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NORTH AMERICAN MOTHS
OF THE GENUS *SWAMMERDAMIA*
(LEPIDOPTERA: YPONOMEUTIDAE)

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Friese (1960), in his recent revision of the Palaearctic Yponomeutidae, proposed a more natural arrangement of the complex of species previously grouped in the genus *Swammerdamia* Hübner. The Palaearctic species are now divided into three genera, *Pseudoswammerdamia* Friese, *Swammerdamia* Hübner, and *Paraswammerdamia* Friese. In light of this new arrangement it seemed appropriate to examine the two species of *Swammerdamia* described from North America to determine how they fit into this new scheme.

The first record of the genus *Swammerdamia* in North America was published by Busck (1911) when he reported collecting specimens identified by him as *Swammerdamia pyrella* (De Villers) at Monadnock Lake, N.H. Three years later Busck (1914) stated that he had misidentified the specimens from New Hampshire as *S. pyrella* and that they actually represented a new species which he described as *S. castaneae*. Braun (1918) described a second species, *S. cuprescens*, reared from birch in Field, British Columbia. Clarke (1942) reported the first authentic record of *S. pyrella* (De Villers) from Bellingham, Wash., bringing the known North American species to three.

Examination of the genitalia of the types and specimens compared with the types of the two American species, *S. castaneae* and *S. cuprescens*, has revealed some interesting new facts that permit a clearer understanding of the occurrence of this predominantly Palaearctic group in the Nearctic Region. The results of these findings are presented in the present paper.

I wish to thank Dr. J. G. Franclemont for permitting me to study material from the Cornell University Collection, Dr. T. N. Freeman for providing records from material in the Canadian National Collection, Dr. G. J. Spencer for lending specimens from the University of British Columbia Collection, and Dr. Annette F. Braun, Cincinnati, Ohio, for comparing material from the United States National Museum with the type of *S. cuprescens* Braun in her personal collection.

Genus *Swammerdamia* Hübner

Swammerdamia Hübner, 1825, Verzeichniss bekannter Schmettlinge [sic], p. 425.
(Type species, *Tinea pyrella* De Villers).

Head rough. Labial palpus short, porrect. Forewing semilanceolate, terminal cilia long; 11 veins, all separate; 2 from well before angle; 3 from angle; 6 absent; 7 to termen. Hindwing slightly narrower and more lanceolate than forewing, with a subbasal hyaline patch; 7 veins, all separate; 4 absent.

Male genitalia: Harpe simple, sacculus large; ventral plate of the gnathos lightly sclerotized, broad, armed with numerous small spines or nodules; saccus slender, approximately parallel sided; aedeagus with cornuti.

Female genitalia: Anterior apophyses short, ventral arms widening at tips; lamella postvaginalis with a pair of fingerlike setiferous lobes; ostium bursae with dentate signum.

Key to the North American Species of *Swammerdamia* Based on the Genitalia

- | | |
|--|--------------------------------|
| 1. Male | 2 |
| Female | 3 |
| 2. Aedeagus short, straight, pointed at apex; one or more long, heavy setae on sacculus of harpe | <i>S. pyrella</i> (De Villers) |
| Aedeagus long, crooked, bluntly pointed at apex; sacculus without long, heavy setae | <i>S. heroldella</i> Hübner |
| 3. Ductus bursae with granular sclerotizations on posterior half, shorter than length of abdomen | <i>S. pyrella</i> (De Villers) |
| Ductus bursae membranous, much longer than length of abdomen | <i>S. heroldella</i> Hübner |

Swammerdamia pyrella (De Villers)

FIGURES 2a,b,e, 3a

Tinea pyrella De Villers, 1789, Caroli Linnaei entomologia faunae Suecicae . . . , vol. 2, p. 515.

Tinea cerasiella Hübner, 1810-13, Sammlung europäischer Schmetterlinge, vol. 8, Tin. taf. 48, fig. 332.

Oecophora passerella Zetterstedt, 1840, Insecta Lapponica, p. 1009.

Swammerdamia variegata Tengström, 1869, Notis. Sällsk. Fauna Flora Fennica Forh., vol. 10, p. 364.

Swammerdamia nanivora Stainton, 1871, Entomologist's Annual, 1871, p. 96.

Alar expanse 9-12 mm.

