

AMBLYSCIRTES: PROBLEMS WITH SPECIES,
SPECIES GROUPS, THE LIMITS OF THE GENUS,
AND GENUS GROUPS BEYOND—A LOOK AT WHAT IS
WRONG WITH THE SKIPPER CLASSIFICATION OF
EVANS (HESPERIIDAE)

JOHN M. BURNS

Department of Entomology, NHB 169, National Museum of Natural History,
Smithsonian Institution, Washington, D.C. 20560

ABSTRACT. In detecting and correcting errors at all these taxonomic levels, I lean heavily on genitalia. Two similar, closely related, ostensibly allopatric differentiates treated by some as species and by others as subspecies are indeed separate species that are barely sympatric: *Amblyscirtes celia* Skinner and *A. belli* Freeman. Most closely related to this pair is the mainly Mexican complex *A. tolteca* Scudder/*prenda* Evans, rather different in facies and currently misplaced in a different species group of *Amblyscirtes*. Another species that looks very like an *Amblyscirtes*—*simius* Edwards—assuredly is not! Although, like *simius*, *A. alternata* (Grote & Robinson) has a short, blunt antennal apiculus that is “wrong” for *Amblyscirtes*, *alternata* clearly belongs. Placed by Evans (1955) in his N or *Lerdeaa* group of American hesperine genera and said to be allied to *Atrytonopsis*, *Lerdeaa*, and *Oligoria*, *Amblyscirtes* actually has close ties with various neotropical genera in Evans's J or *Apaeustus* group: *Remella*, *Mnasicles*, and *Callimormus*! By extrapolation, much of Evans's taxonomic system just below the level of the subfamily may be invalid. Ironically, a Guatemalan skipper that Bell (1959) described in the J group genus *Moeris* (with which Evans erroneously synonymized *Remella*) is really an *Amblyscirtes*: *A. patriciae*, new combination. This species clusters with *A. folia* Godman, *A. immaculatus* Freeman, and *A. raphaeli* Freeman, which come from southern Mexico.

Additional key words: genitalia (male and female), *Callimormus*, *Mnasicles*, *Remella*, *Moeris*.

Arbitrary change in the rank of a species can sow confusion. Merely by listing *Wallingrenia egeremet* (Scudder) as a variety of *W. otho* (Smith), Edwards (1877) launched a systematic muddle lasting nearly a century and culminating in a published load of biogeographicalities (details in Burns 1985). Unless we ignore arbitrary action from the outset (and lepidopterists seldom do), it will sooner or later require critical response.

With just 7 specimens of *Amblyscirtes belli* Freeman from northern Texas and 11 of *A. celia* Skinner from southern Texas, Evans (1955) made them subspecies. Freeman (1941) had described *A. belli*, in terms of facies, from 109 specimens from Dallas County in northeastern Texas which he compared with 37 specimens of *A. celia*, the most similar species, noting four facies differences (not altogether valid). Skinner (1895) had described *A. celia*, also in terms of facies, from an unstated number of specimens from Blanco, Comal, and Nueces counties in southcentral Texas.

Close similarity plus apparent or actual allopatry do not, of themselves, warrant reduction to subspecific rank. Careful analysis of various

skippers has revealed monophyletic groups of closely related but largely or entirely allopatric species—see, for example, the superspecies in *Erynnis* and *Atrytonopsis* (Burns 1964, 1983).

Evans's (1955) action has been divisive: supported most notably by dos Passos (1964), Harris (1972), and Scott (1986), with echoes to the present (Watson & Hyatt 1988); and opposed by Freeman (1973), MacNeill (1975), and Miller and Brown (1981, 1983), as well as by others, with some waffling—Opler and Krizek (1984:259) treated *A. celia* and *A. belli* separately but allowed that “Celia’s Roadside Skipper is sometimes considered to be the same species as Bell’s Roadside Skipper.”

Facies differences between *A. celia* and *A. belli* (unevenly dealt with in many of the works cited above) are subtle and variable but pervasive enough to suggest different species in the context of the genus *Amblyscirtes*. Still, rank is arguable. New information is needed.

Freeman (1973, and again in Irwin & Downey 1973), in defending the rank of species, cited an instance of sympatry between *A. celia* and *A. belli* near the type-locality of the latter in Dallas County, Texas. Because I found *celia* common 265 km to the southsouthwest at Austin, Travis County, Texas, in 1966 and 1967, contact seemed plausible. But because Freeman mistook a few of my 56 Austin specimens of *celia* for *belli* at that time, I was dubious—until 1989, when he graciously collected, mounted, and forwarded 8 ♂ 3 ♀ of *celia* and 6 ♂ 1 ♀ of *belli* that were flying together at Garland, Dallas County, Texas, during August and September, and when I discovered, among *Amblyscirtes* in the National Museum of Natural History (USNM), a misplaced worn female of *belli* taken at Austin in May 1980. Like many other pairs of differentiates, these two skippers overlap narrowly in eastcentral Texas.

Without giving specifics, Freeman (1973:54) added, “There are slight differences [between *celia* and *belli*] in the genitalia, however genitalic determinations in the genus *Amblyscirtes* are practically impossible with most species due to the fact that the basic pattern is very similar.” The qualification is disturbing. Early in the same review of *Amblyscirtes*, Freeman (1973:41) put it this way: “. . . there is a remarkable similarity in the male genitalia of all of the species. Often worn specimens are very difficult to identify even after an examination of the genitalia due to this great consistency in basic form.” Long before, having reprinted the Skinner and Williams (1923) figures of the male genitalia of *Amblyscirtes* from the United States and Canada, Lindsey et al. (1931:126) observed, “The genitalia of all of these species are remarkably uniform in structure.” I am skeptical, then, when Freeman (1973:45, 48, 50, 51, 54) repeatedly asserts—for five pairs of species whose rank has been (or, in one case, may be) questioned—“there are

differences in the genitalia," especially since he never says what any of those differences are.

