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PHYLLOPHAGA HARRIS (LACHNOSTERNA HOPE): A REVISION OF THE SYNONYMY, AND ONE NEW NAME.

BY

ROBERT D. GLASGOW, PH.D.

ERRATA AND ADDENDA.

Page 50, second column, line 13 from bottom, for *Danais archippus* read *Anosia plexippus;* line 8 from bottom, for *mellifica* read *mellifera.*

Page 51, line 11 from bottom, for *Danais* read *Anosia.*

Page 159, at right of diagram, for *Bracon agrilli* read *Bracon agrili.*

Page 289, second column, last line but one, for *Scalops* real *Scalopus.*

Page 294, line 3, for *catcsbeana* read *catesbiana.*

Pages 327 and 330, line 12, for *orcus* read *oreas.*

Page 347, line 4, for Cecidomyidæ read Cecidomyiidæ.

Page 356, line 7, for Anthomyidæ read Anthomyiidæ.

Page 368, line 18, dele second word.

Page 373, after line 10 insert as follows: 53a, *subpruinosa* Casey, 1884, p. 38.

Page 375, after *submucida* Le Conte, 48, insert *subpruinosa* Casey, 53a.

Page 377, after line 7, insert as follows:—

1884. Casey, Thomas L.
Contributions to the Descriptive and Systematic Coleopterology of North America. Part I.

Page 379, line 11 from bottom, for *sensu lata* read *sensu lato.*

Page 382, line 12, for VII read VIII.

Page 408, line 2, for *the next article in* read *Article VIII of.*

Page 410, line 6 from bottom, for $=4$ read *'11.*

Page 412, line 7, for 31 read 30.

Page 421, line 17 from bottom, insert *it* before *grows.*

ARTICLE V.—*Phyllophaga* Harris (*Lachnosterna* Hope): *A Revision of the Synonymy, and one New Name.* By ROBERT D. GLASGOW, PH.D.

In few genera of equal economic importance has greater confusion existed, either in collections or in the published work on the group, than in the assemblage of species known to American and English entomologists as *Lachnosterna* Hope, and to European entomologists as *Ancylonycha* Dejean.

Some years ago the writer turned to this group hoping to make it the basis for a study of some of the problems relating to the origin or source, the diversification, and the dispersal of animal forms in North America. The group offers material that is unsurpassed for such a study. It has a wide distribution, and comprises a great number of species which are relatively sedentary, of large size, and usually abundant wherever they occur. Moreover, it includes a large and compact series of species which are peculiar to the region selected for study.

It appeared very early, however, that sufficient data were not yet available to warrant such a treatment of the group. Exhaustive collections had been made in too few localities, particularly in too few localities that have a critical significance for the group, and the determinations in the published lists, based usually upon external characters alone, were too frequently inaccurate to make even the existing records available for the proposed studies.

The work of Dr. George H. Horn (1887) on *Phyllophaga* is more complete and more nearly monographic in nature than that of any other author; yet Dr. Horn says of the group: "It is not surprising that attention has not been given to the species as the literature at present available does not give great assistance, and *in my own case* there was *almost equal difficulty* in arriving at a correct determination of the species *with the types for comparison* along with the literature." And again, Dr. Horn says: "*Lachnosterna* is certainly one of the most difficult genera in our fauna.....".*

*Italics by present author.

Shortly after the publication of Horn's "Revision," which was based upon external characters alone, a notable contribution to our knowledge of *Phyllophaga* was made by John B. Smith (1889), who demonstrated the great taxonomic value of the genital characters in the group, and published a series of figures showing these characters for the various species. Smith's figures have been immensely useful to entomologists who have used these characters, but unfortunately, they were designed to supplement Horn's work rather than for independent use, and were published without any accompanying synoptic tables. For this reason they are available only indirectly, through the index, for verifying determinations based upon external characters made first from Horn's tables, and they have not been used as generally as they should have been.

