

THE POLYTYPIC GENUS *CELOTES*
(LEPIDOPTERA: HESPERIIDAE: PYRGINAE)
FROM THE SOUTHWESTERN UNITED STATES
AND NORTHERN MEXICO*

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Although most species of American hesperiids are hard to determine, some are not; and none is more immediately distinct than the "streaky skipper," *Celotes nessus* (Edwards). Ever since it was described (in genus *Pholisora*) in 1877, nothing else like it has been known. Indeed, since the turn of the century — despite abortive attempts of various workers to jam it into polytypic genera (such as *Pyrgus* [then commonly called *Hesperia*], *Systasea*, and *Antigonus*) — it has properly stood alone in the monotypic genus *Celotes* (Godman and Salvin 1899). I feel, therefore, a measure of remorse in now describing a second species of *Celotes* that closely resembles the first.

Although I have accumulated data on *Celotes* since New Year's Eve of 1961, when I first recognized it as polytypic, I still see no clear clues to the evolutionary differentiation of *C. nessus* and the species to be described: they overlap fully in space and in time, and at least partly in choice of larval foodplants. The new species is a multivoltine mallow-eater occurring in a montane strip that runs northwest-southeast through the middle of the range of *C. nessus*.

Because *C. nessus* is both peculiar and familiar, the following description is comparative. And because original descriptions can be too tedious for words, this one is largely visual.

In preparing it, I have examined the genitalia of all specimens of *Celotes* available to me and possessed of an abdomen — a total of 529 individuals, of which 97 represent the new species. Wherever possible, I have also examined the metathoracic pouch of males. Each pinned specimen studied has received a sex-and-determination label.

The new specific name is a noun in apposition.

***Celotes limpia* new species**

Holotype. — ♂, Limpia Canyon, 5000 feet, Davis Mountains, 4 miles WNW of Fort Davis, Jeff Davis County, Texas, May 2,

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1959 (J. M. and S. N. Burns) [Museum of Comparative Zoology no. 31888].

Size.—On average, *limpia* is larger than *nessus*; and, in both species, females are larger than males, although size varies considerably (table 1). In *nessus*, the wingspread of Texas specimens exceeds that of Arizona specimens by at least 1 mm.

Table 1. Maximum wingspread in well-mounted specimens of *Celotes* from Texas.

Species	Sex	Number measured	Wingspread (mm)	
			Mean	Range
<i>nessus</i>	♂	35	23.7	22-26
"	♀	22	25.1	23-27
<i>limpia</i>	♂	39	25.9	23-29
"	♀	24	27.8	25-31

Facies.—Fig. 1E-H. Very like *nessus* (fig. 1A-D), but with slightly larger and more conspicuous hyaline spots and a generally paler aspect.

Noteworthy in the latter connection is a set of pale areas between dark marks on the proximal 60% of the ventral secondary (i.e. from the three hyaline spots of the secondary inward): these pale areas are enlarged and whitened in *limpia* and hence usually more pronounced than in *nessus*. In dorsal view, unworn (particularly reared) specimens of *limpia* may show considerable grayish overscaling on the body and adjacent wing bases. The usually paler shades of brown and tan in *limpia* tend to make it reflect more and appear colder and harder and sometimes more contrasty. All of these average differences involving color are perceptible chiefly when *limpia* is compared with *nessus* from Texas; *nessus* from Arizona (where *limpia* does not occur) often essentially duplicates the facies of *limpia*—except insofar as the remarkably small average size of Arizona *nessus* gives its pattern a special sharpness. Wear and fading

Data for specimens in Fig. 1:

- A, B—Sitting Bull Falls, 4650 feet, Guadalupe Mountains, Eddy County, New Mexico, V-26-1959 (J. M. and S. N. Burns).
 C, D—Topotype. San Antonio, Bexar County, Texas, VI-30-1963 (J. M. Burns).
 E, F—Holotype. Limpia Canyon, 5000 feet, Davis Mountains, 4 mi. WNW of Fort Davis, Jeff Davis County, Texas, V-2-1959 (J. M. and S. N. Burns).
 G, H—Allotype. As for holotype, except V-1-1959.

