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# Keys and Illustrations for the Armyworm Moths of the Noctuid Genus *Spodoptera* Guenée from the Western Hemisphere<sup>1</sup>

E. L. TODD AND R. W. POOLE

Systematic Entomology Laboratory, IIBIII, USDA, SEA, c/o US National Museum, Washington, DC 20560

## ABSTRACT

Ann. Entomol. Soc. Am. 73: 722-738 (1980)

Characters for the recognition of the 14 Western Hemisphere species of the armyworms of the economically important genus *Spodoptera* Guenée are provided in keys to the species based on maculation and coloration and in keys to the male genitalia. Illustrations of adults and figures of the male and female genitalia, discussion of the geographic distribution, and synonymical bibliographies of each species are given.

The genus *Spodoptera* Guenée is composed of moths whose larvae are rather general feeders and attack various crops. The species of the genus are primarily tropical and subtropical, but in both hemispheres a number of species occur in, or spread into, the temperate regions each growing season. In the Western Hemisphere the species found in the more temperate regions include *Spodoptera frugiperda* (J. E. Smith) (fall armyworm), *S. exigua* (Hübner) (beet armyworm), *S. ornithogalli* (Guenée) (yellow-striped armyworm), *S. praefica* (Grote) (western yellow-striped armyworm), *S. eridania* (Cramer) (southern armyworm), and *S. latifascia* (Walker). *Spodoptera exigua* (Hübner) was introduced into the western United States in about 1875 and has now spread eastward across the nation and southward to Nicaragua (Todd 1966). It also occurs on some of the Antilles; however, its occurrence there could have resulted from more recent introductions from the eastern hemisphere. Another Old World species, *S. pecten* Guenée, was commonly intercepted from planes returning to the United States from southeast Asia during the Vietnam war. Two specimens were taken in light traps at McChord Air Force Base in California, but it has not been determined whether the species has been established in this country. One American species, *S. frugiperda* (J. E. Smith), has recently become established in Israel (Wilshire 1977).

Sexual dimorphism is well developed in some species but is weak in others. A number of species have similar patterns of wing maculation, resulting in considerable confusion of species and frequent misidentification. We hope that the recognition characteristics indicated in the keys and shown in the illustrations will help eliminate errors of identification and facilitate the work of researchers concerned with American species of the genus.

Two species, *Laphygma nigrescens* Dyar and *Laphygma compta* Walker do not belong to *Spodoptera* (*Laphygma* is a synonym of *Spodoptera*) and are not treated in this paper. *Laphygma nigrescens* Dyar and its two forms, *fulvimedia* Draudt and *albimedia* Draudt, is transferred to *Calymniodes*, *Calymniodes nigrescens* (Dyar), NEW COMBINATION. *Laphygma compta* Walker is transferred to the genus *Platysenta*, *Platysenta compta* (Walker), NEW COMBINATION.

## Genus Recognition

There is, unfortunately, no simple external morphological character specific to the genus *Spodoptera*. The two best procedures for identifying a moth as a *Spodoptera* are as follows:

1. Familiarization with the general appearance given in the figures of the adults. Economically important species have a characteristic appearance which will usually enable identification as a *Spodoptera*.
2. If specimens are fresh, gently squeezing the abdomen until the genitalia are extruded. With dry specimens, relax them and gently pull the genitalia out with a pair of forceps. The male genitalia of *Spodoptera* are highly characteristic of the genus, particularly the broad, slightly membranous valve, bifid at the apex, and the clasper at the apical end of the valve (see Fig. 25). In females, the neck of the ovipositor is covered with massive tufts of long fine hair. This fine hair is black in *Spodoptera ornithogalli* (Guenée) and its relatives, black in *Spodoptera eridania* (Cramer) and its relatives, but dirty white in *Spodoptera frugiperda* and *Spodoptera exigua*. In dried specimens these tufts can usually be seen by gently brushing away the hairy scales from the tip of the abdomen. However these tufts are not entirely limited to *Spodoptera*. Also the tufts are very weak in *S. exigua* (Hübner) and *S. hipparis* (Druce) and are easily missed in these two species. Consequently it is best to associate males if at all possible.

Some other characters are as follows: 1) the eyes are not hairy, 2) the tibia of the prothoracic leg is spineless, 3) the eyes are not lashed below the antenna, 4) the venation is trifold, and 5) the last tarsal segment has two rows of strong spines. For definitions of the terms used consult Forbes (1954).

## *Spodoptera* Guenée

*Spodoptera* Guenée 1852:153. Type species: *Hadena mauritia* Boisduval, by subsequent designation, Hampson 1894:248.

*Prodenia* Guenée 1852:159. Type species: *Hadena retina* Freyer, by subsequent designation, Grote 1874:17.

*Laphygma* Guenée 1852:156. Type species: *Noctua exigua* Hübner, by original designation.

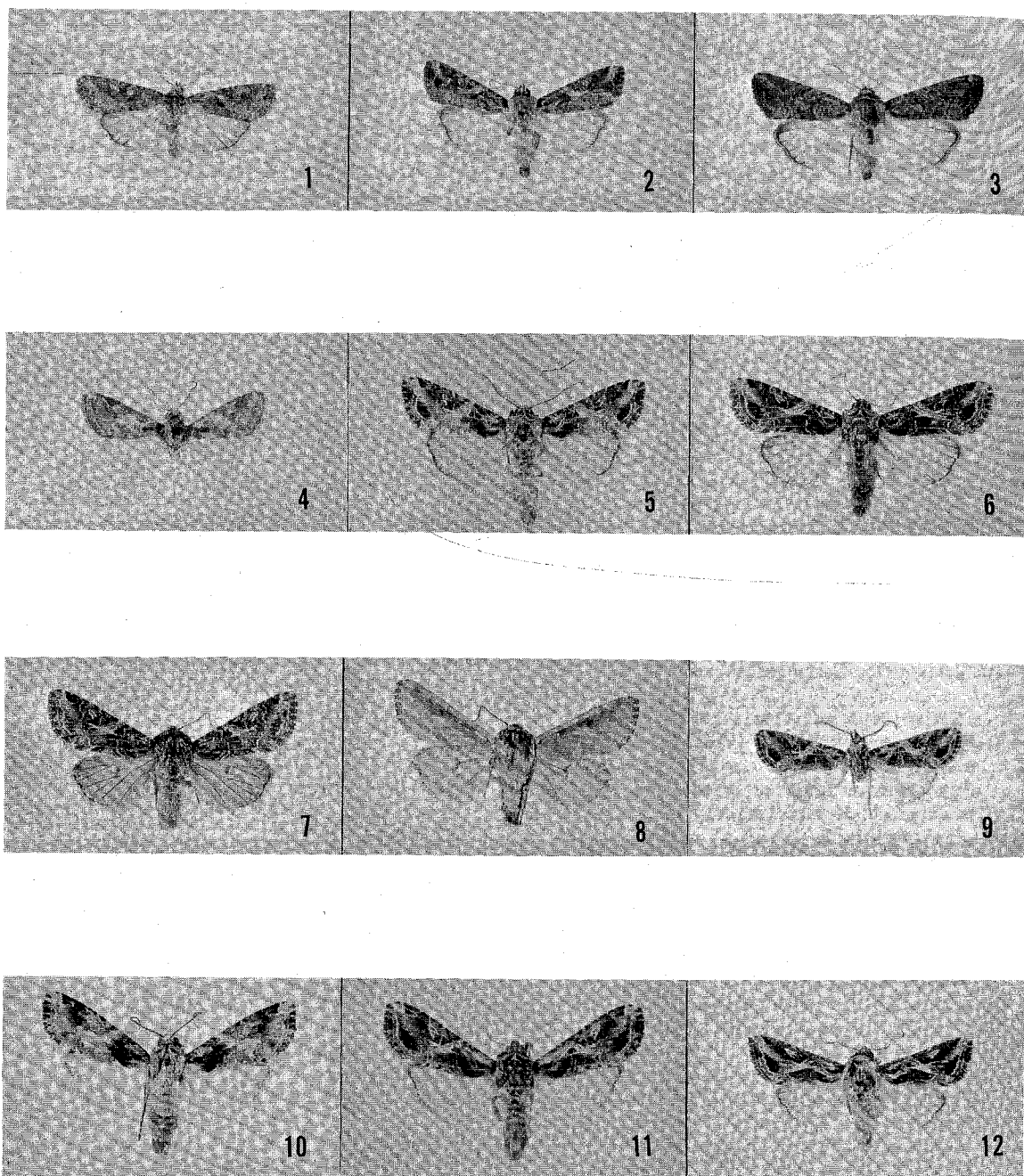
*Xylomyges* Guenée 1852:147 (in part, not the type species).

<sup>1</sup> Received for publication Jan. 9, 1980.

