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The genus *Amphicosmus* Coquillett (Diptera: Bombyliidae: Tomomyzinae), with key to species, and description of a new species collected on R.H. Painter's fateful last collecting trip

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Abstract. The genus *Amphicosmus* is reassessed taxonomically and a revised key to species given. *Amphicosmus painteri*, **n**. **sp**. is described and is one of the last bee flies collected by Reginald H. Painter in southern central Mexico on his fateful last collecting trip. *Amphicosmus arizonensis* Johnson & Johnson, 1959 is found to be a junior synonym of *A. vanduzeei* Cole, 1922, **n**. **syn**. A key is given to identify species in the genus.

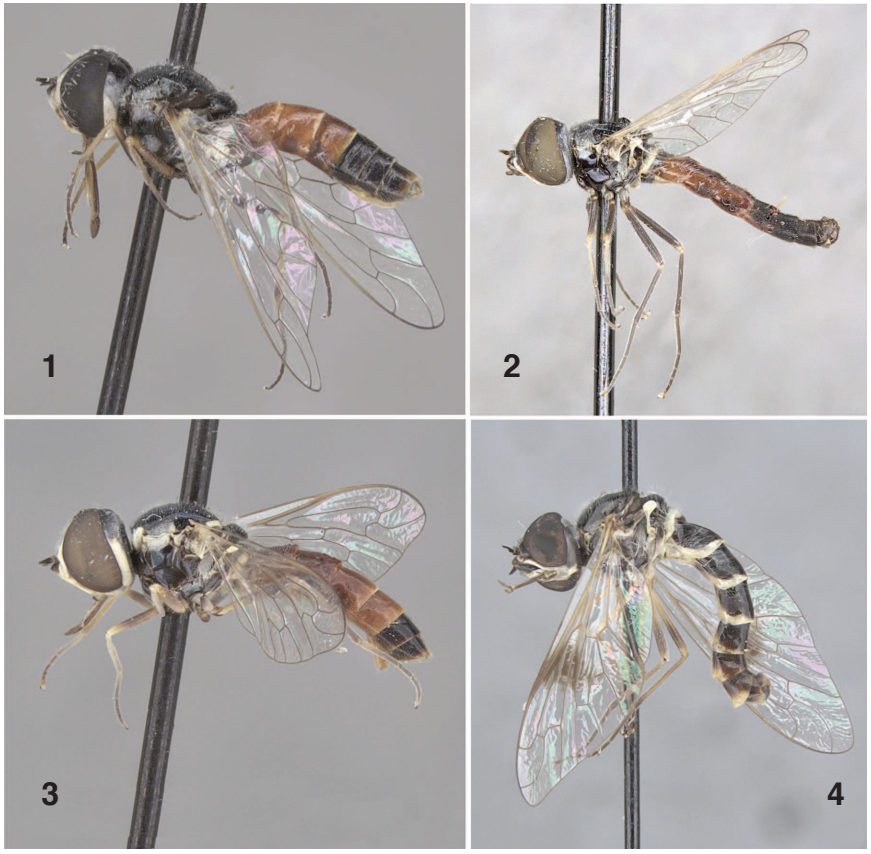
INTRODUCTION

Amphicosmus is a genus of small-sized bacchine syrphid-like bee flies found from the United States south to southern Mexico and comprising five nominal extant species. Males and females show slight dimorphism (narrow vertex in males with the frons usually comprised of a silvery pollinose triangle; and females with wide vertex with less silvery pollen and more yellow color on the lateral mesonotum and pleura). The genus was proposed by Coquillett (1891) for his single southern Californian species *Amphicosmus elegans*. Since then, little work has been done on the genus save for descriptions of new taxa based on one or only a few specimens. Hall (1957) was the first and last to key the species of the genus (at that time known from just three extant species). Since then, two additional species have been described, and Hull (1973) proposed the subgenus *Glycophorba* for *Amphicosmus cincturus* Williston, 1901 from Mexico.

This study examines the known extant species and describes one new species, *Amphicosmus painteri*, **n**. **sp**. from Mexico. A revised and updated key to extant species in the genus is also provided. In examining specimens to make the updated key, it was discovered that *A. arizonensis* Johnson & Johnson, 1959 is conspecific with *A. vanduzeei* Cole, 1922, **n**. **syn**. With the new species described herein and the new synonymy, there are five extant species known in the genus, three of which are here treated in the subgenus *Glycophorba*, the remaining two in the nominate subgenus. The new species described herein turns out to be one of the last bee flies collected by R.H. Painter on his fateful last collecting trip to Mexico in 1968, which was cut short in November of that year when he had a cerebral hemorrhage and died a month later in Mexico City.