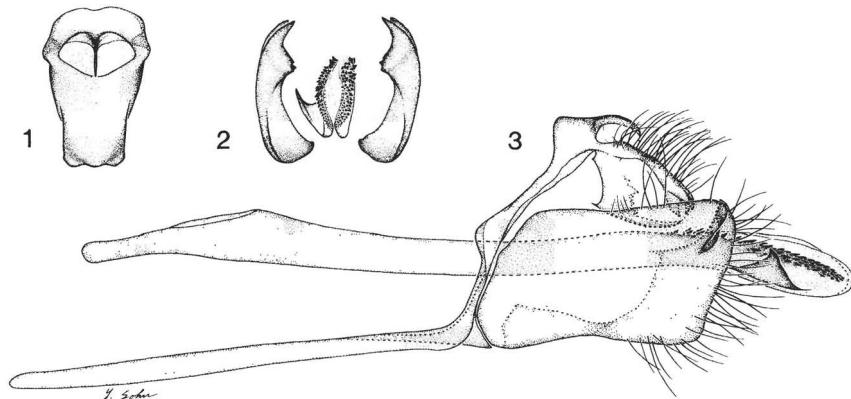
Considering the genitalic conservatism, intrageneric taxa showing distinct genitalic differences will almost certainly be species rather than subspecies. However, I must stress that in *Amblyscirtes*, as elsewhere, genitalia vary individually so that, even in a local population of a single species, no two tails are exactly alike; and the detection of "distinct genitalic differences" entails much dissection and comparison. In comparing genitalia of different species in this and similar taxonomic papers, the reader should keep in mind that many of the differences between figures are individual instead of interspecific and that the angle of illustration (and hence of observation) is crucial.

A Tail of Two Species

At certain angles, the male genitalia of the taxa in question clearly differ. From above, the middle of the distal end of the uncus looks convex in *A. celia* (Fig. 1) but concave in *A. belli* (Fig. 4). In all species of *Amblyscirtes* the simple, roughly rectangular valva ends in a prominent, pointed, dorsally directed terminal process that is slightly set off from the body of the valva and slightly medial to it (Figs. 3, 6, 13, 20, plus figures in many other sources, especially Godman & Salvin 1879-1901, Skinner & Williams 1923, Lindsey et al. 1931, and Evans 1955). A posterior look at the distal end of the valva shows—at the level of the base of the dorsally directed terminal process—a major, modestly dentate, medial expansion in *A. celia* (Fig. 2) which, by contrast, is relatively low and smooth in *A. belli* (Fig. 5).

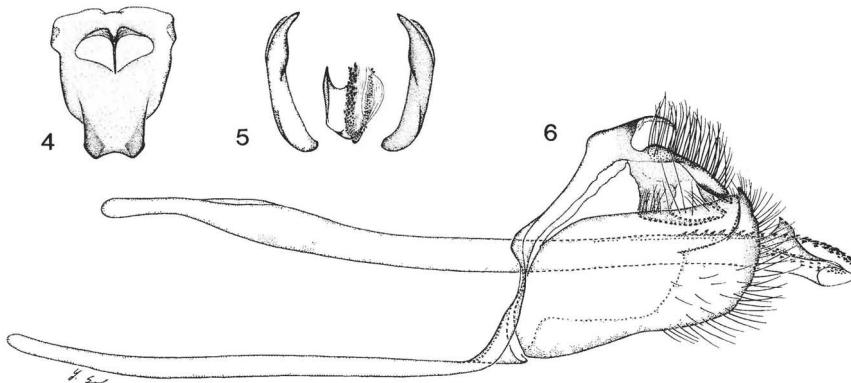
The distal location of these genitalic characters often makes them accessible *in situ*. Using both wet and dry dissection, I have examined them critically in 43 males of *A. celia* from Dallas, Travis, Bastrop, Comal, Bexar, Kendall, Kerr, Harris, Hidalgo, and Cameron counties, Texas, plus Ciudad Victoria and Ciudad Mante, Tamaulipas, Mexico; and in 40 males of *A. belli* from Dallas and Tarrant counties, Texas, Garfield County, Oklahoma, Carroll, Faulkner, and Pulaski counties, Arkansas, Labette County, Kansas, Barry and St. Clair counties, Missouri, Fulton and McCracken counties, Kentucky, Madison County, Tennessee, Fulton County, Georgia, and Pickens County, South Carolina. The genitalic differences hold over the range of each species, even where the two are sympatric or geographically close (nearly half the *celia* genitalia examined come from Austin, Texas, and nearly a fifth of the *celia*, and more than half the *belli*, from around Dallas, Texas).

Though highly variable, the female genitalia also differ in a distal



Figs. 1-3. Male genitalia of *Amblyscirtes celia* from Austin, Travis Co., Texas, 15 May 1967, J. M. Burns (genitalic dissection no. X-2528) (USNM). 1, Tegumen, uncus, and gnathos in dorsal view; 2, Distal ends of valvae and aedeagus in posterior view; 3, Complete genitalia (minus juxta and right valva) in left lateral view.

character (mere removal of terminal ventral abdominal scales will reveal it). The sclerotized posterior margin of the lamella postvaginalis (just ventral to the ovipositor lobes) is, in *A. celia*, widely but decidedly V-shaped, with the point of the V anterior, midventral, and more or less rounded into a small midventral notch (Fig. 7). In *A. belli* this sclerotized posterior margin varies from shallowly U-shaped (Fig. 9) to shallowly W-shaped to virtually straight. I have compared this feature again and again in 33 females of *A. celia* from Dallas, Travis, Bexar, Harris, San Patricio, Hidalgo, and Cameron counties, Texas; and in 25



Figs. 4-6. Male genitalia of *Amblyscirtes belli* from the vicinity of Irving, Dallas Co., Texas, 28 July 1984 (X-2529) (USNM). 4, Tegumen, uncus, and gnathos in dorsal view; 5, Distal ends of valvae and aedeagus in posterior view; 6, Complete genitalia (minus juxta and right valva) in left lateral view.

females of *A. belli* from Travis and Dallas counties, Texas, Pulaski County, Arkansas, Labette County, Kansas, St. Clair and Cape Girardeau counties, Missouri, Fulton County, Georgia, and Pickens County, South Carolina.

In both species the sclerotized ductus bursae—which angles to the left (Figs. 7, 9)—is not a plain tube: approximately the anterior third bears a wide, deep groove in the left side which, posteriorly, becomes shallow as it twists to the dorsal side and disappears (Figs. 7–10). Details of expression vary greatly. Because most of this variation is individual, no consistent interspecific differences emerge.