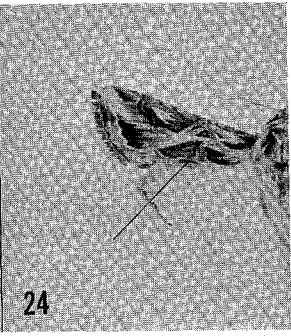
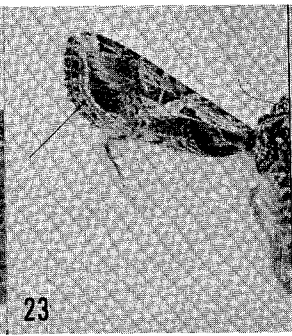
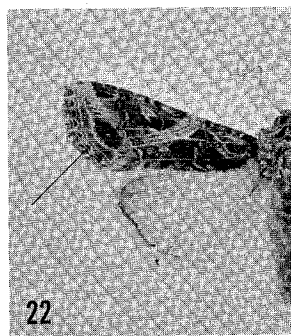
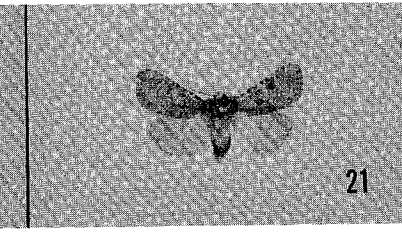
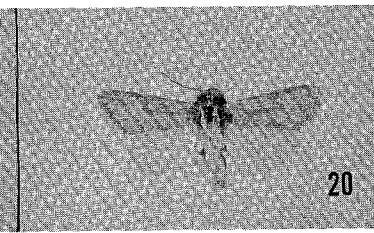
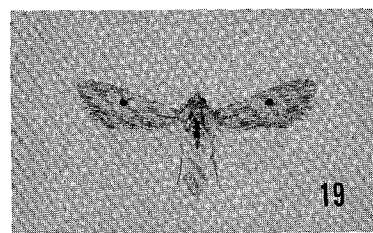
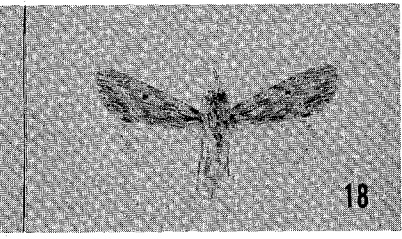
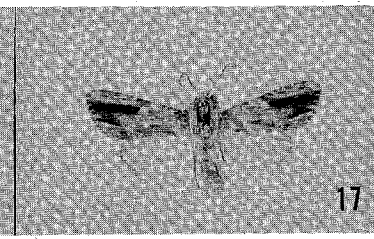
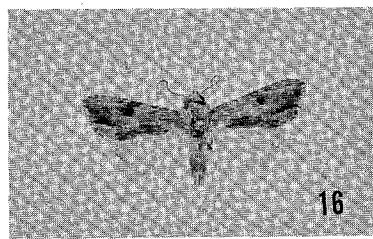
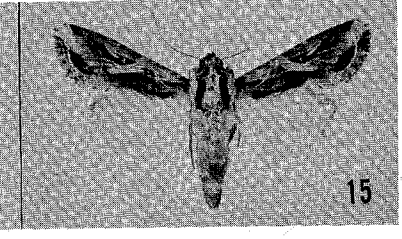
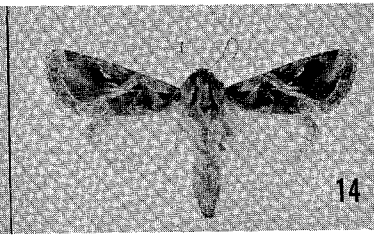
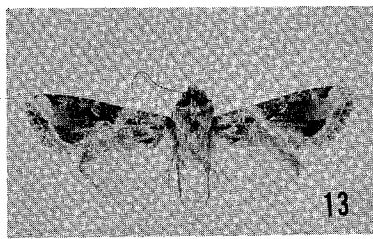
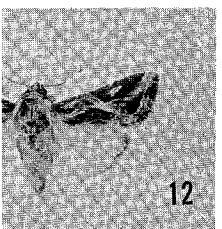
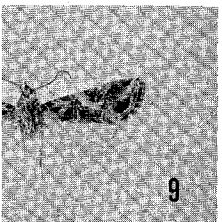
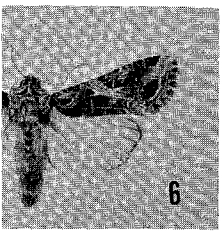
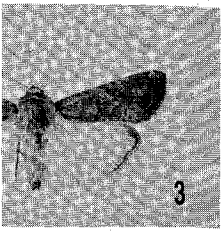
16. Veins of the hindwing with fuscous scaling; sexual dimorphism present, males with median area lighter, often yellower than the rest of the forewing . . . . . *Spodoptera ornithogalli* (Guenée)  
Veins of hindwing pure white; sexual dimorphism absent, males with median area not lighter than rest of forewing . . . . . *Spodoptera marima* (Schaus)

1. Long soci-like structures at the base of the uncus present (Fig. 37).....2

..... *Spodoptera frugiperda* (J. E. Smith) ♀  
Forewing not entirely dark brown, always with  
some contrasting markings ..... 9



FIGS. 1-12.—*Spodoptera* spp. adults. 1) *S. exigua* (Hübner) male; 2) *S. frugiperda* (J.E. Smith) male; 3) *S. frugiperda* (J.E. Smith) female; 4) *S. evanida* Schaus male; 5) *S. ornithogalli* (Guenée) male; 6) *S. ornithogalli* (Guenée) female; 7) *S. praefica* (Grote) female; 8) *S. praefica* (Grote) female, underside; 9) *S. marima* (Schaus) male; 10) *S. latifascia* (Walker) male; 11) *S. latifascia* (Walker) female; 12) *S. pulchella* (Herrich-Schaeffer) male.



; 3) *S. frugiperda* (J.E.  
) female; 7) *S. praefica*  
(Walker) male; 11) *S.*

FIGS. 13-24.—*Spodoptera* spp. adults. 13) *S. androgea* (Cramer) male; 14) *S. androgea* (Cramer) male, red form; 15) *S. dolichos* (Fabricius) male; 16) *S. eridania* (Cramer) male; 17) *S. eridania* (Cramer), lineate form; 18) *S. sunia* (Guenée) male; 19) *S. sunia* (Guenée) male, form with prominent reniform; 20) *S. ochrea* (Hampson) male; 21) *S. hipparis* (Druce) male; 22) *S. ornithogalli* (Guenée) female, detail of forewing; 23) *S. latifascia* (Walker) female, detail of forewing; 24) *S. pulchella* (Herrich-Schaeffer) male, detail of forewing.

- Long soci-like structures at the base of the uncus absent, or if present very weakly sclerotized (Fig. 31) ..... 4
2. A second pair of flaps on upper third of tegumen present (Fig. 37) ..... 3  
 A second pair of flaps on upper third of tegumen absent (Fig. 39) ... *Spodoptera ochrea* (Hampson)
3. A broad cleft between the sacculus and clasper of the cucullus; tip of sacculus pointed (Fig. 37) ..... *Spodoptera eridania* (Cramer)  
 Only a small cleft between the sacculus and clasper of the cucullus; tip of sacculus clavate (Fig. 38) ..... *Spodoptera sunia* (Guenée)
4. Clasper hook-shaped or pointed (Fig. 35) ..... 5  
 Clasper plate-shaped, not long or pointed (Fig. 40) ..... *Spodoptera hipparis* (Druce)
5. End of valve rounded without a noticeable cleft between sacculus and cucullus; vesica of aedeagus with a single well sclerotized cornutus (Fig. 27) ..... *Spodoptera exigua* (Hübner)  
 End of valve with a distinct cleft between the sacculus and cucullus; vesica of aedeagus not as above ..... 6
6. Basal process of the sacculus with a distinct knob at the tip (Fig. 33) ... *Spodoptera latifascia* (Walker)  
 Basal process of the sacculus without a distinct knob at the tip ..... 7
7. Clasper broad, sickle-shaped; ampullus large, well sclerotized, pointing toward the tip of the valve (Fig. 29) ..... *Spodoptera evanida* Schaus  
 Clasper narrower, either straight or hook-shaped; ampullus thin, not well sclerotized, pointing at right angles to the upper margin of the valve (Fig. 31) ... 8
8. Clasper short, straight, no more than three times as long as wide (Fig. 28) .....  
 ..... *Spodoptera frugiperda* (J. E. Smith)  
 Clasper longer, usually hooked at tip, usually at least three times as long as wide ..... 9
9. Clasper nearly straight, curved mostly at the tip (Fig. 34) ... *Spodoptera pulchella* (Herrich-Schaeffer)  
 Clasper always noticeably curved (Fig. 31) ... 10
10. Vesica of aedeagus with sclerotized area with sharp point (Fig. 36) ... *Spodoptera androgea* (Cramer)  
 Vesica of aedeagus without sclerotized area or with sclerotized area, without a sharp point ..... 11
11. Ampullus short, no more than two to three times as long as wide ..... *Spodoptera praeifica* (Grote)  
 Ampullus long, far more than three times as long as wide ..... 12
12. Clasper swollen near tip, distinctly bulbous ..... *Spodoptera roseae* (Schaus)  
 Clasper not swollen near tip, or if slightly swollen, not distinctly bulbous ..... 13
13. Ampullus appearing to arise near base of valve, about one-half to three-fourths as far from base as width of articulation of valve at base .....  
 ..... *Spodoptera dolichos* (Fabaricius)  
 Ampullus appearing to arise distinctly further from the base of the valve, about one to one and a half times as far as width of articulation of valve at base ..... *Spodoptera ornithogalli* (Guenée)  
 and *marima* (Schaus)

*Spodoptera exigua* (Hübner)  
 (Beet Armyworm)  
 Figures 1, 27, 41

*Noctua exigua* Hübner 1796–1838 [1803–1808]: Fig. 362.