Antenna whitish basally, fuscous beyond. Head white; labial palpus gray, tip of apical segment whitish. Legs gray. Thorax dark gray dorsally. Forewing gray, overcast to a greater or lesser degree with fuscous scales; a white antepical costal spot; cilia fuscous with a coppery lustre. Hindwing gray, cilia gray.

Male genitalia: See figures (slide WDD 3195). Harpe broad with one or more large, heavily sclerotized, long setae on sacculus, ventral edge of sacculus with several short, heavy setae usually grouped in pairs; ventral plate of the gnathos with numerous small nodules; aedeagus short, straight, pointed at apex; vesica armed with cornuti.

Female genitalia: See figures (slide WDD 3196). Ductus bursae with granular sclerotizations on posterior half, shorter than length of abdomen; corpus bursae with signum a sclerotized, dentate plate.

Type: Lost.

Type locality: Southern France.

Food plant: Friese (1960) reports the larvae from *Pyrus communis* L., *Malus silvestris* Mill. (= *Pyrus malus* L.), *Prunus cerasus* L., *Prunus domestica* L., *Crataegus* spp., and in northern Europe on *Betula nana* L.

Distribution: BRITISH COLUMBIA: Fraser Mills (July, Aug.). WASHINGTON: Bellingham (Aug.).

The first authentic record of this species in North America was published by Clarke in 1942, as was mentioned earlier. It is undoubtedly an introduction from Europe, most likely brought in with plant material imported for the vast orchards of the Pacific Northwest. A very common and widespread species in Europe, *S. pyrella* does not seem to have established itself as well in North America; however, due to its small size and dull color, it may well be that it has been overlooked by most collectors.

Although rather indistinct in coloration, *S. pyrella* is readily recognizable by characters of the genitalia. These characters have been noted in the key, and examination of the figures readily illustrates them.



FIGURE 1.—Distribution records of the North American species of *Swammerdamia*.

▲ *pyrella*

● *heroldella*

Swammerdamia heroldella Hübner (sensu Treitschke, 1833)

FIGURES 2c,d, 3b

Tinea caesiella Hübner, 1796, Sammlung europäischer Schmetterlinge, vol. 8, p. 65, pl. 25, fig. 172.

Swammerdamia heroldella Hübner [new name for *caesiella*], 1825, Verzeichniss bekannter Schmettlinge [sic], p. 425.

Lita heroldella Treitschke, 1833, Die Schmetterlinge von Europa, vol. 9, p. 97.

Tinea nubeculella Tengström, 1848, Notis. Sällsk. Fauna Flora Fennica Forh., vol. 1, p. 3.

Tinea griseocapitella Stainton, 1851, Catalogue of the British Tineidae and Pterophoridae, suppl., p. 3.

Swammerdamia castaneae Busek, 1914, Proc. Ent. Soc. Washington, vol. 16, p. 148. (New synonymy.)

Swammerdamia cuprescens Braun, 1918, Canadian Ent., vol. 50, p. 231. (New synonymy.)

Alar expanse 9–13 mm.

Antennae whitish basally, fuscous annulated with white beyond. Head and face white; labial palpus fuscous, tip of apical segment whitish. Legs light to dark gray, tarsi more or less annulated with white. Thorax white to gray dorsally. Forewing grayish white variably overcast with fuscous scales; white anteapical costal spot either present or absent; cilia fuscous with a coppery lustre. Hindwing pale to dark gray, cilia gray.

Male genitalia: See figures (slide WDD 3025). Harpe narrow basally with numerous short, heavy setae on ventral edge of sacculus; ventral plate of gnathos with numerous small spines; aedeagus long, crooked, bluntly pointed at apex; vesica armed with cornuti.

Female genitalia: See figures (slide WDD 3003). Ductus bursae membranous, much longer than length of abdomen; corpus bursae with signum a sclerotized, dentate plate.

Type: Lost.

Type locality: Unknown.

Food plant: *Betula* spp., *Alnus* spp., *Castanea dentata* (Marsh.).

Distribution: BRITISH COLUMBIA: Field (Aug.); Fraser Mills (May). CONNECTICUT: East River (Aug.). ILLINOIS: Putman Co. (May, July, Aug.). MASSACHUSETTS: Framingham (May); Martha's Vineyard (Aug.). MINNESOTA: Chisago Co. (May). NEW HAMPSHIRE: Dublin (Aug.). ONTARIO: Toronto (July); Queenston (June). PENNSYLVANIA: Charter Oak (March). QUEBEC: Newago, Lake St. Francis (July). WEST VIRGINIA: Randolph Co. (May).