MATERIAL AND METHODS

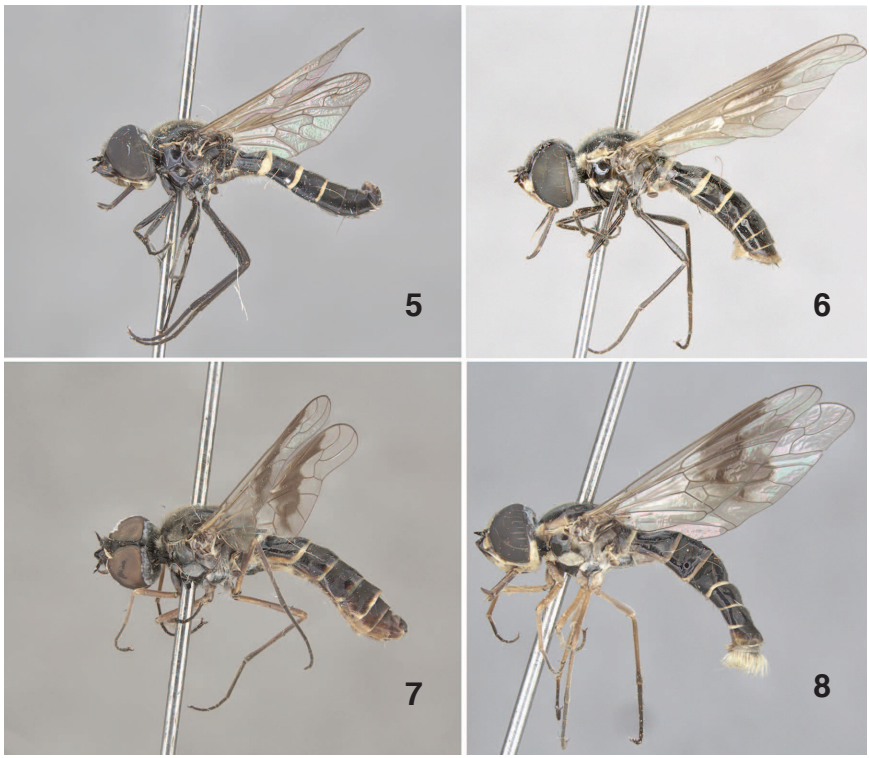
Specimens in this study derive from or or deposited in the following collections: BMNH (the Natural History Museum, London, UK); BPBM (Bernice Pauahi Bishop Museum, Honolulu, Hawai'i, USA); CAS (California Academy of Sciences, San Francisco, California, USA); CDFA (California Department of Food and Agriculture, Sacramento,



Figures 1–4. *Amphicosmus* habitus, lateral. **1**. *A.* (*Amphicosmus*) *elegans*, female; **2**. *A.* (*A.*) *vanduzeei*, male; **3**. *A.* (*A.*) *vanduzeei*, female; **4**. *A.* (*Glycophorba*) *arizonicus*, male;

California, USA), USNM (United States National Museum of Natural History, Washington, D.C., USA).

Morphological terminology follows Cumming & Wood (2017). Images were accomplished by obtaining a series of stacked images using a Leica M165C stereo dissecting scope via the Leica Microsystems LASX Multifocus software and using Zerene Stacker® stacked focusing software (v. 1.05) (Zerene Systems, LLC, Richmond, Washington, USA) to align and stack-focus each final image. Genitalic preparations were made by macerating parts in hot lactic acid (30 sec bursts in a microwave), washing in distilled water, and dissecting and examining in concave slides in glycerine; male genitalia are preserved in microvials pinned below the specimen; female genitalia are mounted on slides.



Figures 5–8. *Amphicosmus* (*Glycophorba*) habitus, lateral. **5**. *A*. (*G*.) *cincturus*, male; **6**. *A*. (*G*.) *cincturus*, female; **7**. *A*. (*G*.) *painteri*, n. sp., male; **8**. *A*. (*G*.) *painteri*, n. sp., female.

TAXONOMY

Genus *Amphicosmus* Coquillett

Amphicosmus Coquillett, 1891: 219. Type species: *Amphicosmus elegans* Coquillett, 1891, by monotypy.

Of the three tomomyzine genera occurring in the New World, *Amphicosmus* is readily separated by having three submarginal cells (two in *Metacosmus* Coquillett and *Paracosmus* Osten Sacken). Previous to this study, five extant and one fossil species were known in the genus. These bee flies frequent the arid areas of western North America and are found in the southwestern United States and the Nearctic states of Mexico. The genus contains two subgenera: the nominate subgenus and the subgenus *Glycophorba* Hull, 1973, the latter of which was proposed for *Amphicosmus cincturus* Williston from central Mexico.

Hull (1973) primarily based his new subgenus on its single species (*A. cincturus*) having a clubbed apex of the abdomen and long hind femoral hairs. A reassessment of the

characters used by Hull (1973) to distinguish *Glycophorba* from the other congeners showed that the clubbed abdominal apex is found in species in the nominate subgenus as well as *Glycophorba,* thus that character alone would not justify its treatment as separate from *Amphicosmus* s. str. The long hairs on the hind femora used by Hull (1973) to separate *Glycophorba* has been found to not be present in all *Glycophorba* species and is also found in some species in the nominate subgenus. However, two other characters have been found in this study that are more robust in separating the two and *Glycophorba* is thus kept as a subgenus in this study: the presence or absence of wing patterning and shape and size of the gonocoxae of the male genitalia.