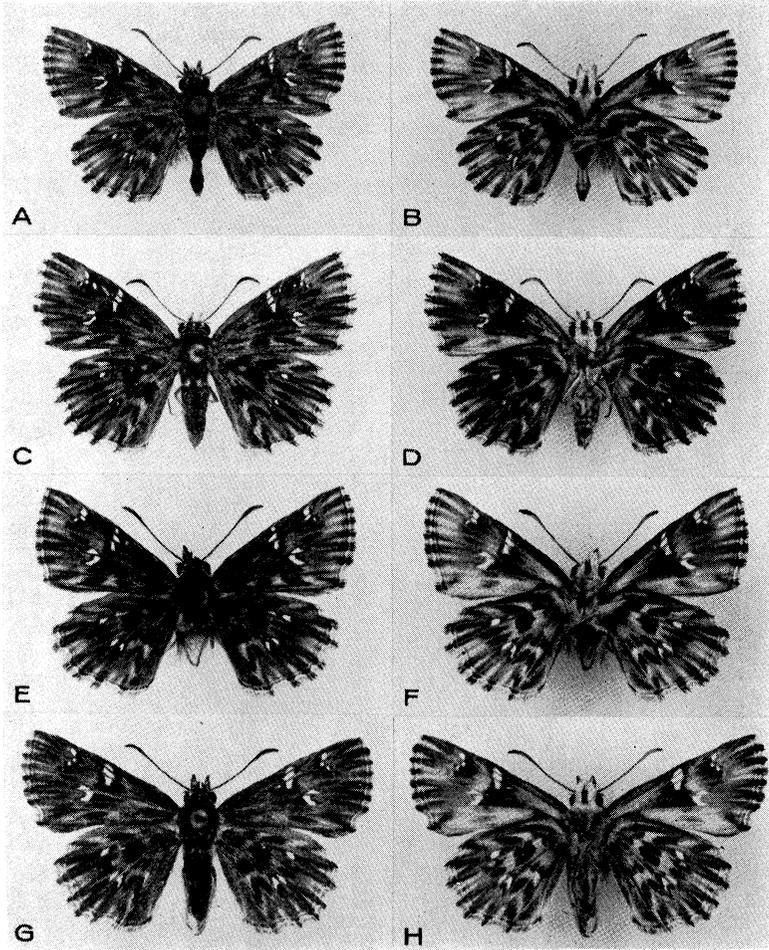


Fig. 1. Facies of *Celotes*.

<i>C. nessus</i>	}	A	B	→	♂
		C	D	→	♀
<i>C. limpia</i>	}	E	F	→	♂
		G	H	→	♀
		↓	↓		
		dorsal	ventral		

raise additional hell with these subtle color characters, but no matter: the genitalia (q.v.) last and last.

Male scent-spreading sex characters.—Males of *limpia*, like those of *nessus*, have a narrow costal fold on the primary and a metathoracic system of ventral pouch and tibial tufts. The metathoracic pouch of *limpia* (fig. 2B) bears short linear scales over most or all of its dorsal surface (except at the lateral margin). In *nessus* (fig. 2A), linear scales are altogether absent (particularly in Arizona males) or, if present (as in Texas males), are much less dense and/or proximal in distribution; even in extreme cases, they never attain the distal apex of the pouch, and the pouch is therefore clad—entirely or for its greater part—with much broader, flat-lying shingle-like scales (cf. figs. 2A and 2B). Because the linear scales of *limpia* are creamy, whereas some to all of the broad shinglelike scales of *nessus* are gray to brown, the general color of the dorsal surface of the metathoracic pouch differs in the two species. (Interior morphology of costal folds has not been studied.)

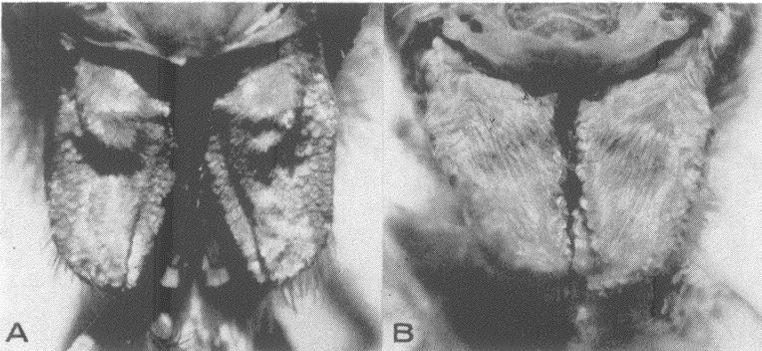


Fig. 2. Metathoracic pouch of the male; abdomen removed, dorsoposterior view. A. *Celotes nessus* from Austin, Travis County, Texas, V-26-1966 (J. M. Burns). B. *Celotes limpia*, a paratype reared out IX-10-1966 from a larva collected on *Abutilon malacum*, 15 mi. SE Redford, 2500 ft., Presidio County, Texas, VIII-18-1966 (R. O. Kendall).

Male genitalia.—Fig. 4. Although basically similar to *nessus* (fig. 3), there are abundant differences, of which the most salient include the following. (1) In *limpia*, a long thin flattened projection, like a curved spatula, arises from the dorsoposterior rim of the body of the valva and starts dorsad but at once curves caudad, extending far back to become the caudalmost valval element and to end in a

slightly flared tip with a peripheral array of fine sharp teeth (fig. 4A-C). Its homolog in *nessus* is a robust spike arising in a similar position, except that the distinctive high dorsal curvature of the body of the valva in *nessus* places the origin of the spike well down on the medial surface of the valva (fig. 3A-C); this tapering spike extends chiefly dorsad, but usually bends slightly caudad at its apex, which is pointed and often entire or bifurcate (fig. 3A,B), but sometimes trifurcate, or very rarely quadrifurcate; although occasionally broadened or lengthened and bent strongly caudad apically, the spike *never* approaches the form of the spatula in *limpia*. (2) Anterior end of tegumen, in *limpia*, large and well-developed, projecting far cephalad (fig. 4E,F); but in *nessus*, extraordinarily reduced (fig. 3E,F). (3) In *limpia*, uncus broad, and the paired terminal prongs of the uncus heavy and stubby (fig. 4F); but in *nessus*, uncus relatively narrow, and its terminal prongs more delicate (fig. 3F).

Female genitalia. — Fig. 6. Sterigma of *limpia* altogether more massive (fig. 6A,B) and, viewed ventrally, more nearly square in outline (fig. 6A); heavy central sclerotization in lamella postvaginalis like a wide triangle tapering quickly toward ostium bursae (fig. 6A). Sterigma of *nessus* (fig. 5) less massive (fig. 5A,B) and, in ventral view, narrower posteriorly, suggesting in outline a caudally truncated triangle (fig. 5A) more than a square; heavy central sclerotization in lamella postvaginalis limited to a comparatively narrow midventral strip that tapers but little toward ostium bursae (fig. 5A). Ostium bursae of *limpia* a relatively narrow curved slit, like a crescent bowed dorsad (fig. 6C), but that of *nessus* large and more or less round, like a manhole (fig. 5C).

