

## A REVIEW OF FOUR SPECIES NAMES OF *PAECTES* FROM NORTH AMERICA (NOCTUIDAE: EUTELIINAE)

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**ABSTRACT.** The status of *Paectes pygmaea* Hübner, *P. abrostoletta* (Walker), *P. praepilata* (Grote), and *P. flabella* (Grote) is discussed. *Paectes abrostoletta* is the prior name for the species previously misidentified as *P. flabella*. *Paectes praepilata* is a junior synonym of *P. abrostoletta*. *Paectes flabella* is a junior synonym of *P. pygmaea*. Type specimens for all available names are illustrated. The male and female genitalia of *P. pygmaea* and *P. abrostoletta* are illustrated. *Paectes pygmaea* occurs in the eastern U.S. and *P. abrostoletta* occurs in the western U.S. The ranges of the two species overlap in the midwest from Michigan and Ohio through Kansas, and both species occur in Florida.

**Additional key words:** *pygmaea*, *abrostoletta*, *flabella*, *praepilata*, Ohio, Kentucky.

In Ohio and Kentucky, two species of *Paectes* have long been treated by collectors as a single taxon, *P. pygmaea* Hübner. Although similar, these two species can be distinguished morphologically, and one is restricted to remnant prairies. After examining photographs of the types of *P. abrostoletta* (Walker 1866), *P. praepilata* (Grote 1875), *P. flabella* (Grote 1879), and photographs of the pattern plate of the type (i.e., the original plate illustrating the type, hand-painted by Hübner himself) of *P. pygmaea* Hübner 1818, we determined that the senior name for the widespread species is *P. pygmaea*, and that *P. abrostoletta* is the valid name for the species from remnant prairies.

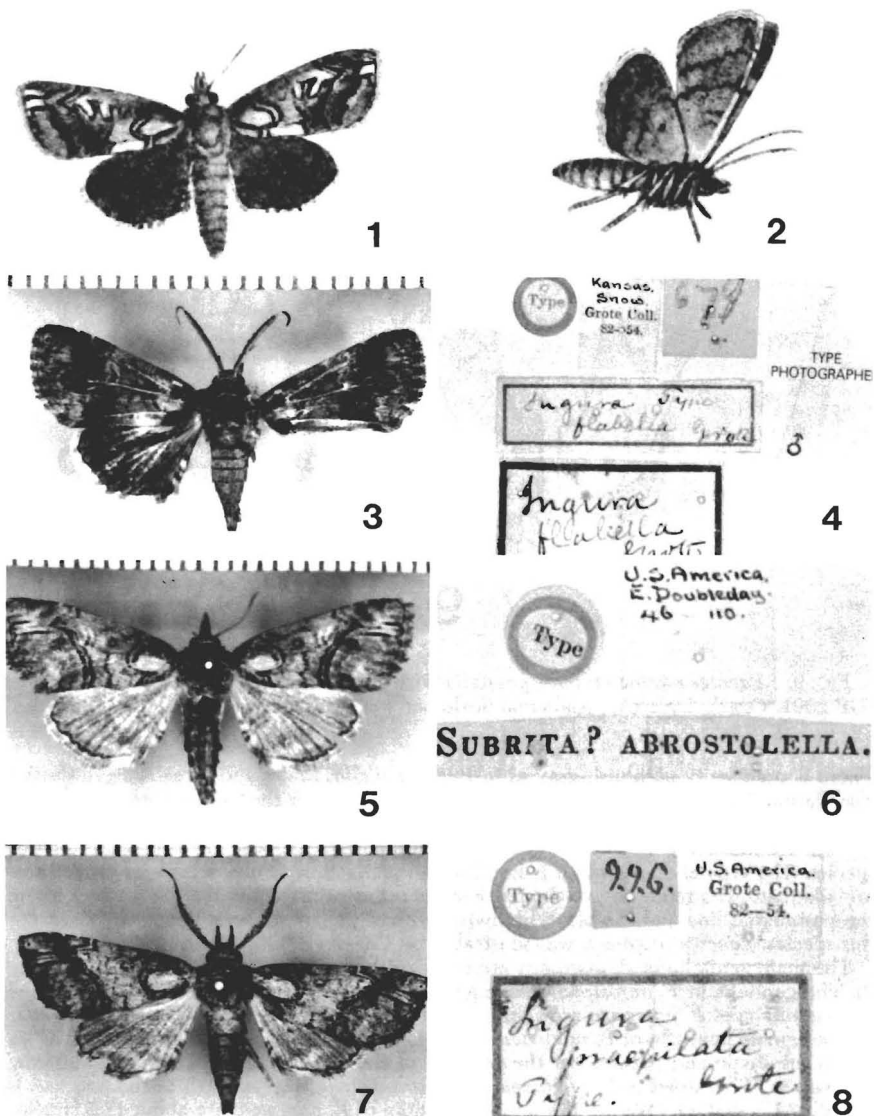
*Paectes abrostoletta* was previously considered a synonym of *P. pygmaea* and misidentified as *P. flabella*. *Paectes praepilata*, previously considered a synonym of *P. pygmaea*, is a junior synonym of *P. abrostoletta*. *Paectes flabella*, previously thought to be a distinct species, is a junior synonym of *P. pygmaea*. *Paectes pygmaea* and *P. abrostoletta* occur sympatrically over much of their ranges in the midwest and in Florida.

