrs. A. T. Slosson, with Packard's handwritten "Type" label; one lectoparatype female, same labeling.
spadicis Grossbeck, *Monoleuca*. 1906, p. 289. IN A.M.N.H.: unique type male, ex Grossbeck Coll.

Pyromorphidae

aversus Hy. Edwards, *Triprocris*. 1884, p. 13. IN A.M.N.H.: unique type male, Jalapa, Mexico, No. 8323, Coll. Hy. Edwards.
basalis Hy. Edwards, *Triprocris*. 1887A, p. 91. IN A.M.N.H.: unique type female, No. 8329, Coll. Hy. Edwards.
lustrans Beutenmuller, *Triprocris*. 1894, pp. 367-368. IN A.M.N.H.: unique type male, Colorado, No. 8328, Coll. Hy. Edwards.
notha Hy. Edwards, *Lycomorpha*. 1885, p. 128. IN A.M.N.H.: cotype female, Jalapa, Mexico (Schaus), No. 8344, Coll. Hy. Edwards. The male cotype, if still in existence and in good condition, should be made the lectotype.

Tineidae

dietziella Busck, *Hypoplesia*, 1913, pp. 101-102. IN A.M.N.H.: one paratype.

Psychidae

celibata Jones, *Psyche* (*Eurycyttarus*). 1922, p. 130, Pls. VII-VIII. IN A.M.N.H.: one paratype, with pupal shell and case.
coniferella Hy. Edwards, *Psyche*. 1877, p. 142. IN A.M.N.H.: lectotype, hereby designated, larval case, "California," No. 7539, Coll. Hy. Edwards; one lectoparatype, larval case, as above.
davidsoni Hy. Edwards, *Oiceticus*. 1877, pp. 142-143. IN A.M.N.H.: lectotype, hereby designated, larval case, No. 7537, Coll. Hy. Edwards, labeled "Type of case" by Hy. Edwards; one lectoparatype case, No. 7541. Two pupae, Nos. 7538 and 7541, Coll. Hy. Edwards, should presumably also be regarded as lectoparatype material.
dendrokomos Jones, *Oiketicus*. 1926, pp. 1-6, Pl. I. IN A.M.N.H.: one paratype male; two paratype cases.

exigua Hy. Edwards, *Pseudopsyche*. 1892, p. 125. IN A.M.N.H.: one cotype, "Arizona," No. 7546, Coll. Hy. Edwards. The specimen is in bad condition; if the other cotype is in existence and in better condition, it should be made the lectotype.

fragmentella Hy. Edwards, *Psyche*. 1877, p. 142. IN A.M.N.H.: lectotype larval case, hereby designated, Nos. 7551 and 7530, Coll. Hy. Edwards, "Mt. Shasta dist., California"; six lectoparatype larval cases, same data.

fumosa Butler, *Hyaloscotes*. 1881, p. 314. IN A.M.N.H.: one paratype, Siskiyou Co., 87.47 [California, Walsingham].

meadi Hy. Edwards, *Thyridopteryx*. 1881, p. 116. IN A.M.N.H.: unique type male, with its larval case and pupal shell.

pallidovenata Grossbeck, *Thyridopteryx*. 1917, pp. 104-105. IN A.M.N.H.: unique type male.

Lyonetiidae

albaciliella Braun, *Bucculatrix*. 1910, p. 175. IN A.M.N.H.: one paratype.

ochristrigella Braun, *Bucculatrix*. 1910, pp. 174-175. IN A.M.N.H.: one paratype.

tetrella Braun, *Bucculatrix*. 1910, pp. 175-176. IN A.M.N.H.: one paratype.

Haplotiliidae (Coleophoridae)

entoloma Busck, *Coleophora*. 1913, p. 97. IN A.M.N.H.: one paratype (labeled "cotype").

quadristrigella Busck, *Coleophora*. 1913, pp. 96-97. IN A.M.N.H.: one paratype (labeled "cotype").

sparsipuncta Heinrich, *Coleophora*. 1929, p. 18. IN A.M.N.H.: six paratypes.

Heliozelidae

kalmiella Dietz, *Coptodisca*. 1921, p. 44. IN A.M.N.H.: type and two paratypes. All are glued to a single celluloid "point." The specimen at the tip of the point is in the best condition and should be regarded as the type. The present writer prefers not to attempt to remount the specimens.

major Kearfott, *Antispila*. 1907B, p. 166, Pl. VIII, fig. 15. IN A.M.N.H.: lectotype

hereby designated, Black Mts., N. C., "Valley," June 10, labeled "Type" by Kearfott.

Oecophoridae

pallidella Busck, *Depressaria*. 1904, p. 765. IN A.M.N.H.: one paratype (labeled "cotype").

Ethmiidae

albistrigella Walsingham, *Psecadia*. 1880, pp. 89-90, Pl. XII, fig. 6. IN A.M.N.H.: one so-called "cotype"; see discussion above.

Gelechiidae

iothalles Forbes, *Trichotaphe*. 1939, pp. 159-161. IN A.M.N.H.: two paratypes.
natalella Busck, *Aristotelia*. 1904, p. 756. IN A.M.N.H.: one paratype (labeled "cotype").
pauella Busck, *Gelechia*. 1903, p. 865. IN A.M.N.H.: one paratype (labeled "cotype").

Yponomeutidae

parvula Hy. Edwards, *Penthetria*. 1881, p. 80. IN A.M.N.H.: lectotype female, hereby designated, Indian River, Fla., Nos. 7508 (original) and 8351, Coll. Hy. Edwards. The original description erred in calling this specimen a male.

Glyphipterygidae

carduiella Kearfott, *Choreutis*. 1902, pp. 116-120. IN A.M.N.H.: one paratype (labeled "cotype") and the pin and labels of another, the specimen having been destroyed.
gemmalis Hulst, *Chalcoela*. 1886, p. 148. IN A.M.N.H.: one cotype, with abdomen lost, labeled "Type" by Hulst, Nos. 3015 (original) and 13841, Coll. Hy. Edwards. There are also two other specimens in good condition, from the same lot, a male (no original number) "Sier. Nev." and a female (original No. 3015) "Sier. Nev.," both No. 13842, Coll. Hy. Edwards. No lectotype has yet been chosen. This is not done here because of the condition of the cotype.
slossonia Fernald, *Walsinghamia*. 1900, p.

244. IN A.M.N.H.: four specimens, *ex* Slosson Coll., may be cotypes.
trigonana Walsingham, *Sciaphila* (*Lotisma*). 1879, pp. 22-23, Pl. LXV, fig. 7. IN A.M.N.H.: two so-called "cotypes"; see discussion above.

Olethreutidae

abietana Fernald, *Argyroploce*. 1908, pp. 349-350, 432. IN A.M.N.H.: one so-called "cotype," with no data other than "Me. Exp. Sta. Lot 237" and a "cotype" label by Fernald (?).
adana Heinrich, *Rhyacionia*. 1923, p. 18, fig. 52. IN A.M.N.H.: one paratype.
aemulana Heinrich, *Polychrosis*. 1926, p. 94, figs. 180, 369. IN A.M.N.H.: holotype male, Hazelton, Pa., 7-3-'05.
afficticia Heinrich, *Aphania*. 1926, p. 118, fig. 378. IN A.M.N.H.: unique male type, Mt. Washington, N. H.
agricolana Walsingham, *Paedisca*. 1879, p. 42. IN A.M.N.H.: one so-called "cotype"; one specimen "named by Walsingham."
albacostana Kearfott, *Ancylis*. 1905A, p. 360. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 253), "Colo."
albafascia Heinrich, *Ancylis*. 1929A, p. 19, fig. 5. IN A.M.N.H.: two paratypes.
albicapitana Kearfott, *Proteopteryx*. 1907, pp. 47-48. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 206), Placer Co., Calif., Sept.; one female lectoparatype.
albidorsana Kearfott, *Proteopteryx*. 1904, pp. 113-114. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 119), Kaslo, B. C.; two lectoparatypes. See also *Proteopteryx columbia* Kearfott and *mediostriana* Kearfott.
albidula Heinrich, *Olethreutes*. 1926, p. 189, fig. 253. IN A.M.N.H.: two paratypes.
albipuncta Heinrich, *Bactra*. 1926, pp. 84-85, figs. 46, 347. IN A.M.N.H.: five paratypes.
albolineana Kearfott, *Lipoptycha*. 1907B, pp. 160-161, Pl. VIII, fig. 11. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 107); one male lectoparatype.

- alterana* Heinrich, *Thiodia*. 1923, pp. 46–47, fig. 102. IN A.M.N.H.: two paratypes.
- amatana* Heinrich, *Gretchena*. 1923, p. 184, fig. 319. IN A.M.N.H.: holotype male, Oak Sta., Pa., May (Marloff); four paratypes.
- ambrosiana* Kearfott, *Polychrosis*. 1907, p. 8. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, pp. 94–95), Cincinnati, O., seeds of *Ambrosia trifida* (Braun); four lectoparatypes; two pupal shells (of type-lot); one of the lectoparatypes is labeled "Murtf. St. L." [St. Louis, Mo.] instead of "Kirkwood, Mo." as stated in the original description.
- amphorana* Walsingham, *Semasia*. 1879, p. 63. IN A.M.N.H.: four so-called "cotypes."
- andromedana* Barnes and McDunnough, *Olethreutes*. 1917, p. 223. IN A.M.N.H.: two males, one female from what was originally the type-lot; these were sent to Kearfott by the authors, but, when he did not return them, they described the species from the material which they had retained. Kearfott had applied the same specific name, as a MS. name of his own, to these specimens.
- angleseana* Kearfott, *Enarmonia*. 1907, pp. 64–65. IN A.M.N.H.: lectotype female (designated by Heinrich, 1926, p. 31), Anglesea, N. J., labeled "Type" by Kearfott; ten lectoparatypes (labeled "cotype" by Kearfott).
- annetteana* Kearfott, *Thiodia*. 1907, p. 42. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 43); two lectoparatypes.
- arctostaphylana* Kearfott, *Cydia*. 1904, pp. 109–110. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 221), Kaslo, B. C., etc.; two lectoparatypes. There are also twelve specimens, Kearfott rearing Nos. K514 and K606 which, Kearfott's records show, were from Carmel, Calif. (Vachell). Four of these bear Kearfott's red, printed "TYPE" labels; one of these also bears a handwritten "cotype" label by Kearfott. These are obviously "pseudo-types."
- arizonae* Kearfott, *Proteoteras*. 1907, p. 48. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 168–169), Prescott, Ariz.; one lectoparatype.
- articulatana* Kearfott, *Enarmonia*. 1908, pp. 177–178. IN A.M.N.H.: lectotype female (designated by Heinrich, 1926, pp. 51–52), Cincinnati, O., Apr. 30 (Braun).
- aruncana* Kearfott, *Polychrosis*. 1907, p. 5. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 95); one female lectoparatype.
- asphodelana* Kearfott, *Thiodia*. 1907, p. 41. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 257–258), Calgary, Alta.; one lectoparatype.
- atomosana* Heinrich, *Eucosma*. 1923, pp. 110–111. IN A.M.N.H.: lectotype male, hereby designated, San Antonio, Tex.; one female lectoparatype. Heinrich validated this name, which was a Kearfott MS. name, as a synonym of *exclusoriana* Heinrich, but did not designate a type.
- aurantiana* Walsingham, *Hystrichophora*. 1879, p. 65. IN A.M.N.H.: one so-called "cotype."
- avemeana* Kearfott, *Thiodia*. 1907, p. 41. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 38), Aweme, Man.; two lectoparatypes, one male and one female.
- baetrana* Heinrich, *Eucosma*. 1923, pp. 117–118, fig. 239. IN A.M.N.H.: one paratype.
- bandana* Heinrich, *Grapholitha*. 1926, p. 31. IN A.M.N.H.: lectotype male, hereby designated, Wellington, B. C. (Taylor and Bryant). Heinrich validated this name, which was a Kearfott MS. name, while discussing *vana* and *zana* Kearfott, referring to Kearfott's series of MS. types. The specimen which is here designated as lectotype of *bandana* is also the lectotype of *zana* Kearfott as designated by Heinrich (*q. v.*). *Bandana* Heinrich is thus disposed of as an absolute synonym of *zana* Kearfott.
- baracana* Kearfott, *Thiodia*. 1907, p. 43. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 158–159), Stockton, Utah; three lectoparatypes.

- benjamini* Heinrich, *Thiodia*. 1923, p. 66, fig. 114. IN A.M.N.H.: three paratypes.
- bicordana* Heinrich, *Epinotia*. 1923, pp. 220-221, fig. 368. IN A.M.N.H.: holotype male, Aweme, Man., 26 March, 1905 (Criddle).
- bigemina* Heinrich, *Epinotia*. 1923, p. 220, fig. 374. IN A.M.N.H.: holotype male, Carmel, Calif., April (Vachell); two paratypes.
- bilineana* Kearfott, *Eucosma*. 1907A, p. 54. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 115), Illinois (Fernald); one female lectoparatype.
- bobana* Kearfott, *Eucosma*. 1907, p. 26. IN A.M.N.H.: one lectoparatype female, "S. W. Colo." (Dietz). Heinrich (1923, pp. 103-104) states that the type, from Salida, Colo., is in the American Museum. This is not so; I believe that it is in the U. S. National Museum.
- bolanderana* Walsingham, *Paedisca*. 1879, p. 42. IN A.M.N.H.: one so-called "cotype."
- boxcana* Kearfott, *Eucosma*. 1907, pp. 87-88. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 139), Cincinnati, O., May 18-21 (Braun); three lectoparatypes.
- brauni* Heinrich, *Anchylopera*. 1931, pp. 11-12, Pl. v, fig. 16. IN A.M.N.H.: two paratypes.
- brevirostratum* Heinrich, *Exartema*. 1926, pp. 154-155. IN A.M.N.H.: holotype male, Aweme, Man.; three paratypes. This is also type material of *Exartema nortanum* Heinrich, *q. v.*
- brightonana* Kearfott, *Eucosma*. 1907, p. 23. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 154); two lectoparatypes; all three from New Brighton, Pa. There is also a specimen, without data, labeled "cotype" by Kearfott, which is dubiously part of the original type-lot.
- burkeana* Kearfott, *Evetria*. 1907, pp. 4-5. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 26-27).
- busckana* Heinrich, *Rhyacionia*. 1923, pp. 17-18, fig. 51. IN A.M.N.H.: three paratypes.
- californiae* Heinrich, *Hystriophora*. 1923, pp. 256-257. IN A.M.N.H.: one paratype.
- canariana* Kearfott, *Eucosma*. 1907, p. 18. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 81), Stockton, Utah, Aug. 1 (Spalding); four lectoparatypes.
- candana* Forbes, *Laspeyresia*. 1924, p. 394. IN A.M.N.H.: lectotype male and five lectoparatypes (designated by Heinrich, 1926, p. 54), Oak Station, Pa., May 15-21 (Marloff). Forbes validated *candana*, a MS. name of Kearfott's. The lectoparatypes were labeled "paratypes" by Heinrich.
- candidula* Heinrich, *Thiodia*. 1924, p. 387. IN A.M.N.H.: one paratype.
- caracana* Kearfott, *Thiodia*. 1907, p. 43. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 158-159), Denver, Colo., 3 Aug. (Oslar); two female lectoparatypes.
- carbonana* Heinrich, *Ancylis*. 1923, pp. 248-249, fig. 407. IN A.M.N.H.: holotype male, Scranton, Pa., 15 May, 1905 (Lister); two paratypes.
- cercocarpana* Dyar, *Eucosma*. 1903, pp. 297-298. IN A.M.N.H.: one presumed paratype which, however, bears a red label "Type No. 6771, U.S.N.M." as stated, in the original description, for the type.
- chrysea* Heinrich, *Bactra*. 1926, p. 85, figs. 49, 348. IN A.M.N.H.: three paratypes.
- cinereodorsana* Heinrich, *Suleima*. 1923, p. 159, fig. 294. IN A.M.N.H.: holotype male, Oak Station, Pa., July 26-Aug. 15 (Marloff); five paratypes.
- cocana* Kearfott, *Eucosma*. 1907, p. 26. IN A.M.N.H.: unique male type.
- cockleana* Kearfott, *Enarmonia*. 1904, pp. 137-138. IN A.M.N.H.: two lectoparatypes, each of which bears a handwritten label "Type" by Kearfott.
- colfaxiana* Kearfott, *Evetria*. 1907, p. 3. IN A.M.N.H.: unique type.
- colorana* Kearfott, *Cydia*. 1907, p. 93. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 61), Salida, Colo., June 19, Hulst Collection, from Dietz.
- columbia* Kearfott, *Proteopteryx*. 1904, pp. 112-114. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 219),