I have examined the genitalia of Busck's type of *S. castanae* and a specimen compared with Braun's type of *S. cuprescens* and found them identical to each other and to the European species *S. heroldella*. This species is rather variable in color. It has been the subject of a great deal of controversy among European workers, as the synonymy will attest. Friese (1960) has reviewed the subject, and I follow his conclusions concerning the synonymy in this paper. The failure of Busck and Braun to recognize the species as *S. heroldella* was most probably due to the state of confusion among the European workers regarding this species.

As is the case with the preceding species, *S. heroldella* is undoubtedly an introduction from Europe brought in on plant material. The diversity in the type localities (Field, British Columbia, for *S. cuprescens* and East River, Connecticut, for *S. castanae*) of the two North American synonyms suggests either a much more widespread distribution than the preceding species, *S. pyrella*, or two independent introductions, one on the east coast and one on the west coast.

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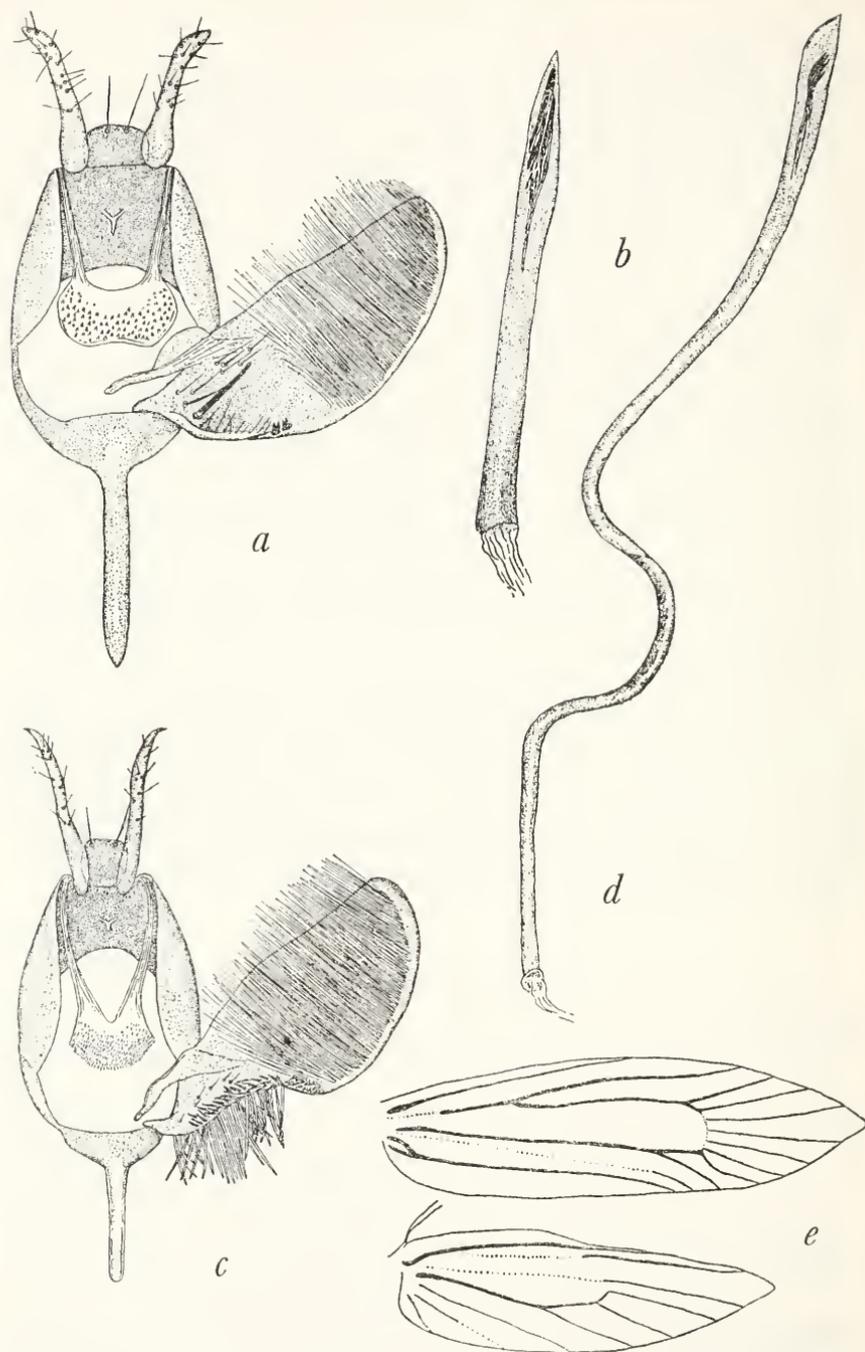


FIGURE 2.—*Swammerdamia pyrella* (De Villers): *a*, ventral view of male genitalia with aedeagus removed; *b*, aedeagus; *e*, wing venation. *S. Heroldella* Hübner: *c*, ventral view of male genitalia with aedeagus removed; *d*, aedeagus.