Key to species of *Amphicosmus* Coquillett

1. Wing hyaline, without infuscation (Fig. 14); male genitalia with gonocoxae three times as high as wide in caudal view (Fig. 23) … (subg. *Amphicosmus*) **2**
–. Wing with pale to dark brown infuscation, either anterobasally or as a subapical band (Fig. 19); male genitalia with gonocoxae two times as high as wide in caudal view (Fig. 24) … (subg. *Glycophorba*) **5**

2. Male **3**
–. Female **4**

3. Mesonotum with pair of admedian silvery gray pollinose stripes extending from pronotal area to supra-alar area (Fig. 11) ..... ***A***. (***A***.) ***elegans*** Coquillett
–. Mesonotum lacking pollinose stripes ..... ***A***. (***A***.) ***vanduzeei*** Cole

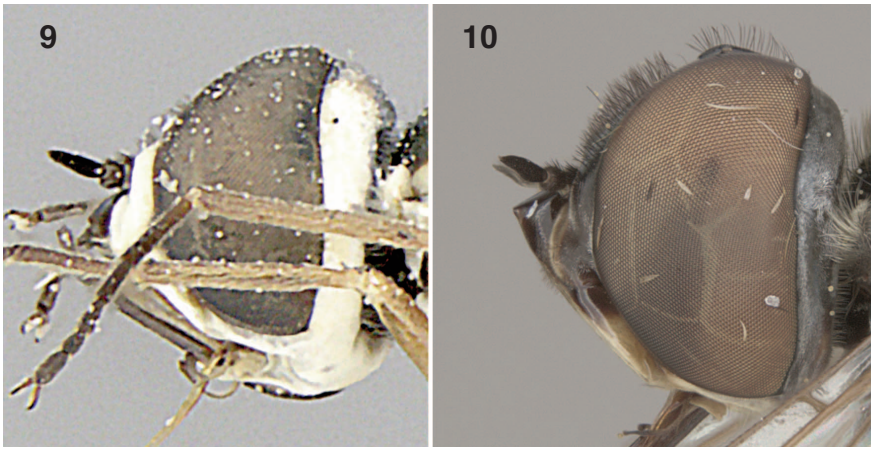
4. Pleura and humeral callus with yellow (Fig. 13); abdominal tergite V red (Fig. 21); antennal scape often with some yellow ..... *A*. (***A***.) ***vanduzeei*** Cole
–. Pleura and humeral callus gray to black, without yellow (Fig. 12); abdominal tergite V black (Fig. 20); antennal scape all black ..... ***A***. (***A***.) ***elegans*** Coquillett

5. Wing infuscation pale brown to brown, restricted to anterobasal portion of wing, extending along costal cell, and sometimes down to r-m crossvein (Fig. 18) .... ***A***.(***G***.) ***cincturus*** Williston
–. Wing hyaline anterobasally, infuscation opaque brown to dark brown, extending from costal cell into radial cells and/or as distinct band subapically (Fig. 19) **6**

6. Male **7**
–. Female **8**

7. Band of infuscation extending into cells m3 and m4 (Fig. 19) ... (Mexico) .... ***A***. (***G***.) ***painteri*** Evenhuis, **n**. **sp**.
–.Cells m3 and m4 hyaline (Fig. 16) ... (SW USA) ..... ***A***. (***G***.) ***arizonicus*** Hall

8. Occiput black laterally, white only as extension of color of mentum (Fig. 10) .... ***A***. (***G***.) ***painteri*** Evenhuis, **n**. **sp**.
–. Occiput white laterally, black only at vertex (Fig. 9) ..... ***A***. (***G***.) ***arizonicus*** Hall



Figures 9–10. *Amphicosmus* (*Glycophorba*) female heads, lateral. **9**. *A*. (*G.*) *arizonicus*; **10**. *A*. (*G.*) *painteri*, n. sp.

Subgenus *Amphicosmus* Coquillett

Included species: *Amphicosmus elegans* Coquillett, 1891; *A. vanduzeei* Cole, 1922.

Diagnosis. Easily separated from the nominate subgenus by the absence of patterning on the wing (with infuscation in subgenus *Glycophorba*) and the gonocoxae height being three times its width (height about two times width in *Glycophorba*).

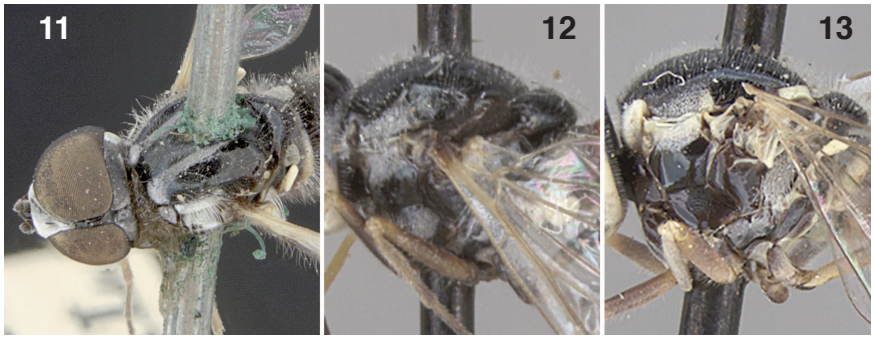
Amphicosmus (*Amphicosmus*) *elegans* Coquillett
(Figs. 1, 11, 12, 14, 20)