Spatial distribution. — A widespread species, *nessus* ranges from about the 97th meridian in southcentral Oklahoma and central Texas west to northwestern and southeastern Arizona and south in Mexico to at least southern Sonora, southern Chihuahua and Coahuila (fig. 7). By contrast, so far as known, *limpia* occurs only along the southern Rocky Mountain axis in Trans-Pecos Texas and along the Mexican counterpart of this axis, the northern segment of the Sierra Madre Oriental, as far south at least as southern Coahuila (fig. 8). Having been taken in numbers in the Guadalupe, Davis, and Chisos mountains of Trans-Pecos Texas, *limpia* may confidently be expected (1) in many other west Texan ranges — such as the Delawares, Chinatis, and Santiagos — that are more or less associated with the scattered southern Rocky Mountain system, (2) northward in at least the New Mexican extension of the Guadalupe, if not in the Sacramentos and more northern chains, and (3) southward in Chi-

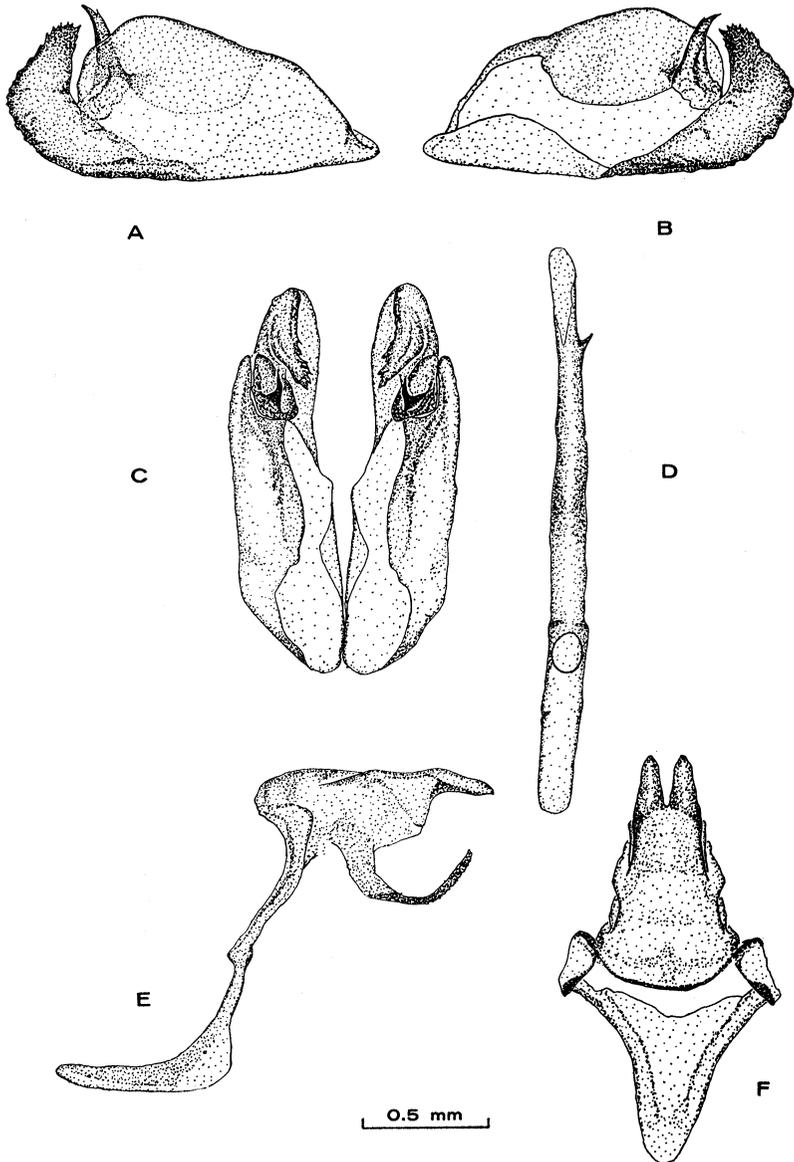


Fig. 3. Male genitalia of *Celotes nesus*. A. Lateral view of right valva. B. Medial view of right valva. C. Dorsal view of both valvae. D. Dorsal view of aedeagus. E. Left lateral view of uncus, tegumen, gnathos, vinculum, and saccus. F. Dorsal view of uncus, tegumen, vinculum, and saccus. [A and B, drawn from male from Palo Duro Canyon, 2800 feet, Randall County, Texas, V-10-1959 (J. M. and S. N. Burns); C to F, from male from Austin, Travis County, Texas, V-26-1966 (J. M. Burns).]

