

A LIST OF FIREFLIES KNOWN OR LIKELY TO OCCUR IN OHIO; WITH SPECIAL NOTES ON SPECIES OF *ELLYCHNIA*^{1, 2}
(LAMPYRIDAE: COLEOPTERA)

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ABSTRACT

This paper provides a check list of Ohio Lampyridae. The species are listed in phylogenetic order and distribution records are given by counties. This study reveals 8 genera and 24 species recorded from Ohio. *Pyropyga minuta* LeConte is a new state distribution record.

Examination of male genitalia of specimens of the genus *Ellychnia* LeConte clearly shows that *E. corrusca* (Linnaeus), *E. autumnalis* (Melsheimer), and *E. lacustris* LeConte should each be classified as a distinct species.

During the course of this investigation, 2,271 specimens were examined. I collected a total of 1,374 of these specimens between 1960 and 1962 in Athens and neighboring counties in southeastern Ohio. The remaining specimens examined were in the collections of Ohio University (141), The Ohio State University Department of Zoology and Entomology (498), and The Ohio State Museum, Natural History Division (258). My field notes, data from museum specimens and literature records were combined to give information on ecology and distribution of Ohio species.

I wish to express my appreciation to Dr. W. C. Stehr, Ohio University, for his suggestions and guidance during this study. Thanks are also extended to Dr. J. N. Knull, The Ohio State University, and Dr. Edward S. Thomas, The Ohio State Museum, for the use of their collections.

"North American Fireflies of the Genus *Photuris*" was published by H. S. Barber in 1951. This paper contains descriptions of 10 new species and 2 new varieties of American fireflies. Prior to this work, *Photuris pensylvanica* DeGeer was the only species of this genus recorded from Ohio. Barber's system of classification is based primarily on variation in the flashing behavior of the males of the species, and to a lesser degree on seasonal variation in population between species. I made limited observations on the Ohio species of this genus. It was noted that variation does occur in the flashing behavior of the males, but no definite pattern could be detected. Most specimens collected exhibited a single green flash given at varying intervals; however on several occasions, specimens were collected which had given a series of short quick flashes. Due to insufficient data on behavior, the studied specimens of this genus were not identified to species by Barber's arrangement, but have been placed in a *Photuris pensylvanica* complex.

Using an earlier system of classification, F. O. Hazard (1929) in his work on the Ohio Lampyridae, reported 7 genera, 17 species, and 1 variety of the tribe *Lampyrini* as occurring in Ohio. This tribe has now been raised to the family Lampyridae, and 2 of the species and the 1 variety reported by Hazard have since been reduced to synonymy. My study revealed 8 genera and 24 species recorded from Ohio with 1 genus and 7 additional species of possible occurrence. One specie is newly recorded from the state.

The species in the following list are arranged phylogenetically, and the distribution records are given by county. When a county is represented by one or two specimens, the date of collection and deposition of each specimen is included;

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when represented by a larger number, the total number of specimens examined for that county is listed with the collections in which they were found. Collections have been abbreviated in the following manner: Ohio University (OU), The Ohio State University (OSU), the Ohio State Museum (OSM), and author's collection (AC). Additional information on relative abundance, seasonal occurrence, biological and ecological notes, and habits is included when sufficient data permit.

CHECK LIST OF OHIO LAMPYRIDAE

Lucidota Castlenau*L. atra* (Fabricius)

Ashland, 7-VII-40 OSM 1-VI- OSU

Ashtabula, -VI-09 OSU

Belmont, 5 specimens OSM

Champaign, 13-VI-61 OSU

Columbiana, 21-VI-32 OSM

Delaware, 3 specimens OSU

Fairfield, 19-VII-38 OSM 29-VI-35 OSU

Franklin, 17-VI-35 OSM 16-VII-35 OSU

Greene 15-VI-53 OSU

Jefferson, 25-VI-39 OSM

Licking, 27-VI-46 OSM

Muskingum, 4-VII-33 OSM

Summit, 1-VII-20 OSU

This species is a diurnal form often occurring in large colonies. June 15 to August 1.