Amphicosmus elegans Coquillett, 1891: 291. Goode 1893: 530; Aldrich 1905: 238; Kertész 1909: 109; Coquillett 1910: 505; Becker 1913: 496; Woodworth 1913: 150; Bezzi 1924: 6; Paramonov 1939: 31; Hall 1957: 142, 1976: 5, 1981: 592; Painter & Painter 1965: 427; Cole & Schlinger 1969: 242; Tabet 1974: 20; Frommer 1981: 31; Theodor 1983: 150; Tabet & Hall 1984: 20, 1987: 75; Evenhuis 1991: 11; Poole 1996: 67.

Amphicosmus (*Amphicosmus*) *elegans* Coquillett. Hull 1973: 295; Evenhuis & Greathead 1999: 283.

Types examined. *Syntypes* [USNM ENT 01353041] 2♂, 2♀, from UNITED STATES: **California**: Los Angeles, "Co-type 985" [ca. 1885] (USNM). **Other material examined**: UNITED STATES: **California**. Riverside Co: 1♀, 1 mi [1.2 km] W. Corn Springs Recreation Site, 20 Apr 1973, E.M. Fisher (CDFA). San Diego Co: 1♂, Borrego, 24 Apr 1955, P.D. Hurd (BPBM).

Remarks. Hall's (1957) male of *A. vanduzeei* from Borrego, California (one of which was named by him as "allotype" [NB: it has no type status as it was described after the original publication]) has been examined in this study and found to be a misidentification for *A. elegans* as it lacks the distinctive pollinose stripes on the mesonotum. Coquillett (1891) indicated he had collected these type specimens about 6 years prior to their description, which would be ca. 1885.



Figures 11–13. *Amphicosmus* (*Amphicosmus*) thoraces. **11**. *A*. (*A*.) *elegans*, male, oblique view showing pollinose admedian vittae; **12**. *A*. (*A*.) *elegans*, female, lateral; **13**. *A*. (*A*.) *vanduzeei*, female, lateral.

***Amphicosmus* (*Amphicosmus*) *vanduzeei* Cole
(Figs. 2, 3, 13, 15, 21, 23)

Amphicosmus vanduzeei Cole, 1922: 22. Cole & Schlinger 1969: 242; Painter & Painter 1965: 427; Arnaud 1979: 205; Poole 1996: 67.

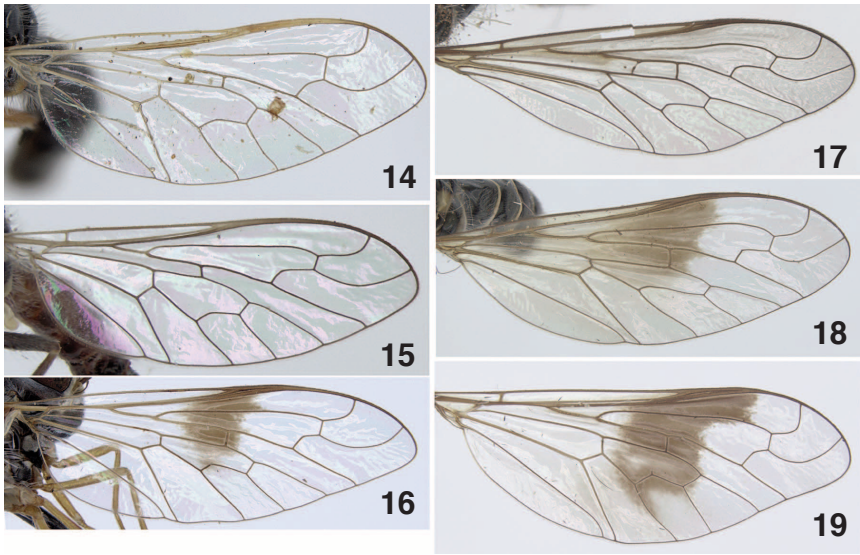
Amphicosmus (*Amphicosmus*) *vanduzeei* Cole. Hull, 1973: 295; Evenhuis & Greathead 1999: 283.

Amphicosmus arizonensis Johnson & Johnson, 1959: 67. Painter & Painter 1965: 427; Poole 1996: 67. **New synonymy**

Amphicosmus (*Amphicosmus*) *arizonensis* Johnson & Johnson. Hull 1973: 295; Evenhuis & Greathead 1999: 283.