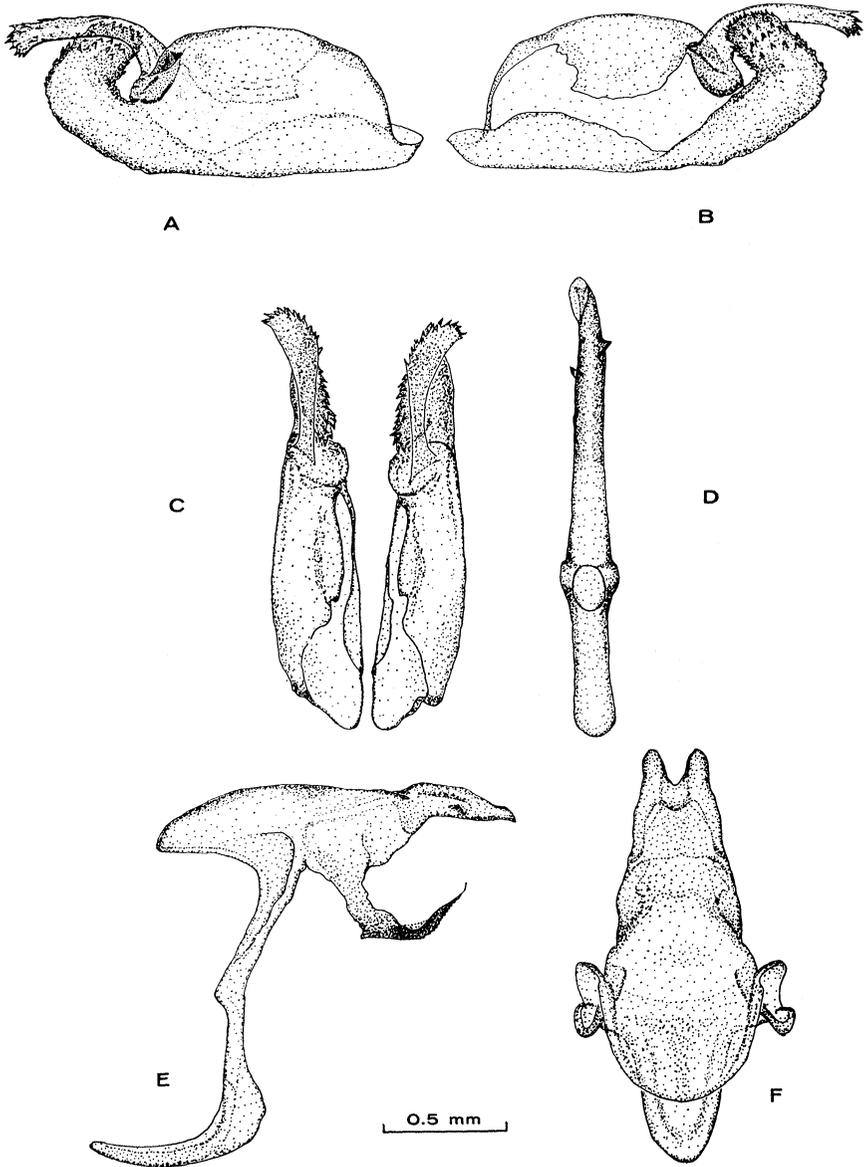


Fig. 4. Male genitalia of *Celotes limpia*. A to F as in fig. 3. [A and B, drawn from holotype; C to F, from paratype from type locality, V-4-1959 (J. M. and S. N. Burns).]

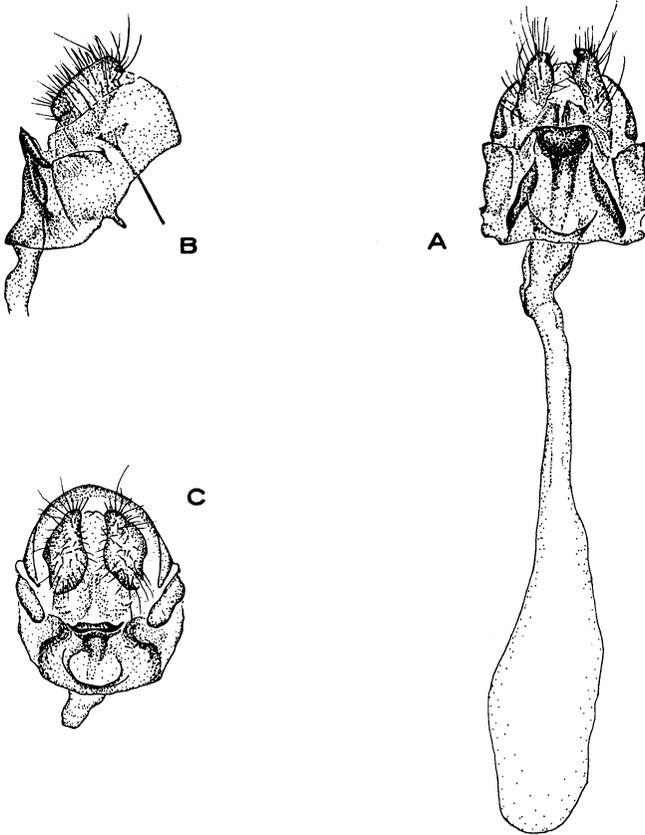


Fig. 5. Female genitalia of *Celotes nesus*. A. Ventral view of bursa copulatrix, sterigma, and ovipositor lobes. B. Right lateral view. C. Ventroposterior view. [Drawn from female from Austin, Travis County, Texas, IV-18-1967 (J. M. Burns).]