*Noctua fulgens* Geyer 1796–1838 [1828–1832]: Fig. 796.

*Caradrina pygmaea* Rambur 1834:384, pl. 8, Fig. 2.

*Caradrina junceti* Zeller 1847:445.

*Laphygma cycloides* Guenée 1852:157.

*Laphygma caradrinoides* Walker 1856:190.

*Caradrina flavimaculata* Harvey 1876:54.

*Caradrina sebhana* Austaut 1880:212.

*Caradrina venosa* Butler 1880:7.

Length of forewing from base to apex: Males, 12–15 mm; females 12–15 mm.

*Spodoptera exigua* is a small, slender-winged species most similar to *S. frugiperda* among the Western Hemisphere species, particularly the females. But its ground color is paler, and the forewing is characterized by the small round orbicular spot which is filled with pale-yellow or yellow-orange scales. The orbicular spot in *frugiperda* is oval, oblique, and dark centered. In addition, the veins of the hindwing are dark to the base. These veins in *frugiperda* are dark only toward the outer margin of the hindwing. *Spodoptera exigua* exhibits little sexual dimorphism and is less variable than other species of the genus. Specimens from arid regions tend to be somewhat paler and larger than individuals from more mesic areas. The larva of *exigua* is usually called the beet armyworm. The male and female genitalia are illustrated in Fig. 27 and 41. The massive membranous area and scaling present in most species of *Spodoptera* are greatly reduced in the female genitalia of *exigua*.

*Distribution:* This species occurs throughout most of the United States; however, its northern distribution is seasonal, reaching southern Canada. It is known from as far south as Nicaragua in Central America and from the Dominican Republic and Dominica in the Antilles. Earlier reports of this species from South America, except for one specimen labeled "French Guiana" have undoubtedly been misidentifications of *Spodoptera frugiperda*. Based on our knowledge of the spread of *exigua* in North America, it is certain that the species will continue to spread into other regions of the Western Hemisphere.

*Spodoptera frugiperda* (J. E. Smith)  
 (Fall Armyworm)  
 Figures 2, 3, 28, 43

*Noctua frugiperda* J. E. Smith 1797:191, pl. 96.

*Laphygma macra* Guenée 1852:157

*Laphygma inepta* Walker 1856:190.

*Prodenia signifera* Walker 1856:193.

*Prodenia plagiata* Walker 1856:194.

*Prodenia autumnalis* Riley 1871:109, Fig 44–49.

*Prodenia fulvosa* Riley 1876:49.

*Prodenia obscura* Riley 1876:49.

Length of forewing from base to apex: Males, 12–17 mm; females 12–16 mm.



8 [1803–1808]: Fig.

8 [1828–1832]: Fig.

:384, pl. 8, Fig. 2.

:157.

856:190.

876:54.

:212.

apex: Males, 12–15

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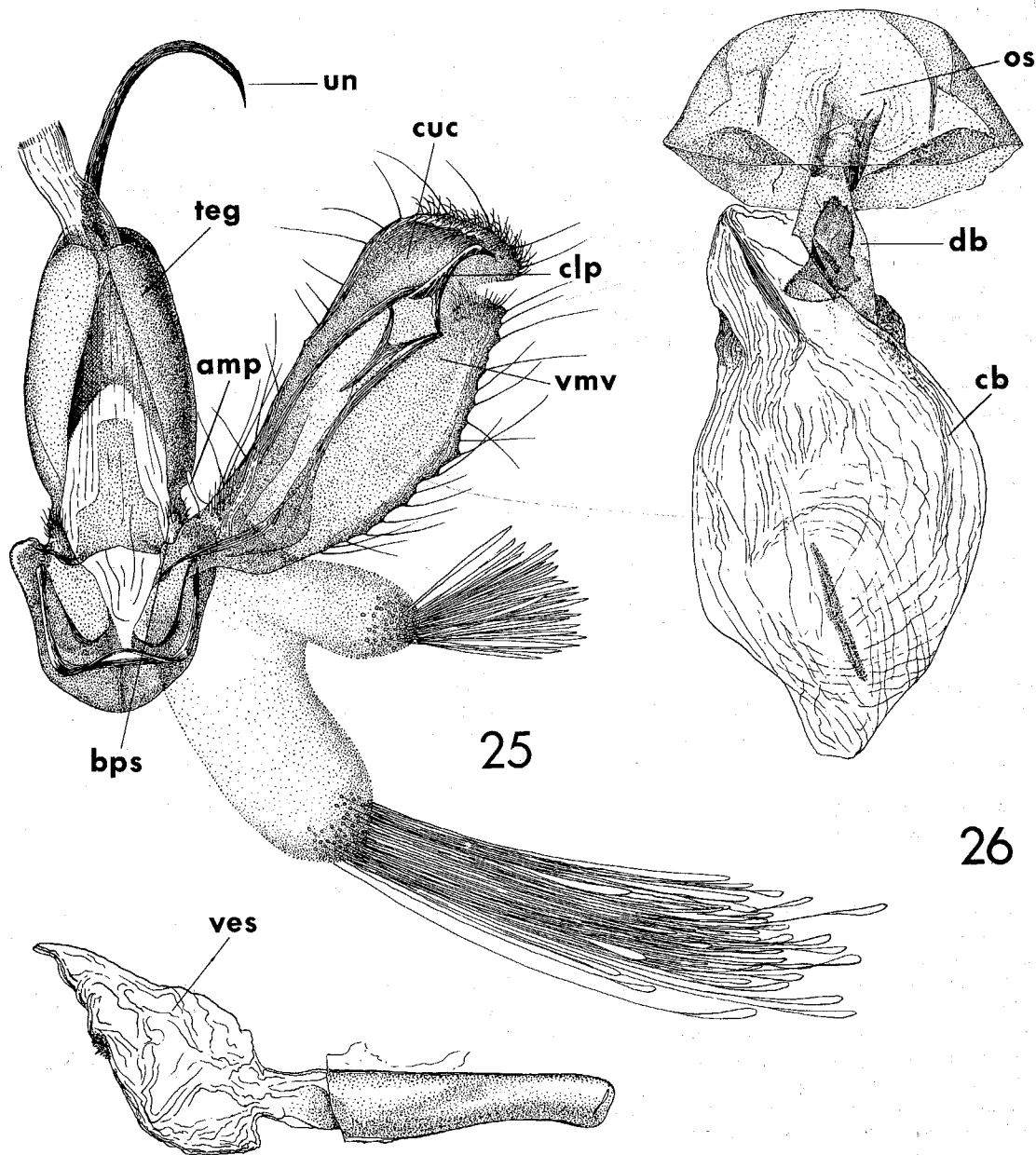
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7:191, pl. 96.

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9, Fig 44–49.

pex: Males, 12–17



FIGS. 25, 26.—Male and female genitalia labeled to show terminology used in key. 25) Male genitalia, amp = ampullus, bps = basal process of the sacculus, clp = clasper, sac = sacculus; cuc = cucullus; teg = tegumen, un = uncus, ves = vesica. 26) female genitalia, os = ostium, cb = corpus bursae, db = ductus bursae.

*Spodoptera frugiperda* is characterized by the elongate forewings, its size, and superficially rounded appearance of the apex of the forewing. Sexual dimorphism is well marked; the male resembling those species previously referred to *Prodenia* such as *ornithogalli* (Guenée), whereas the females are almost uniformly grey brown sometimes resembling *exigua*. However, the orbicular is ovate, oblique, dark centered, not round or light colored as in *exigua*. The male and female genitalia are illustrated in Fig. 28 and 43. The hair mass associated with the female genitalia is well developed, unlike that of *exigua*. The light stripe between the orbicular and reniform in the male varies considerably in its distinctness. The ground color varies from grey brown to reddish brown. The larva of *frugiperda* is usually called the fall armyworm.