### *Paectes pygmaea* Hübner (Figs. 1-4, 9, 11)

*Paectes pygmaea* Hübner 1818:21, plate [19], figures 109 & 110. Type locality: "Aus Georgien in Florida."

*Ingura flabella* Grote 1879:208. Type locality: Kansas. Revised Synonymy.

*Paectes pygmaea* is distinguished by its small size (19-24 mm wingspan) and very dark hindwing with contrasting white fringe. The forewing is dark brown with some lighter areas. Some specimens show a contrastingly pale basal area in the fold of the forewing.



FIGS. 1-8. 1, Type of *Paectes pygmaea*, upper side; 2, Type of *Paectes pygmaea*, under side; 3, Type of *Ingura flabella*. Scale bar in mm; 4, Labels for type of *Ingura flabella*; 5, Type of *Subrita? abrostoellella*. Scale bar in mm; 6, Labels for type of *Subrita? abrostoellella*; 7, Type of *Ingura praepilata*. Scale bar in mm; 8, Labels for type of *Ingura praepilata*.

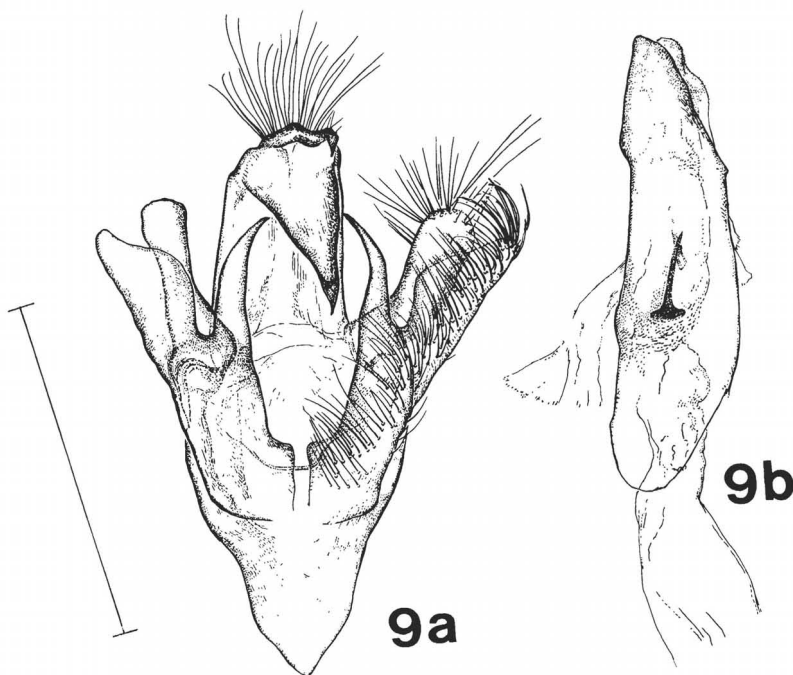


FIG. 9. *Paectes pygmaea*: male genitalia with aedeagus removed; b aedeagus. Slide JGF 2501. Ozark, Dale Co., Alabama. Scale bar = 1 mm.