Disruption of Species Groups

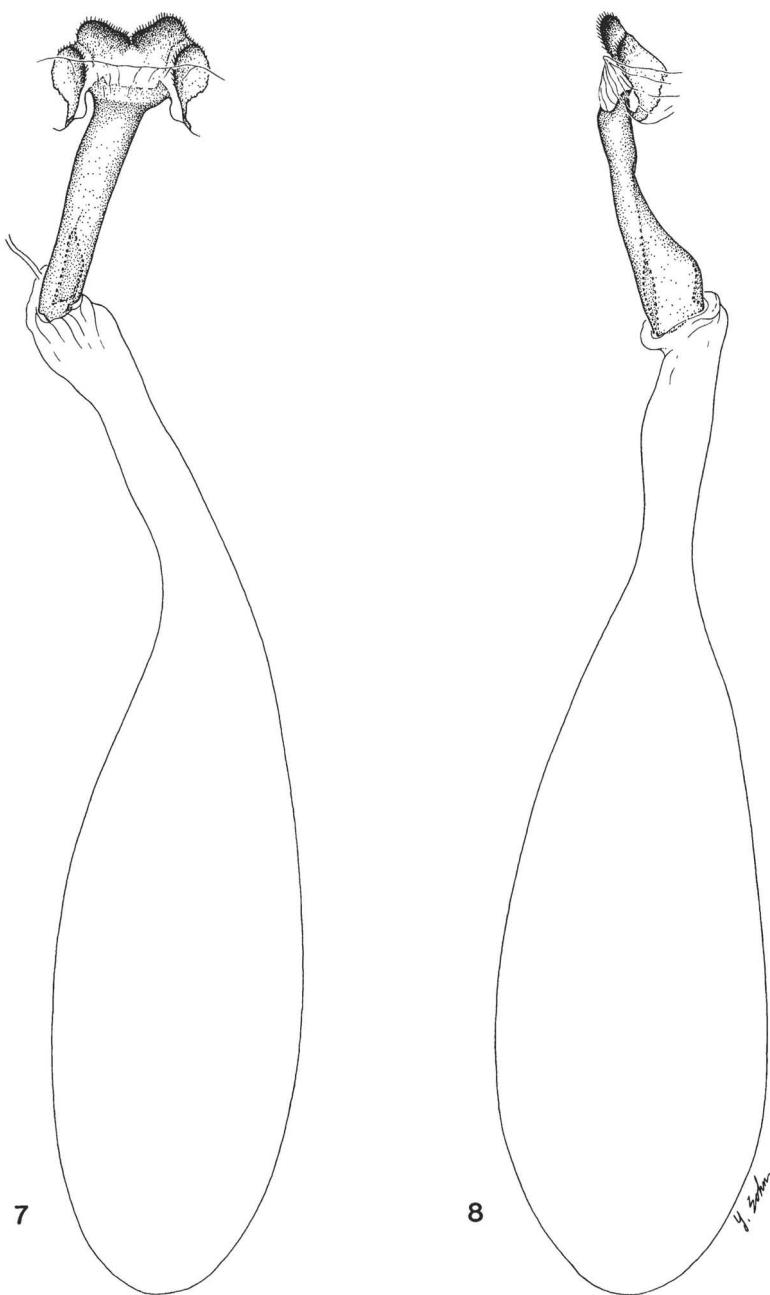
Both *A. celia* and *A. belli* display a striking asymmetry of the aedeagus. (This feature, too, is distal and thus visible without dissection whenever the superlengthy shaft projects from the end of the abdomen.) Along the left side of the aedeagus, just before its end, a large, thin, triangular plate with a long base curves outward and upward forming a conspicuous pointed titillator (Figs. 2, 3, 5, 6).

No one has ever mentioned it. Skinner and Williams (1923:144, fig. 24) and Lindsey et al. (1931:pl. 31, fig. 24), in illustrating the right valva and the distal end of the aedeagus of what they called *A. celia*, either got the wrong species or missed the titillator, which, given its size and the amount of detail in their figures, seems unlikely. On the other hand, Evans (1955:pl. 82, fig. N.2.18), without comment, caught the titillator in his caricature of distal portions of *A. celia* genitalia.

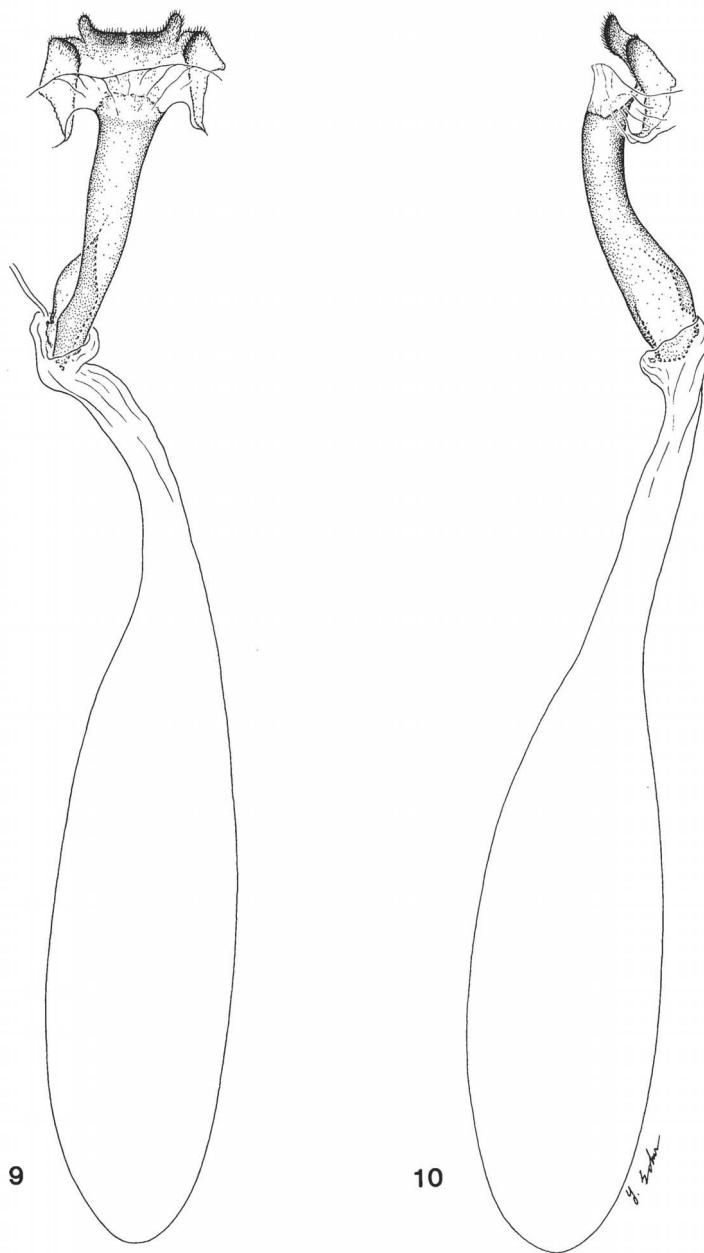
Nothing like it appears in any of his 22 other genitalic caricatures of *Amblyscirtes* species—not even the one for *A. tolteca* Scudder (Evans 1955:pl. 82, fig. N.2.11). Ranging through most of Mexico, *A. tolteca* apparently gives way in the west and northwest (especially in Sonora plus southern Arizona) to what Evans (1955) briefly described (in terms of size and facies) as subspecies *prenda*, which Freeman (1973) raised to the rank of species without adequate justification. Though lacking enough material to resolve the status of *tolteca* vis-à-vis *prenda*, I can definitely say that both have a titillator like that of *A. celia* and *A. belli* and, furthermore, that no other known species of *Amblyscirtes* does.