**Distribution:** *Spodoptera frugiperda* is found throughout most of the Western Hemisphere from southern Canada to Chile and Argentina, and it is often abundant in agricultural areas. Wiltshire (1977) reported an introduction of this New World species into Israel.

*Spodoptera evanida* Schaus  
Figures 4, 29, 42

*Spodoptera evanida* Schaus 1914:490.

Length of forewing from base to apex: Males, 14–16 mm; females, 15 mm.

*Spodoptera evanida* appears to be one of the rarer species of the genus or at least one of the most restricted species geographically. The dull orangish coloration of the forewing and the pure white hindwings are distinctive. The ordinary maculation of transverse lines and spots is only weakly apparent. The color and pattern make it unlikely that this species will be readily confused with any other species in the genus.

**Distribution:** Presently known only from the upper Amazon and French Guiana.

*Spodoptera praefica* (Grote)  
(Western yellow-striped armyworm)  
Figures 7, 8, 30, 44

*Prodenia praefica* Grote 1875:44.

Length of forewing from base to apex: Males, 11–20 mm; females, 14–20 mm.

This species is easily recognized by the presence of a distinctive discal spot on the underside of the hindwing. Its peculiar distribution also can be used as an identification aid. *Spodoptera praefica* is the only species of the genus throughout its range except where it overlaps slightly with *ornithogalli* toward its southern limits. At its southern boundary it resembles the pale western females of *ornithogalli*. However the discal spot on the hindwing undersurface of *praefica* easily permits the separation of the two species. There is no obvious sexual dimorphism in this species; both males and females resemble the females of *ornithogalli*.

**Distribution:** *Spodoptera praefica* is found in the Great Basin area of the United States and northern and middle California.

*Spodoptera ornithogalli* (Guenée)  
(Yellow-striped armyworm)  
Figures 5, 6, 22, 31, 45

*Prodenia ornithogalli* Guenée, 1852:163.

*Prodenia eudioptia* Guenée, 1852:164.

*Prodenia flavimedia* Harvey 1875:274.

*Prodenia lineatella* Harvey 1875:275.

*Prodenia eudioptoides* Barnes and Benjamin 1923:81.

Length of forewing from base to apex: Males, 12–17 mm; females, 16–19 mm.

*Spodoptera ornithogalli*, the yellow-striped armyworm, a common economic species in the eastern part of the United States, resembles in coloration and maculation several other species of *Spodoptera*. It most closely resembles *S. latifascia* (Walker), *S. marima* (Schaus), and *S. pulchella* (Herrich-Schaeffer). Females of *latifascia* have most commonly been confused with females of *ornithogalli*. A character which will usually permit the separation of the two species is the transverse series of crescent-shaped spots on the adterminal line or lines immediately basad of the outer margin of the forewing. In *ornithogalli* the opposing crescents are separate (Fig. 22) while in *latifascia* at least the pairs of crescents nearest the tornus are adnate to one another, forming a spindle-shaped spot (Fig. 23). *Spodoptera ornithogalli* can be separate from *pulchella* by the absence of the curved line which extends along the inner margin of the forewing from the postmedial band to the antemedial band in *pulchella* (Fig. 24). *Spodoptera ornithogalli* can be distinguished from *marima* by the presence of some dark scales on the veins of the hindwing. Also *S. marima* and *S. ornithogalli* are allopatric. *Spodoptera ornithogalli* is sexually dimorphic and *marima* is not. In the western United States, males of *ornithogalli* are pale and orange colored, approaching males of *latifascia* in general coloration. Females of these western populations are somewhat similar to *praefica* on the upper surface of the wings. However, the dark discal spot on the under surface of the hindwing of *praefica* will easily identify females of *praefica*.

**Distribution:** This species is found in eastern North America from southern Canada to Florida, the Greater Antilles except Jamaica, east to Antigua. To the west *ornithogalli* occurs in Arizona, New Mexico, and California south of the Tehachapee Range to the Channel Islands and south to Mexico and possibly to Guatemala and Costa Rica. One specimen in the U.S. National Museum via the Oberthür collection is labeled Dominica, but it is not known whether the label is correct. *Spodoptera ornithogalli* was not collected by eight collectors of Lepidoptera during the Archibold-Bredin-Smithsonian Survey of Dominica in the sixties.

*Spodoptera marima* (Schaus), NEW COMBINATION  
Figures 9, 32, 46

*Prodenia marima* Schaus 1904:150.

Length of forewing from base to apex: Males, 14–15 mm; females, 14–16 mm.



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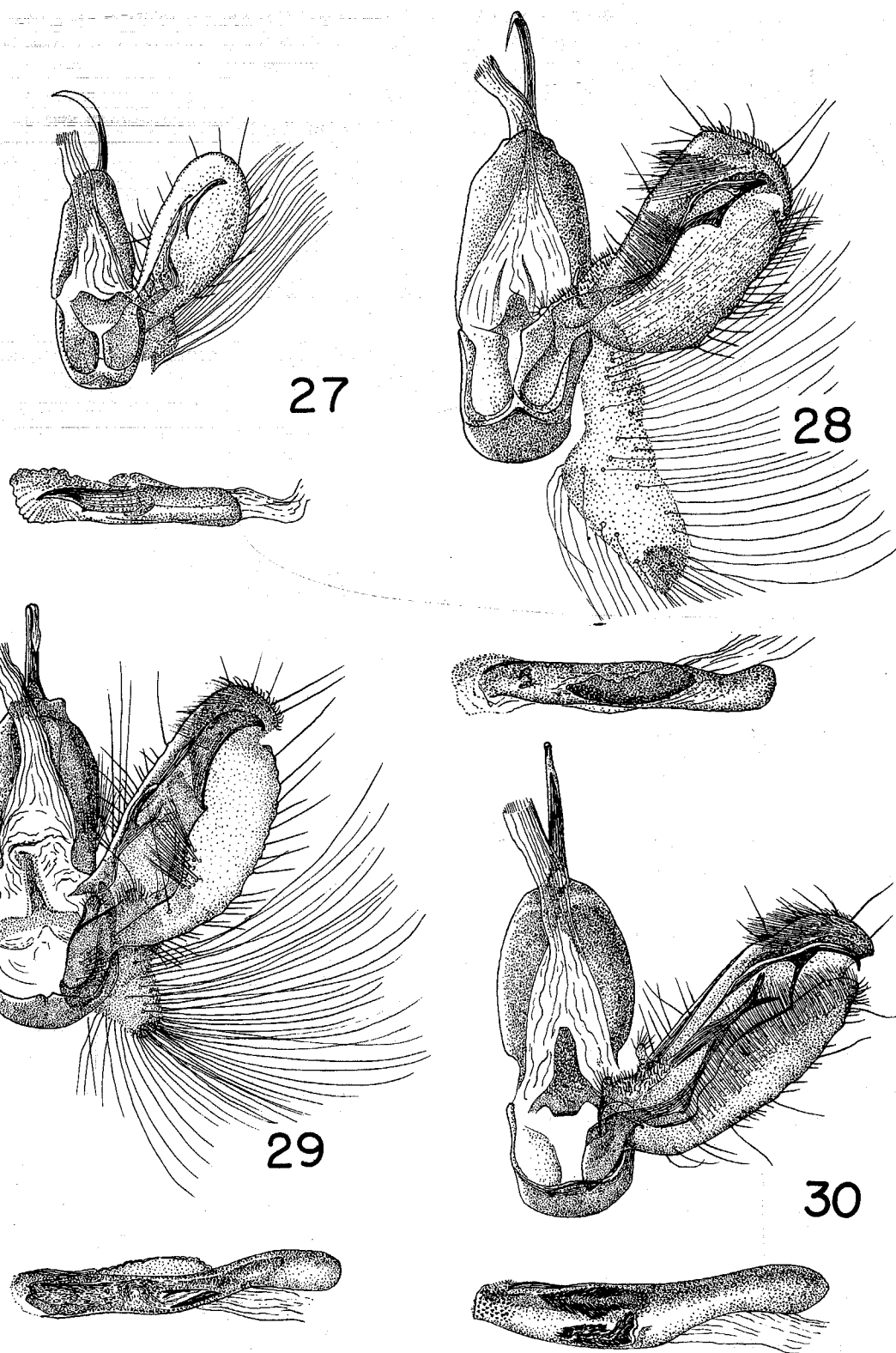
1852:163.  
52:164.  
875:274.  
75:275.  
and Benjamin 1923:81.  
to apex: Males, 12-17

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*Spodoptera ornithogalli*  
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W COMBINATION

0.  
apex: Males, 14-15



FIGS. 27-30.—Male genitalia. 27) *S. exigua* (Hübner); 28) *S. frugiperda* (J. E. Smith); 29) *S. evanida* Schaus; 30) *S. praefica* (Grote).