Smith's work was based upon that of Horn, and made no advance in nomenclatural accuracy such as the use of the genital characters had made possible, for, as Smith states in his introduction, he had no opportunity to verify by reference to the types Horn's determinations of the species described by earlier authors. The insufficiency of the external characters when used alone, makes it no reflection upon the thoroughness of Horn's work to say that these determinations were not always correct, and, indeed, Dr. Horn's statements quoted above show that he freely admitted such a possibility himself.

Since our present unsatisfactory knowledge of *Phyllophaga* is due primarily to the lack of means for the ready and accurate determination of the species, the writer determined, as the first step toward the accomplishment of his original purpose, to make a thorough systematic study of the group, and to prepare tables and figures such that collectors anywhere may make accurate determinations of their species with ease and certainty. In this way it is hoped so to encourage the study of the group that local lists may multiply rapidly and accurate data increase, until the group may serve, possibly in a few years, as a basis for the biological generalizations to which it promises to lend itself so effectively.

Because of the more urgent need for such a treatment of the "May beetles" of that region, and because it was desired to stimulate collecting there as early as possible, the species of the United States and Canada were taken up first; but it is hoped to extend the work as rapidly as circumstances may permit, to include the entire range of the group.

This preliminary paper is designed to indicate the progress of the work, and to present at once the changes in synonymy that a thorough study of the types has shown to be necessary.

All of the types of North American species known still to be in existence have been located, and as far as possible all determinations have been verified by studies of the genital characters in the actual type specimens. The writer has personally dissected and remounted all of the type specimens of this group in American museums, and has carefully studied and sketched the genital characters in these types. The Burmeister types, which belong to the museum of the University at Halle, were sent by Dr. Otto Taschenberg to the University of Illinois, to be remounted and studied by the writer; while the remaining types in foreign museums were remounted by members of the respective museum staffs, and carefully prepared drawings of the genital structures sent to the University of Illinois for use in the present studies.

Of the types not yet known to the writer, either directly or through drawings of the genital characters prepared for these studies, those of the earlier authors apparently have been lost, while those of the more recent authors are in private collections that have not yet been conveniently accessible. The species of the latter group, however, are all well known to the writer, while, fortunately, those of the first group usually are so strongly marked in one way or another as to leave little doubt that they have been correctly identified.

It is needless to say that the results reported here would have been impossible but for the uniform courtesy, the hearty encouragement, and the ready assistance that have been experienced from the beginning of these studies. Permission to dissect priceless type specimens has everywhere been freely granted, and numerous collectors have generously coöperated in the work. Full acknowledgments will be made in a later paper, but it would be out of place to present even these preliminary results without naming the men who primarily have made this work possible.

Preeminent among these, the writer deems it an honor, as it is a pleasure, to acknowledge his profound indebtedness to Dr. S. A. Forbes. Dr. Forbes generously placed at his disposal all of the collections of "May beetles" (over 100,000 specimens) and all of the data relating to the group which belong to the Office of the Illinois State Entomologist and to the Illinois State Laboratory of Natural History; through a special commission for the State Entomologist's Office, Dr. Forbes made it possible for the writer to visit all of the American museums where types of *Phyllophaga* are deposited, and he lent his influence to aid in securing the privilege of making dissections of these type specimens; and, finally, while in Europe, after

the meeting at London of the Second International Entomological Congress, Dr. Forbes visited the museums at London, Paris, and Berlin, where he personally made arrangements to have all of the types of North American *Phyllophaga* at these institutions dissected, and drawings of the genital structures prepared for these studies—an arrangement that was later extended by correspondence to include all of these types known to be in foreign museums. Indeed, the results accomplished thus far have been possible only through the continued interest and encouragement and material assistance with which Dr. Forbes has followed each step of the work; and any credit that may be due for these results belongs to Dr. Forbes quite as much as to the writer.