Using a few characters of facies, Evans (1955) divided the sizeable and superficially variable genus *Amblyscirtes* into four species groups which Freeman (1973), in his review of the genus, endorsed. Freeman also followed Evans's sequence of species—as have most workers, with little or no deviation, from dos Passos (1964) on. This arrangement puts *A. celia* plus *A. belli* far from *A. tolteca/prenda* in a different species group.

The distinctive titillator unites them in a close-knit assemblage (above



Figs. 7, 8. Female genitalia of *Amblyscirtes celia* from Austin, Travis Co., Texas, 25 May 1967, J. M. Burns (X-2452) (USNM). 7, Sterigma, bursa copulatrix, and part of the ductus seminalis in ventral view; 8, Sterigma and bursa copulatrix in right lateral view.



FIGS. 9, 10. Female genitalia of *Amblyscirtes belli* from Vickery, Dallas Co., Texas, 30 August 1952, H. A. Freeman (X-2692) (USNM). 9, Sterigma, bursa copulatrix, and part of the ductus seminalis in ventral view; 10, Sterigma and bursa copulatrix in right lateral view.

a superspecies since *A. celia* and *A. tolteca* overlap broadly in Mexico). Though all have a fundamentally similar spot-pattern on the ventral secondary, the four taxa run a gamut in average spot expression from weak in *belli* and rather better in *celia* to strong in *tolteca* and very strong in *prenda*; and *tolteca/prenda* stand out especially on account of a bold double spot in the cell and a sharp spot in space 1b₁, on both surfaces of the primary, plus several spots on the dorsal secondary—all of which *A. celia* and *A. bellii* lack. (In these species of *Amblyscirtes*, males express spots better than females.) In addition, primaries are more pointed in *tolteca/prenda* than in *celia* and *belli*. (And primaries are more pointed in males than in females.)

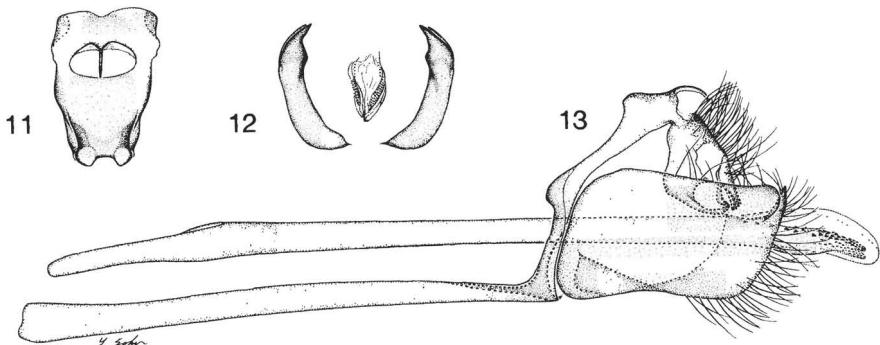
Banishing the Imposter

Originally described in *Amblyscirtes, simius* Edwards (1881) was moved by Barnes and McDunnough (1916) to *Chaerephon* Godman—which Hemming (1935) pegged as a junior homonym and renamed *Yvretta*—from which Freeman (1943) moved *simius* back to *Amblyscirtes*, where it remains (uncomfortably). (Draudt [1924] put it in *Stomyles*, which has long been considered a synonym of *Amblyscirtes*.)

Barnes and McDunnough justified removal by citing the third palpal joint and the antennal club. The third joint of the palpus is relatively short and directed forward to moderately upward in *simius* but long, slender, and about vertical in most species of *Amblyscirtes*; the antennal club looks nearly blunt with an exceedingly short and stubby apiculus in *simius* but conspicuously pointed with an abruptly constricted and attenuate apiculus in *Amblyscirtes*. Also mentioning the peculiar stigma, Barnes and McDunnough (1916:125) went so far as to say, “it may be necessary to erect a new genus for” *simius*; but conservatively, and tentatively, they placed it in *Chaerephon*—which is wrong (compare the figures of the male genitalia of *simius* with those of the other two species under *Chaerephon* in Skinner & Williams 1923, reprinted in Lindsey et al. 1931).

Proclaiming that “Edwards was correct when he described this species in the genus *Amblyscirtes*,” Freeman (1943:75) argued his opposite case using the very same characters—third palpal joint and antennal club—which he misrepresented. Freeman (1943:76) admitted that “genitally this species is not like other members of the genus *Amblyscirtes*.”