- Wellington, B. C. (Taylor); ten lectoparatypes. See also *P. albidorsana* and *mediosiriana* Kearfott.
- concitatricana* Heinrich, *Gwendolina*. 1923, p. 189, figs. 32, 323. IN A.M.N.H.: three paratypes.
- concubitana* Heinrich, *Gretchina*. 1923, pp. 181-182, fig. 318. IN A.M.N.H.: one female paratype, without abdomen.
- confluana* Kearfott, *Eucosma*. 1905A, p. 355. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 121-122), Montclair, N. J., 24 Aug. 1899; four lectoparatypes.
- connanum* Heinrich (*lapsus calami*), *Exartema*. 1923A, pp. 112-113. See *cornanum* Heinrich.
- connutana* Heinrich (Kearfott MS.), *Exartema*. 1923A, pp. 112-113. See *cornanum* Heinrich.
- consobrinana* Heinrich, *Eucosma*. 1923, pp. 128-129, fig. 242. IN A.M.N.H.: three paratypes.
- consociana* Heinrich, *Eucosma*. 1923, p. 101, fig. 187. IN A.M.N.H.: one paratype.
- conspiciendana* Heinrich, *Eucosma*. 1923, pp. 135-136, fig. 157. IN A.M.N.H.: type male and one paratype.
- cornanum* Heinrich, *Exartema*. 1923A, pp. 112-113. IN A.M.N.H.: holotype male. In describing this name Heinrich spelled it "*connanum*," evidently a *lapsus calami*. He also validated the Kearfott MS. name *connutana* which, as *connutana* Heinrich, becomes a synonym of *cornanum* Heinrich.
- coronana* Kearfott, *Olethreutes*. 1907, p. 10. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 174), Aweme, Man.; two lectoparatypes; the entire type-lot.
- costastrigulana* Kearfott, *Eucosma*. 1908, pp. 171-172. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 92); also one (a female) of three additional specimens mentioned in the original description.
- crescentana* Kearfott, *Proteoteras*. 1907, pp. 49-50. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 167), Plummer's I., Md. (Busck); one lectoparatype.
- criddleana* Kearfott, *Proteopteryx*. 1907A, pp. 58-59. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 211), Aweme, Man. (Criddle); eleven lectoparatypes.
- cupressana* Kearfott, *Cydia*. 1907, pp. 54-55. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, pp. 56-57); three lectoparatypes.
- cupressi* Heinrich, *Epinotia*. 1923, p. 207, fig. 341. IN A.M.N.H.: three paratypes.
- cyppripediana* Forbes, *Polychrosis*. 1924, p. 473. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 92); one lectoparatype female.
- daeckana* Kearfott, *Olethreutes*. 1907, p. 12. IN A.M.N.H.: lectotype female (designated by Heinrich, 1926, p. 104); three female lectoparatypes.
- dana* Kearfott, *Enarmonia*. 1907, p. 65. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 16); four lectoparatypes.
- dandana* Kearfott, *Enarmonia*. 1907, pp. 65-66. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 53); one lectoparatype.
- dapsilis* Heinrich, *Eucosma*. 1929A, pp. 5-6. IN A.M.N.H.: one paratype.
- daracana* Kearfott, *Thiodia*. 1907, p. 44. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 156-157); three lectoparatypes.
- deceptana* Kearfott, *Olethreutes*. 1905, pp. 41-42. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 120), Aweme, Man., 8 Aug., 1904.
- decorosa* Heinrich, *Hystriophora*. 1929A, pp. 20-21, figs. 25-28. IN A.M.N.H.: one paratype.
- delicatana* Heinrich, *Gretchena*. 1923, p. 185, fig. 320. IN A.M.N.H.: five paratypes.
- delphinoides* Heinrich, *Thiodia*. 1923, p. 59, fig. 135. IN A.M.N.H.: ten paratypes.
- delphinus* Heinrich, *Thiodia*. 1923, pp. 45-46, fig. 134. IN A.M.N.H.: two paratypes.
- denverana* Kearfott, *Eucosma*. 1907A, p. 77. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 116).
- deprecatoria* Heinrich, *Olethreutes*. 1926,

- pp. 177-178, figs. 247, 436. In A.M.N.H.: six paratypes.
- derehcta* Heinrich, *Eucosma*. 1929A, pp. 13-14, fig. 30. In A.M.N.H.: one paratype.
- desotatum* Heinrich, *Gymnandrosoma*. 1926, pp. 72-73, fig. 123. In A.M.N.H.: one paratype.
- devotana* Kearfott, *Olethreutes*. 1907, p. 16. In A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 188).
- dietziana* Kearfott, *Epinotia*. 1907, pp. 92-93. In A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 191), Hampton, N. H.; one male lectoparatype.
- diffusana* Kearfott, *Eucosma*. 1905A, p. 355. In A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 121), Vernon Parish, La., Aug. (Coverdale); one female lectoparatype.
- diminuatana* Kearfott, *Analysis*. 1905A, pp. 361-362. In A.M.N.H.: lectotype female (designated by Heinrich, 1923, pp. 249-250), Caldwell, N. J.; three lectoparatypes.
- dodana* Kearfott, *Eucosma*. 1907, pp. 27-28. In A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 106); six lectoparatypes.
- domonana* Kearfott, *Eucosma*. 1907A, p. 79. In A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 226), Framingham, Mass., June 10 (Frost); one lectoparatype. These constitute the entire type-lot. The lectoparatype lacks the abdomen.
- dorsiatomana* Kearfott, *Thiodia*. 1905, pp. 44-45. In A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 57-58); one pseudotype, Rounthwaite, Man. (Marmont).
- dorsisuffusana* Kearfott, *Eucosma*. 1908, pp. 167-168. In A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 152-153), labeled "Type" by Kearfott; two lectoparatypes.
- doxcana* Heinrich, *Exartema*. 1926, pp. 158-159. In A.M.N.H.: lectotype male, hereby designated, Cincinnati, O., VI-11-04 (Braun), genitalia slide by C. H.; nine lectoparatypes, Cincinnati, various dates VI-11 to VIII-24, 1903 and 1904; one lectoparatype, Essex Co. Park, N. J., 7.1.99 (Kearfott). This Kearfott MS. name was validated by Heinrich who placed it in the synonymy of *Exartema concinnatum terminatum* McD. The above types are Kearfott's MS. types as labeled by him.
- dulciana* Heinrich, *Gretchena*. 1923, pp. 182-183, fig. 327. In A.M.N.H.: two paratypes.
- dyarana* Kearfott, *Enarmonia*. 1907, p. 58. In A.M.N.H.: lectotype female, Colorado (Dyar and Caudell), (designated by Heinrich, 1926, p. 38).
- eburata* Heinrich, *Eucosma*. 1929A, pp. 6-7, fig. 11. In A.M.N.H.: one paratype.
- edwardsiana* Kearfott, *Enarmonia*. 1907, pp. 58-59. In A.M.N.H.: lectotype female (designated by Heinrich, 1926, p. 37); two female lectoparatypes. All three specimens are numbered 14569, Henry Edwards Collection. The lectotype has had the genitalia mounted on a slide by Heinrich. One of the lectoparatypes was labeled "Type ♂."
- electrofusum* Heinrich, *Exartema*. 1923A, pp. 110-112. In A.M.N.H.: holotype male and one paratype. See also *Exartema liniatasciana* Heinrich.
- emarginana* Walsingham, *Proteopteryx*. 1879, p. 68. In A.M.N.H.: two so-called "cotypes."
- engelana* Kearfott, *Eucosma*. 1908, p. 169. In A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 122), very badly rubbed.
- essexana* Kearfott, *Thiodia*. 1907, pp. 39-40. In A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 38); six male and three female lectoparatypes, six of which had not been labeled as types or cotypes by Kearfott; seven blown larvae from the original lot.
- eumaea* Meyrick, *Eucosma*. 1912, p. 34. In A.M.N.H.: unique male type. This name is a valid Meyrick substitute for Kearfott's homonomous *E. wandana*, q. v.
- exacerbatricana* Heinrich, *Epiblema*. 1923, p. 146, fig. 264. In A.M.N.H.: six paratypes.
- exaeresimum* Heinrich, *Exartema*. 1926, pp.

- 160–161, figs. 101, 406. IN A.M.N.H.: one paratype.
- excerptionana* Heinrich, *Eucosma*. 1923, p. 117, fig. 237. IN A.M.N.H.: six paratypes.
- excluseriana* Heinrich, *Eucosma*. 1923, pp. 110–111, fig. 160. IN A.M.N.H.: one male and two female paratypes; see also *Eucosma atomosana* Heinrich; also one pseudotype, Tiger Hill, Texas.
- excusabilis* Heinrich, *Eucosma*. 1923, p. 123, fig. 158. IN A.M.N.H.: one paratype.
- expolitana* Heinrich, *Eucosma*. 1923, p. 132, fig. 249. IN A.M.N.H.: three paratypes.
- floridana* Kearfott, *Enarmonia*. 1907, p. 64. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 33), labeled "Type" by Kearfott; three lectoparatypes; four pseudotypes, three from "East branch of Potomac R., D. C.," K. 669, the other Caldwell, N. J., 17 May, 1903.
- fandana* Kearfott, *Eucosma*. 1907, p. 19. IN A.M.N.H.: unique type.
- faracana* Kearfott, *Proteopteryx*. 1907, p. 47. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 177).
- felicitana* Heinrich, *Pammene*. 1923A, p. 120. IN A.M.N.H.: holotype male and one paratype.
- ferrugineanum* Riley, *Exartema*. 1881, pp. 317–318. IN A.M.N.H.: one "cotype" (?) with a red, printed label "cotype" and a handwritten name label but with no further data.
- fertoriana* Heinrich, *Thiodia*. 1923, pp. 264–265, fig. 423. IN A.M.N.H.: one female paratype.
- festivana* Heinrich, *Thiodia*. 1923, pp. 265–266, fig. 425. IN A.M.N.H.: holotype male.
- finitimana* Heinrich, *Kundrya*. 1923, pp. 192–193, figs. 8, 8a, 34, 415. IN A.M.N.H.: two paratypes.
- fiskeana* Kearfott, *Eucosma*. 1905A, p. 358. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 127), lacking the abdomen.
- fletcherana* Kearfott, *Enarmonia*. 1907A, pp. 127–128. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 56); one male lectoparatype.
- floridana* Kearfott, *Eucosma*. 1907, p. 21. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 136), Hastings, Fla., Oct. 6; two lectoparatypes.
- fofana* Kearfott, *Eucosma*. 1907, p. 28. IN A.M.N.H.: unique male type.
- fortunana* Kearfott, *Epinotia*. 1907A, p. 126. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 172), labeled "Type" by Kearfott; four lectoparatypes.
- fratrueis* Heinrich, *Eucosma*. 1923, p. 98, fig. 232. IN A.M.N.H.: four paratypes.
- fraudabilis* Heinrich, *Eucosma*. 1923, pp. 98–99, fig. 161. IN A.M.N.H.: five paratypes.
- fumoviridana* Heinrich, *Epinotia*. 1923, p. 208, fig. 348. IN A.M.N.H.: one paratype.
- furvescens* Heinrich, *Anchylopera*. 1929A, p. 18. IN A.M.N.H.: holotype male.
- galaxana* Kearfott, *Olethreutes*. 1907, p. 9. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 173), Vernon, B. C., May 18; one male lectoparatype, Vernon, B. C., Apr. 13.
- galbinea* Heinrich, *Ahmosia*. 1926, pp. 98–99, figs. 58, 186, 386. IN A.M.N.H.: holotype male and seven paratypes.
- galenapunctana* Kearfott, *Eucosma*. 1908, pp. 169–170. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 94), Denver, Colo., 7–15–05 (Osler); six lectoparatypes; one pseudotype, labeled "cotype" by Kearfott.
- gandana* Kearfott, *Eucosma*. 1907, p. 20. IN A.M.N.H.: unique female type.
- garacana* Kearfott, *Enarmonia*. 1907, p. 66. IN A.M.N.H.: lectotype female (designated by Heinrich, 1926, p. 49), Chicago, Ill., July (Reading), genitalia slide by C. H.
- gaylussaciana* Heinrich, *Exartema*. 1926, pp. 155–156. IN A.M.N.H.: lectotype female, hereby designated, Kearfott No. 601 (Essex Co. Park, N. J., leaf crumpler, huckleberry), genitalia slide by C. H.; five lectoparatypes, Kearfott No. 601; two lectoparatypes, Kearfott No. 225 (Essex Co. Park, N. J., huckleberry); two lectoparatypes, Kearfott No. 518 (Essex Co. Park, N. J., huckleberry); one lectoparatype, Kearfott No. 202