Special acknowledgments are due to Dr. Otto Taschenberg, of the University at Halle, who, as stated before, generously sent the Burmeister types all the way to America, in order that they might be examined directly for these studies.

For directing the dissection of type specimens under their charge and for the preparation of drawings of the genital structures for these studies, the writer is deeply indebted to Mr. Charles J. Gahan, of the British Museum of Natural History, to M. Pierre Lesne, of the Muséum d'Histoire Naturelle de Paris, to Dr. Richard Heymons, of Berlin University, to Dr. Karl Brandt, of the University at Kiel, and to Dr. B. Y. Sjoestedt, of the Naturhistoriska Riksmuseum at Stockholm.

The Graduate School of the University of Illinois has made liberal grants of money for the purchase of collections and to defray the cost of the drawings made from the types in foreign museums.

The late Dr. John B. Smith generously placed his private collection of "May beetles" unreservedly at the writer's disposal, with instructions to use the material it contained in any way that might advance the work.

For the privilege of dissecting type specimens, for the loan of valuable material, and for innumerable courtesies, the writer is deeply indebted also, to Dr. L. O. Howard; to Mr. J. C. Crawford, Mr. E. A. Schwarz, and Mr. H. S. Barber, of the United States National Museum; to Dr. Henry Skinner and Mr. E. T. Cresson, Jr., of the Museum of the Academy of Natural Sciences of Philadelphia; to Mr. Charles Schaeffer, of the Museum of the Brooklyn Institute of Arts and Sciences; and to Mr. Samuel Henshaw, of the Museum of Comparative Zoology at Harvard University.

Special acknowledgments are due to Mr. E. A. Schwarz, Mr.

H. S. Barber, and Mr. Samuel Henshaw for assistance in locating obscure references and references in rare and relatively inaccessible publications, and to Mr. A. N. Caudell, for assistance in solving many of the difficult nomenclatural problems encountered in the course of the work.

And, finally, the writer wishes to acknowledge his particular indebtedness to Mr. E. A. Schwarz, for many invaluable suggestions and data relating to *Phyllophaga,* drawn from a wealth of entomological knowledge and experience that is probably unsurpassed.

The name *Phyllophaga* was proposed by Thaddeus W. Harris in 1826, in the following words: "The genus Melolontha as constituted by Fabricius contains a vast number of species, differing greatly in external appearance, and somewhat in modes of life. Fabricius describes 149 species, and Schoenherr, after separating those which constitute the modern genera Anisonyx, Glaphyrus, Amphicoma, Rutela, and Hoplia, enumerates 226 species of Melolontha, to which additions are constantly making from the discovery of new species. Hence the genus requires further subdivision. The bases of these subgenera have been pointed out by Latreille, Knoch, and Schoenherr, and some have already been established. I would restrict the name of Melolontha to those species which have more than three lamellæ to the club of the antennæ, like the *vulgaris* of Europe, and of which we have an indigenous example in the M. *decimlineata* of Say (M. *occidentalis* Herbst ?). *Our common species quercina, hirsuta, hirticula, balia, and some others might receive the generic name Phyllophaga.** M. *vespertina, scricea,* and *iricolor* would form another subgenus which might be called Stilbolemma, unless they are included in Serica MacLeay, or Omaloplia of Megerle; the characters of their genera I have not seen. M. *pilosicollis, longitarsa,* and *moesta* of Knoch and Say should each constitute a subgenus. The latter (with M. *sordida* and *frondicola* Say?) belongs to Kirby's genus Apogonia. From the singular manner in which the nails are divided at tip, I would call the *linearis* of Schoenherr Dichelonyx." (Massachusetts Agricultural Journal and Repository, Vol. X (1826), p. 6, note.)

Of the other two names referred to at the beginning of this article, *Ancylonycha* Dejean was first used in 1833 (Catalogue des Coléoptères de la collection de M. le Comte Dejean), while *Lachnosterna* Hope was not coined until 1837 (Hope, The Coleopterist's Manual, containing the Lamellicorn Beetles of Linnæus and Fabricius).