Material examined. MEXICO: **Sonora**: 5♂, 9♀, 10 mi [16.1 km] SE Goyamas, 13 Aug 19549, R.H. & E.M. Painter (USNM); 1♂, 1♀, Hwy 15, 15 mi [24.1 km] S. Hermosillo, 4 Sep 1962, D. Martin (USNM). UNITED STATES: **Arizona**: 5♂, 3♀, Globe, 27 Jul 1932, R.H. Painter (USNM); 1♂, 1♀, same data, mating, C.W. Sabrosky (USNM); 1♂, Sells, 12 Oct 1959, R.H. & E.M. Painter (USNM); 1♀, same data excerpt 31 Jul 1932, R.H. Painter (USNM); 1♀, Wilcox, 10 Aug 1930, R.H. Painter (USNM); 1♀, Pima County, Box Canyon, 1`5 Sep 1982, L.G. Bezark (CDFA).

Remarks. Originally described based on females from one locality, examinations of specimens during this study show that *Amphicosmus vanduzeei* is a fairly widely distributed species in the southwestern United States and northern Mexico and exhibits some variation in coloration of the head features and legs (e.g., the scape varies from yellow to partly yellow to all black and the legs range from all yellow to orange and black). Males are easy to separate from *A. elegans* based on the lack of silvery pollinose stripes on the mesonotum (present in *A.* elegans). However, females of each species look very similar. A mating pair of *A. vanduzeei* allowed comparison of its female with the female syntypes of *A. elegans* collected at the type locality by Coquillett and showed that the oral margin coloration can be used to easily separate females. Specimens fitting Cole's description of *A. vanduzeei* fall within the range of variation of *A. arizonensis* and dissections of the male genitalia of each show no appreciable differences; thus, *A. vanduzeei* is herewith treated as conspecific with *A. arizonensis*, **n**. **syn**.



Figures 14–19. *Amphicosmus* wings. **14**. *A*. (*Amphicosmus*) *elegans*; **15**. *A*. (*A*.) *vanduzeei*; **16**. *A*. (*Glycophorba*) *arizonicus*; **17**. *A*. (*G*.) *cincturus*, male; **18**. *A*. (*G*.) *cincturus*, female; **19**. *A*. (*G*.) *painteri*, n. sp., male.

Subgenus *Glycophorba* Hull

Glycophorba Hull, 1973: 295. Type species: *Amphicosmus cincturus* Williston, 1901, by original designation.

Included species: *Amphicosmus* (*Glycophorba*) *arizonicus* Hall, 1975; *A*. (*Glycophorba*) *cincturus* Williston, 1901; *A*. (*Glycophorba*) *painteri* Evenhuis, **n**. **sp**.;

Diagnosis. Easily separated from te nominate subgenus by the presence of infuscation and or patterning in the wing along the anterior border and often subapically from costa to the posterior margin of the wing (wing all hyaline in the nominate subgenus; and the male genitalia with the gonocoxa two times higher than wide in causal view (three times as high as wide in the nominate subgenus) (cf. Figs 9 and 10).

Amphicosmus (*Glycophorba*) *arizonicus* Hall
(Figs. 4, 9, 16)

Amphicosmus arizonicus Hall, 1975: 113. Poole 1996: 67.
Amphicosmus (*Amphicosmus*) *arizonicus* Hall. Evenhuis & Greathead 1999: 283.

Types (not examined). *Holotype* ♀ and 3 ♀♀ paratypes from UNITED STATES: **Arizona**: Santa Cruz County: 6 mi. E. Patagonia, 17 Sep 1971, J.C. Bath. Holotype and paratypes in CAS.

Material examined. UNITED STATES: **Arizona**: Cochise Co: 1♂, Huachuca Mountains, Ash Canyon, 5,200–5,800 ft [1,585–1,768 m], 8 Sep 1981, J.P. & K.E. Donahue (BPBM); 1♀, Pima Co: Box Canyon, 15 Sep 1982, L.G. Bezark (CDFA).

The finding in this study of the first male of the species allows its description below and comparison with the female.

Description. **Male** (Fig. 4). Measurements. Body: 6.0 mm. Wing: 6.0 mm. *Head*. Black; occipital fringe with short white hairs. Eyes separated at vertex by width of narrow ocellar tubercle. Frons slightly tumid, fine, short, black pilose, pale yellow pile immediately above antennae. Face brown, yellowish white laterally, produced, subconical, rounded apically, bare, yellow surrounding antennal sockets. Antenna black with scape subspherical, brown, with black hairs, with small shining brown knob mesally; pedicel subspherical, with black hairs mesally; flagellomere longer than scape and pedicel combined; base subconical, tapering to styliform apical three-fourths, style minute, terminal. Proboscis short, brown, as long as oral margin. Palpi brown, with sparse, minute black hairs.

Thorax. Mesonotum and scutellum shining black, short white pilose, with anterior and lateral margins silvery gray tomentose. Scutellum with long white hairs. Pleura predominantly black, bare, except katatergite brown with white hairs; upper half of katepisternum silvery tomentose. Halter stem and knob yellow.

Legs. Orange-yellow with hind femora with brown on apical one-third; all legs without without bristles; all claws of equal size.

Wing (Fig. 16). Hyaline with narrow band of brown from end of R1 to r-m crossvein, some brown fading into cell dm; cell m3 hyaline, cell m4 with only a smudge of brown along vein separating it from cell dm; veins dark brown to black; anal cell open in wing margin by width narrower than r-m crossvein. Alula reduced.