Evans (1955), MacNeill (1975), Stanford (1981), and Scott (1986) reiterated that the genitalia of *simius* are aberrant for *Amblyscirtes*; and the three Americans added, on this and other (especially behavioral) grounds, that *simius* may belong in another genus. Having shown conclusively that “genitalic characters, generally so useful in differentiating



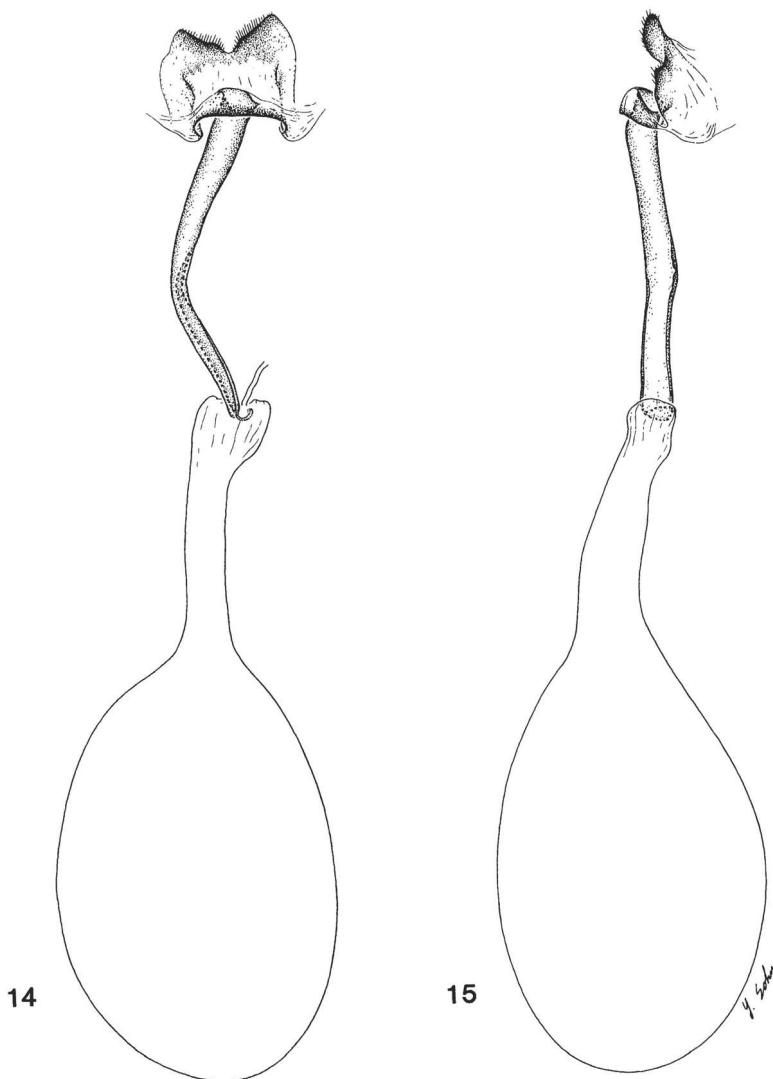
Figs. 11–13. Male genitalia of *Amblyscirtes vialis* from Lexington, Middlesex Co., Massachusetts, 2 June 1975, J. M. Burns (X-2516) (USNM). 11, Tegumen, uncus, and gnathos in dorsal view; 12, Distal ends of valvae and aedeagus in posterior view; 13, Complete genitalia (minus juxta and right valva) in left lateral view.

species, are also exceptionally valuable at the generic level in skippers" (Burns 1987:173), I wish, once and for all, to banish *simius* from *Amblyscirtes*.

In both sexes the genitalia of *A. celia* and *A. belli* (Figs. 1–10) are obvious variations on the theme of the type-species, *A. vialis* (Edwards) (Figs. 11–15). In males this singular theme boasts several salient elements: a wonderfully long, narrow aedeagus (Figs. 3, 6, 13) split distally into two, more or less parallel, linearly toothed ends (Figs. 2, 3, 5, 6, 12, 13); a correspondingly long, narrow saccus (Figs. 3, 6, 13); and a tegumen with a delicate, middorsal, caudally arching prong supporting membrane over a variously oval to cordate to triangular dorsal opening (Figs. 1, 3, 4, 6, 11, 13).

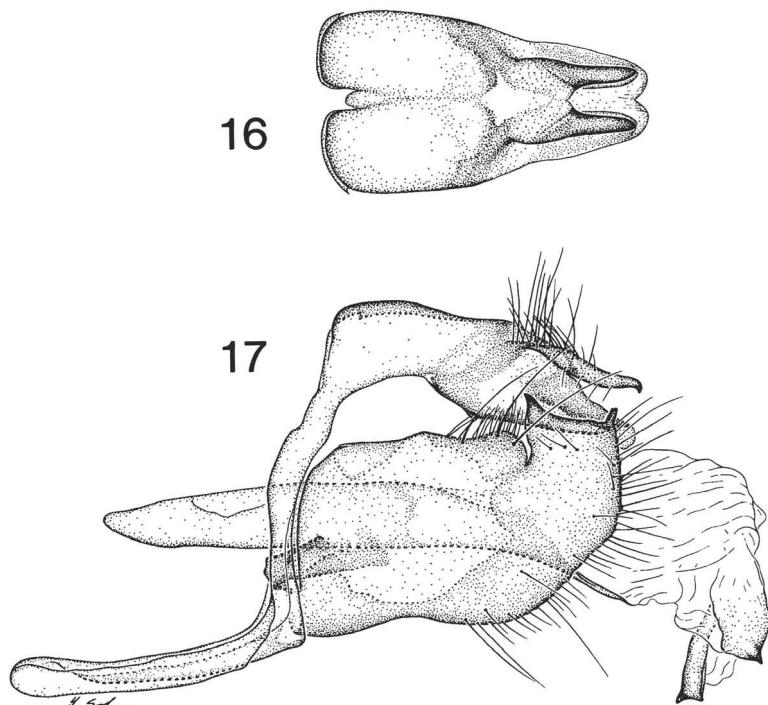
The male genitalia of *simius* (Figs. 16, 17) differ radically: the aedeagus is relatively short and stout, without distal modification, but with a pair of simple cornuti (lacking in *Amblyscirtes*); the saccus, though somewhat long, is not half what it is in *Amblyscirtes*; and the tegumen, uncus, and gnathos are all utterly distinct, both in form and in relative proportions, from their counterparts in *Amblyscirtes*. As in many other hesperiine skippers, the paired distal tips of the gnathos are completely free of the overlying uncus instead of being individually joined to its underside, as they are in *Amblyscirtes*. Any fancied resemblance between the valvae in lateral view is doubtless convergent.

The female genitalia of *simius* stand apart at the grossest level: after 4 or 5 minutes of boiling in 10% KOH, they are virtually membranous throughout—even the lamella postvaginalis and the ductus bursae. These parts are always well sclerotized in *Amblyscirtes* (Figs. 7–10, 14, 15), even after 7 or more minutes of boiling.