L. punctata LeConte

Ashland 1-VII OSU

Belmont, 24-VI-39 OSM

Delaware, 21-VI-50 OSU 24-VI-52 OSM

Hocking, 12 specimens OSU

Scioto, 9-VI-45 OSU

June 10 to July 20.

Ellychnia LeConte*E. autumnalis* (Melsheimer)

Champaign, 8-X-35 OU

E. lacustris LeConte*

No state record, but known to occur in Michigan, Minnesota, and Wisconsin.

E. corrusca (Linnaeus)

Ashland, 27-V- OSU

Champaign, 7-V-43 OSM

Columbiana, 9-IX-33 OSM

Erie, 6-VIII-02 OSU

Franklin, 6-IV-32 OSM

Harrison, 2-IV-39 OSM

Jackson, 5-XI-35 OU 12-VI-32 OSM

Licking, 21-V-33 OSM

Pike, 14-X-34 OSM

Scioto, 10-VI-44 OSU

This species is a common diurnal woodland form, usually found in shady locations, and overwinters as an adult. Most abundant in early spring and fall.

Pyropyga Motschulsky*P. nigricans* (Say)

Athens, 24-VI-61 AC

Franklin, 10-VII-51 OSM

Lucas, 29-VI- OSU

June 25 to August 15.

Athens, 117 specimens; all collections

Butler, 22-VI-28 OSM

Clinton, 17-VII-28 OSM

Coshocton, 3-VII-32 OSM

Erie, 6-VII-35 OSU

Hocking, 23 specimens OSU, OSM, AC

Lawrence, —OSU

Meigs, 10-VI-34 OU

Scioto, 21-VI-36 OSM 17-VI-44 OSU

Vinton, 19-VI-01 OSU 15-VI-32 OU

Athens, 13 specimens OU, AC

Clinton, 4 specimens OSM

Paulding, literature record

Athens, 43 specimens OU, AC

Clinton, 12-III-28 OSM

Delaware, 21-V- OSU

Fairfield, 6 specimens OU, OSU, OSM

Geauga, 25-III-35 OSM

Hocking, 62 specimens; all collections.

Noble, 4 specimens OU

Ross, 8-XII-45 OU

Tuscarawas, 16-V-50 OSM

Erie, 8-VII-42 OSM

Holmes, 7-VIII-32 OSM

Williams, 10-VII-49 OSM

P. decipiens (Harris)

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|------------------------------|-----------------------------------|
| Ashtabula, literature record | Athens, 106 specimens AC, OU, OSM |
| Champaign, 2-VIII-51 OSM | Clinton, literature record |
| Defiance, literature record | Delaware, 9 specimens OSU |
| Fairfield, 29-VI-35 OSU | Gallia, 4-IX-45 OU |
| Geauga, 17-VII-36 OSM | Greene, 22-VII- OSU |
| Guernsey, literature record | Holmes, 2-VIII-32 OSM |
| Huron, 1-VII-32 OSM | Knox, literature record |
| Licking, 17-VII-35 OSM | Pickaway, 24-VI-51 OSM |
| Portage, 21-VI-32 OSM | Ross, literature record |
| Williams, literature record | |

This is the most common species of this genus; collected in open grassland fields near small streams or ponds. June 20 to August 1.

P. minuta LeConte

- Athens, 24-VI-61 AC 3-IX-61 AC 16-VIII 33 OU
 Meigs, 28-VII-39 OU
 New state record.

Photinus Castlenau*P. cooki* Green*

No state record, but known to occur in Kentucky and Tennessee.

P. sabulosus Green

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|----------------------------------|-------------------------|
| Athens, 13 specimens AC, OU | Champaign, 18-VI-59 OSU |
| Delaware, 2-VII- OSU | Green, 8-VI-50 OSU |
| Hocking, 5 specimens OSU | Meigs, 29-VI-35 OU |
| Scioto, 10-VI-44 OSU 17-V-44 OSU | |

This species occurs in small numbers in early evening near marginal woodland vegetation.