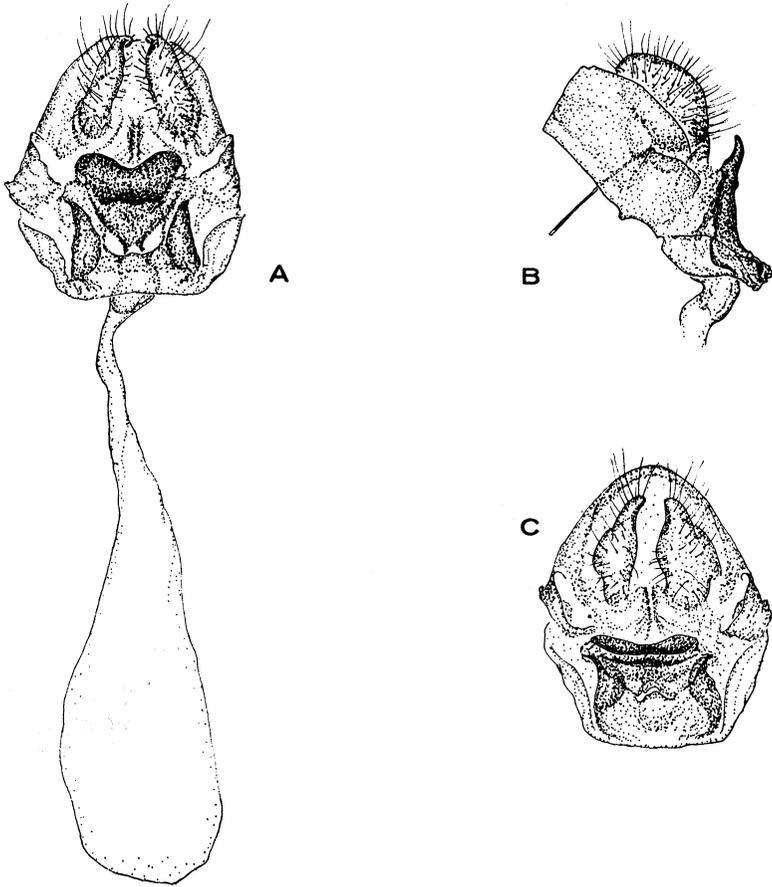


Fig. 6. Female genitalia of *Celotes limpia*. A. Ventral view of bursa copulatrix, sterigma, and ovipositor lobes. B. Left lateral view. C. Ventro-posterior view. [Drawn from paratype from Limpia Canyon, 4700 feet, Davis Mountains, 5 mi. NE of Fort Davis, Jeff Davis County, Texas, V-4-1959 (J. M. and S. N. Burns).]

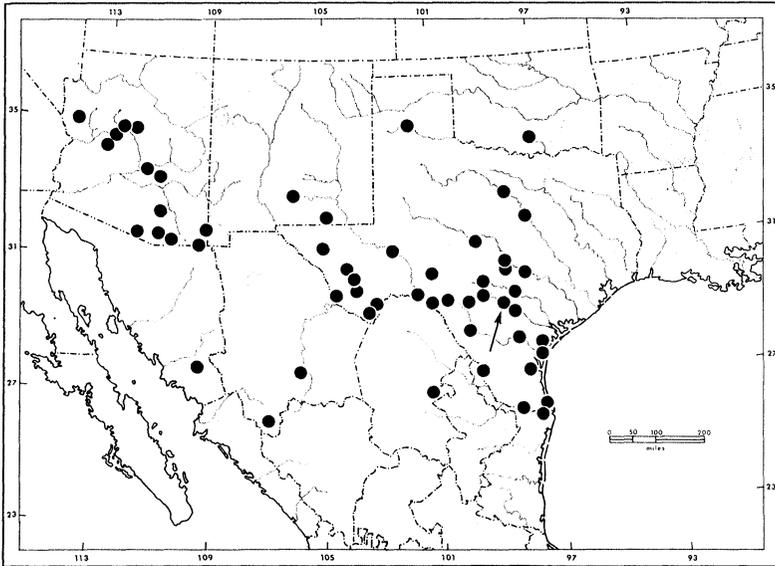


Fig. 7. Spatial distribution (based on material examined) of *Celotes nessus* — southwestern United States and northern Mexico. Rivers and the borders of states are shown. Type locality indicated by arrow.

huahua, as well as Coahuila, and, in all likelihood, beyond these states. Indeed, either *limpia* or *nessus* (see *Nomenclatural epilogue* below) was long ago reported from Durango city (Godman and Salvin 1899), and both species probably range well down the Central Plateau of Mexico. The distribution of *limpia* appears to lie *within* that of *nessus*.

Over its much broader distribution, *nessus* occurs from sea level to somewhere between 5000 and 6000 feet; *limpia*, with its strictly interior distribution, is now known from an elevational range of 1900-5700 feet. In montane regions of the southwestern United States, both skippers are species of alluvial fans, foothills, lower canyon reaches, and lower elevations generally; they avoid higher elevations.

The distribution of *nessus* in the United States is not perfectly known. The skipper may conceivably occur in the New York and Providence mountain region of southeastern California, in southern Nevada, in southern Utah, possibly in extreme southwestern or southeastern Colorado, and certainly in considerably more of New Mexico

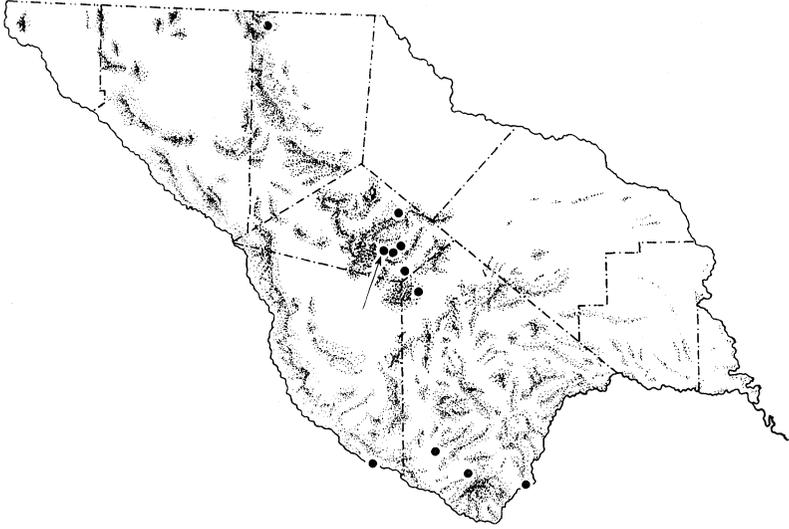


Fig. 8. Spatial distribution (based on material examined) of *Celotes limpia* — Trans-Pecos Texas. Mountains and the borders of counties are shown. Type locality indicated by arrow. The range as plotted spans a north-south distance of about 220 miles; but, since preparing this map, I have examined one male from southern Coahuila, Mexico, about 250 miles southeast of the Big Bend.

than fig. 7 indicates. On the other hand, this map probably gives a close approximation of the eastern distributional limit of *nessus*. This meridional eastern limit coincides neatly with that of many other organisms — including other pyrgine skippers of the southwestern United States and northern Mexico such as *Pyrgus philetas* Edwards (Burns and Kendall 1969) and *Erynnis meridianus* Bell (Burns 1964, and unpublished) — and reflects an important biogeographic barrier.