Le Conte was familiar with all three of these names, but he rejected both *Phyllophaga* Harris and *Ancylonycha* Dejean, and adopted

*Italics by present author.

Lachnosterna Hope, because neither of the earlier names was supported by a technical description that would indicate the limits of the genus.

The name *Phyllophaga* is adopted by the writer on the ground that its validity was fully established by its publication in connection with a series of valid specific names—a position that is fully endorsed by Messrs. Caudell and Banks, and by many other entomologists to whom the question has been submitted—and in the absence of a designated genotype, the species *hirticula* Knoch is here proposed as the type of the genus.

The name *Phyllophaga* has been proposed several times for genera in widely diverse groups of animals, but the earliest use of this name known to the writer, aside from its use by Harris as cited above, is that of Robineau-Desvoidy, who, in 1830, proposed this name for a genus of *Diptera*.

The status of the various names that have been proposed for new genera to be formed at the expense of *Phyllophaga*, but which were all suppressed by Horn, will be reserved for discussion in a later paper, since any consideration of these names would involve interpretations of relationship that would be out of place here.

In several instances in the following list, names indicated as synonyms represent geographic races or varieties; but it has seemed best not to attempt to indicate the status of such names until they may be discussed more fully than would be possible here.

In this list two exclamation points before a name indicate that the writer has personally studied the genital characters in the type specimen, while a single exclamation point before a name indicates that, although the writer has not seen the type specimen himself, the type has been dissected, and drawings of the genital characters prepared for these studies.

Synonymy of the Phyllophaga of the United States and Canada*

1. ! *fervida* Fabricius, 1781, p. 36.
   ! *quercina* Knoch, 1801, p. 74.
   !! *arcuata* Smith, 1888, p. 183.
2. ! *tristis* Fabricius, 1781, p. 39.
   pilosicollis Knoch, 1801, p. 85.
3. *crenulata* Froelich, 1792, p. 94.
   georgicana Gyllenhal, 1817, p. 77.

*The arrangement is chronological.

4. *fusca* Froelich, 1792, p. 99.
   ! *fervens* Gyllenhal, 1817, p. 74.
5. ! *quercus* Knoch, 1801, p. 72.
6. ! *ilicis* Knoch, 1801, p. 75.
   porcina Hentz, 1830, p. 256.
   !! *fimbriata* Burmeister, 1855, p. 326.
   !! *ciliata* Le Conte, 1856, p. 253.
7. ! *micans* Knoch, 1801, p. 77.
8. ! *hirsuta* Knoch, 1801, p. 78.
9. ! *hirticula* Knoch, 1801, p. 79.
10. *knochii* Schoenherr and Gyllenhal, 1817, p. 75.
11. *longitarsa* Say, 1824, p. 241.
12. *lanceolata* Say, 1824, p. 242.
13. *balia* Say, 1825, p. 194.
    !! *comata* Burmeister, 1855, p. 337.
14. *cphilida* Say, 1825, p. 196.
    !! *burmeisteri* Le Conte, 1856, p. 242.
15. ! *drakii* Kirby, 1837, p. 133.
    !! *consimilis* Le Conte, 1850, p. 226.
    !! *grandis* Smith, 1888, p. 181.
16. !! *fraterna* Harris, 1842, p. 29.
    !! *cognata* Burmeister, 1855, p. 323.
17. !! *prunina* Le Conte, 1856, p. 251.
    pruinosa || Melsheimer, 1846, p. 139.
18. *rugosa* Melsheimer, 1846, p. 140.
19. !! *anxia* Le Conte, (March,) 1850, p. 226.
    ! *brevicollis* Blanchard, (April 25,) 1850, p. 132.
    ! *puncticollis* Blanchard, (April 25,) 1850, p. 133.
    !! *cephalica* Le Conte, 1856, p. 245.
    ! *uninotata* Walker, 1866, p. 323.
    !! *dubia* Smith, 1888, p. 183.
    !! *inspcrata* Smith, 1889, p. 93.
    !! *alpina* Linell, 1897, p. 726.
20. !! *futilis* Le Conte, 1850, p. 226.
    !! *gibbosa* Burmeister, 1855, p. 324.
    !! *decidua* Le Conte, 1856, p. 246.
    !! *serricornis* Le Conte, 1856, p. 247.
21. ! *profunda* Blanchard, 1850, p. 132.
    !! *biimpressa* Smith, 1889, p. 97.
    !! *grandior* Linell, 1897, p. 727.
22. ! *uniformis* Blanchard, 1850, p. 133.
    carolina Fall, 1912, p. 43.