Superficially *Spodoptera marima* resembles females of *ornithogalli*, but the hindwings of *marima* are pure white without dark scales on the veins. It tends to be slightly smaller than *ornithogalli*, is not sexually dimorphic, and occurs in a different geographic area than *ornithogalli*. The male genitalia are extremely similar to those of *ornithogalli*; no way has been found to consistently separate the two species on these characters.

**Distribution:** Most specimens of *marima* we have seen are from Brazil and French Guiana although a single male from northern Venezuela is known. Single specimens from the Andes of Ecuador and Bolivia in the U.S. National Museum appear somewhat intermediate between *marima* and *ornithogalli*. *Spodoptera marima* is treated as a distinct species because it lacks sexual dimorphism, is smaller than *ornithogalli*, has a pure white hindwing, and is geographically distinct even though the male genitalia are indistinguishable from those of *ornithogalli*. Possibly *marima* should be considered a race or subspecies of *ornithogalli*, but more specimens and further studies are required before the true relationship can be determined.

*Spodoptera latifascia* (Walker)  
Figures 10, 11, 23, 33, 47

*Prodenia latifascia* Walker 1856:195.

*Prodenia variolosa* Walker 1857:722.

*Prodenia cosmioidea* Walker 1858:1678.

Length of forewing from base to apex: Males, 15–20 mm; females, 16–20 mm.

*Spodoptera latifascia* is very similar to *ornithogalli* but it is on the average larger. In males, the hindwings are pure white and have a generally brighter yellowish median area of the forewing. Females are nearly identical to females of *ornithogalli*, except that the crescents of the adterminal line are adnate and form spindles (Fig. 23). *Spodoptera latifascia* is separated from *pulchella* by the curved line from the antemedial to the postmedial bands near the inner margin of *pulchella*. The yellow median area of the males of *latifascia* will separate it from males of *marima* and the presence of dark scaling on the veins of the hindwing of the females of *latifascia* differs from the pure white hindwing of *marima*. *Spodoptera latifascia* averages larger in size than *marima*, *pulchella* or *ornithogalli*. There is some variation in the distinctness of the maculation and the extent of the yellow coloration of the forewing in the males.

**Distribution:** This is a widespread, common, tropical species occurring in the Gulf States of the United States.

*Spodoptera pulchella* (Herrich-Schaeffer)  
Figures 12, 24, 34, 50

*Laphygma pulchella* Herrich-Schaeffer 1868:116.

*Prodenia exquisita* Möschler 1886:42, Fig. 23.

Length of forewing from base to apex: Males, 14–15 mm; females, 15–16 mm.

*Spodoptera pulchella* is easily separated from other similar species by the curved line running from the antemedial line to the postmedial line near the inner margin (Fig. 24). Otherwise this species is similar to *ornithogalli*.

**Distribution:** This species occurs in the greater Antilles, the Bahamas, and southern Florida. It is apparently not a common species.

*Spodoptera androgea* (Cramer)  
Figures 13, 14, 36, 48

*Noctua androgea* Cramer 1780–1782 [1782], 4:42, pl. 310, Fig. D, index p. 247.

*Noctua marmorea* Sepp 1848:109, pl. 51.

*Prodenia rubrifusa* Hampson 1909:240–241 [NEW SYNONYMY].

Length of forewing from base to apex: Males, 17–24 mm; females, 19–22 mm.

*Spodoptera androgea* is a moderately large species similar to *S. dolichos* (Fabricius) but recognized by the uniform grey thorax lacking the two dark lines of *dolichos*. The distinctly marked curved white line that extends from the costa of the forewing at the basal third to the lower angle of the discal cell reaches the postmedial band without breaking up into three separate streaks on  $M_3$ ,  $Cu_1$ , and  $Cu_2$  as in *ornithogalli* and its relatives. The apical white spot of the forewing has a distinctive pearly lustre. This species shows some geographic variation in color. Specimens from Jamaica and some of the specimens from Puerto Rico are suffused with a reddish-pink coloration. Hampson described this form as a separate species, *Prodenia rubrifusa*, and believed that there was a venational difference. However he was in error. The wing he examined was aberrant as determined by subsequent study.

**Distribution:** This species is found from Guatemala to Brazil and throughout the Antilles. It does not appear to be common in South and Central America but is abundant in the Antilles.

*Spodoptera dolichos* (Fabricius)  
Figures 15, 35, 49

*Noctua dolichos* Fabricius 1794, 3.2:95.

*Phalaena commelinae* J. E. Smith 1797:189, pl. 95

Length of forewing from base to apex: Males, 18–21 mm; females, 19–22 mm.

*Spodoptera dolichos* is easily recognized by the dark longitudinal marks on the thorax that are not found in any other species of the genus. It is a large, common, tropical species. No sexual dimorphism exists. The white markings of the forewing do not have a pearly lustre as in *androgea*, but the two species are otherwise very similar. The dagger-shaped mark on the anterobasal side of the reniform is more elongate than in *androgea*, and it is almost parallel with the costal margin.

**Distribution:** This species is common throughout tropical America. It is found in Florida and has been taken as a stray further north.

*Spodoptera eridania* (Cramer)  
(Southern Armyworm)  
Figures 16, 17, 37, 51

*Noctua eridania* Cramer 1780–1782 [1782], 4:133, pl. 358, Fig. E, index p. 243.

*Noctua linea* Fabricius 1794, 3.2, p. 106.

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782 [1782], 4:42, pl.