- (Caldwell, N. J., huckleberry); one lectoparatype, Essex Co. Park, N. J., July 22. This is a Heinrich validation of a Kearfott MS. name. There may be other lectoparatypes in the U. S. National Museum and elsewhere.
- gemistrigulana* Kearfott, *Evetria*. 1905A, p. 349. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 26); one male lectoparatype.
- gerulae* Heinrich, *Griselda*. 1923, pp. 187-188, fig. 324. IN A.M.N.H.: holotype male.
- glitrana* Kearfott, *Olethreutes*. 1907, pp. 9-10. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 173), Regina, Assa., July 2 (Willing); five lectoparatypes.
- gomonana* Kearfott, *Eucosma*. 1907A, p. 78. IN A.M.N.H.: lectotype male, Essex Co. Park, N. J., May 15 (designated by Heinrich, 1923, p. 119); five lectoparatypes.
- graciliana* Kearfott, *Eucosma*. 1905A, pp. 352-353. IN A.M.N.H.: lectotype female, Tryon, N. C., July 3-24 (designated by Heinrich, 1923, p. 93).
- granulatana* Kearfott, *Cydia*. 1908, p. 173. IN A.M.N.H.: lectotype male, Denver, Colo., Sept. 4 (Osler) (designated by Heinrich, 1923, pp. 68-69); two female lectoparatypes.
- grindeliana* Busck, *Cydia*. 1906, p. 211. IN A.M.N.H.: one paratype.
- griseocapitana* Walsingham, *Semasia*. 1879, p. 61. IN A.M.N.H.: one so-called "cotype"; one specimen "named by Walsingham."
- grossbecki* Heinrich, *Epiblema*. 1923, pp. 142-143, fig. 261. IN A.M.N.H.: holotype male; seven paratypes.
- grotriana* Kearfott, *Eucosma*. 1908, pp. 170-171. IN A.M.N.H.: lectotype female, Iowa (C. P. Gillette) (designated by Heinrich, 1923, p. 106); three lectoparatypes.
- habrosana* Heinrich, *Exentera*. 1923, p. 178, fig. 314. IN A.M.N.H.: one paratype.
- haimbachiana* Kearfott, *Epinotia*. 1907, pp. 51-52. IN A.M.N.H.: lectotype male, Philadelphia, Pa. (Haimbach) (designated by Heinrich, 1923, p. 163); thirteen cotypes.
- hamptonana* Kearfott, *Eucosma*. 1907A, pp. 153-154. IN A.M.N.H.: lectotype male, Hampton, N. H., July 7 (Shaw), genitalia slide by C. H. (designated by Heinrich, 1923, pp. 210-211); one female lectoparatype.
- handana* Kearfott, *Eucosma*. 1907, p. 20. IN A.M.N.H.: lectotype male, Stockton, Utah, July (Spalding) (designated by Heinrich, 1923, p. 102); two lectoparatypes.
- haracana* Kearfott, *Proteopteryx*. 1907, p. 46. IN A.M.N.H.: lectotype female, Hunters Range, Pike Co., Pa., May 1 (Lister) (designated by Heinrich, 1923, pp. 176-177); one female lectoparatype.
- hazelana* Klots, *Eucosma*. 1936, pp. 1-2, figs. 1-2. IN A.M.N.H.: holotype male and one male paratype.
- heathiana* Kearfott, *Eucosma*. 1907A, p. 56. IN A.M.N.H.: lectotype male, Cartwright, Man. (Heath) (designated by Heinrich, 1923, p. 88); three lectoparatypes.
- heucherana* Heinrich, *Epinotia*. 1923, pp. 217-218, fig. 379. IN A.M.N.H.: three paratypes.
- hippocastanum* Kearfott, *Exartema*. 1907B, pp. 155-156, Pl. VIII, fig. 2. IN A.M.N.H.: lectotype male, Black Mts., N. C., May 18, on "buckeye" (Mrs. Beutenmuller) (designated by Heinrich, 1926, p. 149); five lectoparatypes; three pupae and six pupal shells.
- hohana* Kearfott, *Eucosma*. 1907, pp. 28-29. IN A.M.N.H.: lectotype male, Mt. Piran, Alta., Aug. 17 (Barnes) (designated by Heinrich, 1923, p. 129).
- hopkinsana* Kearfott, *Eucosma*. 1907, pp. 36-37. IN A.M.N.H.: lectotype male, Hoquiam, Wash., *Picea sitchensis*, etc. (designated by Heinrich, 1923, pp. 206-207).
- idahoana* Kearfott, *Eucosma*. 1907, p. 90. IN A.M.N.H.: unique male type.
- ilicifolia* Kearfott, *Epinotia*. 1907B, pp. 158-159, Pl. VIII, figs. 8-9. IN A.M.N.H.: lectotype male, Mt. Graybeard, N. C., bred. . . *Ilex* (Mrs. Beutenmuller), etc. (designated by Heinrich, 1923, p. 194); seventeen lectoparatypes; one

- larva, a number of pupae and examples of larval work; one pseudotype with red, printed "TYPE" label but no further data.
- imitativa* Heinrich, *Grapholitha*. 1926, pp. 34-35, figs. 134, 298. IN A.M.N.H.: fourteen paratypes.
- immaculana* Kearfott, *Eucosma*. 1907, p. 35. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 102), Pullman, Wash., etc. (Piper).
- implicata* Heinrich, *Proteoteras*. 1924, p. 390. IN A.M.N.H.: one paratype.
- implicata* Heinrich, *Thiodia*. 1931, p. 7. IN A.M.N.H.: one paratype.
- improvisana* Heinrich, *Epinotia*. 1923, p. 269. IN A.M.N.H.: two paratypes.
- indagatricana* Heinrich, *Thiodia*. 1923, p. 56, fig. 107. IN A.M.N.H.: eight paratypes.
- indentanus* Dyar, *Phthiniolophus*. 1903, pp. 306-307. IN A.M.N.H.: three paratypes, *ex* Kearfott Coll.
- infida* Heinrich, *Aphania*. 1926, pp. 121-122, figs. 271, 380. IN A.M.N.H.: two paratypes.
- influana* Heinrich, *Thiodia*. 1923, pp. 49-50, fig. 93. IN A.M.N.H.: two paratypes.
- ingens* Heinrich, *Laspeyresia*. 1926, p. 63, fig. 161. IN A.M.N.H.: one paratype.
- injectiva* Heinrich, *Hedulia*. 1926, pp. 65-66, figs. 162, 334. IN A.M.N.H.: three paratypes.
- inquilina* Kearfott, *Cydia*. 1907, pp. 55-56. IN A.M.N.H.: lectotype female, San Francisco, Calif. (Mrs. Knickerbocker) (designated by Heinrich, 1926, pp. 67-69); four pupal shells and one pupa, same data.
- insidiosana* Heinrich, *Epiblema*. 1923, p. 145, fig. 263. IN A.M.N.H.: three paratypes.
- insignata* Heinrich, *Thiodia*. 1924, pp. 386-387. IN A.M.N.H.: one paratype.
- intermedianana* Kearfott, *Ancylys*. 1907, pp. 56-57. IN A.M.N.H.: lectotype male, Wellington, B. C., June (Taylor and Bryant) (designated by Heinrich, 1923, p. 238); five lectoparatypes.
- islandana* Kearfott, *Olethreutes*. 1907, pp. 80-81. IN A.M.N.H.: lectotype male, Plummerville, Md., May (Busck) (designated by Heinrich, 1926, pp. 75-76); one lectoparatype.
- johnsonana* Kearfott, *Eucosma*. 1907, p. 36. IN A.M.N.H.: lectotype female, Nevada, No. 14720, Coll. Hy. Edwards (designated by Heinrich, 1923, p. 203); three lectoparatypes.
- junctioniliana* Walsingham, *Rhyacionia*. 1879, p. 75. IN A.M.N.H.: one so-called "cotype"; one specimen named by Walsingham.
- kandana* Kearfott, *Eucosma*. 1907, p. 20. IN A.M.N.H.: lectotype male, Stockton, Utah, Aug. 4-17 (Spalding) (designated by Heinrich, 1923, pp. 99-100); one female lectoparatype.
- kennebecana* Kearfott, *Epinotia*. 1907A, pp. 157-158. IN A.M.N.H.: lectotype male, Kennebunkport, Me., etc., genitalia slide by C. H. (designated by Heinrich, 1923, p. 147).
- kiscana* Kearfott, *Thiodia*. 1907, p. 92. IN A.M.N.H.: lectotype male, Greenwood Lake, N. J., June 10 (designated by Heinrich, 1923, p. 62).
- kokana* Kearfott, *Eucosma*. 1907, p. 29. IN A.M.N.H.: lectotype female, Cincinnati, O., Nov. 3 (Braun), genitalia slide by C. H. (designated by Heinrich, 1923, p. 259).
- lana* Kearfott, *Enarmonia*. 1907, pp. 59-60. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, pp. 37-38), genitalia slide by C. H., labeled "Type" by Kearfott.
- landana* Kearfott, *Eucosma*. 1907, p. 18. IN A.M.N.H.: lectotype female, Rounthwaite, Man., Apr. 25 (Marmont) (designated by Heinrich, 1923, p. 120); two female lectoparatypes.
- laracana* Kearfott, *Proteopteryx*. 1907, p. 45. IN A.M.N.H.: lectotype female, Cincinnati, O., 5 April, 1904 (Braun) (designated by Heinrich, 1923, p. 204); five lectoparatypes.
- latens* Heinrich, *Thiodia*. 1929A, p. 2, fig. 2. IN A.M.N.H.: two paratypes.
- lepida* Heinrich, *Epinotia*. 1924, p. 391. IN A.M.N.H.: three paratypes.
- libertina* Heinrich, *Grapholitha*. 1926, p. 29, fig. 294. IN A.M.N.H.: holotype male, Wellington, B. C. (Taylor).
- liniafasciana* Heinrich, *Exartema*. 1923A,

- pp. 110-112. IN A.M.N.H.: holotype male and one paratype. This is a Heinrich validation of a Kearfott MS. name, validated as a synonym of *Exartema electrofuscum* Heinrich (*q. v.*, above), and with the same type material as that name.
- liriodendrana* Kearfott, *Polychrosis*. 1904A, pp. 293-295, Pl. xix, fig. 6 and Pl. xx, fig. 10. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, pp. 89-90); two lectoparatypes; one larva from original type-lot rearing; two pseudotypes from later rearings by Kearfott; a number of other specimens from these later rearings that were not (in error) labeled "Type" as were the pseudotypes.
- lolana* Kearfott, *Eucosma*. 1907, pp. 29-30. IN A.M.N.H.: lectotype male, Colorado, Gillette and Dyar and Caudell data Nos. 17, 946 and 115 (designated by Heinrich, 1923, p. 105).
- lomonana* Kearfott, *Tortrix*. 1907A, p. 82. IN A.M.N.H.: lectotype male, Victoria, B. C. (designated by Heinrich, 1923, pp. 227-228).
- luminosa* Heinrich, *Ofatulena*. 1926, pp. 40-41, figs. 120, 310. IN A.M.N.H.: holotype male, Brownsville, Tex., etc.
- maculatana* Walsingham, *Paedisca*. 1879, p. 48. IN A.M.N.H.: two so-called "cotypes"; one specimen named by Walsingham.
- madderana* Kearfott, *Eucosma*. 1907A, p. 55. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 204), Rounthwaite, Man., July (Marmont); one lectoparatype.
- manidicana* Heinrich, *Eucosma*. 1923, p. 83, fig. 208. IN A.M.N.H.: unique male type.
- magnoliana* Kearfott, *Polychrosis*. 1907, pp. 6-7. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, pp. 89-90), Bennings Sta., D. C., etc.; two lectoparatypes; two pupal shells, specimens of larval work and a Dipterous parasite, all from type-lot.
- maiorina* Heinrich, *Bactra*. 1923A, p. 105. IN A.M.N.H.: two paratypes.
- magna* Kearfott, *Olethreutes*. 1907, p. 14. IN A.M.N.H.: lectotype female (designated by Heinrich, 1926, p. 75), Black-jack Springs, Tex. (Barnes), genitalia slide by C. H.
- mandana* Kearfott, *Eucosma*. 1907, pp. 17-18. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 124), Washington, D. C., June, at light (Busck).
- maracana* Kearfott, *Proteopteryx*. 1907, p. 46. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 177-178), Cincinnati, O., 3 April, 1906 (Braun); six lectoparatypes.
- maritima* Dyar, *Ancylis*. 1904, p. 221. IN A.M.N.H.: one paratype.
- marmontana* Kearfott, *Proteopteryx*. 1907A, p. 155. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 47), Rounthwaite, Man. (Marmont); four lectoparatypes.
- marmoreana* Heinrich, *Epinotia*. 1923, pp. 222-223. IN A.M.N.H.: six paratypes.
- mediostriana* Kearfott, *Proteopteryx*. 1904, p. 114. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 219), Wellington, B. C., Feb. (Taylor); one female lectoparatype; see also *P. albidorsana* Kearfott and *P. columbia* Kearfott.
- medioviridana* Kearfott, *Eucosma*. 1908, p. 168. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 202) Ottawa, Ont., 17 Aug., 1906 (Young); one female lectoparatype.
- melanomesum* Heinrich, *Exartema*. 1923A, p. 119. IN A.M.N.H.: one paratype.
- membrosa* Heinrich, *Laspeyresia*. 1926, pp. 49-50, figs. 150, 322. IN A.M.N.H.: six paratypes.
- meritana* Heinrich, *Epinotia*. 1923, pp. 226-227, fig. 381. IN A.M.N.H.: two paratypes.
- merrickanum* Kearfott, *Exartema*. 1907B, pp. 156-157, Pl. viii, fig. 1. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 149), New Brighton, Pa., 3 July, 1904; fourteen lectoparatypes; one pseudotype, "Essex Co. Park, N. J."
- metariana* Heinrich, *Eucosma*. 1923, p. 133, fig. 251. IN A.M.N.H.: three paratypes.
- micantana* Forbes, *Cymolomia*. 1924, p.

464. IN A.M.N.H.: lectotype male, hereby designated, Hampton, N. H., "hardhack, 7-4-05" (Shaw), labeled "Type" by Kearfott, genitalia slide by C. H.; eleven lectoparatypes from localities as follows: three, Hampton, N. H.; one, London, Ont.; two, Hatch Ex. Station; two, Kearfott No. 611; one, Framingham, Mass.; one, "Thaxter" and "Slide 1175"; one "1329." Forbes unintentionally validated Kearfott's unpublished name. It seems best to restrict the type-lot to the specimens so labeled by Kearfott, at least as regards the American Museum material; but there may be other type-lot specimens in other institutions as well.
- minutana* Kearfott, *Eucosma*. 1905, p. 356. IN A.M.N.H.: one lectoparatype, Cincinnati, O. (Braun); three probable pseudotypes from Essex Co. Park, N. J., with dates July 20, Aug. 13 and Aug. 20 (in the original description Kearfott gave only May 18 for this locality); two pseudotypes, Wilkes-Barre, Pa., June 16 and Montclair, N. J., May 10. Heinrich designated the types (1923, pp. 140-141) but was in error in stating that the (lecto) type is in the American Museum.
- mira* Heinrich, *Anchylopera*. 1929A, pp. 17-18. IN A.M.N.H.: two paratypes.
- mirosignata* Heinrich, *Eucosma*. 1929A, pp. 11-12. IN A.M.N.H.: three paratypes.
- miscana* Kearfott, *Eucosma*. 1907, pp. 91-92. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 213-214), Cisco, Placer Co., Calif., labeled "Type" by Kearfott; four lectoparatypes.
- miscitata* Heinrich, *Laspeyresia*. 1926, pp. 64-65, fig. 160. IN A.M.N.H.: two paratypes.
- misturana* Heinrich, *Thiodia*. 1923, pp. 54-55, fig. 106. IN A.M.N.H.: one paratype.
- momana* Kearfott, *Eucosma*. 1907, p. 30. IN A.M.N.H.: unique male type.
- momonana* Kearfott, *Proteopteryx*. 1907A, pp. 125-126. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, pp. 212-213), Rounthwaite, Man., July (Marmont); two lectoparatypes.
- monitorana* Heinrich, *Eucosma*. 1920, pp. 58-59. IN A.M.N.H.: one male paratype.
- monophylliana* Kearfott, *Evetria*. 1907, p. 1. IN A.M.N.H.: lectotype, probably a male (designated by Heinrich, 1923, p. 26), Coso Valley, Kern Co., Calif., May, 91, K; lacks abdomen; one lectoparatype, lacking right wings and abdomen.
- monotropana* Heinrich, *Polychrosis*. 1926, p. 91, fig. 366. IN A.M.N.H.: holotype male.
- montanana* Kearfott, *Olethreutes*. 1907B, p. 157, Pl. VIII, fig. 3. IN A.M.N.H.: unique female type.
- mormonensis* Heinrich, *Thiodia*. 1923, pp. 44-45, fig. 129. IN A.M.N.H.: two paratypes.
- multilineana* Kearfott, *Enarmonia*. 1908, pp. 178-179. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 50), Aweme, Man.
- myricana* Heinrich, *Exartema*. 1926, p. 152. IN A.M.N.H.: lectotype male, hereby designated, Kearfott rearing No. 217 (Llewellyn Road, May 24, on *Myrica carolinensis* Möll.); two male and one female lectoparatypes, with dates June 24, July 7 and June 1, respectively, same data otherwise as above. Heinrich validated this Kearfott MS. name, placing it in the synonymy of *E. sericorum* Walsingham. The types here designated are Kearfott's MS. types; there may be additional lectoparatypes in other institutions as well.
- nandana* Kearfott, *Eucosma*. 1907, p. 17. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 119), Rounthwaite, Man., July (Marmont); one male and one female lectoparatype; one pseudotype male, no date or locality data, No. 10733, Aug. 31, genitalia slide by C. H.
- naracana* Kearfott, *Proteoteras*. 1907, pp. 50-51. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 168), New Brighton, Pa. (Merrick); four lectoparatypes; one specimen, Cincinnati, O., May 20, 1902, which may really have been part of the type-lot