23. ! *crassissima* Blanchard, 1850, p. 133.
!! *obesa* Le Conte, 1856, p. 251.
!! *robusta* Le Conte, 1856, p. 257.
!! *generosa* Horn, 1887, p. 222.
24. *glaberrima* Blanchard, 1850, p. 136.
25. ! *diffinis* Blanchard, 1850, p. 138.
!! *comans* Burmeister, 1855, p. 358.
!! *sororia* Le Conte, 1856, p. 246.
!! *rufiola* Le Conte, 1856, p. 256.
26. !! *cribrosa* Le Conte, 1854, p. 231.
!! *ventricosa* Le Conte, 1854, p. 440.
27. !! *æqualis* Le Conte, 1854, p. 440.
28. !! *forsteri* Burmeister, 1855, p. 325.
!! *semicribrata* Le Conte, 1856, p. 247.
!! *lugubris* Le Conte, 1856, p. 248.
!! *lutescens* Le Conte, 1856, p. 249.
!! *politula* Horn, 1887, p. 248.
!! *nova* Smith, 1889, p. 95.
29. !! *albina* Burmeister, 1855, p. 328.
30. *crinita* Burmeister, 1855, p. 359.
!! *glabripennis* Le Conte, 1856, p. 260.
31. !! *prununculina* Burmeister, 1855, p. 360.
!! *cerasina* Le Conte, 1856, p. 241.
32. !! *gracilis* Burmeister, 1855, p. 361.
!! *volvula* Le Conte, 1856, p. 235.
!! *inana* Le Conte, 1856, p. 242.
33. !! *dispar* Burmeister, 1855, p. 361.
!! *boops* Horn, 1887, p. 284.
34. !! *farcta* Le Conte, 1856, p. 238.
35. !! *torta* Le Conte, 1856, p. 239.
36. !! *frontalis* Le Conte, 1856, p. 239.
37. !! *latifrons* Le Conte, 1856, p. 241.
38. !! *congrua* Le Conte, 1856, p. 243.
39. !! *corrosa* Le Conte, 1856, p. 249.
!! *affinis* Le Conte, 1856, p. 252.
40. !! *calceata* Le Conte, 1856, p. 250.
41. !! *marginalis* Le Conte, 1856, p. 250.
42. !! *subtonsa* Le Conte, 1856, p. 254.
43. !! *vilifrons* Le Conte, 1856, p. 255.
!! *hirticeps* Le Conte, 1856, p. 255.
44. !! *nitida* Le Conte, 1856, p. 256.
!! *limula* Horn, 1887, p. 264.
!! *innominata* Smith, 1889, p. 98.