Figs. 14, 15. Female genitalia of *Amblyscirtes vialis* from Jacksonville, Windham Co., Vermont, 5 June 1963, J. M. Burns, E. D. Hanson, and D. W. Hottenstein (X-2519) (USNM). 14, Sterigma, bursa copulatrix, and part of the ductus seminalis in ventral view; 15, Sterigma and bursa copulatrix in right lateral view.

Where does *simius* go? Not in any named Nearctic genus, but conceivably in a Neotropical one. After all, a basically tropical skipper genus can produce a species that breaks the distributional mold by occurring primarily, and extensively, in North America north of Mex-



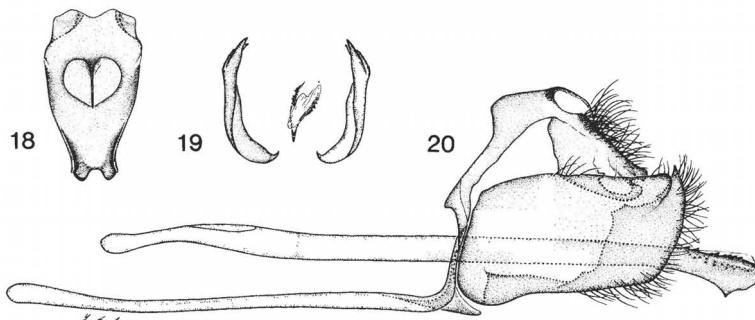
FIGS. 16, 17. Male genitalia of *? simius* from Horsetooth Mountain Park, 1800 m, Larimer Co., Colorado, 14 June 1987, P. A. Opler (X-2509) (USNM). 16, Tegumen, uncus, and gnathos in dorsal view; 17, Complete genitalia (minus right valva) in left lateral view, with vesica everted to show cornuti well.

ico—witness *Epargyreus clarus* (Cramer). To describe a new genus for *simius* still strikes me as premature (as it did Barnes & McDunnough in 1916). For the present I advertise its tail (Figs. 16, 17) so that others, too, may look for a possible match. Though I cannot fix its genus, better that *simius* float than clutter the wrong one.

Sometimes It's Okay To Be Different

The sole excuse for its erroneous placement is that *simius* looks like an *Amblyscirtes*—but we know that facies can converge and appearances, deceive. As discussed above, not only are the entire genitalia of *simius* wrong for *Amblyscirtes* but so are such prominent cephalic appendages as the palpus and, particularly, the antenna, whose apiculus is a blunt fraction of what it ought to be.

In this connection, it is instructive to point out for the first time that *A. alternata* (Grote & Robinson) has a similarly short, blunt apiculus!



Figs. 18–20. Male genitalia of *Amblyscirtes alternata* from 5 km N Panacea, Wakulla Co., Florida, 5 April 1980, J. M. Burns (X-2457) (USNM). 18, Tegumen, uncus, and gnathos in dorsal view; 19, Distal ends of valvae and aedeagus in posterior view; 20, Complete genitalia (minus juxta and right valva) in left lateral view.

Nevertheless, *alternata* is a true *Amblyscirtes*: the third joint of its palpus is long, slender, and erect; and (what is really crucial) its genitalia (Figs. 18–20) are a manifest variation on the *Amblyscirtes* theme (compare Figs. 1–6, 11–13). Note that the aedeagus carries a subterminal titillator in the form of a modest midventral keel (Figs. 19, 20). Both this keel and the much reduced apiculus are unique in the genus *Amblyscirtes*.

Biologic variation may sharply change the singular genitalic theme itself. In three species, *A. nereus* (Edwards), *A. eos* (Edwards), and *A. nysa* Edwards, the delicate, middorsal tegumen prong—one of the “salient elements”—totally disappears. But the underlying dorsal opening persists, as do all other salient elements. Nature simply makes it harder to generalize.

Neotropical Ties and Disruption of Genus Groups

With *simius* out, the rest of the 30 species currently in *Amblyscirtes* (Freeman 1973) comprise a related lot sharing more or less similar genitalia. Still, the genus is mixed with respect to such features as facies, the length of the apiculus, the third joint of the palpus, and, most important, the stigma of the male. Not just the species groups of *Amblyscirtes* but the exact limits of the genus may need to be reworked.

But larger, more basic problems loom. When he arranged the genera of American hesperiines in 8 groups (lettered H to O), Evans (1955: 7–8, 383) put *Amblyscirtes* in the N or *Lerodea* group (the smallest), observing that, “The 4 genera placed in this group [*Atrytonopsis*, *Amblyscirtes*, *Lerodea*, and *Oligoria*] appear to be more or less allied and would be out of place in any other group.” Actually, the nearest relatives of *Amblyscirtes* are far removed in Evans’s J or *Apaustus* group!

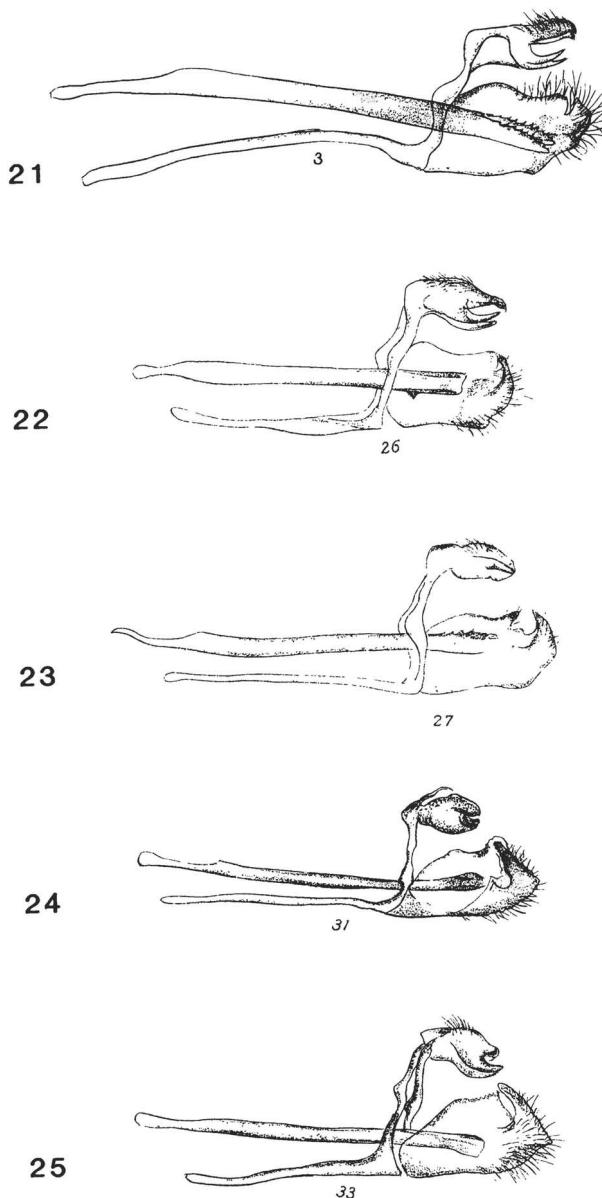
Support for this startling assertion comes from figures of male genitalia in two classic works treating skippers at opposite ends of the neotropics (Mexico and Central America; Argentina). The critical figures (Godman & Salvin 1879–1901:vol. 3, pl. 99, fig. 3, pl. 103, figs. 26, 27, 31, 33 [all reprinted in this paper as Figs. 21–25]; Hayward 1950: pl. 8, fig. 3, pl. 13, figs. 5, 11) show salient elements of the singular *Amblyscirtes* theme—especially those relating to the aedeagus and the saccus, but, in one case, even the delicate tegumen prong—coupled with valvae loosely reminiscent of *Amblyscirtes* valvae. According to Evans (1955), those figured genitalia belong to 5 species in 3 genera—*Moeris remus* (Fabricius), *Mnasicles geta* Godman, *M. hicetaon* Godman, *Callimormus juventus* Scudder, and *C. alsimo* (Möschler)—and those genera (all polytypic) constitute, respectively, numbers 33, 6, and 2 of his *Apastus* group (which contains 53 genera in all).