- (Kearfott stated Cincinnati, May 26–June 4, in the original description).
- nepotinana* Heinrich, *Thiodia*. 1923, pp. 263–264, fig. 422. IN A.M.N.H.: six paratypes.
- nigranum* Heinrich, *Exartema*. 1923A, pp. 115–117. IN A.M.N.H.: holotype male and seventeen paratypes. See also *Exartema ornatatum* Heinrich.
- nigromaculana* Kearfott, *Hemimene*. 1907B, pp. 159–160. IN A.M.N.H.: lectotype female (designated by Heinrich, 1926, pp. 13–14), Black Mts., N. C., "Valley," June 1, genitalia slide by C. H.; one female lectoparatype, lacking the abdomen.
- nomana* Kearfott, *Eucosma*. 1907, p. 30. IN A.M.N.H.: unique female type, Pueblo, Colo. (Nash).
- normanana* Kearfott, *Epinotia*. 1907A, p. 156. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 225); five lectoparatypes.
- nortanum* Heinrich, *Exartema*. 1926, pp. 154–155. IN A.M.N.H.: holotype male and three paratypes. Heinrich validated this name by mentioning it in the synonymy of *Exartema brevirostratum* Heinrich, so that the type material of that name is also the type material of the present one.
- occidentalis* Heinrich, *Thiodia*. 1923, pp. 58–59. IN A.M.N.H.: two paratypes.
- ochromediana* Kearfott, *Olethreutes*. 1907, p. 11. IN A.M.N.H.: lectotype (designated by Heinrich, 1926, p. 170), Hazleton, Pa., "El. It." (Dietz). The date label is so poorly written that one cannot be sure whether it reads 7/14/04 or 7/8/04 or even 6/4/04; the two former dates were given in the original description.
- ochrosuffusanum* Heinrich, *Exartema*. 1923A, pp. 117–118. IN A.M.N.H.: holotype male and two paratypes.
- ochroterminana* Kearfott, *Thiodia*. 1907A, p. 57. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 40), Montclair, N. J., Aug. (Kearfott); fourteen lectoparatypes.
- oclieria* Heinrich, *Hemimene*. 1926, pp. 21–22, fig. 291. IN A.M.N.H.: one paratype.
- oregonensis* Heinrich, *Thiodia*. 1923, pp. 47–48, fig. 104. IN A.M.N.H.: one paratype.
- ornatana* Heinrich, *Exartema*. 1923, p. 148. IN A.M.N.H.: holotype male and seventeen paratypes (of *Exartema nigranum* Heinrich). Heinrich validated *ornatana*, a Kearfott MS. name, by placing it as a synonym of *nigranum* Heinrich in the original description of the latter. The type material of *nigranum* and that of *ornatana* would, I believe, be the same. Kearfott had listed the name *ornatana* Kearfott in "The Insects of New Jersey," 1910, p. 539, but as a *nomen nudum* without description.
- ornatula* Heinrich, *Thiodia*. 1924, pp. 385–386. IN A.M.N.H.: seven paratypes.
- pallidarcis* Heinrich, *Thiodia*. 1923, p. 60, fig. 97. IN A.M.N.H.: holotype male and three paratypes.
- pallidicostana* Walsingham, *Semasia*. 1879, p. 62. IN A.M.N.H.: one so-called "cotype"; one specimen named by Walsingham.
- pallidipolpana* Kearfott, *Eucosma*. 1905A, p. 353. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 99), Washington, D. C. (Busck); one lectoparatype.
- palousana* Kearfott, *Eucosma*. 1907, p. 34. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 130), Pullman, Wash.; two lectoparatypes, Los Angeles, Calif. The lectoparatypes are of a different species from the lectotype, being specimens of *Sonia filiana* Busck.
- palpana* Walsingham, *Paedisca*. 1879, p. 54. IN A.M.N.H.: one so-called "cotype."
- pandana* Kearfott, *Eucosma*. 1907, p. 17. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 127), Kerrville, Tex. (Barnes); two lectoparatypes, one from Kerrville, the other from Wilgus, Cochise Co., Ariz. The latter of these is not conspecific with the lectotype (*fide* Heinrich, *loc. cit.*) but is a specimen of *Eucosma corosana* Walsingham.
- paradisiae* Heinrich, *Hystriophora*. 1923,

- pp. 255-256. IN A.M.N.H.: one paratype.
- pasadenana* Kearfott, *Evetria*. 1907, p. 3. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 16-17), Alameda Co., Calif., March; one lectoparatype, Pasadena, Calif., Apr. 14 (Dietz), lacking both right wings and the abdomen.
- pastigiata* Heinrich, *Thiodia*. 1929A, pp. 3-4, fig. 3. IN A.M.N.H.: three paratypes.
- perfuscana* Heinrich, *Thiodia*. 1923, pp. 40-41, fig. 99. IN A.M.N.H.: holotype male and two paratypes.
- perpropinqua* Heinrich, *Eucosma*. 1929A, pp. 8-9, fig. 13. IN A.M.N.H.: one paratype.
- persolita* Heinrich, *Eucosma*. 1929A, pp. 7-8, fig. 14. IN A.M.N.H.: four paratypes.
- piceaefolia* Kearfott, *Epinotia*. 1908, pp. 176-177. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 226), Essex Co. Park, N. J. [= Montclair], Kearfott rearing No. 510, Spruce, with pupal shell; one male lectoparatype, Cincinnati, O., May 15, (Braun); also four specimens, Montclair, N. J., issued May 25, three of which bear red, printed "TYPE" labels, one of these three also with a Kearfott handwritten "coty" label. These four specimens should, under a strict interpretation, be excluded from consideration as part of the type-lot, for the original description gives the dates of Montclair specimens as June 1-5.
- piperana* Kearfott, *Cydia*. 1907, p. 55. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, pp. 63-64), Pullman, Wash., Apr. 11 (Piper), genitalia slide by C. H.
- placerana* Kearfott, *Enarmonia*. 1907, p. 60. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, pp. 37-38), Placer Co., Calif., Apr. 20 (Vachell), marked "Type ♂" by Kearfott; two female lectoparatypes, same locality, one dated May 1, the other Apr. 20. The former of these was labeled "Type ♀" by Kearfott. Kearfott gave the dates "May to June" in the original description. On the specimens the date labels, on which the month is written in Roman numerals, "IV" and "V," are very hard to read, so that I have no doubt that Kearfott read them "VI" instead of "IV."
- plumbolineana* Kearfott, *Epinotia*. 1907, pp. 53-54. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 229), Wellington, B. C., June (Taylor and Bryant); three lectoparatypes, also Wellington, B. C.; also three pseudotypes with no locality labels but with various number and date labels on green or orange paper.
- popana* Kearfott, *Eucosma*. 1907, p. 31. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 109), Stockton, Utah, 3 July, [1904], lacks left forewing and part of right forewing; twelve lectoparatypes.
- praesumptiosa* Heinrich, *Epiblema*. 1923, p. 143, fig. 262. IN A.M.N.H.: one paratype.
- prosperana* Kearfott, *Enarmonia*. 1907A, p. 128. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 57), San Luis Obispo, Calif. (Vachell), labeled "Type" by Kearfott; five lectoparatypes.
- pruni* Heinrich, *Anchylopera*. 1923, pp. 239-240. IN A.M.N.H.: two paratypes.
- pseudotsugana* Kearfott, *Cydia*. 1904, pp. 110-111. IN A.M.N.H.: one paratype. Heinrich (1923, pp. 171-172) says the "type" is in the American Museum, but in the original description Kearfott plainly designated the type, U. S. National Museum, Type No. 7788; three pseudotypes, Aweme, Man.
- pulsatillana* Dyar, *Eucosma*. 1903, p. 297. IN A.M.N.H.: two paratypes.
- punctidiscanum* Dyar, *Gymnandrosoma*. 1904, p. 60. IN A.M.N.H.: two paratypes.
- quebecense* Heinrich, *Exartema*. 1923A, pp. 119-120. IN A.M.N.H.: unique male type.
- quinquemaculana* Robinson, *Conchylis*. 1869, p. 284. IN A.M.N.H.: lectotype (designated by Heinrich, 1923, pp. 79-80), Pennsylvania, lacks abdomen and part of left forewing.

- rana* Forbes, *Laspeyresia*. 1924, p. 394.
IN A.M.N.H.: unique female type, Black Mts., N. C. See Heinrich, 1926, p. 46. Forbes validated Kearfott's MS. name.
- randana* Kearfott, *Eucosma*. 1907, pp. 21-22. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 97-98), Denver, Colo. (Osler); one lectoparatype.
- raracana* Kearfott, *Thiodia*. 1907, p. 44. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 41), Washington Co., Ark., July (Brown); seven lectoparatypes.
- removana* McDunnough, *Epinotia*. 1935, p. 146, Pl. vi, fig. 3. IN A.M.N.H.: one paratype.
- removana* Kearfott, *Olethreutes*. 1907, p. 15. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, pp. 122-123), New Brighton, Pa., Aug. 21 (Merrick); two lectoparatypes.
- reversana* Kearfott, *Eucosma*. 1907, pp. 22-23. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 112), San Antonio, Tex. (Barnes); one female lectoparatype. The latter specimen is not of the same species as the lectotype but is *E. exclusoriana* Heinrich.
- rhoifructana* Kearfott, *Polychrosis*. 1904A, pp. 296-298, Pl. xix, fig. 3 and Pl. xx, fig. 12. IN A.M.N.H.: two lectoparatypes, plus one pupal shell; the lectotype, in the U. S. National Museum, was designated by Heinrich, 1926, pp. 92-93.
- rorana* Kearfott, *Eucosma*. 1907, p. 31. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 132-133), Stockton, Utah (Spalding); two lectoparatypes.
- rosaochreana* Kearfott, *Olethreutes*. 1907, p. 11. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 113), Florida (Fernald); one lectoparatype female, genitalia slide by C. H.
- roseoterminalana* Kearfott, *Thiodia*. 1907, pp. 40-41. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 38-39), Cincinnati, O. (Braun); seven lectoparatypes; one pseudotype, Chicago, Ill.
- rubipunctana* Kearfott, *Olethreutes*. 1907, pp. 14-15. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 101), Colorado, No. 2693 (Gillette); one lectoparatype.
- ruidosana* Heinrich, *Epinotia*. 1923, pp. 216-217, fig. 380. IN A.M.N.H.: one paratype.
- russeola* Heinrich, *Eucosma*. 1929A, p. 6, fig. 20. IN A.M.N.H.: one paratype.
- rusticana* Kearfott, *Eucosma*. 1905A, p. 358. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 125), Kerrville, Tex. (Barnes); one lectoparatype.
- salmicolorana* Heinrich, *Thiodia*. 1923, pp. 62-63, fig. 123. IN A.M.N.H.: eight paratypes.
- sandana* Kearfott, *Eucosma*. 1907, p. 22. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 95), Chimney Gulch, Golden, Colo., Sept. 3 (Osler); one lectoparatype.
- sandiego* Kearfott, *Eucosma*. 1908, pp. 172-173. IN A.M.N.H.: one female lectoparatype, Walters St., Calif., April. Heinrich (1923, pp. 84-85), in designating the lectotype, says that this is in the American Museum; in this, however, he is mistaken.
- saundersana* Kearfott, *Enarmonia*. 1907, p. 63. IN A.M.N.H.: lectotype (designated by Heinrich, 1926, p. 39), Toronto, Ont., May 24 to June 11, "on lupin," without abdomen; one lectoparatype, consisting of right fore-wing, head and part of thorax only.
- sciotanum* Heinrich, *Exartema*. 1923A, p. 115. IN A.M.N.H.: holotype male and one female paratype.
- segregata* Heinrich, *Thiodia*. 1924, p. 388. IN A.M.N.H.: six paratypes.
- senatrix* Heinrich, *Exentera*. 1924, pp. 390-391. IN A.M.N.H.: two paratypes.
- separatana* Kearfott, *Olethreutes*. 1907, p. 13. IN A.M.N.H.: lectotype female (designated by Heinrich, 1926, p. 162), Cincinnati, O., June 17 (Braun); three lectoparatypes.
- separationis* Heinrich, *Epiblema*. 1923, pp. 143-144, fig. 265. IN A.M.N.H.: two paratypes.
- septemberana* Kearfott, *Epinotia*. 1907, p. 51. IN A.M.N.H.: lectotype male

- (designated by Heinrich, 1923, p. 230), Essex Co. Park, N. J., 25 Sept., 1904; five lectoparatypes, of which three had not been labeled as "Types" by Kearfott.
- serangias* Meyrick, *Eucosma*. 1912, p. 35. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 139-140), Cisco, Placer Co., Calif., June 1 (Vachell), labeled "Type" by Kearfott; three lectoparatypes. This is a valid Meyrick substitute name for *Eucosma vomonana* Kearfott, *q. v.*
- seraphicana* Heinrich, *Hystriophora*. 1923, p. 258. IN A.M.N.H.: one paratype.
- shawiana* Kearfott, *Enarmonia*. 1907A, p. 154. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 272), Hampton, N. H., June 10 (Shaw), labeled "♂ Type" by Kearfott; three lectoparatypes.
- signiferana* Heinrich, *Epinotia*. 1923, p. 232, fig. 365. IN A.M.N.H.: three paratypes.
- silvertoniensis* Heinrich, *Epinotia*. 1923, pp. 214-215, fig. 386. IN A.M.N.H.: two paratypes and four other specimens from same lot as type material.
- siskiyouna* Kearfott, *Evetria*. 1907A, p. 77. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 28), Siskiyou, Calif.
- skinnerana* Heinrich, *Suleima*. 1923, p. 157, fig. 298. IN A.M.N.H.: two paratypes.
- slingerlandana* Kearfott, *Polychrosis*. 1904A, pp. 295-296, Pl. xix, fig. 4 and Pl. xx, fig. 11. IN A.M.N.H.: two paratypes, plus pupal shells and two larvae. Kearfott designated the type in the original description (U. S. National Museum, Type No. 8151) so that Heinrich's designation (1926, pp. 95-96) of a specimen in the American Museum is invalid.
- snyderana* Kearfott, *Eucosma*. 1907, pp. 89-90. IN A.M.N.H.: unique male type, Blackfoot, Idaho, June 3 (Snyder).
- sombreana* Kearfott, *Eucosma*. 1905A, pp. 357-358. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 126), Tryon, N. C., July 14 (Fiske); three lectoparatypes, one of which (from Montclair, N. J.) is, according to Heinrich (*loc. cit.*), a different species.
- sonomana* Kearfott, *Eucosma*. 1907, p. 27. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 103), Sonoma Co., Calif., May (Vachell); two lectoparatypes.
- sordulenta* Heinrich, *Endothenia*. 1926, pp. 102-103, figs. 196, 352. IN A.M.N.H.: holotype male and two paratypes.
- sosana* Kearfott, *Eucosma*. 1907, p. 32. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 145), Stockton, Utah, August 2 (Spalding), genitalia slide by C. H.
- spaldingana* Kearfott, *Eucosma*. 1907, p. 19. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 84), Stockton, Utah (Spalding); six lectoparatypes.
- spiraeafokana* Heinrich, *Polychrosis*. 1923A, pp. 106-107. IN A.M.N.H.: two paratypes.
- suadana* Heinrich, *Eucosma*. 1923, pp. 130-131, fig. 243. IN A.M.N.H.: two paratypes.
- subcandida* Heinrich, *Thiodia*. 1929A, p. 1. IN A.M.N.H.: two paratypes.
- subditiva* Heinrich, *Eucosma*. 1929A, pp. 9-10. IN A.M.N.H.: one paratype.
- subinventa* Kearfott, *Eucosma*. 1907, pp. 33-34. IN A.M.N.H.: type, Williams, Ariz. (designated in original description).
- subminimana* Heinrich, *Thiodia*. 1923, pp. 61-62, fig. 133. IN A.M.N.H.: five paratypes.
- subnubilum* Heinrich, *Exartema*. 1923A, p. 110. IN A.M.N.H.: holotype male and two paratypes.
- subviridis* Heinrich, *Epinotia*. 1929A, pp. 15-16, fig. 22. IN A.M.N.H.: one paratype.
- tahoensis* Heinrich, *Eucosma*. 1923, pp. 112-113, fig. 230. IN A.M.N.H.: one paratype.
- tana* Kearfott, *Enarmonia*. 1907, pp. 62-63. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 56), Colfax, Placer Co., Calif. (Vachell); eleven lectoparatypes.
- tandana* Kearfott, *Eucosma*. 1907, p. 23. IN A.M.N.H.: lectotype male (desig-