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909:240-241 [NEW

apex: Males, 17-24

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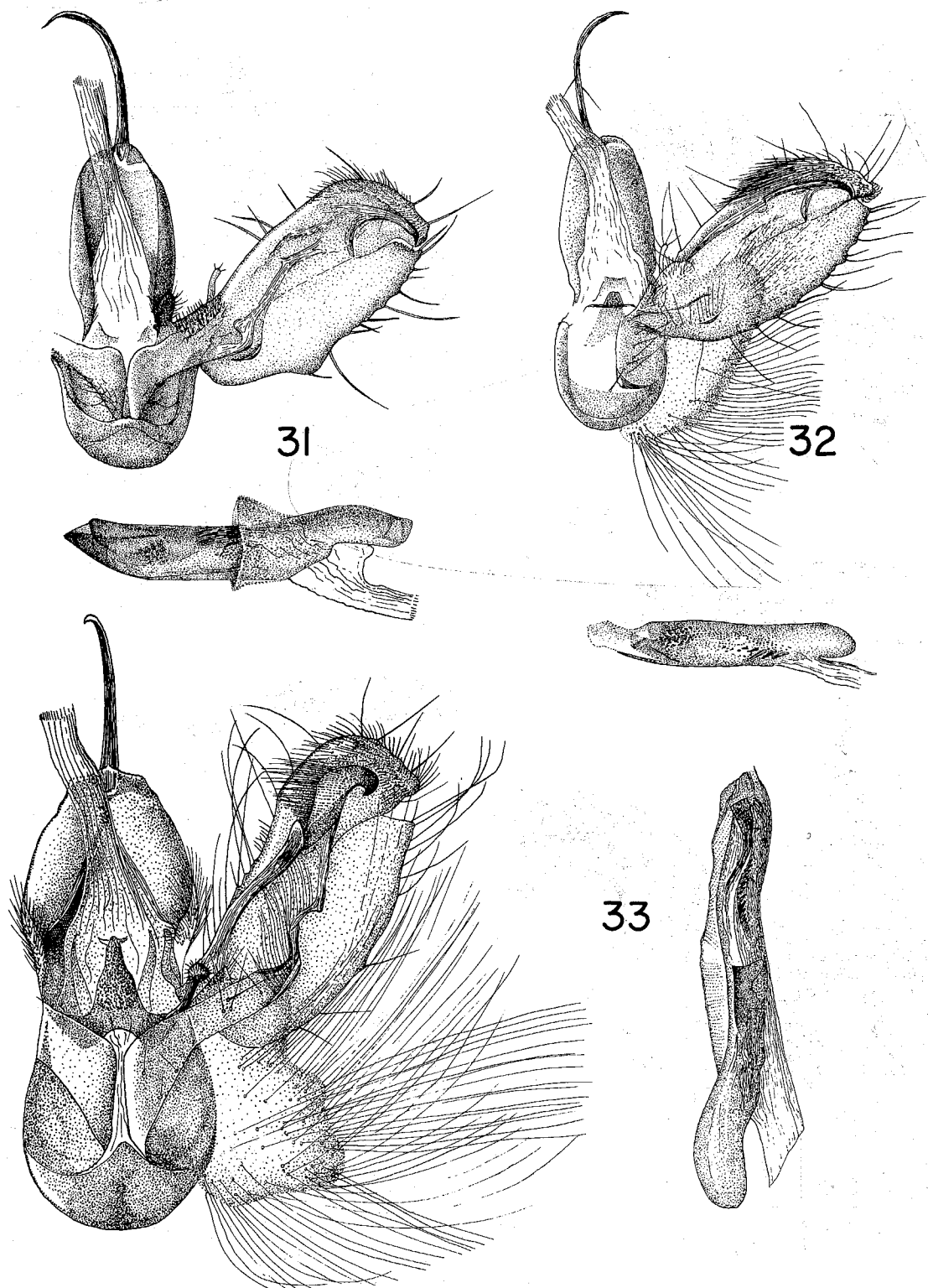
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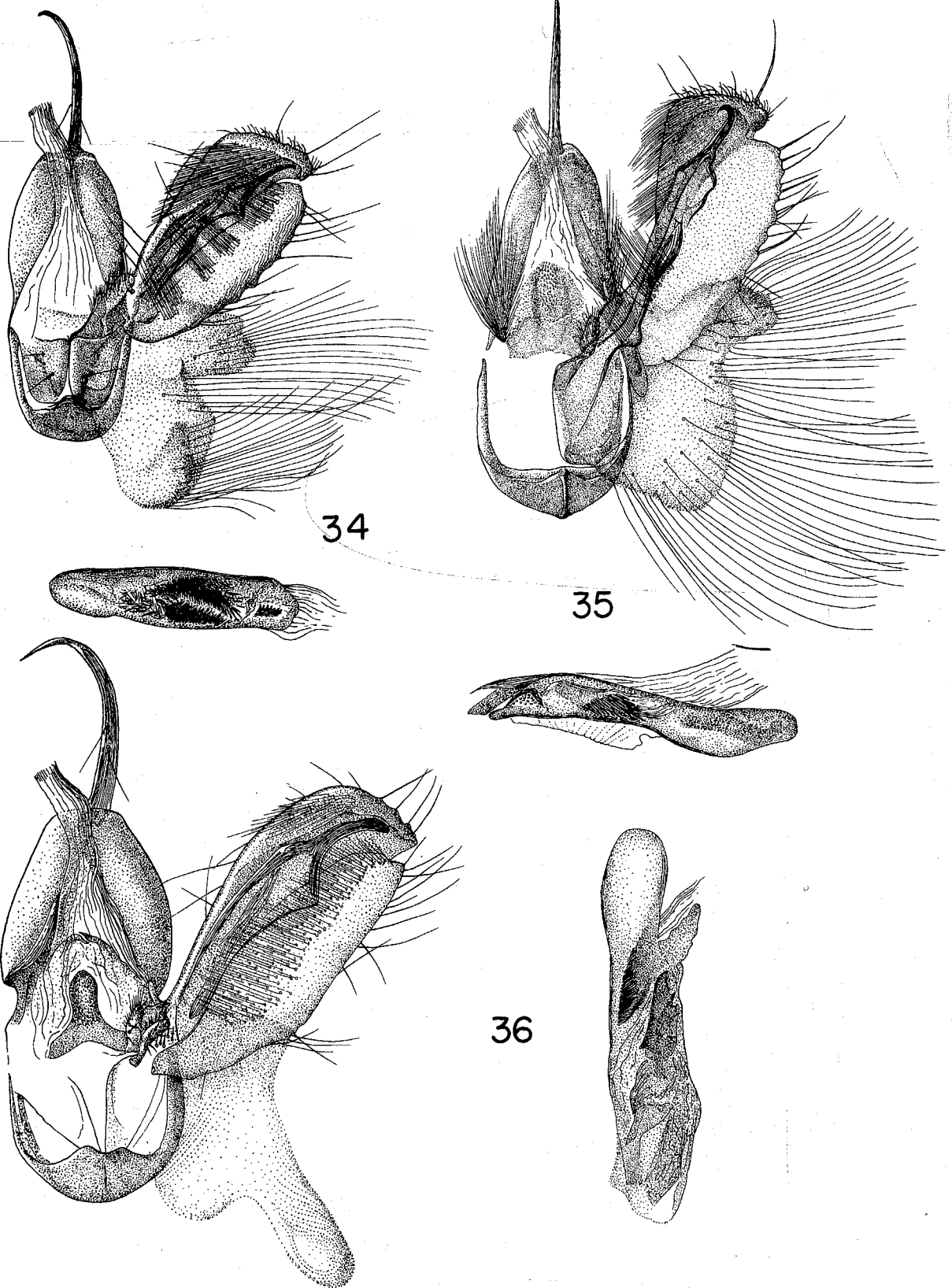
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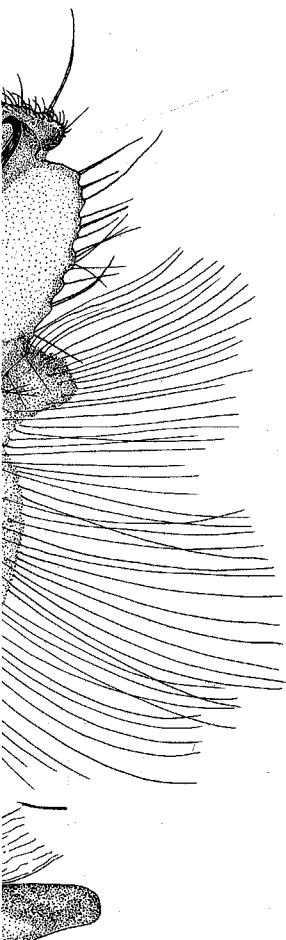
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FIGS. 31-33.—Male genitalia. 31) *S. ornithogalli* (Guenée); 32) *S. marima* Schaus; 33) *S. latifascia* (Walker).



FIGS. 34-36.—Male genitalia. 34) *S. pulchella* (Herrich-Schaeffer); 35) *S. dolichos* (Fabricius); 36) *S. androgea* (Cramer).



*Phalaena phytolaccae* J. E. Smith 1797, 2:193, pl. 97.  
*Xylomyges putrida* Guenée 1852:148.  
*Xylomyges amygia* Guenée 1852:149.  
*Leucania externa* Walker 1856:114.  
*Xylina inquieta* Walker 1857:632.  
*Xylina bipunctata* Walker 1857:629.  
*Prodenia strigifera* Walker 1858:1678.  
*Laphygma peruviana* Walker 1865:650 [NEW SYNONOMY]  
*Laphygma communicata* Walker 1869:31 [NEW SYNONOMY].  
*Actinotia derupta* Morrison 1875:62.  
*Prodenia ignobilis* Butler 1878:485.  
*Leucania nigrofascia* Hulst 1881:77.  
 Length of forewing from base to apex: Males, 13–17 mm; females, 14–17 mm.

The species of the *eridania* complex show little resemblance to the other species of the genus *Spodoptera*, and in the past they have generally been placed in the genus *Xylomyges* Guenée. In fact, *eridania* was considered to be the type of *Xylomyges* by Hampson and others. However, there is an earlier type-species designation. The ground color of *eridania* is a grey brown with few markings except for a short longitudinal dash at the base of the forewing and a conspicuous oblique brown mark before the tornus. The species is somewhat variable in that the reniform may be dark, and/or a dark streak may extend from the reniform to the outer margin of the wing (Fig. 17). The species is similar to *S. sunia* (Guenée), but the ground color of *sunia* is whiter and the oblique mark before the tornus is darker and more elongate in *sunia*. A number of differences occur in the male genitalia of the three species of the complex as illustrated in the figures and indicated in the key to the male genitalia. Many names have been applied to *eridania*, generally proposed for what were thought to be new species. *Laphygma peruviana* Walker is such a name applied to pale specimens from Peru. There are specimens which are larger and darker than normal from Ecuador.

**Distribution:** This is a common species throughout tropical America, extending into the north temperate region as far as Washington, D.C., west to Kansas, and straying even further north. It is a pest species in the tropics.

*Spodoptera sunia* (Guenée)  
 Figures 18, 19, 38, 52

*Xylomyges sunia* Guenée 1852:149.  
*Xylina albula* Walker 1857:629.  
*Laphygma orbicularis* Walker 1857:719.  
*Laphygma caudata* Walker 1869:32.  
 Length of forewing from base to apex: Males, 14–15 mm; females, 13–16 mm.

This species is similar to *eridania* as indicated in the discussion of the latter species, but it is slightly smaller, whiter, and without brown scales. This species is also variable. The best character for recognizing *sunia* is the nearly black, elongate basal dash of the forewing.

**Distribution:** This species appears to occur with *eridania* in much of its range but seems to be absent or at

least is uncommon in the Andean region. It also may be economically important in the tropics.