45. !! *clypeata* Horn, 1887, p. 145.
!! *integra* || Le Conte, 1856, p. 258.
46. !! *parvidens* Le Conte, 1856, p. 259.
47. !! *rubiginosa* Le Conte, 1856, p. 259.
48. !! *submucida* Le Conte, 1856, p. 260.
49. !! *glabricula* Le Conte, 1856, p. 260.
50. !! *debilis* Le Conte, 1856, p. 262.
51. !! *errans* Le Conte, 1860, p. 283.
52. !! *maculicollis* Le Conte, 1863, p. 76.
53. !! *nitidula* Le Conte, 1863, p. 77.
54. !! *clemens* Horn, 1887, p. 144.
55. !! *hamata* Horn, 1887, p. 220.
56. !! *prætermissa* Horn, 1887, p. 223.
!! *definita* Smith, 1888, p. 501.
57. !! *hirtiventris* Horn, 1887, p. 231.
58. !! *postrema* Horn, 1887, p. 233.
59. !! *inversa* Horn, 1887, p. 241.
60. !! *bipartita* Horn, 1887, p. 242.
61. !! *vehemens* Horn, 1887, p. 244.
62. !! *barda* Horn, 1887, p. 248.
63. !! *spreta* Horn, 1887, p. 250.
64. !! *infidelis* Horn, 1887, p. 253.
65. !! *luctuosa* Horn, 1887, p. 254.
66. !! *scitula* Horn, 1887, p. 256.
67. !! *implicita* Horn, 1887, p. 262.
!! *minor* Linell, 1897, p. 728.
68. !! *delata* Horn, 1887, p. 267.
69. !! *æmula* Horn, 1887, p. 271.
70. !! *arcta* Horn, 1887, p. 271.
71. !! *vetula* Horn, 1887, p. 274.
72. !! *fucata* Horn, 1887, p. 278.
73. !! *exorata* Horn, 1887, p. 278.
74. !! *ignava* Horn, 1887, p. 280.
75. !! *inepta* Horn, 1887, p. 282.
76. !! *affabilis* Horn, 1887, p. 283.
77. !! *ecostata* Horn, 1887, p. 284.
78. !! *lenis* Horn, 1887, p. 287.
79. !! *heterodoxa* Horn, 1887, p. 289.
80. !! *tusa* Horn, 1887, p. 290.
81. !! *ulkei* Smith, 1889, p. 94.
82. !! *quadrata* Smith, 1889, p. 94.
83. !! *hornii* Smith, 1889, p. 95.

84. !! *longispina* Smith, 1889, p. 97.
85. !! *antennata* Smith, 1889, p. 99.
86. !! *elongata* Linell, 1897, p. 725.
87. !! *parva* Linell, 1897, p. 726.
88. !! *rugosioides* Linell, 1897, p. 728.
89. !! *karlsioei* Linell, 1898, p. 400.
90. *epigæa* Wickham, 1903, p. 71.
91. !! *arkansana* Schaeffer, 1906, p. 257.
lenta Fall, 1908, p. 162.
92. !! *pygidialis* Schaeffer, 1906, p. 257.
93. !! *latidens* Schaeffer, 1906, p. 258.
94. *lobata* Fall, 1908, p. 163.
95. !! *georgiana* Schaeffer, 1909, p. 382.

Alphabetical List of Foregoing Names

A List of the Publications Containing Original Descriptions of Phyllophaga of the United States and Canada