- nated by Heinrich, 1923, pp. 154-155), New Brighton, Pa., Aug. 18 (Merrick); one lectoparatype.
- terracoctana* Walsingham, *Paedisca*. 1879, p. 39. IN A.M.N.H.: three so-called "cotypes"; one specimen named by Walsingham.
- tilianum* Heinrich, *Exartema*. 1923A, pp. 113-114. IN A.M.N.H.: holotype male and one paratype.
- tocullionana* Heinrich, *Eucosma*. 1920, pp. 59-60, Pl. II, fig. 8. IN A.M.N.H.: one paratype.
- tomonana* Kearfott, *Eucosma*. 1907A, p. 78. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 48), Essex Co. Park, N. J.; three lectoparatypes.
- torontana* Kearfott, *Proteoteras*. 1907, p. 50. IN A.M.N.H.: unique male type.
- totana* Kearfott, *Eucosma*. 1907, p. 32. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 108-109), Stockton, Utah; one lectoparatype.
- trepidulum* Heinrich, *Exartema*. 1926, pp. 147-148, fig. 81. IN A.M.N.H.: holotype male and two paratypes.
- triangulana* Kearfott, *Thiodia*. 1905, pp. 47-48. IN A.M.N.H.: lectotype male, hereby designated, Regina [Sask.], 18 July, 1904; one pseudotype, Beulah, Man. The Beulah specimen was designated lectotype by Heinrich (1923, p. 65), but, since it was not listed in the original description, it cannot be accepted as part of the type-lot. Kearfott had put a printed "TYPE" label on it, but, as we have seen, he made so many errors of this kind that by itself such a label means little.
- tryonana* Kearfott, *Eucosma*. 1905A, p. 350. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 80), Tryon, N. C. (Fiske).
- umbriana* Kearfott, *Thiodia*. 1907, p. 40. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 39), Cincinnati, O. (Braun); seven lectoparatypes.
- vagana* Heinrich, *Epinotia*. 1923, pp. 230-231, fig. 335. IN A.M.N.H.: three paratypes.
- vana* Kearfott, *Enarmonia*. 1907, p. 62. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 31), Colfax, Placer Co., Calif., July (Vachell), labeled "Type" by Kearfott; one lectoparatype.
- vancouverana* Kearfott, *Enarmonia*. 1907, p. 63. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, pp. 37-38), Wellington, B. C., June (Bryant); five lectoparatypes, of which three had not been labeled as "types" by Kearfott.
- vandana* Kearfott, *Eucosma*. 1907, p. 24. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 134-135), Hastings, Fla., April (Brown); six lectoparatypes in poor condition.
- verniochreana* Heinrich, *Thiodia*. 1923, pp. 67-68, fig. 95. IN A.M.N.H.: holotype male and two paratypes.
- vernoniana* Kearfott, *Polychrosis*. 1907, pp. 7-8. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, pp. 94-95), Caldwell, N. J.; twelve lectoparatypes. One of the latter is dated "iss. VII-25" which might properly exclude it from the type-lot, for Kearfott stated "July 28-Aug. 7," but Kearfott may have misread the label. There are also a number of pupae, pupal shells, examples of larval work, and one larva, all from the same lots as the type material.
- vetulana* Walsingham, *Sericoris*. 1879, p. 32. IN A.M.N.H.: one so-called "cotype" and one specimen named by Walsingham.
- vomonana* Kearfott, *Eucosma*. 1907, p. 90. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 139-140), Cisco, Placer Co., Calif. (Vachell), labeled "Type" by Kearfott; three lectoparatypes. See *E. serangias* Meyrick.
- vovana* Kearfott, *Eucosma*. 1907, p. 33. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 161), Stockton, Utah, 8 August, 1904; five lectoparatypes.
- walkerana* Kearfott, *Eucosma*. 1907, p. 89. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, p. 212), District of Columbia, U. S. D. A. breeding No. 2917, hazel catkins; three lectoparatypes. There are also three specimens

- from Nicholson, Pa., dated Aug. 5 and 6; in the original description Kearfott gave only July 4-24 for this locality.
- walsinghami* Kearfott, *Enarmonia*. 1907, p. 57. IN A.M.N.H.: lectotype female (designated by Heinrich, 1923, pp. 150-151), Essex Co., N. J., Apr. 30; three lectoparatypes. One of these is not, according to Heinrich, a representative of the same species as the type but is a specimen of *Epiblema infelix* Heinrich.
- wana* Kearfott, *Enarmonia*. 1907, p. 60. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, pp. 33-34), Carmel-by-the Sea, Monterey Co., Calif., April, labeled "Type" by Kearfott; sixteen lectoparatypes; one pseudotype, Colfax, Calif., April.
- wandana* Kearfott, *Eucosma*. 1907, p. 24. IN A.M.N.H.: unique male type. The name is a homonym, so that Meyrick's substitute name of *eumaea* (q. v., above) is valid.
- watchungana* Kearfott, *Epinotia*. 1907A, p. 81. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 182), Watchung Hills, Essex Co. Park, N. J., 28 April, 1900; six lectoparatypes; one pseudotype, Ramapo, N. J., 7 May, 1900, with both red, printed "TYPE" label and handwritten "Cotype" label.
- willingana* Kearfott, *Proteopteryx*. 1904, pp. 306-307. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 167), Regina, Assa., *Acer negundo* (Willing); one female lectoparatype.
- womonana* Kearfott, *Eucosma*. 1907, p. 88. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 134), Cincinnati, O., July 11 (Braun), genitalia slide by C. H.
- xandana* Kearfott, *Eucosma*. 1907, pp. 24-25. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, pp. 204-205), Cincinnati, O. (Braun), genitalia slide by C. H.; seven lectoparatypes.
- yandana* Kearfott, *Eucosma*. 1907, p. 25. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 206), New Brighton, Pa. (Merrick), lacks left wings, genitalia slide by C. H.; four lectoparatypes.
- yaracana* Kearfott, *Polychrosis*. 1907, pp. 5-6. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 93), Cincinnati, O. (Braun); one male lectoparatype.
- youngana* Kearfott, *Enarmonia*. 1907A, pp. 1-2. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, pp. 52-53), Hurdman's Bridge, Ottawa, Can. (Young), cones of *Picea alba*; seven lectoparatypes, of which five had no "Type" or "cotype" labels; there are also two other broken specimens, with the same data, and a pin of pupal shells.
- zana* Kearfott, *Enarmonia*. 1907, p. 61. IN A.M.N.H.: lectotype male (designated by Heinrich, 1926, p. 31), Wellington, B. C. (Taylor and Bryant), genitalia slide by C. H.; thirteen lectoparatypes.
- zandana* Kearfott, *Eucosma*. 1907, pp. 25-26. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 205), Cincinnati, O., "III-19-04" (Braun); two lectoparatypes, "3.19.03," same other data. Kearfott gave the dates March 26-May 7 in the original description, but this must have been an error.
- zomonana* Kearfott, *Eucosma*. 1907A, p. 80. IN A.M.N.H.: lectotype male (designated by Heinrich, 1923, p. 134), New Brighton, Pa., May 22 (Merrick); one pseudotype, Beaver Co., Pa., May, 1900.
- zozana* Kearfott, *Evetria*. 1907, p. 2. IN A.M.N.H.: unique type, Placer Co., Calif., Apr. 20 (Vachell).

Tortricidae

- albilineana* Kearfott, *Acleris*. 1907A, p. 158. IN A.M.N.H.: lectotype male, hereby designated, Hampton, N. H., 18 Oct., 1905, labeled "Type" by Kearfott; two lectoparatypes, same locality.
- baboquavariana* Kearfott, *Tortrix*. 1907A, p. 82. IN A.M.N.H.: lectotype male, hereby designated, Baboquavaria Mts., Pima Co., Ariz., July 15-30, 1903 (Poling); one female lectoparatype, same data.
- bistriata* Kearfott, *Sparganothis*. 1907, p. 67. IN A.M.N.H.: lectotype male, hereby designated, "Fla."; one lectoparatype, Shovel Mt., Tex. (Schaupp).
- bowmanana* McDunnough, *Peronea*. 1934,

- p. 313. IN A.M.N.H.: five paratypes.
- braunana* McDunnough, *Peronea*. 1934, pp. 317-318; p. 328, fig. 3; p. 332, fig. 4. IN A.M.N.H.: one paratype.
- brauniana* Kearfott, *Archips*. 1907, p. 69. IN A.M.N.H.: lectotype male, hereby designated, Cincinnati, O., 17 June, 1904 (Braun), labeled "Type" by Kearfott; four male lectoparatypes, same locality, various dates, labeled "cotype" by Kearfott.
- britannia* Kearfott, *Acleris*. 1904, pp. 138-140. IN A.M.N.H.: lectotype male, hereby designated, Kaslo Cr., B. C., Dyar No. 21082; seven lectoparatypes, Kaslo, Victoria and Wellington, B.C.
- busckana* McDunnough, *Peronea*. 1934, pp. 308-309. IN A.M.N.H.: allotype male and seventeen paratypes.
- canadana* Kearfott, *Pandemis*. 1905, p. 90. IN A.M.N.H.: lectotype male, hereby designated, Regina [Sask.], 15 Aug., 1904; lectoparatypes as follows: one female, no data labels, with pupal shell and Kearfott's handwritten "cotype" label; two males, Aweme, Man.; one female, Regina, 16 Aug., 1903, labeled "Paratype" by Kearfott. This last may be a "pseudotype," for specimens labeled "Paratype" by Kearfott usually seem to have been. There are also five pseudotypes from Winnipeg, and Cartwright, Man.
- caryae* Robinson, *Tortrix*. 1869, p. 270, Pl. iv, fig. 26. IN A.M.N.H.: lectotype male, hereby designated, Illinois. In the Academy of Natural Sciences of Philadelphia is a lectoparatype with no abdomen and no data.
- chambersana* Kearfott, *Cenopis*. 1907, pp. 93-94. IN A.M.N.H.: lectotype male, hereby designated, Cincinnati, O., 7 June, 1904 (Braun); one female lectoparatype, Cincinnati, O., 12 June, 1904 (Braun). In the original description Kearfott gave the dates June 12-July 6, but I believe that this was an error, and that the specimen here designated lectotype is indubitably valid.
- chioccana* Kearfott, *Tortrix*. 1907, p. 72. IN A.M.N.H.: lectotype male, hereby designated, Palm Beach, Fla., Dyar No. 15613.
- clemensiana* Forbes, *Peronea*. 1924, p. 487. IN A.M.N.H.: lectotype male, hereby designated, Hampton, N. H., 27 Oct., 1908; nine lectoparatypes, same locality, various dates. Of these, four were labeled as "cotypes" by McDunnough; see discussion above under Forbes.
- cockerellana* Kearfott, *Tortrix*. 1907, p. 71. IN A.M.N.H.: two cotypes, Glenwood Springs, Colo., both lacking abdomens.
- curvalana* Kearfott, *Tortrix*. 1907, p. 73. IN A.M.N.H.: lectotype male, hereby designated, Montclair, N. J., Trap., June 25; four lectoparatypes, Montclair and Essex Co. Park, N. J.; one pseudotype, Black Mts., N. C., Kearfott No. 461 (bred from Witch Hazel, according to Kearfott's index file, but from Huckleberry according to the label on the specimen); two pseudotypes, Essex Co. Park, N. J., July 4, one of them labeled "Paratype" by Kearfott.
- deflectana* Robinson, *Teras*. 1869, p. 283, Pl. vii, fig. 71. IN A.M.N.H.: one female lectoparatype, "Penn.," lacking abdomen, No. 23026, Grote and Robinson Coll.; also two other specimens No. 23026, Grote and Robinson Coll., one with no data (may be a lectoparatype), one labeled "Ohio, 53," both lacking abdomens. The lectotype female, hereby designated, is in the Academy of Natural Sciences of Philadelphia.
- dorsalana* Dyar, *Tortrix*. 1903, p. 231. IN A.M.N.H.: one cotype.
- dorsipurpurana* Kearfott, *Tortrix*. 1907, p. 73. IN A.M.N.H.: two male cotypes in poor condition.
- ednana* Kearfott, *Phalonia*. See under Phaloniidae.
- forbesana* McDunnough, *Peronea*. 1934, pp. 319-320; p. 328, fig. 6; p. 332, fig. 7. IN A.M.N.H.: one paratype.
- fragariana* Kearfott *Acleris*. 1904, pp. 140-141. IN A.M.N.H.: lectotype female, hereby designated, Ellensburg, Wash., Strawberry (Maxey), with pupal shell.
- fumosa* Robinson, *Tortrix*. 1869, p. 268, Pl. iv, fig. 19. IN A.M.N.H.: lectoparatype female, No. 23013, Grote and

- Robinson Coll., lacking abdomen and data, with Robinson's handwritten name label. The lectotype female, hereby designated, "Ohio, 53," lacking abdomen, is in the Academy of Natural Sciences of Philadelphia.
- furvana* Robinson, *Tortrix*. 1869, p. 265, Pl. I, fig. 9. IN A.M.N.H.: one lectoparatype, No. 23015, Grote and Robinson Coll., lacking data, with Robinson's name label. The lectotype female, hereby designated, "N. Y.," is in the Academy of Natural Sciences of Philadelphia.
- gogana* Kearfott, *Olethreutes*. 1907, pp. 8-9. IN A.M.N.H.: unique type, Wellington, B. C., Apr. 4, 1902 (Taylor), lacking abdomen.
- gurgitana* Robinson, *Tortrix*. 1869, p. 263, Pl. IV, fig. 16. IN A.M.N.H.: two lectoparatype females, one from "Ill." lacking abdomen, the other lacking data. The lectotype female, hereby designated, "Penn.," with abdomen, is in the Academy of Natural Sciences of Philadelphia.
- hydeana* Klots, *Sparganothis*. 1936, pp. 2, 4, figs. 3-5. IN A.M.N.H.: holotype male, allotype female and two paratypes.
- inana* Robinson, *Teras*. 1869, p. 281, Pl. VII, fig. 65. IN A.M.N.H.: one lectoparatype, no data, consisting of head, prothorax and fore-wings only. The lectotype female, hereby designated, "N. Y.," is in the Academy of Natural Sciences of Philadelphia.
- irrorea* Robinson, *Tortrix*. 1869, p. 274, Pl. V, fig. 44. IN A.M.N.H.: one lectoparatype, lacking data and abdomen. The lectotype male with abdomen, hereby designated, labeled "Br." [Brewsters, Putnam Co., N. Y.] is in the Academy of Natural Sciences of Philadelphia.
- karacana* Kearfott, *Cenopis*. 1907, pp. 68-69. IN A.M.N.H.: lectotype male, hereby designated, K. 224, Essex Co. Park, N. J., "collected [as larva] May 30, 1902," issued 29 June, Oak; one lectoparatype, K. 367, Anglesea, N. J., issued 9 July, 1902, Bayberry; one blown larva and one pupal shell, K. 224; one pupal shell and sample of larval work, K. 367. There are also three pseudotypes, Lacy, N. J., 14 July, 1907.
- kukakana* Kearfott, *Tortrix*. 1907, p. 70. IN A.M.N.H.: one cotype, Kukak Bay, Alaska, July 1, 1899 (Kincaid), lacking head.
- lamprosana* Robinson, *Tortrix*. 1869, p. 264, Pl. I, fig. 5. IN A.M.N.H.: lectotype male, hereby designated, "Penn."; two lectoparatypes, "Penn."; all No. 23019, Grote and Robinson Coll.
- limitata* Robinson, *Tortrix*. 1869, p. 264. IN A.M.N.H.: lectotype male, hereby designated, "[Penn.]" and Robinson's name label.
- listerana* Kearfott, *Phalonia*. 1907, p. 80. IN A.M.N.H.: two female cotypes, quite moldy.
- lycopodiana* Kearfott, *Epagoge*. 1907A, pp. 2-3. IN A.M.N.H.: lectotype male, hereby designated, Hurdman's Bridge, Ottawa, *Lycopodium* (Young), 9 Aug., 1906; six lectoparatypes.
- minuta* Robinson, *Tortrix*. 1869, p. 276. IN A.M.N.H.: one specimen without data, from the Robinson Collection, might be regarded as a cotype. The lectotype, hereby designated, is in the Academy of Natural Sciences of Philadelphia.
- mortuana* Kearfott, *Archips*. 1907A, p. 158. IN A.M.N.H.: lectotype male, hereby designated, New Brighton, Pa., June 20 (Merrick); one lectoparatype, "Wis.," lacking hind-wings and abdomen. There are also the two specimens mentioned in the original description as "badly rubbed."
- nervosana* Kearfott, *Tortrix*. 1907, p. 71. IN A.M.N.H.: lectotype male, hereby designated, Winchendon, Mass., 7 Aug., 1902.
- nigridia* Robinson, *Tortrix*. 1869, p. 268, Pl. IV, fig. 20. IN A.M.N.H.: lectotype male, hereby designated, no data, with Robinson's name label; one male lectoparatype.
- nigrolinea* Robinson, *Teras*. 1869, p. 281, Pl. VII, fig. 67. IN A.M.N.H.: lectotype male, hereby designated, no data, No. 23028, Grote and Robinson Coll., with Robinson's handwritten name label; one male lectoparatype, the same labeling.