There are two freaky records of streaky *nessus* east of the 97th meridian. The first [Burton, Georgia, V-21-1911 (J. C. Bradley) (Cornell University collection)] was published by Harris (1950) and repeated [as “Georgia (once!)”] by Klots (1951), but was not even mentioned later by Harris (1972) and should be discounted. The second [Tallulah, Louisiana, between VIII-1926 and X-1931 (collected in the day at an altitude of 20 feet by an airplane)] was published by Glick (1939); but though it has been repeated (Lambremont 1954; Mather and Mather 1958), the feat itself has not.

Temporal distribution. — Both *limpia* and *nessus* are multivoltine, and both fly at the same times. Nearly all of the dated wild-caught adults of *Celotes* that I examined were collected from March to September: in Texas, every half-month interval from the beginning of March to mid-September includes records of both *limpia* (N = 68) and *nessus* (N = 158); however, for Arizona *nessus* (N = 183), the months of May and June together yield but 3 records, which leaves a major gap between one large cluster of records in March and April and another in July, August, and the first half of September. The only other dated wild-caught specimens examined are 5 *nessus* from far southern Arizona collected in mid-January and 5 *nessus* from the last half of September and the first half of October from central and, as might be expected, extreme southern Texas (the lower Rio Grande Valley). In the experience of Kendall (1965), *nessus* flies from early March to mid-November in Texas.

The fact that temporal distribution is essentially continuous through the warm season for both *limpia* and *nessus* in Texas but distinctly bimodal for *nessus* in Arizona probably relates to the different patterns of rainfall in the two states. For the most part, Texas has much more evenly distributed precipitation than does Arizona, where it occurs in two widely disjunct winter and summer periods. The second flight period of *nessus* in Arizona coincides with the summer rainy season, to which it is presumably geared. In the course of his field studies and laboratory rearings, Kendall (1965, and unpublished) has observed that full-grown larvae of *Celotes* are able to enter diapause (facultatively) to beat heat and drought, as well as to get through the cold of a winter season. Kendall has shown in the laboratory that such diapause can be broken by providing moisture, whereupon larvae pupate and produce adults promptly. Given this capacity to be flexible, variable larval growth rates, and the usual vicissitudes of weather, individuals of a single generation must often get out of synchrony with the result that generations overlap broadly and irregularly, forming no definite number per year in either species.

There are no indications that *limpia* and *nessus* are temporally displaced with respect to each other where they spatially coexist in Trans-Pecos Texas. Rather, my records show that adults of both species have repeatedly been collected in association — unwittingly, of course, since the collectors were unaware of the existence of more than one species of *Celotes*. On nine occasions altogether, five different collectors (or pairs of collectors) have caught a total of 37

limpia and *nessus* at the same place on exactly the same date — the places occurring in Jeff Davis and Brewster counties and the dates in March, May, June, July, and August. Many other records of both species at a single locality differ by only one to a few days.

Larval foodplants. — Numerous studies in Texas by R. O. and C. A. Kendall show that both *limpia* and *nessus* feed on various species of Malvaceae. For both skippers, the Kendalls have witnessed oviposition — directly on larval foodplants — in the wild, and have collected numerous eggs and larvae from which they have reared adults.

In the field, *limpia* eats *Abutilon malacum* Wats., *A. incanum* (Link) Sweet, *Sphaeralcea angustifolia* var. *lobata* (Woot.) Kern., and *Wissadula holosericea* (Scheele) Gke., and, in the laboratory, also *Malvastrum americanum* (L.) Torr. and *Althaea rosea* Cav. In the field, *nessus* eats *Abutilon incanum*, *Sphaeralcea angustifolia* var. *lobata*, *Wissadula holosericea*, *W. amplissima* (L.) R. E. Fries, and *Sida filipes* Gray, and, in the laboratory, also *Althaea rosea*. Both skippers very likely eat other mallows, as well.

Documentation: Eggs and larvae of *Celotes* were found on *Sphaeralcea angustifolia* var. *lobata* at Davis Mountains State Park, Jeff Davis County, V-1-61, by R. O. and C. A. Kendall. At the laboratory in San Antonio, those larvae that were not preserved were reared perforce on *Althaea rosea*. One adult was obtained from a larva on V-28-61 and two from eggs on VI-6 and 9-61. Although all were reported as *nessus* (Kendall 1965), I find that only the adult that emerged VI-6 is *nessus* whereas those that emerged V-28 and VI-9 are *limpia* (paratypes).

From 3 larvae found by the Kendalls on *Wissadula holosericea* in Musquiz Canyon on state highway 118, Jeff Davis County, VIII-14-66, 1 adult (a paratype of *limpia*) was obtained on IV-14-67.

From 2 larvae found by the Kendalls on *Abutilon incanum* near Rio Grande Village in Big Bend National Park, Brewster County, X-12-67, 2 adults of *limpia* (paratypes) were obtained (after a lengthy diapause) on VI-19 and 22-68. At the same locality, III-27-68, the Kendalls saw a female of *Celotes* oviposit on *A. incanum* but got only the egg and not the female; from this egg, an adult of *limpia* (paratype) was obtained on V-29-68.