*Spodoptera ochrea* (Hampson), NEW COMBINATION  
 Figures 20, 39

*Xylomyges ochrea* Hampson 1909:273.  
 Length of forewing from base to apex: Males, 12–16 mm; females, 13–18 mm.

*Spodoptera ochrea* is similar to *sunia* but lacks the longitudinal dash at the base of the forewing and the oblique line at the coloration in the forewing.

**Distribution:** Apparently *ochrea* is restricted to the dry western area of Peru.

*Spodoptera hipparis* (Druce), NEW COMBINATION  
 Figures 21, 40, 53

*Heliophobus hipparis* Druce 1889:272.  
*Leucochlaena hipparis* form *pallens* Draudt 1924:178, Fig. 26b.

*Leucochlaena hipparis* form *colossa* Draudt 1924:178, Fig. 26b.

Length of forewing from base to apex: Males, 9–14 mm; females, 9–13 mm.

This species has been treated as a member of the genus *Leucochlaena* Hampson, but it is not congeneric with the type species *Noctua hispida* Hübner. It is certainly closely related to species of *Spodoptera*, particularly to certain Old World species such as *S. pecten* and *S. abyssinia* that have special modifications of the antennae and reduced genitalia. *Spodoptera hipparis* lacks the massive hair tufts surrounding the female ovipositor lobes as does *exigua*. For these reasons we include *hipparis* in *Spodoptera*. The pectinate antennae and rather broad, short wings distinguish this species from all other Western Hemisphere species of *Spodoptera*. *Spodoptera hipparis* varies considerably in size and the darkness of the brown coloration.

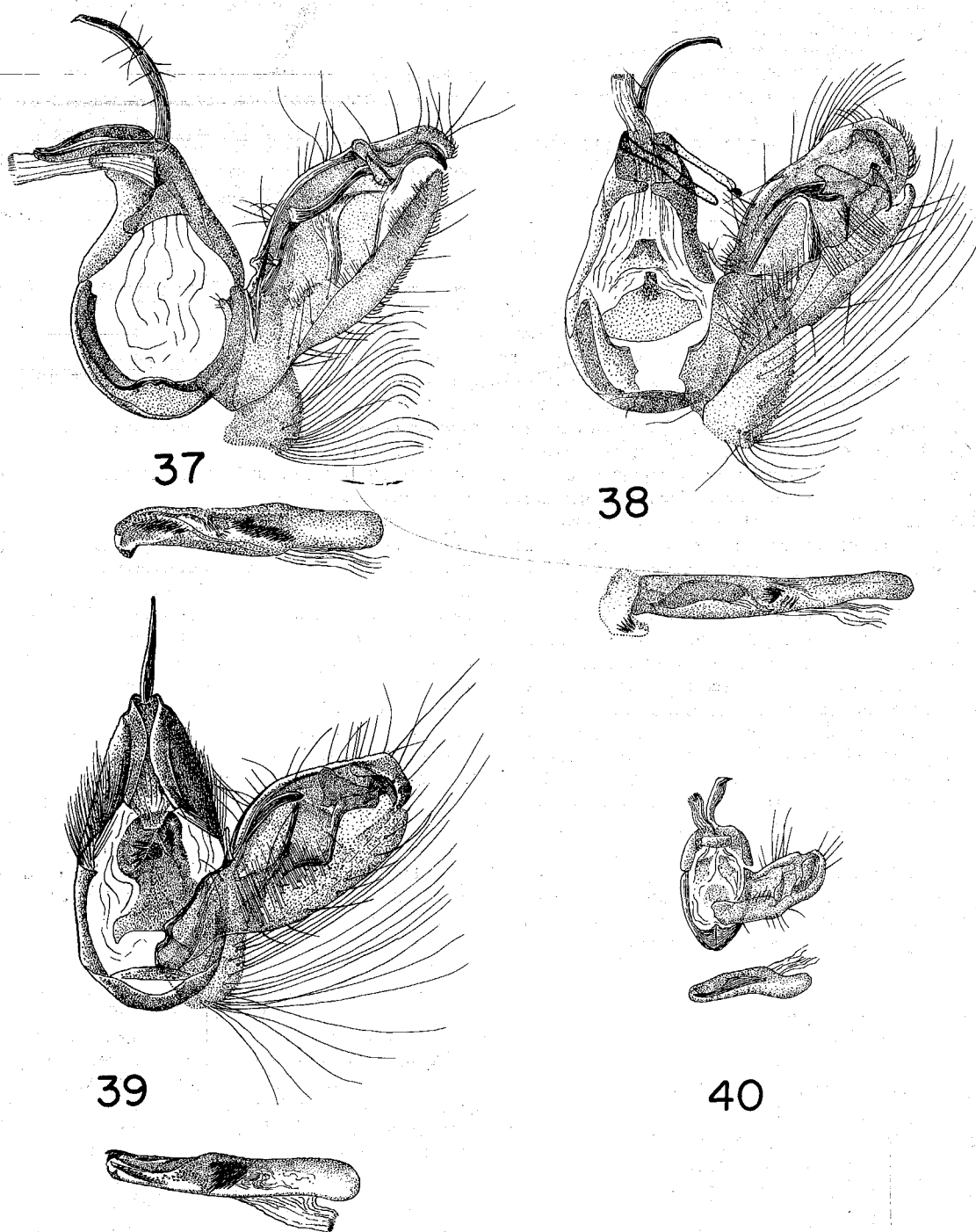
**Distribution:** This species occurs in northern and central Mexico and the southwestern United States. It is sometimes a pest of legumes in northern Mexico.

*Spodoptera roseae* (Schaus)

*Trachaea* [sic!] *roseae* Schaus 1923:33.  
 Length of forewing from base to apex: 20 mm male.  
*Spodoptera roseae* is an endemic species from the Galapagos Islands. Although clearly a species of *Spodoptera*, *roseae* is superficially very different from the rest of the species in the genus. Male and female adults have been figured by Hayes (1975) and the male and female genitalia were figured by Richards (1941).