P. marginellus LeConte

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|--------------------------|-------------------------------|
| Athens, 23-VI-39 OU | Delaware, 64 specimens OSU |
| Fairfield, 5-VIII-51 OSM | Franklin, 10-VIII-39 OSM |
| Greene, 4 specimens OSU | Hocking, 8 specimens OSU, OSM |
| Madison, 4-VII-51 OSM | Marion, 10 specimens OSM |
| Pickaway 7-VII-31 OSM | Summit, 16 specimens OSU |

This species emits a short yellow flash at about 5-sec intervals. June 1 to August 1.

P. curtatus Green

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|----------------------------|-----------------------------------|
| Athens, 11 specimens AC | Delaware, 24-VI-52 OSM 2-VII- OSU |
| Franklin, 15 specimens OSM | Highland, 7-VII-53 OSM |
- This species inhabits moist woodland areas. June 15 to July 5.

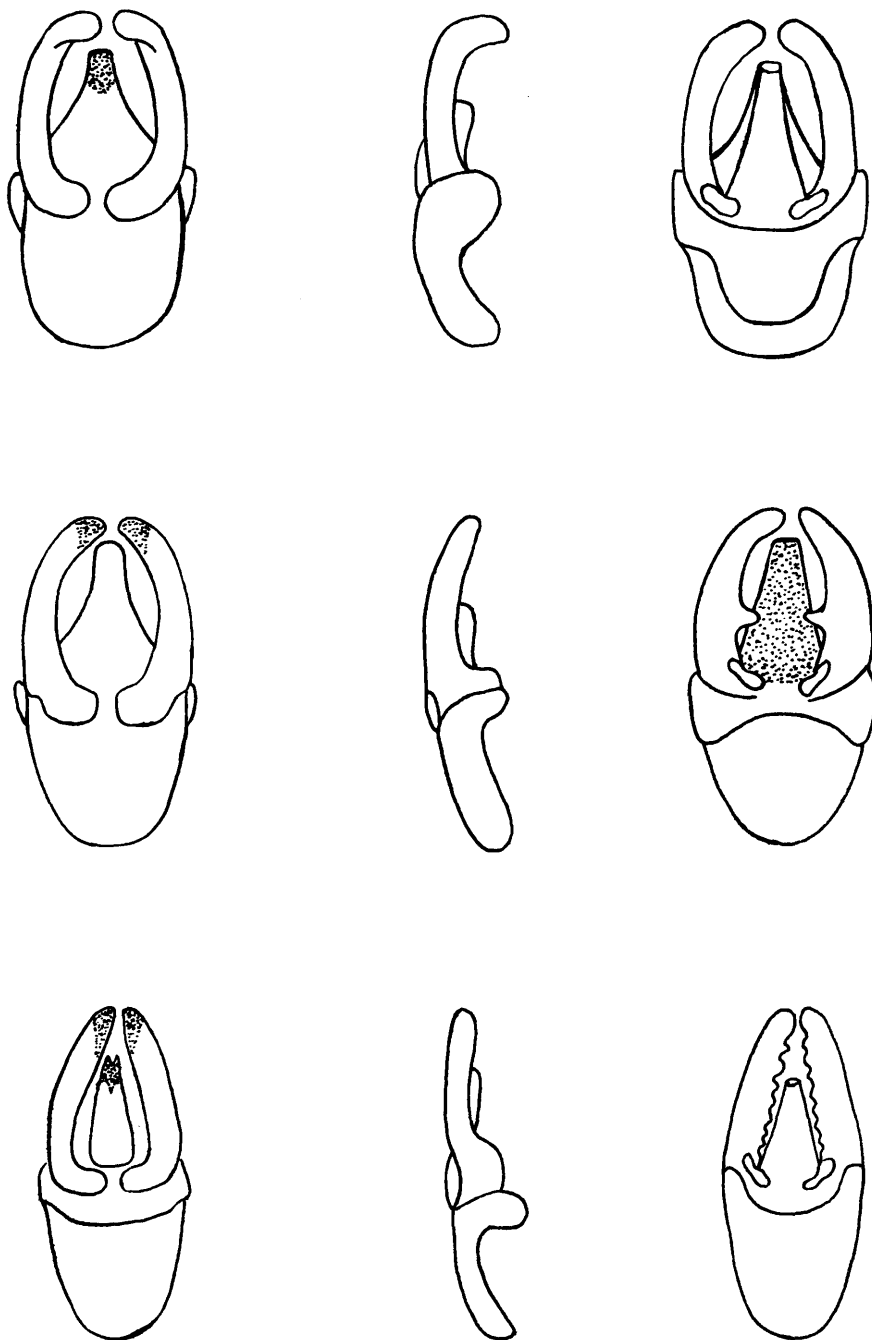
P. scintillans (Say)