- niscana* Kearfott, *Eulia*. 1907, p. 94. IN A.M.N.H.: lectotype male, hereby designated, Carmel, Calif., June (Vachell); two lectoparatypes, same data.
- pallorana* Robinson, *Tortrix*. 1869, p. 266, Pl. I, fig. 13. IN A.M.N.H.: lectotype male, hereby designated, "Ill.," No. 23020, Grote and Robinson Coll., with Robinson's handwritten name label; two female lectoparatypes, same locality and number; two male and one female lectoparatypes with no locality label.
- paludana* Robinson, *Tortrix*. 1869, p. 295, Pl. VI, fig. 45. IN A.M.N.H.: lectotype male, hereby designated, "Penn.," No. 23017, Grote and Robinson Coll., with Robinson's handwritten name label; two female and one male lectoparatypes, same locality and number.
- parallela* Robinson, *Tortrix*. 1869, p. 267, Pl. IV, fig. 17. IN A.M.N.H.: lectotype male, hereby designated, "N. Y.," No. 23016, Grote and Robinson Coll., with Robinson's handwritten name label; one male lectoparatype, "Penn.," same number.
- pettitana* Robinson, *Tortrix*. 1869, p. 269, Pl. IV, figs. 21-23. IN A.M.N.H.: two female lectoparatypes with abdomens and one female lectoparatype lacking abdomen, all with no locality labels, No. 23022, Grote and Robinson Coll. The lectotype male, as well as a female lectoparatype, hereby designated, is in the Academy of Natural Sciences of Philadelphia.
- pinatubana* Kearfott, *Eulia*. 1905, p. 9. IN A.M.N.H.: lectotype male, hereby designated, Essex Co. Park, N. J., 1 May, 1904; twenty-six lectoparatypes from the same locality, Winchendon, Mass., and Watchung Mts., N. J., various dates; a number of pupae and specimens of larval work.
- placidana* Robinson, *Teras*. 1869, p. 282, Pl. VII, fig. 68. IN A.M.N.H.: a male specimen, "Pa.," No. 23026, Grote and Robinson Coll., may not be a part of the type-lot, for the original description specifies "♀" only. The lectotype female, hereby designated, is in the Academy of Natural Sciences of Philadelphia.
- provana* Kearfott, *Olethreutes*. 1907, p. 16. IN A.M.N.H.: unique type, lacking abdomen.
- pyrusana* Kearfott, *Pandemis*. 1907, p. 70. IN A.M.N.H.: lectotype male, hereby designated, Alameda Co., Calif., June, labeled "♂ Type" by Kearfott.
- robinsonana* Forbes, *Peronea*. 1924, p. 487. IN A.M.N.H.: lectotype male, hereby designated, Hampton, N. H., 29 April, 1907 (Shaw); eighty-three lectoparatypes, comprising the entire lot of American Museum-Kearfott material of this species. Ten of these and the lectotype were labeled "cotype" by McDunnough; see discussion above under Forbes.
- sanbornana* Robinson, *Tortrix*. 1869, p. 265, Pl. I, fig. 8. IN A.M.N.H.: two specimens, *ex* Grote and Robinson Coll., may belong to this, but there is no authenticatable type material.
- saracana* Kearfott, *Cenopis*. 1907, p. 68. IN A.M.N.H.: one female cotype, Essex Co., N. J. (Weidt).
- seminolana* Kearfott, *Tortrix*. 1907, p. 71. IN A.M.N.H.: lectotype male, hereby designated, Florida, "W. B." coll.; three lectoparatypes, the same data.
- semipurpurana* Kearfott, *Tortrix*. 1905, p. 9. IN A.M.N.H.: lectotype female, hereby designated, Cincinnati, O., 15 June, 1904 (Braun); seven lectoparatypes from Quiney, Ill., Montclair, N. J. (bred-oak), and New Brighton, Pa. (Merrick); two pseudotypes, Daytona, Fla., and Essex Co. Park, N. J., "Trap."
- symphoricarpana* Kearfott, *Tortrix*. 1905, p. 92. IN A.M.N.H.: lectotype male, hereby designated, Medicine Hat, Alta., July 21, Snowberry, labeled "♂ Type" by Kearfott; one female lectoparatype, no data, with its pupal shell, labeled "cotype" by Kearfott.
- taracana* Kearfott, *Sparganothis*. 1907, p. 66. IN A.M.N.H.: lectotype male, hereby designated, Hastings, Fla., March (Brown); eight lectoparatypes, Hastings, Fla., and Burnet Co., Tex. (Schaupp).
- triangulana* Kearfott, *Tortrix*. 1908, p. 179. IN A.M.N.H.: one probable pseudotype male, Santa Clara, Calif., with Kearfott's handwritten "cotype" label.
- trishnana* Robinson, *Teras*. 1869, p. 282,

- Pl. VII, fig. 69. IN A.M.N.H.: lectotype male, hereby designated, "W. Va.," No. 23025, Grote and Robinson Coll.
- tristriata* Kearfott, *Sparganothis*. 1907, p. 67. IN A.M.N.H.: one female cotype, "Duluth, Minn."
- violaceana* Robinson, *Tortrix*. 1869, p. 271, Pl. V, fig. 31. IN A.M.N.H.: one lectoparatype, lacking abdomen and locality label, No. 23023, Grote and Robinson Coll. with Robinson's handwritten name label. The lectotype, hereby designated, "Mass.," lacking abdomen, is in the Academy of Natural Sciences of Philadelphia.
- vocaridorsana* Kearfott, *Sparganothis*. 1905, p. 89. IN A.M.N.H.: lectotype male, hereby designated, Regina, Sask., 16 June, 1904; one pseudotype, Pullman, Wash.
- yumana* Kearfott, *Sparganothis*. 1907, p. 67. IN A.M.N.H.: one female cotype, Yuma Co., Ariz., "desert."
- zapulata* Robinson, *Tortrix*. 1869, p. 264, Pl. I, fig. 7. IN A.M.N.H.: lectotype male, hereby designated, "Ill.," No. 23014, Grote and Robinson Coll., with Robinson's handwritten name label; one male lectoparatype, with the same data.

Carposinidae

- comonana* Kearfott, *Carposina*. 1907, p. 87. IN A.M.N.H.: lectotype male, hereby designated, San Francisco, Cal.
- hawleyana* Klots, *Tesuquea*. 1936, pp. 4-6, figs. 6-8. IN A.M.N.H.: holotype male.
- ottawana* Kearfott, *Carposina*. 1907A, pp. 124-125. IN A.M.N.H.: lectotype male, hereby designated, Ottawa, Ont., June 20 (C. H. Young); one lectoparatype female.

Phaloniidae¹

- angulatana* Robinson, *Conchylis*. 1869, p. 286, Pl. VIII, fig. 81. IN A.M.N.H.: one lectoparatype, no data, with Robinson's handwritten name label. The lectotype, hereby designated, "Penn.," is in the

Academy of Natural Sciences of Philadelphia.

argentalimitana Robinson, *Conchylis*. 1869, p. 287, Pl. VIII, fig. 82. IN A.M.N.H.: one lectoparatype, "Penn.," in poor condition; also a pseudotype female, "W. Va.," with Robinson's handwritten name label and various "Type" labels. The lectotype, hereby designated, "Penn.," is in the Academy of Natural Sciences of Philadelphia.

aurorana Kearfott, *Phalonia*. 1907, p. 83. IN A.M.N.H.: lectotype male, hereby designated, Essex Co. Park, N. J., Aug. 22, "Trap"; three lectoparatypes, same locality, various dates.

bana Kearfott, *Phalonia*. 1907, p. 73. IN A.M.N.H.: one female lectoparatype, Chicago, Ill., Sept., 1900, without abdomen, labeled "Type" by Kearfott. The lectotype female, hereby designated, Chicago, Ill., J. H. R[ead]ing, genitalia slide by J. F. Gates Clarke, is in the U. S. National Museum. The original description gives "June" as the date.

basiocreana Kearfott, *Phalonia*. 1907, p. 78. IN A.M.N.H.: unique female type, Los Angeles, Calif., June (Letcher).

biscana Kearfott, *Phalonia*. 1907, p. 75. IN A.M.N.H.: lectotype male, hereby designated, Essex Co. Park, N. J., July 20; fourteen lectoparatypes, various dates and localities.

bomonana Kearfott, *Phalonia*. 1907, p. 75. IN A.M.N.H.: lectotype male, hereby designated, Chicago, Ill., Sept. (Reading); one lectoparatype. The lectotype bears both Kearfott's printed "TYPE" label and his handwritten "Type" label. The original description states "June" as the date; this must have been an error.

carmelana Kearfott, *Phalonia*, 1907, p. 76. IN A.M.N.H.: lectotype male, hereby designated, Carmel, Calif., April (Vachell); sixteen lectoparatypes.

cartwrightana Kearfott, *Hysterosia*. 1907A, p. 123. IN A.M.N.H.: lectotype male, hereby designated, Cartwright, Man. (Heath); three lectoparatypes.

cinnatana Kearfott, *Phalonia*. 1907, p. 78. IN A.M.N.H.: lectotype female, hereby designated, Cincinnati, O., 23

¹ I am especially indebted to Mr. J. F. Gates Clarke of the U. S. National Museum for help in working out the proper type designations in the Phaloniidae.

- April, 1905 (Braun); two female lectoparatypes. There is also a male, Cincinnati, O., 13 April, that may have been a part of the type-lot.
- contrastana* Kearfott, *Commophila*. 1907A, p. 160. IN A.M.N.H.: cotype female, New Haven, Conn., etc.; the male cotype, which is in the U. S. National Museum, is hereby designated the lectotype.
- discana* Kearfott, *Phalonia*. 1907, p. 78. IN A.M.N.H.: lectotype male, hereby designated, Cincinnati, O., 17 Aug., 1904 (Braun); two male lectoparatypes.
- ednana* Kearfott, *Phalonia*. 1907B, pp. 161-162. IN A.M.N.H.: lectotype male, hereby designated, Black Mts., N. C., "Halfway," June 29. Ten lectoparatypes; two pseudotypes, each labeled with red, printed "TYPE" label, one with data "Can."; the other, with no data. The species almost certainly belongs in the Tortricidae.
- elderana* Kearfott, *Phalonia*. 1907, p. 84. IN A.M.N.H.: unique female type.
- fernaldana* Walsingham, *Phalonia*. 1879, pp. 27-28. IN A.M.N.H.: one so-called "cotype."
- formonana* Kearfott, *Phalonia*. 1907, p. 81. IN A.M.N.H.: lectotype female, hereby designated, San Luis Obispo, Calif., March (Vachell); one lectoparatype female, same data; six pseudotypes, Colfax, Placer Co., Calif., and Pasadena, Calif.
- foxcana* Kearfott, *Phalonia*. 1907, p. 84. IN A.M.N.H.: lectoparatype female, Plimmers I., Md., Aug., 1903 (Busck); another lectoparatype, without abdomen. The lectotype, hereby designated, Plimmers I., Md., 18 Aug. (Busck), is in the U. S. National Museum.
- fulviplicana* Walsingham, *Idiographia*. 1879, pp. 27-28, Pl. LXVI, fig. 7. IN A.M.N.H.: two so-called "cotypes."
- fuscodorsana* Kearfott, *Commophila*. 1904, p. 141. IN A.M.N.H.: one paratype, Fieldbrook, Calif., 29 May, 1903. Type is in the U. S. National Museum, as stated in the original description. In the original description Kearfott gave the date of the above specimen as 21 May; this was indubitably an error.
- giscana* Kearfott, *Phalonia*. 1907, p. 75. IN A.M.N.H.: lectotype male, hereby designated, Essex Co. Park, N. J., 25 July, Trap; three lectoparatypes. One of these is dated 18 July; the original description gives the dates 24 July-15 Sept.; this was almost certainly an error by Kearfott.
- hoffmanana* Kearfott, *Phalonia*. 1907B, p. 162. IN A.M.N.H.: lectotype female and three lectoparatypes, hereby designated, Black Mts., N. C., various localities and dates. The entire type-lot.
- hollandana* Kearfott, *Phalonia*. 1907A, p. 159. IN A.M.N.H.: one female cotype.
- homonana* Kearfott, *Hysterosia*. 1907A, p. 84. IN A.M.N.H.: lectotype male, hereby designated, Verdi, Nev., 20-30 June (Vachell); twelve lectoparatypes. It might be noted that both the lectotype and one of the lectoparatypes bear handwritten labels by Kearfott reading "♂ Type."
- huachucana* Kearfott, *Commophila*. 1907, p. 79. IN A.M.N.H.: lectotype male, hereby designated, Cochise Co., Ariz., 1 Aug., 1904 (Franck); one lectoparatype, Huachuca Mts., Ariz., 8-15 Aug.
- hubbardana* Busck, *Phalonia*. 1907, p. 28. IN A.M.N.H.: three "cotypes" (really paratypes) with pupal shells.
- komonana* Kearfott, *Hysterosia*. 1907A, p. 121. IN A.M.N.H.: six lectoparatypes, all in rather poor condition, from Santa Clara or Santa Clara Co., Calif., and Stockton, Utah. The lectotype male, hereby designated, Santa Clara Co., Calif., is in the U. S. National Museum.
- labeculana* Robinson, *Conchylis*. 1869, p. 287, Pl. VIII, fig. 83. IN A.M.N.H.: one male lectoparatype, no data, bearing Robinson's handwritten name label and various "type" labels. The lectotype male, hereby designated, "Penn.," is in the Academy of Natural Sciences of Philadelphia.
- leguminana* Busck, *Phalonia*. 1907, p. 28. IN A.M.N.H.: two "cotypes" (really paratypes).
- maiana* Kearfott, *Phalonia*. 1907, p. 82. IN A.M.N.H.: eleven lectoparatypes, all in more or less poor condition. One, labeled "Type" by Kearfott, lacks the