1781. Fabricius, Johann Christian.
Species Insectorum, Tomus I.
1792. Froelich, Jos. Aloys.
Der Naturforscher, Stueck 26, pp. 68–165.
1801. Knoch, August Wilhelm.
Neue Beytraege zur Insectenkunde, Theil 1.
1817. Gyllenhal, Leonhard.
Synonymia Insectorum (Schoenherr), Band 1, Theil 3, Appendix.
1817. Schoenherr, Carl Johan, and Gyllenhal, Leonhard.
Synonymia Insectorum (Schoenherr), Band 1, Theil 3, Appendix.
1824. Say, Thomas.
Journ. Acad. Nat. Sci. Phil., Vol. 3, Part 2, pp. 238–282.
1825. Say, Thomas.
Journ. Acad. Nat. Sci. Phil., Vol. 5, Part 1, pp. 160–204.
1830. Hentz, Nicholas Marcel.
Trans. Am. Phil. Soc., Vol. 3, N.S., pp. 253–258.
1837. Kirby, William.
Fauna Boreali-Americana (Richardson, J.), Part 4, The Insects.
1842. Harris, Thaddeus William.
Insects Injurious to Vegetation, 1st edition.
1846. Melsheimer, Frederick Ernst.
Proc. Acad. Nat. Sci. Phil., Vol. 2, 1844–45, pp. 134–160.
1850. Le Conte, John L.
Lake Superior, its Physical Character, Vegetation, and Animals (Agassiz), pp. 201–242.
1850. Blanchard, Émile.
Catalogue de la Collection Entomologique du Museum d'Histoire Naturelle de Paris (Milne-Edwards, M.), Tome I.
1854. Le Conte, John L.
Proc. Acad. Nat. Sci. Phil., Vol. 6, 1852, pp. 226–235.
1854. Le Conte, John L.
Proc. Acad. Nat. Sci. Phil., Vol. 6, 1852, pp. 439–448.
1855. Burmeister, Hermann.
Handbuch der Entomologie, Band 4, Abth. 2.
1856. Le Conte, John L.
Journ. Acad. Nat. Sci. Phil., Ser. 2, Vol. 3, pp. 225–288.

1860. Le Conte, John L.
Proc. Acad. Nat. Sci. Phil., 1859, pp. 281–293.
1863. Le Conte, John L.
New Species of North American Coleoptera, Part I.
1866. Walker, Francis.
The Naturalist in Vancouver Island and British Columbia, Vol. 2.
1887. Horn, George H.
Entomologica Americana, Vol. 3, Nov. 1887, pp. 141–145.
1887. Horn, George H.
Trans. Am. Ent. Soc., Vol. 14, Dec. 1887, pp. 209–296.
1888. Smith, John B.
Insect Life, Vol. 1, Dec. 1888, pp. 180–185.
1889. Smith, John B.
Entomologica Americana, Vol. 5, May, 1889, pp. 93–99.
1889. Smith, John B.
Proc. U. S. Nat. Mus., Vol. 11, 1888, pp. 481–525.
1897. Linell, Martin L.
Proc. U. S. Nat. Mus., Vol. 18, 1896, pp. 721–731.
1898. Linell, Martin L.
Proc. U. S. Nat. Mus. Vol. 19, 1897, pp. 393–401.
1903. Wickham, H. F.
Can. Ent., Vol. 35, March, 1903, pp. 67–74.
1906. Schaeffer, Charles.
Trans. Am. Ent. Soc., Vol. 32, pp. 249–266.
1908. Fall, H. C.
Entomological News, Vol. 19, April, 1908, pp. 159–164.
1909. Schaeffer, Charles.
Science Bulletin, Brooklyn Institute Museum, Vol. 1, No. 15.
1912. Fall, H. C.
Can. Ent., Vol. 44, Feb. 1912, pp. 40–48.

This occasion is taken to propose a much needed name for an undescribed species that is abundant in southern Illinois in midsummer; so abundant that it ranks high among the species of *Phyllophaga* whose numbers give them marked economic importance. The writer takes pleasure in naming this important Illinois species after his instructor and friend, Dr. S. A. Forbes. The name proposed seems peculiarly appropriate in view of the notable contributions made by Dr. Forbes to our knowledge of the biological and economic relations of the species of *Phyllophaga* that occur in Illinois.

PHYLLOPHAGA FORBESI, n. sp.