Abdomen. Black with white along posterior margin of tergites I–VI, erect white hairs laterally. Abdominal tergites III and IV with patch of minute tubercles laterally. Venter yellowish brown [tergites conceal most of sternites due to typical lateral compression]; segments VI–VII of abdomen curled upward.

Genitalia. Not dissected; epandrium brown, gonocoxa black.

Remarks. Evenhuis & Greathead (1999) mistakenly placed this species in the nominate subgenus.

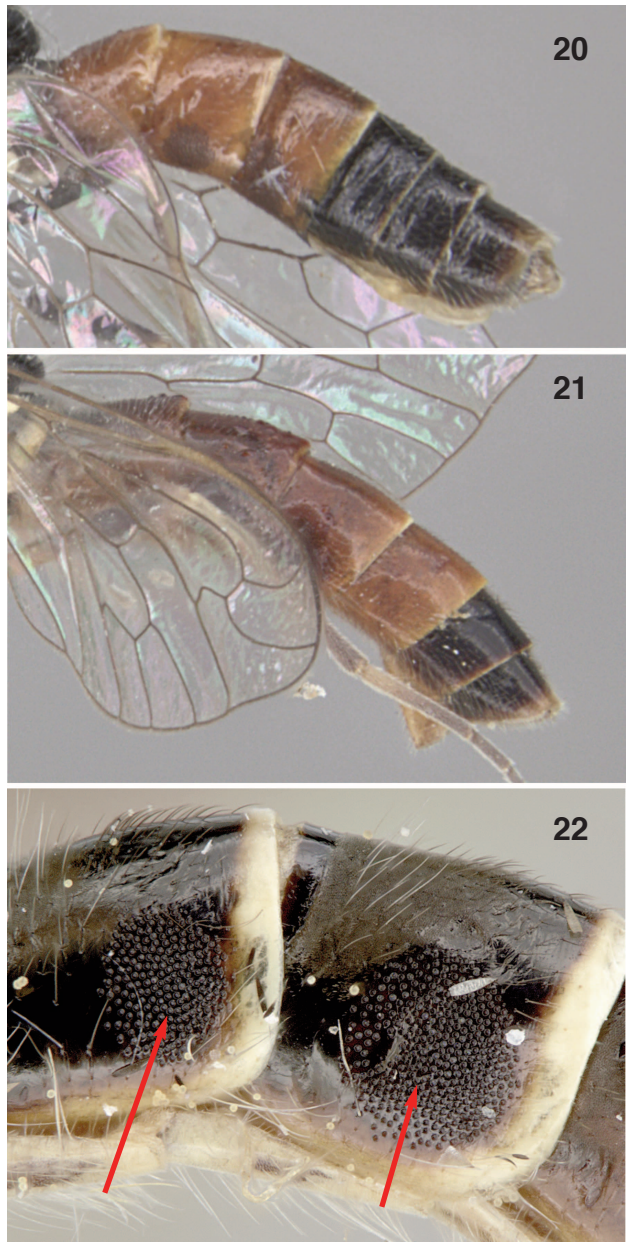
***Amphicosmus* (*Glycophorba*) *cincturus* Williston**
(Figs. 5, 6, 17, 18)

Amphicosmus cincturus Williston, 1901: 296. Aldrich 1905: 238; Kertész 1909: 109; Curran 1934: 198; Painter & Painter 1962: 58; Frommer 1981: 31; Tabet & Hall 1984: 20, 1987: 74.

Amphicosmus (*Glycophorba*) *cincturus* Williston. Hull 1973: 295. Painter *et al.* 1978: 24; Evenhuis & Greathead 1999: 283.

Material examined. MEXICO: **Morelos**: 3♀, 12 mi [19.3 km] E. Cuernavaca, 4,800 ft [1,463 m], 27 Oct 1968. R.H. & E.M. Painter (USNM). **Puebla**: 9♂, 2♀, 32 mi [51.5 km] S. Tehuacan, 20 Oct 1968, R.H. & E.M. Painter (USNM).

Remarks. The listing of the distribution of this species in Arizona and California by Evenhuis & Greathead (1999) is an error and partly due to misidentifications of *A. arizonicus* Hall. *Amphicosmus cincturus* is apparently restricted to southern Mexico found only in the states of Guerrero, Morelos and Puebla.



Figures 20–22. *Amphicosmus* female abdomens. **20**. *A*. (*Amphicosmus*) *elegans*; **21**. *A*. (*A*.) *vanduzeei*; **22**. *A*. (*Glycophorba*) *painteri*, n. sp. detail showing tergal patches (arrows).