- abdomen. The lectotype male, hereby designated, Essex Co. Park, N. J., "G. N." [Great Notch], 10 May, is in the U. S. National Museum.
- merrickana* Kearfott, *Hysterosia*. 1907A, p. 59. IN A.M.N.H.: lectotype male, hereby designated, New Brighton, Pa., 14 Aug., 1903 (Merrick); four lectoparatypes, same locality, various dates.
- nomonana* Kearfott, *Phalonia*. 1907A, p. 84. IN A.M.N.H.: unique type.
- nonlavana* Kearfott, *Phalonia*. 1907, p. 85. IN A.M.N.H.: lectotype male, hereby designated, New Brighton, Pa., 20 June, 1903 (Merrick).
- obispoana* Kearfott, *Phalonia*. 1907, p. 77. IN A.M.N.H.: lectotype male, hereby designated, S. Luis Obispo, Cal., March (Vachell); ten lectoparatypes.
- obliquana* Kearfott, *Phalonia*. 1907B, p. 163. IN A.M.N.H.: lectotype female, hereby designated, Black Mts., N. C., "Valley," 6 June (Beutenmuller); two lectoparatypes, Hastings, Fla., 11.26 and "12077 and 173." These two lectoparatypes are not members of the same species as the lectotype but, according to Mr. J. F. G. Clarke, are *P. ziscana* Kearfott.
- pecosana* Kearfott, *Hysterosia*. 1907A, p. 124. IN A.M.N.H.: lectotype male, hereby designated, Beulah, N. M., July, 1902 (Cockerell); one lectoparatype, "S. W. Col., 7.6.99," lacking the abdomen.
- punctadiscana* Kearfott, *Phalonia*. 1908, pp. 179-180. IN A.M.N.H.: lectotype female, hereby designated, Oak Sta., Alleghany Co., Pa., Aug. 21, 1907 (Marloff), genitalia slide prepared by J. F. G. Clarke; two lectoparatypes, same locality, July 29 and Aug. 4.
- riscana* Kearfott, *Hysterosia*. 1907A, p. 122. IN A.M.N.H.: lectotype male, hereby designated, Glenburn, Pa., 10 July, 1905 (Lister); one female lectoparatype, Glenburn, Pa., 20 July, 1905 (Lister).
- romonana* Kearfott, *Phalonia*. 1907A, p. 83. IN A.M.N.H.: lectotype male, hereby designated, Essex Co. Park, N. J., 7 Sept., 1906, "Trap"; nineteen lectoparatypes.
- sublepidana* Kearfott, *Phalonia*. 1907, p. 82. IN A.M.N.H.: lectotype male, hereby designated, Caldwell, N. J., 8 July, 1900; two lectoparatypes, Caldwell and Essex Co. Park, N. J.; the latter of these was labeled "Type" by Kearfott, as was also the lectotype.
- tiscana* Kearfott, *Hysterosia*. 1907A, p. 123. IN A.M.N.H.: lectotype male, hereby designated, Essex Co. Park, N. J., 24 Aug.; three lectoparatypes, same locality, dated Aug. 1, 13 and 16; the one dated Aug. 1 was labeled "Type ♀" by Kearfott. The lectotype was labeled "Type ♂" by Kearfott. The dates given in the original description are Aug. 1-22.
- toxcana* Kearfott, *Phalonia*. 1907, p. 85. IN A.M.N.H.: lectotype male, hereby designated, Essex Co. Park, N. J., 19 Aug., Trap; twelve lectoparatypes, various dates. The lectotype was labeled "Type" by Kearfott, but so was one of the lectoparatypes.
- umbrabasana* Kearfott, *Commophila?* (sic). 1908, pp. 180-181. IN A.M.N.H.: lectotype male, hereby designated, Alameda Co., Calif., 17 June, 1908 (Pilate); seven lectoparatypes, various California localities.
- vachelliana* Kearfott, *Phalonia*. 1907, p. 80. IN A.M.N.H.: lectotype male, hereby designated, Placer Co., Calif., 20 April (Vachell); three lectoparatypes, various dates, one from Cisco, Placer Co.
- viscana* Kearfott, *Phalonia*. 1907, p. 84. IN A.M.N.H.: unique type.
- voxcana* Kearfott, *Phalonia*. 1907, p. 83. IN A.M.N.H.: lectotype hereby designated, Hampton, N. H., 24 Aug., 1904 (Shaw), lacking abdomen; one lectoparatype, Kennebunkport, Me., Aug. (Clapp), also lacking abdomen.
- waracana* Kearfott, *Hysterosia*. 1907A, p. 122. IN A.M.N.H.: six lectoparatypes, Prince Albert and Regina, all in poor condition. The lectotype female, hereby designated, Regina, Assa., 15 July, 1904, "J. F.," is in the U. S. National Museum.
- winniana* Kearfott, *Phalonia*. 1905, p. 10. IN A.M.N.H.: lectotype male, hereby designated, Essex Co. Park, N. J., 20 May; one female lectoparatype, Montclair, N. J., 18 July.

wiscana Kearfott, *Phalonia*. 1907, p. 77.

IN A.M.N.H.: unique female type.

yuccatana Busck, *Phalonia*. 1907, p. 23.

IN A.M.N.H.: three "cotypes" (really paratypes).

zaracana Kearfott, *Phalonia*. 1907, p. 74.

IN A.M.N.H.: lectotype male, hereby designated, Central New York, 6 June, 1899.

ziscana Kearfott, *Phalonia*. 1907, p. 76.

IN A.M.N.H.: lectotype male, hereby designated, Hastings, Fla., 26 Feby., labeled "Type" by Kearfott.

zorcana Kearfott, *Phalonia*. 1907, pp.

86-87. IN A.M.N.H.: one cotype, Cincinnati, O., 26 Aug., 1903 (Braun); the original description gives the dates 17-24 Aug.; this may have been one of Kearfott's errors, or this specimen may not be a valid cotype, although so labeled by Kearfott.

Thyrididae

fasciata Grote and Robinson, *Platythyris*.

1866, pp. 362-364, Pl. XIII, figs. 4-5. IN A.M.N.H.: one cotype, lacking abdomen and right fore-wing; one pseudotype, "W. Va."; both are numbered "23089 Grote and Robinson."

Pyalididae

adipaloides Grote and Robinson, *Botys*.

1867, pp. 26-27, Pl. II fig. 19. IN A.M.N.H.: lectotype male, hereby designated, "Pa.," No. 23007, Grote and Robinson, with Robinson's handwritten label.

alatella Hulst, *Acrobasis*. 1887, p. 135.

IN A.M.N.H.: one female cotype, Napa Co., Calif., August, Nos. 3870 (original) and 14201, Coll. Hy. Edwards; labeled "Type" by Hulst.

albicostella Grossbeck, *Calera* (?). 1917,

pp. 134-135. IN A.M.N.H.: lectotype female, hereby designated, Ft. Meyers, Fla., 23 Apr., 1912; one lectoparatype female, Everglade, Fla., 7 Apr. This designation is as the specimens were labeled by Grossbeck. It should be noted that Grossbeck misspelled the specific name on the name labels.

alliculella Hulst, *Myelois*. 1887, p. 135.

IN A.M.N.H.: lectotype male, hereby

designated, "Ariz.," No. 14191, Coll. Hy. Edwards; lectoparatype female, "Ariz.," No. 14190, Coll. Hy. Edwards; both were labeled "Type" by Hulst.

alitalis Hulst, *Glyphodes*. 1886, pp. 157-158. IN A.M.N.H.: three female cotypes, Indian River, Fla., No. 13919, Coll. Hy. Edwards.

anthoecioides Grote and Robinson, *Asopia*.

1867, pp. 15-16, Pl. II, fig. 9. IN A.M.N.H.: lectotype male, hereby designated, no locality label, No. 23006, Grote and Robinson; one lectoparatype female.

aridalis Barnes and Benjamin, *Noctuella*.

1922, p. 48. IN A.M.N.H.: one paratype.

atrifascialis Hulst, *Tetralopha*. 1886, p.

160. IN A.M.N.H.: lectotype male, hereby designated, Blanco Co., Cent. Texas, Sept., *ex* Slosson Coll., labeled "Type" by Hulst; one pseudotype, Indian River, Fla., also labeled "Type" by Hulst.

attenuatus Grote, *Crambus*. 1880, pp. 18-

19. IN A.M.N.H.: lectotype male, hereby designated, Vancouver I., Nos. 5927 (original) and 14275, Coll. Hy. Edwards; one lectoparatype, same data, lacking abdomen.

aureolalis Hulst, *Eurycreon*. 1886, p. 156.

IN A.M.N.H.: unique male type; two pseudotypes, "Col.," No. 13847, Coll. Hy. Edwards, one labeled "Type" by Hulst.

bellulalis Hulst, *Botis*. 1886, p. 149. IN

A.M.N.H.: one female cotype, Texas, No. 14062, Coll. Hy. Edwards, labeled "Type" by Hulst.

bifasciella Hulst, *Nephoteryx*. 1887, p.

132. IN A.M.N.H.: one female cotype, "Ariz.," No. 14191, Coll. Hy. Edwards, labeled "Type" by Hulst.

biothanatalis Hulst, *Crambus*. 1886, p.

166. IN A.M.N.H.: unique male type. *brunneogrisea* Hy. Edwards, *Prorasea*. 1886, p. 171. IN A.M.N.H.: unique male type, Prescott, Ariz.

citrina Grote and Robinson, *Botys*. 1867,

p. 23, Pl. II, fig. 20. IN A.M.N.H.: one female cotype, "Phil.," No. 22996, Grote and Robinson.

coloradensis Grote and Robinson, *Botys*.

- 1867, p. 25, Pl. II, fig. 18. In A.M.N.H.: one female cotype, No. 22998, Grote and Robinson.
- comptulatalis* Hulst, *Crambus*. 1886, p. 167. In A.M.N.H.: unique female type, Vancouver I., Nos. 5941 (original) and 14290, Coll. Hy. Edwards.
- diffissa* Grote and Robinson, *Botys*. 1867, p. 19, Pl. II, fig. 16. In A.M.N.H.: one female cotype, no locality data, No. 22994, Grote and Robinson, lacks right fore-wing.
- edwardsialis* Hulst, *Megaphycis*. 1886, p. 163. In A.M.N.H.: lectotype male, hereby designated, Nevada, Nos. 274 (original) and 14171, Coll. Hy. Edwards, labeled "Type."
- electalis* Hulst, *Aglossa*. 1886, p. 146. In A.M.N.H.: lectotype male, hereby designated, Arizona, No. 13809, Coll. Hy. Edwards, labeled "Type" by Hulst.
- electella* Hulst, *Anerastia*. 1887, pp. 137-138. In A.M.N.H.: one female cotype, No. 14157, Coll. Hy. Edwards.
- extorralis* Hulst, *Crambus*. 1886, p. 165. In A.M.N.H.: one male cotype, Louisiana, lacking abdomen and right hind-wing.
- festalis* Hulst, *Botis*. 1886, p. 153. In A.M.N.H.: lectotype female, hereby designated, Prescott, Arizona, Nos. 6197 (original) and 13985, Coll. Hy. Edwards, labeled "Type" by Hulst.
- fumoferalis* Hulst, *Botis*. 1886, p. 154. In A.M.N.H.: lectotype male, hereby designated, Siskiyou Co., Calif., No. 14007, Coll. Hy. Edwards, labeled "Type" by Hulst; one lectoparatype male, same data; one lectoparatype female, "Sier. Nev.," Cal., No. 14006, Coll. Hy. Edwards.
- generosa* Grote and Robinson, *Botys*. 1867, pp. 20-21, Pl. II, fig. 10. In A.M.N.H.: one "cotype" female, "Pa.," No. 22992, Grote and Robinson. Since only "♂" was mentioned in the original description, this may not be a true cotype.
- gracilis* Grote and Robinson, *Botys*. 1867, pp. 25-26, Pl. II, fig. 15. In A.M.N.H.: lectotype male, hereby designated, no locality data, No. 23002, Grote and Robinson.
- gyralis* Hulst, *Hydrocampa*. 1886, p. 159. In A.M.N.H.: lectotype male, hereby designated, Georgia, No. 14077, Coll. Hy. Edwards, labeled "Type" by Hulst.
- haruspica* Grote and Robinson, *Botys*. 1867, pp. 19-20, Pl. II, fig. 14. In A.M.N.H.: lectotype male, hereby designated, no locality data, No. 23003, Grote and Robinson, name label in Grote's handwriting; two male lectoparatypes, same number.
- hystriculella* Hulst, *Acrobasis*. 1887, p. 135. In A.M.N.H.: one female cotype, "Tex.," No. 14202, Coll. Hy. Edwards, labeled "Type" by Hulst.
- lallatalis* Hulst, *Nephopteryx*. 1886, p. 161. In A.M.N.H.: one male cotype, Nevada, Nos. 3017 (original) and 14154, Coll. Hy. Edwards, lacking abdomen.
- laticlavia* Grote and Robinson, *Botys*. 1867, pp. 17-18, Pl. II, fig. 12. In A.M.N.H.: lectotype male, hereby designated, "Pa.," No. 22991, Grote and Robinson; one lectoparatype, same data, lacking abdomen; three other specimens probably from the Grote and Robinson collection.
- lepidalis* Hulst, *Prorasea*. 1886, p. 146. In A.M.N.H.: lectotype male, hereby designated, "Colo.," No. 13790, Coll. Hy. Edwards, labeled "Type" by Hulst.
- levalis* Hulst, *Botis*. 1886, pp. 152-153. In A.M.N.H.: one cotype, lacking abdomen.
- limata* Grote and Robinson, *Pantographa*. 1867, p. 464, Pl. XVI, figs. 16-17. In A.M.N.H.: lectotype male, hereby designated, "W. Va.," No. 23010, Grote and Robinson; one lectoparatype male, same data.
- lulualis* Hulst, *Botis*. 1886, p. 150. In A.M.N.H.: lectotype male, hereby designated, Soda Springs, Siskiyou Co., Calif., May 10, No. 13999, Coll. Hy. Edwards, labeled "Type" by Hulst; another male specimen, Siskiyou Co., Calif., same number.
- magnalis* Hulst, *Emprepes*. 1886, p. 147. In A.M.N.H.: lectotype male, hereby designated, "Ariz.," No. 13812, Coll. Hy. Edwards, labeled "Type" by Hulst.
- marculenta* Grote and Robinson, *Botys*. 1867, pp. 23-24, Pl. II, fig. 21. In A.M.N.H.: lectotype female, hereby des-