Moderately elongate, subcylindrical, rufotestaceous, moderately shining. Clypeus broadly emarginate, moderately reflexed; both clypeus and front rather coarsely and very closely punctate. Prothorax one half broader than long; sides arcuate, nearly parallel posteriorly, narrowed in front, margins entire; surface much less closely punctate than front, with an indistinct fovea on each side in front of middle. Elytra more closely and deeply punctate than prothorax, discal costae feeble. Pygidium of male broader than long, surface irregularly wrinkled, vaguely punctate; of female, smoother, less vaguely punctate, nearly as long as broad. Metasternum closely and finely punctate, hairs short and sparse. Abdomen finely, faintly, and sparsely punctate, nearly smooth at middle. Claws strong, slightly intramedian in male, median in female. Hind tarsi similar in both sexes.

Length 14–17 mm.

Male.—Antennæ 10-jointed, club a little shorter than the stem. Abdomen broadly concave, penultimate segment feebly emarginate at middle, with a roughened space in front of the faint emargination; last segment deeply emarginate, with an obtuse or rounded cusp at each side of the emargination, the middle of the segment abruptly depressed, the depressed area but little roughened, and with a distinct transverse ridge at posterior margin. Fixed spur of hind tibiæ short and narrow, outer spur long and slender.

Female.—Club of antennæ much shorter than the funiculus. Spurs of hind tibiæ slender.

Many specimens. Abundant in southern Illinois in late June, July, and early August.

This species is very nearly allied to *ephilida* Say and *uniformis* Blanchard (*carolina* Fall). It resembles both of these species in all of the more obvious characters, and is rather common in collections in the *ephilida* series. It may be assumed that specimens bearing an Illinois label, and properly placed in the *ephilida* series, are of this species; since *ephilida* Say does not occur in Illinois.

While this species is not easily separated from *ephilida* by the external characters alone, the genital characters of the two species are strikingly different. The male genital structures are symmetrical in both species. In the apical portion of these structures, however, in *ephilida* the ventral margins are entire, the ventro-distal angles are produced to form elongate, rounded lobes, and there is a very characteristic pair of long, slender, curved processes that arise from the dorso-lateral margins of the distal opening and extend distad, in a general

ventro-mesal direction; while in the species here described, the slender, curved processes of *ephilida* apparently have no counterpart, the rounded, ventro-distal lobes are broad and not elongate as in *ephilida,* and in this species, there is a pair of broad, angulate lobes not present in *ephilida,* which are apparently developed from the ventral margins, and which bear each a short, straight, slender process, which extends directly mesad from its point of origin. The females of this species are readily separated from those of *ephilida* and *uniformis* by the pubic process. This structure has approximately the same length and the same general form in these three species, but in the Illinois species it is broader than in either of the other two.

The foregoing will serve to indicate the general plan of the writer's work on *Phyllophaga,* and will make immediately available some of the results already obtained. It is hoped that the names given here will be useful to those who contemplate publishing on the group before the completed synopsis may appear.

The writer is now prepared to give determinations of any "May beetle" material from the United States and Canada, and will be glad to do anything in his power to encourage greater activity in the study of the group. He will gladly determine and report promptly on any collections that may be submitted to him if mounted with the genital structures exposed. Unmounted material, however, or mounted collections that do not have the genital structures exposed, can be accepted only with the understanding that they will be determined as leisure from other duties may permit the time-consuming manipulation that such material requires.

A large series of exotic species of *Phyllophaga, sensu lata,* is now being worked over. This series belongs to the United States National Museum, and includes species from the West Indies, Mexico, Central America, South America, Eastern and Southern Asia, and islands of the Pacific and Indian Oceans. It is hoped that studies of this material will suggest a grouping of the North American species that will represent natural relationships more successfully than might be possible from a study of the North American species alone.

Any criticisms or suggestions from other workers that may contribute to the completeness, or the thoroughness, or the usableness of the forthcoming paper will be welcome.

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ERRATA

Page 373, after line 10, insert 53a, *subpruinosa* Casey, 1884, p. 38.

Page 375, after *submucida* Le Conte, 48, insert *subpruinosa* Casey, 53a.

Page 377, after line 7, insert 1884. Casey, Thomas L. Contributions to the Descriptive and Systematic Coleopterology of North