There is practically no bluish-gray as in *P. abrostoletta*. Males and females have similar maculation. The male antennae are pectinated to more than  $\frac{3}{4}$  the length. Female antennae are simple.

Figs. 1 and 2 (type of *P. pygmaea*), and 3 (type of *P. flabella*) are diagnostic for this species. The type of *P. pygmaea* is lost, but Hübner's illustrations, which we reproduce, are adequate. His rendering of the forewing is rather stylized but the darker area along the postmedial line and the black hindwing with white fringe are sufficient to diagnose this species. *Paectes pygmaea* was illustrated by Covell (1984), plate 30 (20).

The male genitalia of *P. pygmaea* are distinguished by the long sacculus process (Fig. 9). The genitalia of *P. abrostoletta* have a shorter sacculus process (Fig. 10). Overall, the male genitalia of *P. pygmaea* are about 17% smaller than the genitalia of *P. abrostoletta*.

The female genitalia of *P. pygmaea* (Fig. 11) differ from those of *P. abrostoletta* (Fig. 12) in the shape and positions of the two sacs of the corpus bursae. The junction of the two sacs is "Y" shaped in *P. pygmaea*. In *P. abrostoletta*, the junction of the two sacs is broadly "U" shaped. Overall, the female genitalia of *P. pygmaea* are about 17% smaller than the genitalia of *P. abrostoletta*.

*Paectes pygmaea* is widespread in the eastern U.S. from Massachusetts to Florida and west to Michigan, Kansas, and eastern Texas (Fig. 13). In the south it flies from February (in the Florida Keys) to April–June and August (in the Florida panhandle) and in May–early July (Louisiana). In the vicinity of Washington, D.C., it flies in mid June–early July and late July–mid August. In Ohio it flies in late May–mid June and again in mid July–early August. In Michigan it flies in late May–early July and late July–late August.

The larva was described by Edwards and Elliot (1883): "Larva. (Full grown.) Yellowish apple green. Second segment with yellow line in front. All the segments have about 15 to 18 yellow spots irregularly disposed. Most of these spots are lozenge-shaped; those of