Amphicosmus (*Glycophorba*) *painteri* **Evenhuis**, **n**. **sp**.
(Figs. 7, 8, 10, 19, 22, 24–26)

Material examined. *Holotype* ♂ (USNMENT 01353605) and 12♂♀ paratypes from MEXICO: **Puebla**: 30 mi [48.2 km] SW Tehuacan, 19 Oct 1968, R.H. & E.M. Painter. *Other paratypes*: MEXICO: **Puebla**: 1♂, topotypic, 12 Oct 1968; 2♂, topotypic, 13 Oct 1968; 1♀, 32 mi [51.5 km] SW Tehuacan, 20 Oct 1968, R.H. & E.M. Painter. **Guerrero**: 3♂, 3 mi [4.82 km] N. Chilpancingo, 3,400–3,600 ft [1,036–1,098 m], 2 Nov 1968, R.H. & E.M. Painter. **Hidalgo**: 1♂, 9 mi [14.5 km] N. Ixmiquilpan, 5 Oct 1968, R.H. & E.M. Painter (all USNM).

Diagnosis. The species is closest in appearance to *Amphicosmus arizonicus* by virtue of each having a wing pattern that extends into the wing from the anterior costal border, but can be separate in males by this patterning extending into the cells m3 and m4 (wing patterning having these cells hyaline in *A. arizonicus*); and in the females by the occiput being black laterally (white laterally in *A. arizonicus*).

Description

Male (Fig. 7). Measurements. Body: 5.1–9.0 mm. Wing: 5.0–8.0 mm. *Head*. Black; occipital fringe with short white hairs. Eyes separated at vertex by width of ocellar tubercle. Frons slightly tumid, fine, short, erect black pilose, pale yellow pile immediately above antennae. Face brown, yellowish white laterally, produced, subconical, rounded apically, bare, yellow surrounding antennal sockets. Antenna black with scape subspherical, brown, with black hairs, with small shining brown knob mesally; pedicel subspherical, with black hairs mesally; flagellomere longer than scape and pedicel combined; base subconical, tapering to styliform apical three-fourths, style minute, terminal. Proboscis short, brown, as long as oral margin. Palpi brown, with sparse, minute black hairs

Thorax. Mesonotum and scutellum shining black, with dirty yellow pile, anterior and lateral margins dense gray pollinose; disc uniformly covered with black tomentum, hairs on disc black, short, minute, not dense, hairs long in prescutellar area. Pleura predominantly black, bare, except katatergite brown with white hairs; most of katepisternum silvery tomentose. Halter stem and knob dark brown.

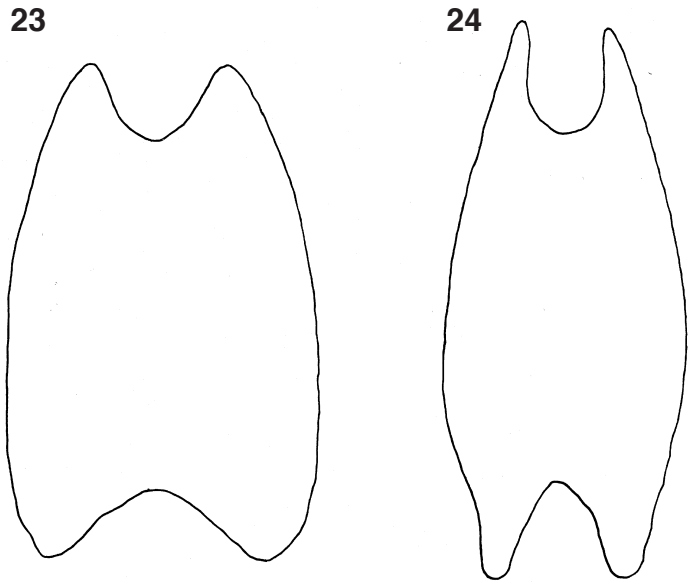
Legs. Coxae black, femora and tibiae orange-yellow, with hind femur brown on apical half; all legs without bristles; all claws of equal size.

Wing (Fig. 19). Hyaline with broad subapical band of brown from end of R_1 to M_4; veins dark brown to black; three submarginal cells; anal cell open in wing margin by width narrower than r-m crossvein. Alula reduced.

Abdomen. Black with yellow along posterior margin of tergites I–VI, erect white hairs laterally. Tergites III and IV each with circular patch of minute tubercles laterally (Fig. 22). Venter with sternites II and III black, remainder yellow.

Genitalia (Fig. 25). Epandrium in lateral view subquadrate, slightly higher than wide, deeply concave dorsally, cercus exerted; gonocoxa in lateral view sublinear-ovate, with long, thin gonostyli, slightly hooked apically, bearing minute hairs on dorsal surface; distiphallus (aedeagal tip) tapering from broad base to pointed apex, without modifications; aedeagal apodeme small, peanut-shaped.

Female (Fig. 8). As in male except as follows: as in male except lower occiput yellowish white as extension of mentum coloration (Fig. 10); oral margin yellow laterally; thorax with yellow on humeral callus, postalar callus, propleuron, upper anepisternum, all of katepisternum and anepimeron except small brown spot anteriorly; scutellum orange with



Figures 23–24. *Amphicosmus*, male gonocoxites, caudal view, showing relative shapes. **23**. *A*. (*Amphicosmus*) *vanduzeei*; **24**. *A*. (*Glycophorba*) *painteri*.

thin black basally; coxae brown basally; sternites all yellow. Tip of abdomen with dense bright yellowish white setae surrounding sand chamber. Genitalia with thin, V-shaped genital fork (Fig. 26A) with bottom of "V" membranous; basal spermathecal duct 2× length of genital fork; ejection apparatus (Fig. 26B), short, darkly sclerotized, with distinct apical and basal valves; apical spermathecal duct very long, sclerotized near ejection apparatus; spermatheca (Fig. 26C) ellipsoid, darkly sclerotized.