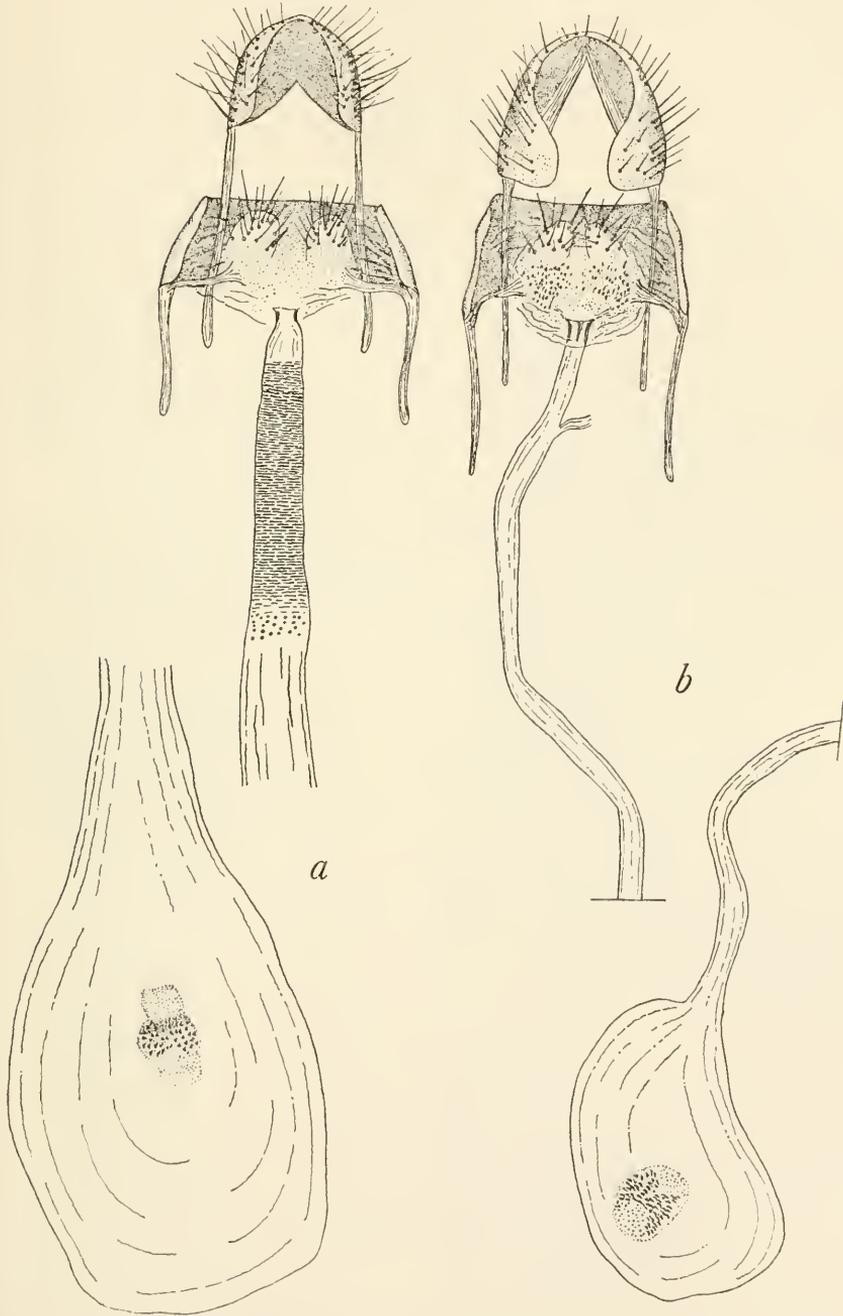


FIGURE 3.—*Swammerdamia pyrella* (De Villers): a, female genitalia. *S. heroldella* Hübner: b, female genitalia.