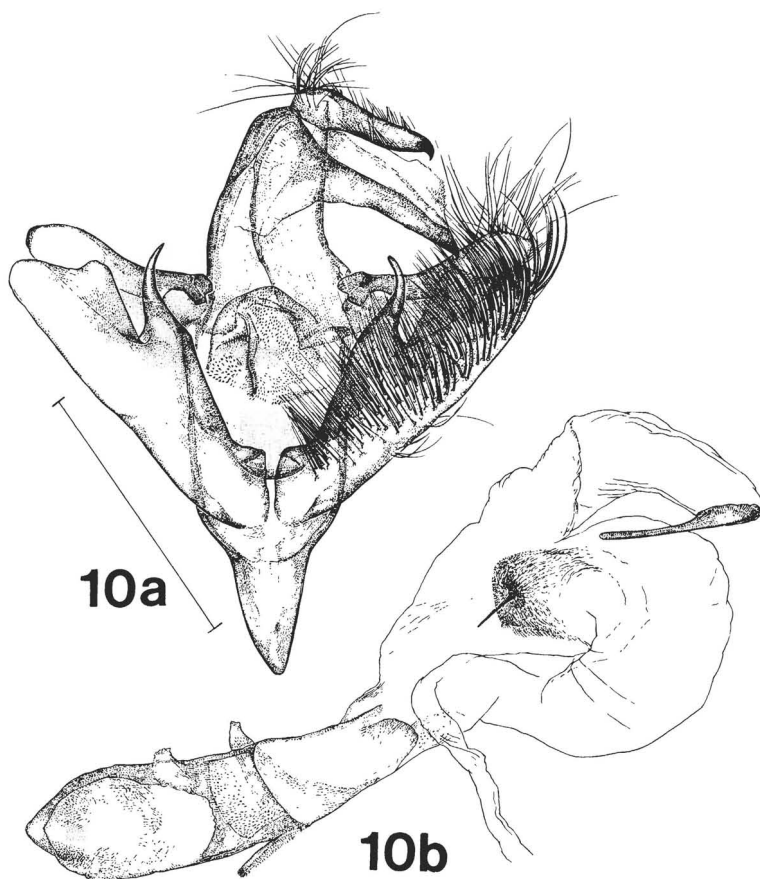


FIG. 10. *Paectes abrostoletta*: male genitalia with aedeagus removed; b aedeagus. Slide JGF 7518. Madera Canyon, Santa Rita Mts., Santa Cruz Co., Arizona. Scale bar = 1 mm.

the subdorsal region being somewhat linear. Spiracles dull orange, with bright lemon-yellow stigmal line. Length: 16 mm. Food plant *Liquidamber* [sic] *ptyraciflua* [sic] L., *Liquidambar styraciflua* is Sweet Gum (Hamamelidaceae).

*Paectes abrostoletta* (Walker)

(Figs. 5–8, 10, 12)

*Subrita*? *abrostoletta* Walker 1866:1744. Type locality: United States. Revised status.

*Ingura praepilata* Grote 1875:311. Type locality: Texas (Bosque County)? Revised synonymy

*Paectes abrostoletta* is distinguished from *P. pygmaea* by its slightly larger size (22–27 mm wingspan), blue-gray appearance, and paler hindwings. Whereas *P. pygmaea* is dark brown, *P. abrostoletta* is a bluish gray species that varies from pale to dark gray. The black markings are thinner and finer. The fringe of the hindwing is gray or only partially white.



FIGS. 11, 12. 11, *Paectes pygmaea*: Female genitalia. Slide JGF 3558. Ozark, Dale Co., Alabama. Scale bar = 1 mm; 12, *Paectes abrostolella*: Female genitalia. Slide JGF 7519. Madera Canyon, Santa Rita Mts., Santa Cruz Co., Arizona. Scale bar = 1 mm.

Figs. 5 and 7 illustrate adults of this species. The oval basal area of the forewing is not contrastingly pale on all specimens. The hindwings are light gray at the inner margin where they are crossed with dark lines. The adult moth resembles a diminutive *P. abrostoloides*, but *P. abrostoloides* tends to be a brownish moth whereas *P. abrostolella*