At this point I must sunder the Evans combination *Moeris remus* and restore *remus* to its proper genus. Without any question, the figures of the male genitalia of the type-species of Godman's new genera *Perimeles* (Godman & Salvin 1879–1901:vol. 3, pl. 99, fig. 3 [Fig. 21 in this paper]) and *Moeris* (vol. 3, pl. 100, fig. 2 [Fig. 26 in this paper]) reflect very distinct genera, which Evans (1955:146) wrongly lumped. The genitalia of the type-species of *Perimeles*—*remus* Fabricius—suggest *Amblyscirtes*, while the genitalia representing *Moeris* do not. There has been a legitimate name change, though: *Perimeles remus* became *Remella remus* when Hemming (1939) saw that Godman's *Perimeles* is a junior homonym and replaced it with *Remella*.

Having examined a number of genitalic dissections of *Remella*, *Mnasicles*, and *Callimormus* for myself, I reiterate that those small neotropical skippers are phylogenetically close to *Amblyscirtes*. To see—almost at a glance—that the male tails of *Atrytonopsis*, *Oligoria*, and *Lerodea* depart much farther from those of *Amblyscirtes*, compare relevant figures in Godman and Salvin (1879–1901), Lindsey et al. (1931), Hayward (1950), and Burns (1982, 1983).

Blatant genitalic heterogeneity in both the J and the N groups of Evans probably exceeds what I have indicated. Worse yet, it may occur in other groups, invalidating much of Evans's taxonomic system just below the level of the subfamily.

I have a final irony in the fire. In the course of checking out possible neotropical relatives of *Amblyscirtes*, I studied the male holotype (the only known specimen) of what Bell (1959) designated *Moeris patriciae* (taken by Patricia Vaurie at Salamá, elevation 3000 ft [915 m], in the middle of Guatemala on 22 July 1947), including the slide Bell had made of its genitalia. From this—as well as from Bell's (1959:figs. 9, 15) illustrations of the whole animal and its genitalia—the skipper



Figs. 21-25. Godman's figures of male genitalia of various neotropical relatives of *Amblyscirtes*; complete genitalia (minus juxta and left valva) in left lateral view. Note that, because Godman removed the left valva, his figures show the inner surface of the right valva, whereas mine of *Amblyscirtes* show the outer surface of the left valva. 21, *Remella remus*; 22, *Mnasicles geta*; 23, *Mnasicles hicetaon*; 24, *Callimormus juventus*; 25, *Callimormus alsimo*.

26

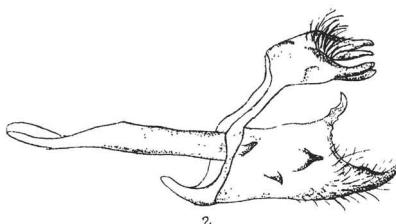


FIG. 26. Godman's figure of the male genitalia of *Moeris striga*; complete genitalia (minus juxta and left valva) in left lateral view. Even in a limited lateral comparison, this tail differs grossly from that of *Remella remus* (Fig. 21): the aedeagus is short and simple but equipped with cornuti, the saccus is very short, and the distal ends of the valva are much produced.

obviously belongs in *Amblyscirtes* as then and now conceived. *Amblyscirtes patriciae* (Bell), **new combination**, clusters with *A. folia* Godman, *A. immaculatus* Freeman, and *A. raphaeli* Freeman, which come from southern Mexico.

For *Amblyscirtes*, these species are large to extremely large in size (the length of the male primary ranges from about 15 to 20 mm). Males have a well-developed, conspicuous, linear stigma, in three sections, consisting mainly of fine, dense, short, brown, hairlike scales. The longest (and uppermost) section begins at the origin of veins 3 and 4, runs along the lower side of the cubitus, diverges from it well before the origin of vein 2, and extends down to that vein. The second and third sections pick up below vein 2 as a pair of dashes or dots, much more nearly vertical in orientation, that extend to, or toward, vein 1. Although tripartite, this stigma looks more or less continuous to the naked eye. The apiculus of the antenna (unfortunately missing from the specimen of *A. patriciae*) is perceptibly longer and more delicate than it is in other *Amblyscirtes*. The third segment of the palpus is relatively short, rather than long and slender. A pale area (cream or tan or yellowish) tends to develop on the ventral primary in the distal half of space 1b.

ACKNOWLEDGMENTS

My thanks to F. H. Rindge for his generous hospitality during repeated visits to the American Museum of Natural History, New York, including access to Bell's and Freeman's various genitalic preparations and their *Amblyscirtes* types; to Rindge and C. V. Covell Jr. for lending specimens of *Amblyscirtes* and to H. A. Freeman, P. A. Opler, and C. N. Watson Jr. for donating them; to Adrienne Venables for 123 precise KOH dissections of male and female genitalia of *Amblyscirtes*, its relatives, and *? simius* and to Young Sohn for superb drawings of some of them; to F. D. Godman for figuring male genitalia of skippers before it was fashionable and to Victor Krantz for reproducing a few of Godman's figures; and to Sarah Burns for catching *Amblyscirtes*, recording data, reading manuscript and proof, and giving all sorts of general support.