- ignated, "Pa.," No. 22995, Grote and Robinson.
- montinatatella* Hulst, *Spermatophthora*. 1887, p. 134. In A.M.N.H.: one male cotype, "Sier. Nev., Cal.," Nos. 5933 (original) and 14192, Coll. Hy. Edwards, lacking abdomen.
- monulalis* Hulst, *Botis*. 1886, p. 154. In A.M.N.H.: one female cotype, Sierra Nevada Mts., Calif., No. 14003, Coll. Hy. Edwards, labeled "Type" by Hulst.
- muirii* Hy. Edwards, *Oribates*. 1881, p. 22 (and p. 117). In A.M.N.H.: two female specimens, Nos. 4461 (original) and 11554, Coll. Hy. Edwards, Havilah, California. One of these was labeled "Type" by Henry Edwards. The original description gives "Tuolomne Co., Cal." as type locality. The page that bore No. 4461 of the original Hy. Edwards catalog has been lost. Lacking further evidence, we cannot call these two specimens cotypes, but they certainly are authentic Henry Edwards material. If the Tuolomne Co. material (collected by Muir) does not exist any longer, a "neotype" should be designated from one of these two specimens.
- neariatella* Grossbeck, *Wunderia*. 1917, p. 133. In A.M.N.H.: unique female type, Everglade, Fla., Apr. 6.
- nobilis* Grote, *Siparocera*. 1875, pp. 128-129. In A.M.N.H.: unique female type, New York, No. 23006, Grote and Robinson; four male pseudotypes, three with no data and one "Pa.," all with printed "Type" labels, No. 23000, Grote and Robinson. Grote is the sole author of this name, which he published after Robinson's death.
- octosignalis* Hulst, *Botis*. 1886, p. 153. In A.M.N.H.: lectotype male, hereby designated, "Calif.," Nos. 705 (original) and 13989, Coll. Hy. Edwards, labeled "Type" by Hulst.
- opalescella* Hulst, *Ephestia*. 1887, p. 138. In A.M.N.H.: one male cotype, No. 14200, Coll. Hy. Edwards, lacking abdomen.
- oregonicus* Grote, *Crambus*. 1880, p. 17. In A.M.N.H.: lectotype male, hereby designated, Oregon, Nos. 5923 (original) and 14208, Coll. Hy. Edwards.
- ostreonalis* Grote, *Metrea*. 1882, p. 73. In A.M.N.H.: one specimen "Conn.," No. 13933, Coll. Hy. Edwards, labeled "Type." Since the original description mentions only "Amherst, Mass. (Goodell)" and "a New York specimen," this is probably a pseudotype.
- pallulella* Hulst, *Stenoptycha*. 1887, p. 137. In A.M.N.H.: one cotype, "N. C.," No. 14198, Coll. Hy. Edwards, lacking abdomen; labeled "Type" by Hulst.
- penitalis* Grote, *Botis*. 1876, pp. 98-99. In A.M.N.H.: one female cotype, Kansas, No. 14067, Coll. Hy. Edwards, labeled "Type" by Grote, lacking end of abdomen and right hind-wing.
- pergilvalis* Hulst, *Botis*. 1886, p. 151. In A.M.N.H.: lectotype female, hereby designated, "Ariz.," No. 14068, Coll. Hy. Edwards, labeled "Type" by Hulst.
- planatella* Grossbeck, *Dolichorrhinia*. 1917, pp. 131-132. In A.M.N.H.: lectotype male, hereby designated, Ft. Myers, Fla., 1 April, 1912. No. 23776, A.M.N.H.; lectoallotype female, hereby designated, Everglade, Fla., June, 1912; four lectoparatypes, Ft. Myers, Everglade and Marco, Fla. The types are here designated as labeled by Grossbeck.
- plectilis* Grote and Robinson, *Botys*. 1867, pp. 27-28, Pl. II, fig. 17. In A.M.N.H.: one female cotype, "Pa.," No. 23005, Grote and Robinson.
- posticata* Grote and Robinson, *Botys*. 1867, p. 22, Pl. II, fig. 25. In A.M.N.H.: lectotype male, hereby designated, "Pa.," No. 23009, Grote and Robinson, labeled (with name) by Robinson; one lectoparatype, "Pa.," No. 23008, Grote and Robinson.
- primordialis* Dyar, *Geshna*. 1906, p. 97. In A.M.N.H.: one paratype (labeled "cotype") *ex* Kearfott Coll.
- psychialis* Hulst, *Botis*. 1886, p. 149. In A.M.N.H.: lectotype female, hereby designated, Texas, No. 14061, Coll. Hy. Edwards.
- reluctalis* Hulst, *Orobena*. 1886, pp. 156-157. In A.M.N.H.: lectotype male, hereby designated, Arizona, labeled "Type" by Hulst; three lectoparatypes, same data. All are numbered 13880, Coll. Hy. Edwards.

- rickseckerellus* Klots, *Crambus*. 1940, pp. 60–61, Pl. vii, fig. 8. IN A.M.N.H.: holotype male, allotype female and six paratypes.
- roseopennalis* Hulst, *Botis*. 1886, pp. 148–149. IN A.M.N.H.: lectotype male, hereby designated, "Ariz.," No. 14063, Coll. Hy. Edwards, labeled "Type" by Hulst.
- scurralis* Hulst, *Botis*. 1886, p. 155. IN A.M.N.H.: lectotype male, hereby designated, Arizona, No. 13986, Coll. Hy. Edwards; one female lectoparatype, same data.
- sperryellus* Klots, *Crambus*. 1940, pp. 62–65. IN A.M.N.H.: holotype male, allotype female, thirty-six paratypes.
- succandidalis* Hulst, *Botis*. 1886, p. 153. IN A.M.N.H.: one pseudotype, "Texas," Nos. 5566 and 13988, Coll. Hy. Edwards, labeled "Type" by Hulst. Hulst described this species from a unique male type, Black Hills, D. T. [Dakota Territory].
- thallophyllialis* Hulst, *Botis*. 1886, p. 154. IN A.M.N.H.: lectotype female, hereby designated, California, No. 13984, Coll. Hy. Edwards.
- unifascialis* Packard, *Botys*. 1873, p. 261. IN A.M.N.H.: lectotype male, hereby designated, California, Nos. 207 (original) and 13991, Coll. Hy. Edwards, labeled "Type" by Henry Edwards. The original Hy. Edwards catalog gives the reference for this as "*Botys unifascialis* Grote" (*sic!*), "Hilly Pastures, Angel Island, Collected by Hy. Edwards, May." There are also in the A.M.N.H. two other male specimens, with the same data; only one of these bears a name label. Since Packard in the original description stated 2 ♂♂, California (Edwards), only one of these two specimens can be regarded as a lectoparatype and has been so labeled. The other was probably not sent to Packard.
- unimacula* Grote and Robinson, *Asopia*. 1867, pp. 14–15, Pl. ii, fig. 8. IN A.M.N.H.: one pseudotype, "Ohio," No. 23004, Grote and Robinson.
- uxorculalis* Hulst, *Botis*. 1886, p. 153. IN A.M.N.H.: one cotype, "Sier. Nev., Cal.," Nos. 4460 (original) and 13773, Coll. Hy. Edwards, lacking abdomen, labeled "Type" by Hulst.
- ventralis* Grote and Robinson, *Botis*. 1867, pp. 21–22, Pl. ii, fig. 23. IN A.M.N.H.: lectotype male, hereby designated, "Pa.," No. 22390, Grote and Robinson, with name label by Robinson; one female lectoparatype, same data.
- verecuntella* Grossbeck, *Diviana*. 1917, p. 132. IN A.M.N.H.: lectotype female, hereby designated, Everglade, Fla., 10 April, 1912; four female lectoparatypes, Everglade and Ft. Myers, Fla. The types are here designated as labeled by Grossbeck.
- vinulenta* Grote and Robinson, *Botys*. 1867, p. 17. IN A.M.N.H.: one male, no data, Grote and Robinson Collection, labeled "*Botys signatalis* G. and R. ♂" by Grote. This may well be a type or cotype of *vinulenta* which was proposed by Grote and Robinson for the eastern population of *signatalis* Walker.
- zelatella* Hulst, *Myelois*. 1887, p. 136. IN A.M.N.H.: one cotype, "N. Y.," Nos. 6218 (original) and 14189, Coll. Hy. Edwards, lacking abdomen, labeled "Type" by Hulst.

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- californicus* Walsingham, *Aciptilus?* (*sic*). 1880A, pp. 60–62, Pl. ii, fig. 9. IN A.M.N.H.: two so-called "cotypes," "California." See discussion above.
- carolina* Kearfott, *Platyptilia*. 1907B, p. 155, Pl. viii, fig. 17. IN A.M.N.H.: one male cotype.
- castor* Barnes and Lindsey, *Oidaemato-phorus*. 1931, pp. 394–395, Pl. xlvii, fig. 10 and Pl. li, fig. 8. IN A.M.N.H.: allotype female and one male paratype.
- cinerascens* Walsingham, *Aciptilus*. 1880A, pp. 57–59, Pl. iii, fig. 13. IN A.M.N.H.: three so-called "cotypes," "California." See discussion above.
- edwardsii* Fish, *Platyptilus*. 1881, p. 72. IN A.M.N.H.: one male lectoparatype and one female lectoparatype, both "Boston, Mass.," *ex* Coll. Hy. Edwards. The lectotype was designated by Barnes and Lindsey, 1931, pp. 328–329.
- fieldi* Wright, *Pterophorus*. 1921, pp. 6–7. IN A.M.N.H.: four paratypes.

grandis Fish, *Leioptilus*. 1881, p. 141.
IN A.M.N.H.: lectotype female, hereby designated, "Cal.," No. 16601, Coll. Hy. Edwards, labeled "Type," presumably by Fish; one probable male lectoparatype, No. 16597, Coll. Hy. Edwards.

gratiosus Fish, *Oedematophorus*. 1881, p. 73. IN A.M.N.H.: lectotype male, hereby designated, "California," Nos. 1357 (original) and 16615, Coll. Hy. Edwards, labeled "Type," presumably by Fish.

griscenscens Walsingham, *Oedematophorus*. 1880A, pp. 34-35, Pl. II, fig. 11. IN A.M.N.H.: one so-called "cotype," "Oregon." See discussion above.

guttatus Walsingham, *Oedematophorus*. 1880A, pp. 36-37, Pl. II, fig. 12. IN A.M.N.H.: one so-called "cotype," "California." See discussion above.

lugubris Fish, *Oedematophorus*. 1881, pp. 140-141. IN A.M.N.H.: one female co-

type, labeled "Oed. lugubris Fish, Type," apparently by Fish, No. 11571, Coll. Hy. Edwards. If a male is available (ex Baron Collection) it should be designated as the lectotype.

montanus Walsingham, *Aciptilus*. 1880A, pp. 59-60, Pl. III, fig. 14. IN A.M.N.H.: two so-called "cotypes," "California." See discussion above.

percnodactylus Walsingham, *Platyptilus*. 1880A, pp. 8-10, Pl. I, fig. 7. IN A.M.N.H.: one so-called "cotype," "California." See discussion above.

perplexus Grossbeck, *Pterophorus*. 1917, p. 136. IN A.M.N.H.: lectotype male, hereby designated, Marco, Fla., Apr. 17; two lectoparatypes. The types have been chosen as labeled, but not published, by the author.

simplicius Grossbeck, *Pterophorus*. 1917, pp. 136-137. IN A.M.N.H.: unique female type.

BIBLIOGRAPHY

- BARNES, W., AND BENJAMIN, F. H.
1922. Contrib. Nat. Hist. Lepidoptera N. A., V, No. 1.
- BARNES, W., AND LINDSEY, A. W.
1921. Contrib. Nat. Hist. Lepidoptera N. A., IV, No. 4.
- BARNES, W., AND McDUNNOUGH, J.
1917. Contrib. Nat. Hist. Lepidoptera N. A., III, No. 4.
- BEUTENMULLER, W.
1892. Bull. Amer. Mus. Nat. Hist., IV, No. 1.
1892A. Bull. Amer. Mus. Nat. Hist., IV, No. 1.
1894. Bull. Amer. Mus. Nat. Hist., VI.
1904. Bull. Amer. Mus. Nat. Hist., XX.
- BRAUN, A.
1910. Ent. News, XXI.
- BUSCK, A.
1903. Proc. U. S. Nat. Mus., XXV.
1904. Proc. U. S. Nat. Mus., XXVII.
1906. Can. Ent., XXXVIII.
1907. Journ. N. Y. Ent. Soc., XV.
1913. Journ. Ent. and Zool., V.
- BUTLER, A. G.
1881. Ann. Mag. Nat. Hist., (5) VIII.
- DIETZ, W. G.
1921. Can. Ent., LIII.
- DYAR, H. G.
1903. Proc. Ent. Soc. Wash., V.
1904. Proc. Ent. Soc. Wash., VI.
1906. Journ. N. Y. Ent. Soc., XIV.
- EDWARDS, H.
1874. Proc. Calif. Acad. Sci., V.
1877. Proc. Calif. Acad. Sci., VII.
1881. Papilio, I.
1882. Papilio, II.
1883. Papilio, IV.
1885. Entomol. Americana, I.
1886. Entomol. Americana, II.
1887. Can. Ent., XIX.
1887A. Entomol. Americana, III.
- FERNALD, C. H.
1900. Can. Ent., XXXII.
1908. Can. Ent., XL.
- FISH, C.
1881. Can. Ent., XIII.
- FORBES, W. T. M.
1923. Cornell Univ. Agr. Expt. Sta., Mem. 68.
1939. Journ. N. Y. Ent. Soc., XLVII.
- GROSSBECK, J. A.
1906. Ent. News, XVII.
1917. Bull. Amer. Mus. Nat. Hist., XXXVII.
- GROTE, A. R.
1875. Ann. Lyceum Nat. Hist. N. Y., XI.
1876. Can. Ent., VIII.
1880. Can. Ent., XII.
1882. Papilio, II.
1883. Can. Ent., XV.
- GROTE, A. R., AND ROBINSON, C. T.
1866. Ann. Lyceum Nat. Hist. N. Y., VIII.
1867. Trans. Amer. Ent. Soc., I.
1868. Trans. Amer. Ent. Soc., II.
- HEINRICH, C.
1920. Proc. U. S. Nat. Mus., LVII.
1923. Smithsonian Inst., U. S. Nat. Mus., Bull. 123.
1923A. Proc. Ent. Soc. Wash., XXV.
1924. Journ. Wash. Acad. Sci., XIV.

1926. Smithsonian Inst., U. S. Nat. Mus., Bull. 132.
 1929. Proc. Ent. Soc. Wash., XXXI.
 1929A. Proc. U. S. Nat. Mus., LXXV.
 1931. Proc. U. S. Nat. Mus., LXXIX.
- HULST, G.
 1886. Trans. Amer. Ent. Soc., XIII.
 1887. Entomol. Americana, III.
- JONES, F. M.
 1922. Ent. News, XXXIII.
 1926. Trans. Amer. Ent. Soc., LII.
- KEARFOTT, W. D.
 1902. Journ. N. Y. Ent. Soc., X.
 1904. Can. Ent., XXXVI.
 1904A. Trans. Amer. Ent. Soc., XXX.
 1905. Can. Ent., XXXVII.
 1905A. Proc. U. S. Nat. Mus., XXVIII.
 1907. Trans. Amer. Ent. Soc., XXXIII.
 1907A. Can. Ent., XXXIX.
 1907B. Bull. Amer. Mus. Nat. Hist., XXIII.
 1908. Journ. N. Y. Ent. Soc., XVI.
- KLOTS, A. B.
 1936. Amer. Mus. Novitates, No. 867.
 1940. Bull. South. Calif. Acad. Sci., XXXIX.
- McDUNNOUGH, J.
 1934. Can. Journ. Research, XI.
 1935. Can. Ent., LXVII.
 1939. Mem. South. Calif. Acad. Sci., II, No. 1.
- MEYRICK, E.
 1912. Ent. Month. Mag., XLVIII.
- PACKARD, A.
 1873. Ann. Lyceum Nat. Hist. N. Y., X.
 1893. Ent. News, IV.
- PEARSALL, R. F.
 1887. Entomol. Americana, II.
- RILEY, C. V.
 1881. Trans. St. Louis Acad. Sci., IV.
- ROBINSON, C. T.
 1869. Trans. Amer. Ent. Soc., II.
- STRETCH, R. H.
 1873. Zygaen and Bomb. of N. A., I.
- WALSINGHAM, LORD
 1879. Illustr. Typ. Specimens Lep. Heteroc. Brit. Mus., Part 4.
 1880. Proc. Zool. Soc. London.
 1880A. Pterophoridae of Calif. and Ore
- WRIGHT, W. H.
 1921. Ent. News, XXXII.