- Summit, literature record
 Female not similar to male, brachypterous.

P. pyralis (Linnaeus)

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|--|----------------------------|
| Adams, 25-VI-33 OSM | Allen, 5 specimens OSM |
| Athens, 521 specimens AC, OU | Butler, 1-VII-38 OSM |
| Champaign, 27-VII-35 OSM 18-VI-51 OSU | |
| Coshocton, 22-VI-32 OSM | Crawford, -VII-39 OSM |
| Defiance, 6-VII-48 OSM | Delaware, 32 specimens OSU |
| Erie, 18-VII-38 OSM | Fairfield, 11-VIII-39 OSM |
| Franklin, 15 specimens OSU, OSM | Greene, 8 specimens OSU |
| Highland, 10-VII-29 OSM 20-VIII-35 OU | |
| Hocking, 12 specimens, All collections | |
| Huron, 1-VII-32 OSM | Jackson, 6-VII-35 OSM |
| Licking, 11-VII-37 OSM 6-VII-31 OSM | |
| Lucas 3-VIII-35 OSM | Meigs, 23-VII-38 |
| Muskingum, 3-VII-32 OSM | Pickaway, 19-VII- OSU |
| Preble, 6-VII-50 OSM 11-IX-29 OSM | |

- Ross, 20-VI-34 OSM
 Warren, 21-VI-36 OSM
 This is the most abundant Ohio species of firefly, occurring in large numbers from June to September. Most frequently found flying over lawns and open meadows.
- P. brimleyi* Green*
 No state record, but known to occur in Kentucky. Female not similar to male, brachypterous, larviform.
- P. indictus* (LeConte)
 Ashtabula, 23-VI-37 OSM
 Fairfield, 3-VI-34 OSM
 Summit, 15-VII-20 OSM 28-VI-60 OSM
- P. consanguineus* LeConte
 Ashtabula, literature record
 Scioto, 10-VI-44 OSU 17-VI-44 OSU
- P. consimilis* Green
 Athens, 24-VIII-61 AC
 Holmes, literature record
- P. ardens* LeConte
 Athens, 24-VIII-33 OU
 Erie, 7-VI-32 OSM 17-VI-32 OSM
 Holmes, 17-VI-31 OSM 18-VI-31 OSM
- Pyraclomena* LeConte
- P. angulata* (Say)
 Adams, 3-VI-30 OSM 22-VI-35 OU
 Athens, 6 specimens OU, AC
 Delaware, 19 specimens OSU
 Hocking, 42 specimens OSU, OSM
 Lucas, 9-VI-38 OSU
 Scioto, 17 specimens OSU
 Champaign, 8 specimens OSU, OSM
 Franklin, 9-VI-38 OSU
 Jackson, 28-VI- OSM
 Ross, 20-VI-34 OSM
 This is probably the most widely distributed species of this genus. June 1 to August 1.
- P. lucifera* (Melsheimer)
 Clinton, literature record
 Fairfield, 23-VII-39 OSM
 Hamilton, literature record
 Summit, 27-VI- OSM 26-VI-01 OSU
- P. sinuata* Green*
 No state record, but known to occur in Pennsylvania and Illinois.
- P. borealis* (Randall)
 Champaign, literature record
 Warren 4-VI-52 OSU
 This species is the largest firefly in Ohio, ranging from 12-19 mm.
- P. marginalis* Green*
 No state record, but known to occur in New York, Pennsylvania, Virginia and Illinois.
- P. linearis* Green
 Holmes, 19-VI-31 OU
- P. dispersa* Green
 Athens, 21 Specimens AC OU
 Hocking, 2-VI-57 OSU 20-V-57 OSU
 Greene, 12-VI-53 OSU
 This species can be collected just at dusk, in open fields and lawns. June 1 to July 1.
- Phausis* LeConte
- P. splendidula* (Linnaeus)*
 No state record, but known to occur in Maryland and Illinois.
- P. inaccensa* LeConte*
 No state record, but known to occur in Indiana.
- Pleotomus* LeConte
- P. davisii* LeConte
 Franklin, 26-VI-36 OSM Probably this species.
- Photuris* Dejean
- P. pensylvanica* (DeGeer) Complex
 Adams, 3-VI-30 OSM 11-VI-39 OSM