LITERATURE CITED

- BARNES, W. & J. H. McDUNNOUGH. 1916. Notes on North American diurnal Lepidoptera. Contributions to the natural history of the Lepidoptera of North America. 3:51-156, pls. 4-11. Review Press, Decatur, Illinois.
- BELL, E. L. 1959. Descriptions of some new species of neotropical Hesperiidae (Lepidoptera, Rhopalocera). Am. Mus. Novit. No. 1962. 16 pp.
- BURNS, J. M. 1964. Evolution in skipper butterflies of the genus *Erynnis*. Univ. Calif. Publ. Entomol. 37:1-217.
- 1982. *Lychnuchoides frappenda* from central Mexico joins *lunus* and *zweifeli* in a *lunus* group of *Atrytonopsis* (Lepidoptera: Hesperiidae: Hesperiinae). Proc. Entomol. Soc. Wash. 84:547-567.
- 1983. Superspecies *Atrytonopsis ovinia* (*A. ovinia* plus *A. edwardsi*) and the nonadaptive nature of interspecific genitalic differences (Lepidoptera: Hesperiidae). Proc. Entomol. Soc. Wash. 85:335-358.
- 1985. *Wallengrenia otho* and *W. egeremet* in eastern North America (Lepidoptera: Hesperiidae: Hesperiinae). Smithsonian Contrib. Zool. No. 423. 39 pp.
- 1987. The big shift: *nabokovi* from *Atalopedes* to *Hesperia* (Hesperiidae). J. Lepid. Soc. 41:173-186.
- DOS PASSOS, C. F. 1964. A synonymic list of the Nearctic Rhopalocera. Lepid. Soc. Mem. No. 1. v + 145 pp.
- DRAUDT, M. 1924. Vol. 5. The American Rhopalocera. In Seitz, A. (ed.), The Macro-lepidoptera of the world. Alfred Kernen Verlag, Stuttgart.
- EDWARDS, W. H. 1877. Catalogue of the diurnal Lepidoptera of America north of Mexico. Trans. Am. Entomol. Soc. 6:1-68.
- 1881. Descriptions of new species of diurnal Lepidoptera found within the United States. Trans. Am. Entomol. Soc. 9:1-8.
- EVANS, W. H. 1955. A catalogue of the American Hesperiidae indicating the classification and nomenclature adopted in the British Museum (Natural History). Part IV. Hesperiinae and Megathyminae. British Museum, London. 499 pp., pls. 54-88.
- FREEMAN, H. A. 1941. A new species of *Amblyscirtes* from Texas (Lepidoptera, Rhopalocera, Hesperiidae). Entomol. News 52:50-51.
- 1943. New Hesperioida, with notes on some others from the United States (Lepidoptera, Rhopalocera). Entomol. News 54:72-77.
- 1973. A review of the *Amblyscirtes* with the description of a new species from Mexico (Hesperiidae). J. Lepid. Soc. 27:40-57.
- GODMAN, F. D. & O. SALVIN. 1879-1901. Biologia Centrali-Americana; Insecta; Lepidoptera-Rhopalocera. Vol. 2, 782 pp.; Vol. 3, 113 pls.
- HARRIS, L., JR. 1972. Butterflies of Georgia. Univ. Oklahoma Press, Norman, Oklahoma. xxii + 326 pp.
- HAYWARD, K. J. 1950. Genera et species animalium argentinorum. Vol. 2. Insecta, Lepidoptera, Hesperiidae, Hesperiinae. G. Kraft Ltd., Buenos Aires. 388 pp., 26 pls.
- HEMMING, F. 1935. Notes on seventeen genera of Rhopalocera. Stylops 4:1-3.
- 1939. On five genera in the Lepidoptera Rhopalocera at present without valid names. Proc. Roy. Entomol. Soc. London, series B 8:39.
- IRWIN, R. R. & J. C. DOWNEY. 1973. Annotated checklist of the butterflies of Illinois. Illinois Nat. Hist. Survey, Urbana, Ill. Bio. Notes No. 81. 60 pp.
- LINDSEY, A. W., E. L. BELL & R. C. WILLIAMS, JR. 1931. The Hesperioida of North America. Denison Univ. Bull., J. Sci. Lab. 26:1-142.
- MACNEILL, C. D. 1975. Family Hesperiidae, pp. 423-578. In Howe, W. H. (ed.), The butterflies of North America. Doubleday & Co., Inc., Garden City, New York.
- MILLER, L. D. & F. M. BROWN. 1981. A catalogue/checklist of the butterflies of America north of Mexico. Lepid. Soc. Mem. No. 2. vii + 280 pp.
- 1983. Hesperiidae, pp. 42-48. In Hodges, R. W. (ed.), Check list of the Lepidoptera of America north of Mexico. E. W. Classey Ltd. and The Wedge Entomological Research Foundation, London.

- OPLER, P. A. & G. O. KRIZEK. 1984. Butterflies east of the Great Plains. Johns Hopkins Univ. Press, Baltimore, Maryland. 294 pp., 54 pls.
- SCOTT, J. A. 1986. The butterflies of North America. Stanford Univ. Press, Stanford, California. xiii + 583 pp., 64 pls.
- SKINNER, H. 1895. Notes on Rhopalocera, with descriptions of new species. Entomol. News 6:112-114.
- SKINNER, H. & R. C. WILLIAMS JR. 1923. On the male genitalia of the Hesperiidae of North America, Paper III. Trans. Am. Entomol. Soc. 49:129-153.
- STANFORD, R. E. 1981. Superfamily Hesperioidea Latreille, 1802 (skippers), pp. 67-108, 117-144. In Ferris, C. D. & F. M. Brown (eds.), Butterflies of the Rocky Mountain states. Univ. Oklahoma Press, Norman, Oklahoma.
- WATSON, C. N., JR. & J. A. HYATT. 1988. Butterflies of northeast Tennessee. J. Lepid. Soc. 42:19-31.

Received for publication 30 July 1989; revised and accepted 6 January 1990.