The Kendalls collected 23 larvae on *Abutilon malacum*, VIII-18-66, at a point on ranch road 170 overlooking the Rio Grande, about 15 miles southeast of Redford, Presidio County; and, using *A. incanum*, *Malvastrum americanum*, and especially *Wissadula*

holosericea as larval food in the laboratory, they reared 22 adults of *limpia* (all paratypes) (one seemingly parasitized larva was preserved). At exactly the same spot, X-11-67, the Kendalls collected about 40 more *Celotes* larvae on *A. malacum* and reared 23 adults (apparently *limpia*, but none of them examined by me).

Foodplant records for *nessus* are legion (Kendall 1959, 1965, and unpublished). Most of them are of *Abutilon incanum*; and these come from many counties in central Texas: Bexar (innumerable records), Blanco, Bosque, Comal, Crockett, Kerr, Kimble, Llano, Maverick, McCulloch, Medina, Nueces, San Patricio, Travis, Uvalde, and Val Verde. I have examined much of the *nessus* material reared on *A. incanum*.

The one valid record of *nessus* found as an egg on *Sphaeralcea angustifolia* var. *lobata* in Jeff Davis County, Trans-Pecos Texas, and reared to an adult in the laboratory on *Althaea rosea* was discussed above; the other two adults reared from this lot of eggs and larvae on *Sphaeralcea* are actually *limpia*, though they, too, were reported (Kendall 1965) as *nessus*.

Three larvae found on *Sida filipes* in San Antonio, Bexar County, V-9-63, and kept on this plant, produced adults of *nessus* (not seen by me) on VI-8, 14, and VII-11-63 (Kendall 1965).

A larva found by the Kendalls on *Wissadula holosericea* in San Antonio, Bexar County, V-24-65, yielded an adult of *nessus* (seen by me) on VI-11-65.

Three larvae found on *W. amplissima* in extreme southern Texas at the Laguna Atascosa National Wildlife Refuge, Cameron County, IV-21-62, produced adults of *nessus* (all seen by me) on V-15, VI-4, and VIII-20-62 (Kendall 1965).

Hypodigm. — Of *limpia*: the holotype ♂ specified earlier, an allotype ♀ with identical data (except V-1-59), and paratypes comprising 64 ♂ 30 ♀ from Trans-Pecos Texas and 1 ♂ from Mexico. Paratypic data arranged in the system described by Burns (1964: 19-20), with names of recurring collectors abbreviated: J. M. and S. N. Burns to B, H. A. Freeman to F, and R. O. and C. A. Kendall to K.

MEXICO. COAHUILA. 25 mi. N Saltillo, IX-19-69, 1 ♂ (J. A. Scott).

UNITED STATES. TEXAS. *Brewster County*: Alpine, V-20-26, 1 ♂ (O. C. Poling) (MCZ); V-21-26, 1 ♂ (O. C. Poling) (MCZ); VI-4-42, 1 ♂ (F); VI-5-42, 1 ♂ (F); VI-6-42, 3 ♂ (F); VI-7-49, 1 ♂ (F); VII-10-49, 1 ♀ (F); VIII-9-52, 2 ♂ (F); VII-28-53, 1 ♂ (F); VI-16-60, 1 ♀ (F); III-14-61, 1 ♂ (W. S.

McAlpine); III-27-61, 7♂ (W. S. McAlpine) (2 in PMY); VI-5-61, 1♂ (F). 8 mi. N Study Butte, 3500 ft., VII-15-63, 1♂ (H. Clench) (CM). Big Bend National Park: The Basin, 5500 ft., IV-30-65, 1♀ (K); IX-8-65, 1♂ (K). Oak Spring, 5700 ft., IX-9-65, 1♀ (K). Rio Grande Village, 1900 ft., III-27-68, 3♂ (K); V-29-68, 1♂ reared from egg (K); VI-19, 22-68, 2♂ reared from larvae (K). Window, 5500 ft., VIII-16-66, 3♂ (K). *Culberson County*: 2 mi. N Pine Springs, 5700 ft., Guadalupe Mts., VII-19-63, 6♂ (H. Clench) (CM). *Jeff Davis County*: 11 mi. N Alpine, VI-20-68, 5♂ (J. A. Scott). 13 mi. NW Alpine on state highway 118, IV-17-60, 1♂ 1♀ (K. Roever). Big Aguja Canyon, IV-2-68, 5♂ (K). Davis Mts. State Park, V-28-61, 1♂ reared from larva (K); VI-9-61, 1♀ reared from egg (K). Ft. Davis, VIII-27-54, 1♂ (R. M. Bohart). Limpia Canyon, 4800 ft., Davis Mts., 1 mi. N Ft. Davis, IV-28-59, 1♂ (B) (MCZ). Limpia Canyon, 5000 ft., Davis Mts., 4 mi. WNW Ft. Davis, IV-28-59, 2♀ (B) (MCZ); V-1-59, 2♂ 1♀ (B) (MCZ); V-2-59, 2♀ (B) (MCZ); V-4-59, 1♂ (B) (MCZ). Limpia Canyon, 4700 ft., Davis Mts., 5 mi. NE Ft. Davis, V-4-59, 1♂ 1♀ (B) (MCZ). Musquiz Canyon on state highway 118, VIII-14-66, 2♂ (K); IV-14-67, 1♀ reared from larva (K). *Presidio County*: 30 mi. SE Presidio along Rio Grande, III-26-66, 2♀ (D. J. Lennox). 15 mi. SE Redford on ranch road 170, 2500 ft., VIII-29, 30, 31-66 and IX-1, 4, 5, 6, 7, 8, 9, 10, 11, 17, 29-66, 7♂ 15♀ reared from larvae (K).