Figures show male genitalia of species of *Ellychnia* LeConte; dorsal, lateral, and ventral views are arranged in that order from left to right.

FIGURE 1 (at top). *Ellychnia corrusca* (Linnaeus).

FIGURE 2 (in middle). *Ellychnia autumnalis* (Melsheimer).

FIGURE 3 (at bottom). *Ellychnia lacustris* LeConte.

Ashtabula, 6-VII-34 OSU	Athens, 351 specimens AC, OU
Belmont, 24-VI-39 OSM	Clinton, 8-VI-28 OSM
Crawford, -VII-39 OSM	Delaware, 11 specimens OSU, OSM
Erie, 17-VI-37 OSM	Fairfield, 3-VII-37 OSM
Franklin, 30-VI-31 OSM 14-VI-35 OSM	
Hocking, 9 specimens, all collections	
Knox, 22-VI-32 OSM	Licking, 11-VII-36 OSM
Meigs, 27-VI-36 OSM	Scioto, 6 specimens OSU, OSM
Summit, 15-VII-20 OSU	Warren, 20-VII-40 OSM
Washington, 4-VI-39 OU	

This complex of species is common throughout Ohio. June 1 to September 10.

Polycclasis LeConte

P. bifaria (Say)

Athens, 26-VII-35 OU 15-VII-61 AC

Champaign, 9-VI- OSU

Hamilton, —OSU

This diurnal, woodland species is not common in Ohio.

NOTES ON SPECIES OF *Ellychnia* LECONTE

Little has been published concerning species of the genus *Ellychnia* LeConte, and the exact taxonomic position of certain species has been in question for some time.

LeConte (1881) considered *autumnalis* (Melsheimer) and *lacustris* LeConte as subspecies of *E. corrusca* (Linnaeus). W. S. Blatchley (1910) raised *lacustris* to the species level, but continued to treat *autumnalis* as a subspecies. In the Catalogue of Coleoptera (1920) Leng followed LeConte's treatment. McDermott (1958) states that though *autumnalis* is often given as a "variety" of *E. corrusca*, it should be considered as a distinct species.

The male genitalia of seven specimens of *E. autumnalis*, and 17 specimens of *E. lacustris* from the collection of W. C. Stehr, were examined. Larger numbers of genitalia extractions were made from *E. corrusca*. The genitalia of these forms may be described as follows:

E. corrusca (Linnaeus), figure 1; large and broad, with lateral lobes deeply incurved near apex; color entirely black.

E. autumnalis (Melsheimer), figure 2; oblong with inner margins of lateral lobes deeply notched at base; color black, with grey area near apex of lateral lobes.

E. lacustris LeConte, figure 3; long and narrow, lateral lobes straight with inner margins finely serrate; color dark piceous, with lighter area near apex of lateral lobes.

The distinct differences discovered in the male genitalia of *E. corrusca* (Linnaeus), *E. autumnalis* (Melsheimer), and *E. lacustris* LeConte support the view that these three should be considered as separate species.

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