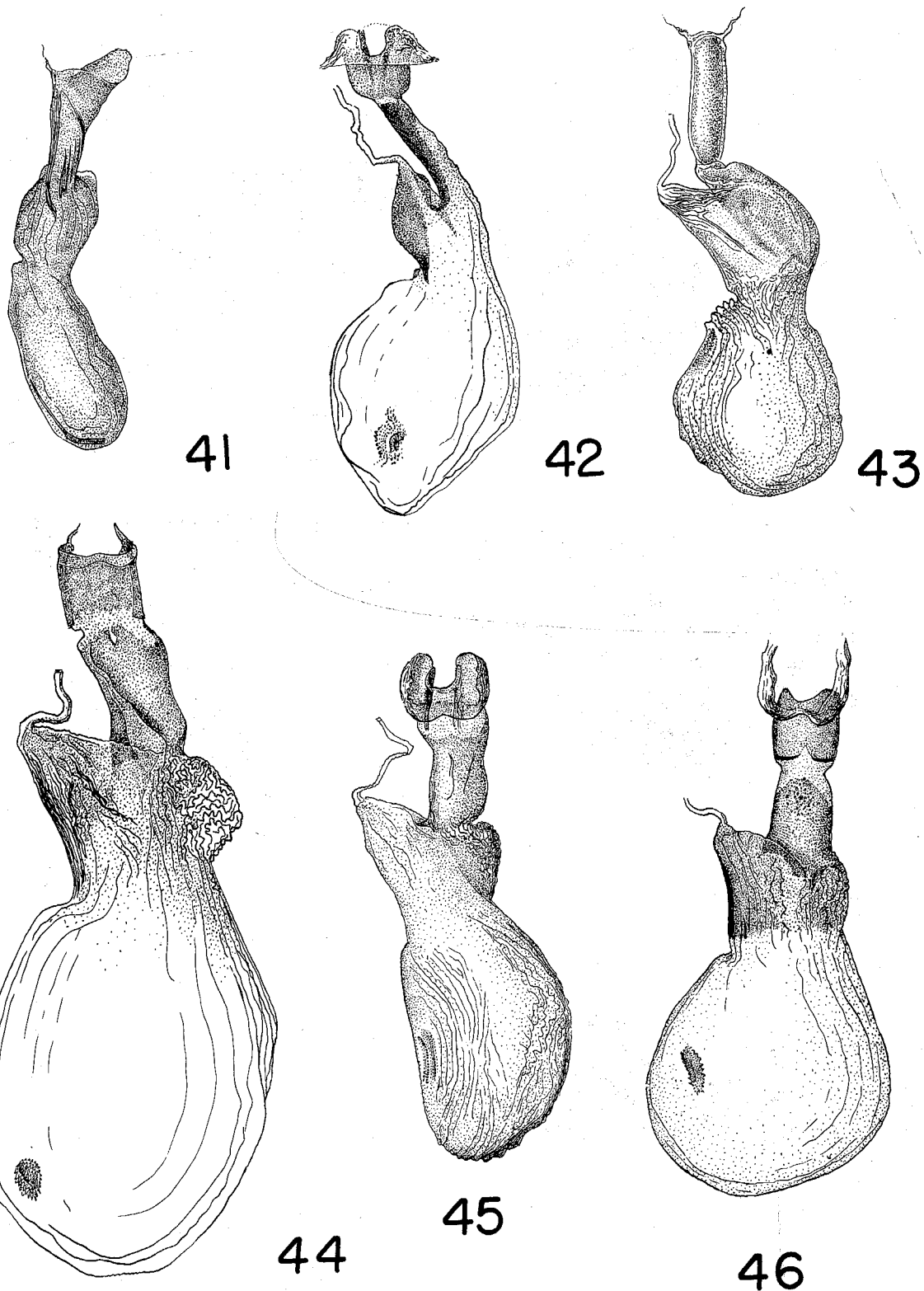
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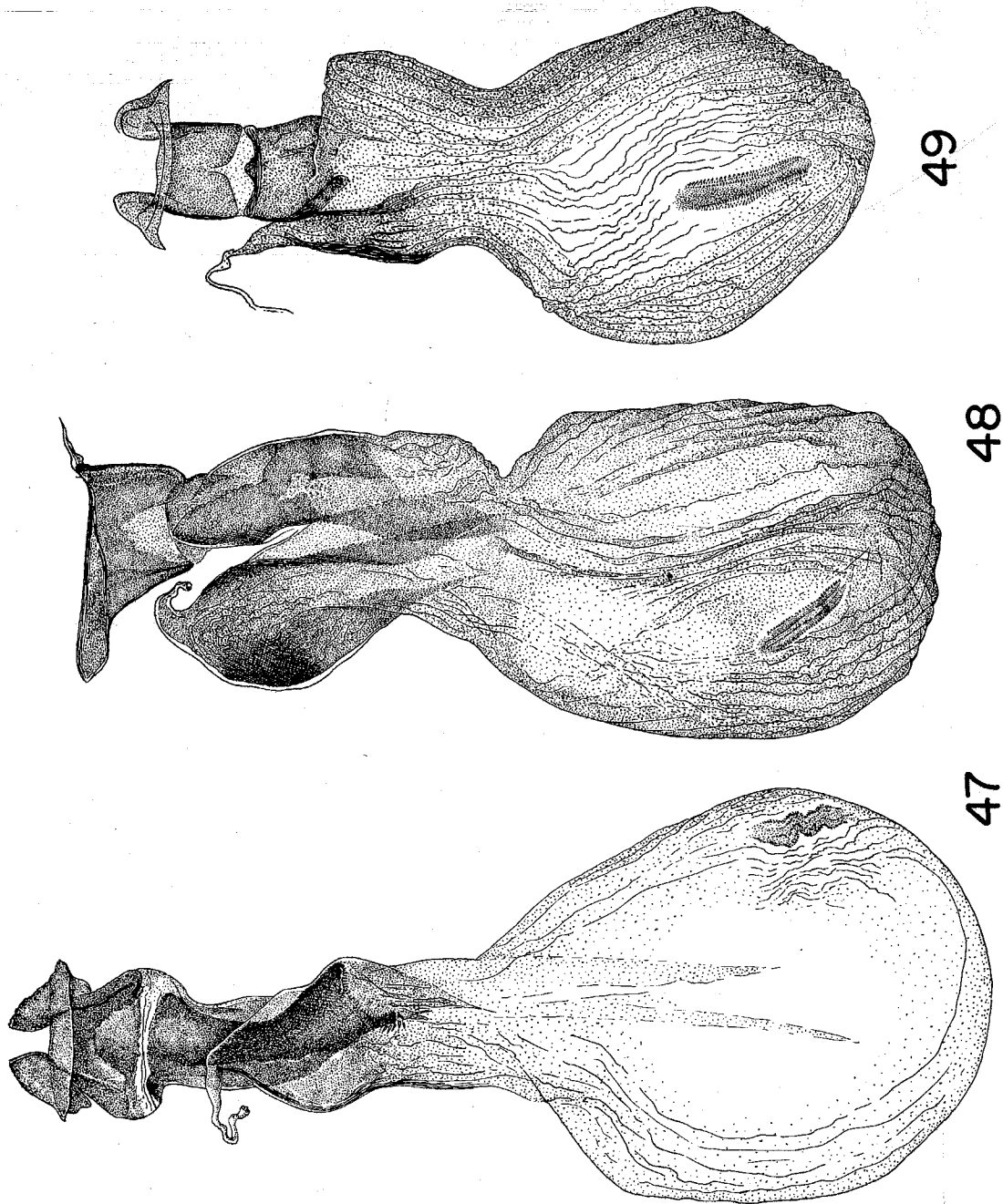
FIGS. 37-40.—Male genitalia. 37: *S. eridania* (Cramer); 38) *S. sunia* (Guenée); 39) *S. ochrea* (Hampson); 40) *S. hipparis* (Druce).



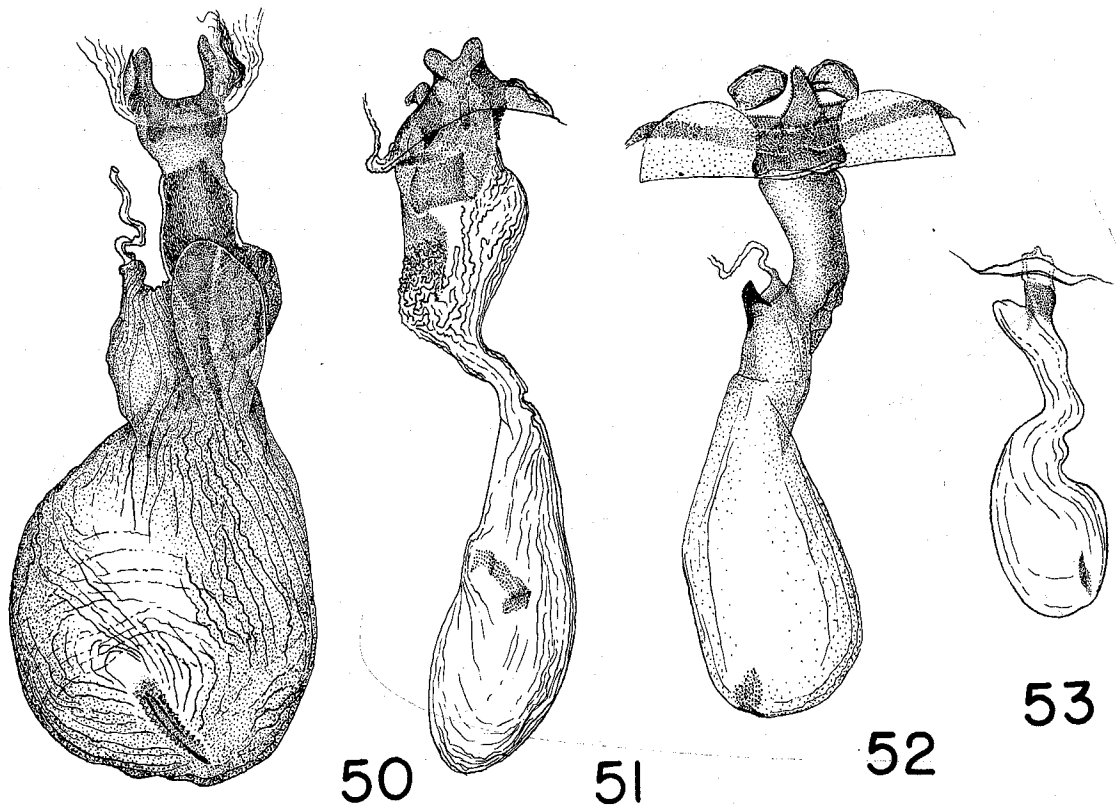


FIGS. 41-46.—Female genitalia. 41) *S. exigua* (Hübner); 42) *S. evanida* Schaus; 43) *S. frugiperda* (J.E. Smith); 44) *S. praefica* (Grote); 45) *S. ornithogalli* (Guenée); 46) *S. marima* (Schaus).

mpson); 40) *S. hipparis*



FIGS. 47-49.—Female genitalia. 47) *S. latifascia* (Walker); 48) *S. androgea* (Cramer); 49) *S. dolichos* (Fabricius).



FIGS. 50-53. —Female genitalia. 50) *S. pulchella* (Herich-Schaeffer); 51) *S. eridania* (Cramer); 52) *S. sunia* (Guenée); 53) *S. hipparis* (Druce).

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