Hypodigm of *nessus* summarized in table 2.

Table 2. Specimens of *Celotes nessus* examined.

COUNTRY			
State	♂	♀	N
MEXICO			
Chihuahua	3	1	4
Coahuila		2	2
Sonora	7		7
UNITED STATES			
Arizona	169	24	193
New Mexico	8	2	10
Oklahoma	1	1	2
Texas	147	67	214
N =			
	335	97	432

Nomenclatural epilogue. — A species of what we now call *Celotes* was named three times within less than a decade, 1877 to 1884 (see e.g. Lindsey, Bell and Williams 1931; Evans 1953). In order of publication, the names are *Pholisora nessus* Edwards, *Spilothyrus notabilis* Strecker, and *Carcharodus radiatus* Plötz. The fact that I have made no effort to examine types is not so cavalier as it might seem. On the one hand, genus *Celotes* is such a distinctive element of the American fauna that one may safely assume that all three names have long since been assigned to it correctly. On the other hand, one may also assume that all three refer to *nessus* rather than to *limpia* for the following reasons. The type locality for both *nessus* and *notabilis* is San Antonio (or perhaps the nearby town of New Braunfels for the latter), at the eastern edge of the main range of *nessus* and therefore a few hundred miles removed from the nearest populations of *limpia* in Trans-Pecos Texas. Because intervening areas have now been well-collected, the total lack of *limpia* from eastcentral Texas is real. The type locality for *radiatus* is simply Texas; but, inasmuch as the name was published in 1884, the material on which it was based almost certainly came from central Texas, too. The west Texas areas in which *limpia* occurs are relatively remote. Indeed, in all of the material assembled from museums for this study, there were only two specimens of *limpia* that had been collected prior to 1961 — and they were taken in 1926.

Godman and Salvin (1899) proposed *Celotes* as a monotypic genus with *Pholisora nessus* Edwards as its type-species. There is some historical and distributional interest in noting that their hypodigm of “*nessus*” undoubtedly included *nessus* but may have been mixed. As they themselves said, it comprised 3 specimens from Texas provided by Strecker and 3 from Mexico (Northern Sonora and Durango city). Strecker’s *notabilis* (= *nessus*) was one of a series of lepidopterans that he described from material collected “by Mr. J. Boll, mostly in the vicinity of New Braunfels and San Antonia [sic]” (Strecker 1878). Owing to its geographic origin, the Strecker material certainly — and that from Northern Sonora almost certainly — would have been *nessus*. Furthermore, the male genitalia that Godman and Salvin clearly figured (pl. 91, fig. 29) belong without question to *nessus*. The Durango material is problematic, however. To judge from the locality, it might almost as well be *limpia* as *nessus*. Godman and Salvin’s color illustrations of dorsal and ventral aspects of a female of *Celotes* (pl. 91, figs. 27, 28) could be taken for either species, the dorsal view (fig. 27), in particular, being

rather more reminiscent of *limpia* with respect to both facies and size. Unfortunately, the geographic source(s) of the female(s) on which these figures are based was not indicated, but probability favors Mexico: Evans (1953) records that the holdings of the British Museum by then included 10 specimens of *nessus* from Texas, of which just 2 are females, but still only 3 from Mexico, to wit, "1 ♂ 2 ♀" from "N. Sonora. Durango." I would not be surprised to find that Godman and Salvin depicted a female of *limpia* from Durango.

SUMMARY

Celotes limpia, a new species of skipper butterfly in a hitherto monotypic genus, is described and extensively compared with *C. nessus*, which it closely resembles in superficial appearance and biology. Of 529 specimens examined, 97 represent the new species. Whereas *C. nessus* ranges widely (from central Texas and Oklahoma west to northwestern Arizona and south to at least the northern tier of Mexican states), *C. limpia* is relatively restricted, occurring within the range of *C. nessus* in Trans-Pecos Texas and interior northern Mexico. In Trans-Pecos Texas, where the only direct comparisons could be made, the two species are not only sympatric but also synchronic, flying in an indefinite number of generations from March to September. Larvae of both skippers are known, in the field, to eat various plants in the Malvaceae: *Abutilon incanum*, *A. malacum* (*limpia* only), *Wissadula holosericea*, *W. amplissima* (*nessus* only), *Sphaeralcea angustifolia* var. *lobata*, and *Sida filipes* (*nessus* only). In the laboratory, additional malvaceous foodplants are *Althaea rosea* and *Malvastrum americanum* (*limpia* only). *Celotes limpia* and *C. nessus* differ slightly in size and strikingly in genitalic morphology (both male and female) and in the morphology of certain scales on a male secondary sex character having a presumed communicative function.

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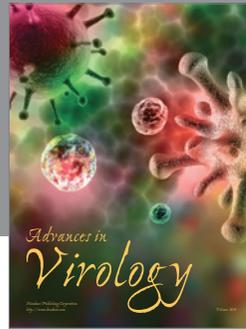
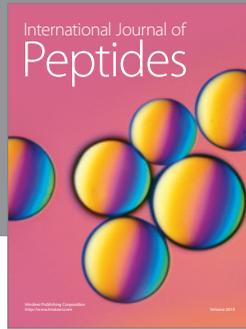
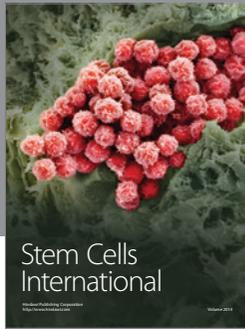
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