Remarks. While noting the dates of collection for the Material Examined, I compared them to the itinerary of the trip made by the Painters in 1968 (these notes in USNM), and it became clear that this species may have been one of the last bee flies R.H. Painter had ever collected. For many years Reginald (Rex) H. Painter (1901–1968) traveled almost annually to Mexico during breaks from teaching to collect beeflies with his wife Elizabeth (Beth). Rex would drive and Beth would keep a record of each stop in a small notebook—one page for each stop recording mileage on the odometer, the name of the locality (if known), the elevation (if known), sometimes the time of day, the weather, and in the notes section of the page, the identification of bee flies collected (mostly to genus) and any flowers they visited. The trip in 1968 was during a sabbatical and served a dual purpose. Rex was to meet a colleague in Chapingo and he and Beth had made arrangements to stay in a small apartment in the university town while writing a book entitled "Principles of host plant resistance to insects" (Knutson 1969), and also use that place as a hub from which to venture out to collect bombyliids when the weather was agreeable.

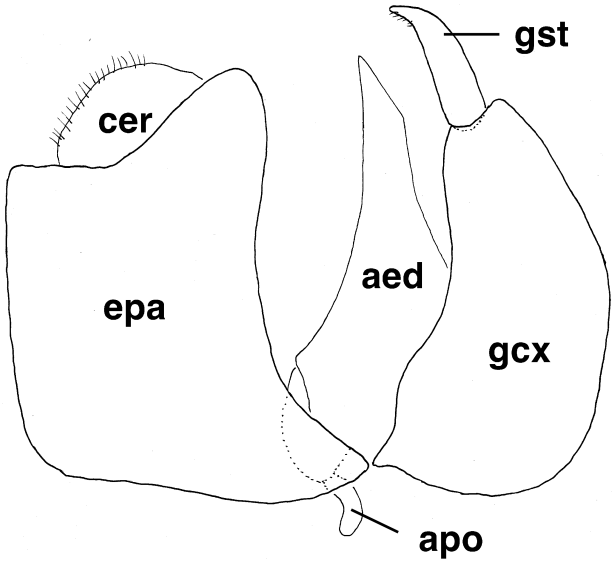


Figure 25. *Amphicosmus* (*Glycophorba*) *painteri*, male genitalia, lateral view. Abbreviations: aed = aedeagus; apo = aedeagal apodeme; cer = cercus; epa = epandrium; gcx = gonocoxa; gst = gonostylus.

The 1968 trip began at 0630 hrs on 10 August 1968 in Manhattan, Kansas and they traveled through Oklahoma and Texas before crossing the border south of Laredo, Texas on 17 August at 0830 hrs. For the next 10 days while on their way to Chapingo, where they arrived on 27 August, they made a number of stops and collected in Monterrey, Saltillo, Zacatecas, Aguascalientes, Guanajuato, Michoacán, Morelia, and Queretaro. After forays from Chapingo out to various sites to the west throughout the months of September and October, the two headed to Cuernavaca and Chilpancingo, collecting in the area from 1–3 November, then back to Chapingo and back out, this time to Tehuacan from 12–13 November. The last entry in the notebook for 13 November simply says "Chapingo 710 pm". At some point around that time, Rex had a stroke and was taken to Mexico City and passed away a month later in December 1968.

The new species *Amphicosmus painteri* was collected at a few localities in October, but 3 males were collected on 2 November near Chilpancingo and represent one of the last collections of bee flies made by Rex before his collecting trip was cut short.

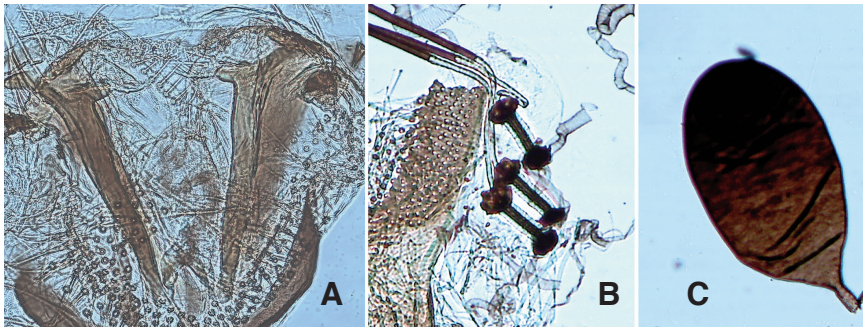


Figure 26. *Amphicosmus* (*Glycophorba*) *painteri*, female genitalia. **A**, genital fork; **B**. ejection apparatus; C. spermatheca.

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