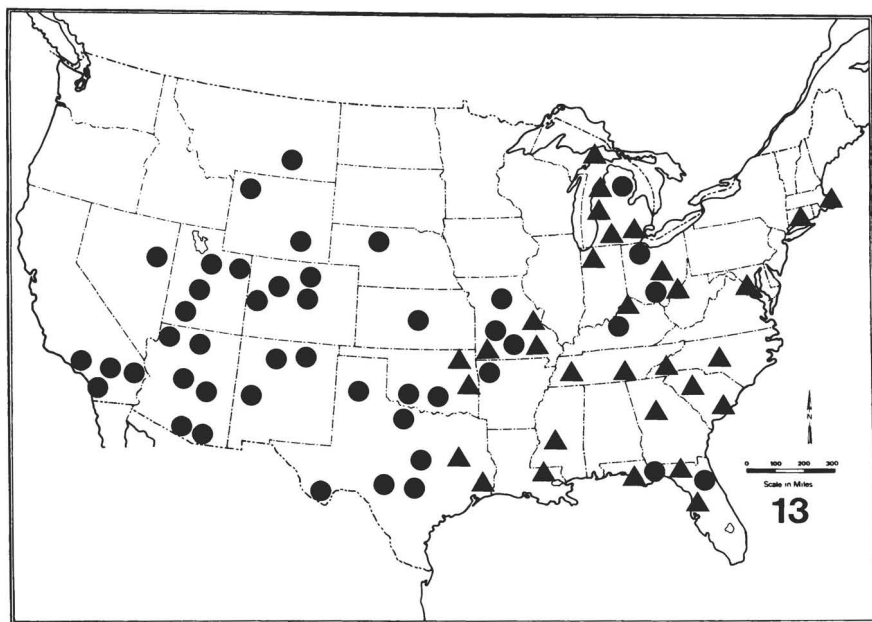


FIG. 13. Geographical ranges of *Paectes* species in the United States. Triangles = *Paectes pygmaea*. Circles = *Paectes abrostoletta*.

tends to be a grayish moth. The maculation of the males and females are similar. The antennae are similar to *P. pygmaea* for each sex, respectively. This species, misidentified as *Paectes pygmaea*, was illustrated by Holland (1903) plate 29 (2).

*Paectes abrostoletta* was described from a single female specimen from the "United States. Presented by E. Doubleday, Esq." (Walker 1866). The specimen may have been collected on Doubleday's trip from Pittsburgh, Pennsylvania down the Ohio River to St. Louis, Missouri (Doubleday 1838).

*Paectes abrostoletta* has often been misspelled as *P. abrostella* (Smith 1893, Dyar 1902[3]). *Paectes abrostoletta* (as a synonym of *P. pygmaea*) was misspelled as *P. abrostoloides* in Hodges et al. (1983).

Figs. 10 and 12 show the male and female genitalia of *P. abrostoletta*. The differences between *P. abrostoletta* and *P. pygmaea* were described under *P. pygmaea*.

*Paectes abrostoletta* is widespread in the western U.S. from California east to Texas and north to Montana (Fig. 13). Populations also occur in Florida, Kentucky, Ohio, and Michigan. It occurs in remnant prairies in Kentucky (mid May and July), southern Ohio (mid-July), and northern Ohio (late June). It occurs in Putnam and Gadsden counties, Florida (March–April and September), and Oscoda County, Michigan (mid-June). In the west it occurs from Texas (March through October), Arizona (April through September), and California (May through September) north to Missouri (May–mid August), Nebraska, Montana, and Utah (June–August). If Doubleday collected the type on his trip down the Ohio River, it would have been collected in mid-September.

## DISCUSSION

*Paectes pygmaea* was variously misidentified by early authors working on North American Noctuidae. It was not included on North Amer-

ican lists until 1882 (Grote), after which it was associated with several other species including *P. fuscescens* (Walker 1855), *P. abrostoletta*, and *P. praepilata*. *Paectes abrostoletta* was even less well understood by earlier authors. It was not included on North American lists until 1893 (Smith), after which it was associated with *P. fuscescens* and *P. praepilata*. Nearly all workers have agreed that *P. abrostoletta* and *P. praepilata* are synonyms. Forbes (1954) separated *P. praepilata* from *P. pygmaea*, but he omitted *P. abrostoletta*. None of the early workers considered *P. flabella* to be a synonym of *P. pygmaea*.

The corrected list of species should be:

*Paectes* Hübner, 1818

*pygmaea* Hübner 1818

*abrostoletta* authors, not (Walker 1866); misidentification

*praepilata* authors, not (Grote 1875); misidentification

*flabella* (Grote 1879); revised synonymy

*abrostoletta* (Walker 1866); revised status

*praepilata* (Grote 1875); revised synonymy

*flabella* authors, not (Grote 1879); misidentification

*Subrita?* *abrostoletta*, *Ingura praepilata*, and *Ingura flabella* are represented by single type specimens in the Natural History Museum, London. Hübner's pattern plate for *Paectes pygmaea* is also in the Natural History Museum, London.

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