

Notes on the Genus *Apallates* Sabrosky (Diptera: Chloropidae)

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**NOTES ON THE GENUS *APALLATES* SABROSKY
(DIPTERA: CHLOROPIDAE)**

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Abstract.—The four most common species of the chloropid genus *Apallates* Sabrosky found in the eastern US are characterized and photographed for the purpose of helping non-specialists determine the identity of these four ubiquitous species. They are *A. coxendix* (Fitch), *A. dissidens* (Tucker), *A. neocoxendix* (Sabrosky), and *A. particeps* (Becker). Notes are included to help in distinguishing these species from species in the very similar genera *Oscinella* Becker and *Rhopalopterum* Duda. Included is a key to these four species of *Apallates* as well as photos of the male genitalia and external features of diagnostic importance.

Key Words: Taxonomy, identification, Oscinellinae

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Species of several genera in the subfamily Oscinellinae are abundant and so close in appearance that distinguishing them from each other can be a frustrating and time-consuming task, especially for the non-specialist of the family. Keys and illustrations of the various species are virtually non-existent in the literature. There are photos available on insect identification sites, but they are usually only determined to genus as it can be impossible to identify these “little, black, shiny flies” to species based on a photograph. After many hours of sorting through chloropids during our general Diptera collecting efforts we became determined to help make it easier for others.

Sabrosky (1980) erected the genus *Apallates* for 10 species formerly placed in three genera: *Hippelates* (*H. convexus* Loew, *H. hermsi* Sabrosky, *H. microcentrus* Coquillett, *H. montanus* Sabrosky, and *H. tener* Coquillett); *Oscinella* (*O. neocoxendix* Sabrosky, *O. ochripes* Sabrosky, and *O. particeps* Becker); and *Oscinis*

(*O. coxendix* Fitch and *O. dissidens* Tucker). The four species treated here may have either a very short or no apical hind tibial spur (*A. coxendix* and *A. neocoxendix*) (Sabrosky 1987) or an apical hind tibial spur as long as or shorter than the width of the tibia (*A. dissidens* and *A. particeps*). In Sabrosky’s (1987) chapter on Chloropidae in the Manual of Nearctic Diptera, *A. coxendix* and *A. neocoxendix* key out at couplet 33b (short or no tibial spur of couplet 4b), while *A. dissidens* and *A. particeps* key out at couplet 9b (long tibial spur of couplet 4a).

Four species of the chloropid genus *Apallates*—*A. coxendix* (Fitch 1856), *A. dissidens* (Tucker 1908), *A. neocoxendix* (Sabrosky 1940), and *A. particeps* (Becker 1912)—are quite common in grassy areas including salt marshes (Bickley and Seek 1975, Rey and McCoy 1986) in the eastern US. Nearly every collecting effort will yield one or more species, and sometimes all four. Faunal, ecological, and other studies

often include one or more of these species. The known geographical distribution of the other six North American *Apallates* species is either Florida/Neotropical or western US, while the four species treated here occur throughout most of the US and Canada (Sabrosky 1965).

The biology of *Apallates* species is poorly known. The species are widespread and are found inland as well as in coastal habitats, associated with grasses. They have been found in marshes, associated with spike-rush, *Eleocharis palustris*, and *Carex* (Foote 2004, 2007), and in brackish and salt marshes (Bickley and Seek 1975, Rey and McCoy 1986). Malloch (1913) noted that *A. dissidens* had been reared from cotton squares. Sabrosky (1935) noted that a specimen of *A. coxendix* had been reared from a mud dauber's nest by R. H. Painter, but that this species is usually reared from plants, especially grasses, previously injured by other insects. Nartshuk (2014) indicates that some species of *Apallates* feed on the dead bodies of mollusks and xiphosurans. GAF has collected them in inland residential yards and wetlands as well as on grasses in both the wet and dry sand zones of coastal salt marshes. Regarding residential yards, GAF has observed that the number of individuals of *Apallates* often are more abundant up to several days after a yard is mowed, with the number of individuals collected decreasing over time.

These four species can be differentiated if one knows what to look for; however, no key specific to *Apallates* has been published, nor are photographs available of external diagnostic features or the male terminalia of specimens with confirmed identities, except for one illustration of the posterior aspect of the male terminalia of *A. dissidens* (Sabrosky 1980). Several papers (Sabrosky 1935, 1936b, 1940, 1980) must be studied in order to piece together the information needed to determine the

identity of *Apallates* specimens. However, without a detailed description or illustrations it still is difficult to confirm determinations. The purpose of this paper is to provide a key and photographs to enable the reliable determination of specimens of *Apallates* collected in eastern North America, especially for non-specialists who may find themselves sorting out an array of hundreds of seemingly identical flies. Also provided here are notes on distinguishing these species from species of the genera *Oscinella* and *Rhopalopterum* Duda, which can be found in large numbers with *Apallates* species and are easily confused with *Apallates*.

MATERIALS AND METHODS

Before examination, the abdomen of each male specimen was removed and placed in a small watch glass. Hot NaOH solution was introduced into the watch glass. After 2–3 minutes the cooled solution was drawn out and fresh hot NaOH solution was added. After 5 minutes the abdomen had cleared enough to allow the genitalic structures to be separated from the remainder of the abdomen. The NaOH solution was then removed from the watch glass and a water/vinegar solution (30% vinegar/70% water) was added. After 5 minutes the genitalia were transferred to another watch glass containing glycerin.

All specimens were collected by GAF with a sweep net. Several sweeps were made at a time, after which the specimens in the net were aspirated into a 6-dram vial attached to an aspirator. The vial then was quickly capped to prevent escape of the flies. A new vial was then attached to the aspirator for another round of sweeping, and the process was repeated. The vials were subsequently placed in a standard home freezer at -18°C for at least one hour to kill the flies. The specimens were sorted by use of a stereoscopic microscope and pinned using double mounts with

0.15 mm-diameter minuten pins inserted into white silicone rubber cubes cut from pinning strips that had been pinned with a #1 or #2 insect pin.

The photographs were taken by use of a VIEW 4K 8mp digital camera mounted to a Leica S Apo stereoscope with a 0.5x video tube. Postprocessing was done utilizing GIMP 2.10.24.

The identity of the specimens examined in this study was confirmed by comparison of external characters and male genitalia with specimens in the author’s collection that had been determined personally by Dr. Curtis Sabrosky. These specimens are noted below as “[det. Sabrosky]”. In addition, some are labelled “Seek & Nixon” with a plot designation, and these were from the Bickley and Seek (1975) study.

Morphological terminology follows Cumming and Wood (2017).

Species treatments below are grouped by apparent close relationship, not alphabetically.

Depositories of material examined are:

GAF: author’s private collection, Columbia, MD

PADA: Pennsylvania Dept. Agriculture, Harrisburg, PA

UNHC: University of New Hampshire, Durham, NH

RESULTS

Key to the species of *Apallates* from eastern North America

- 1. Fore coxa yellow. Ocellar tubercle pollinose (Fig. 1). Tibial spur absent or shorter than width of tibia (Fig. 3) 2
- Fore coxa black. Ocellar tubercle polished (Fig. 2). Tibial spur as long as or longer than width of tibia (Fig. 4) 3
- 2. Gena narrow, 0.4 width of first flagellomere (Fig. 5); first flagellomere of male completely black. Legs brown. Prosternum yellow. Male cercus with a short mesal

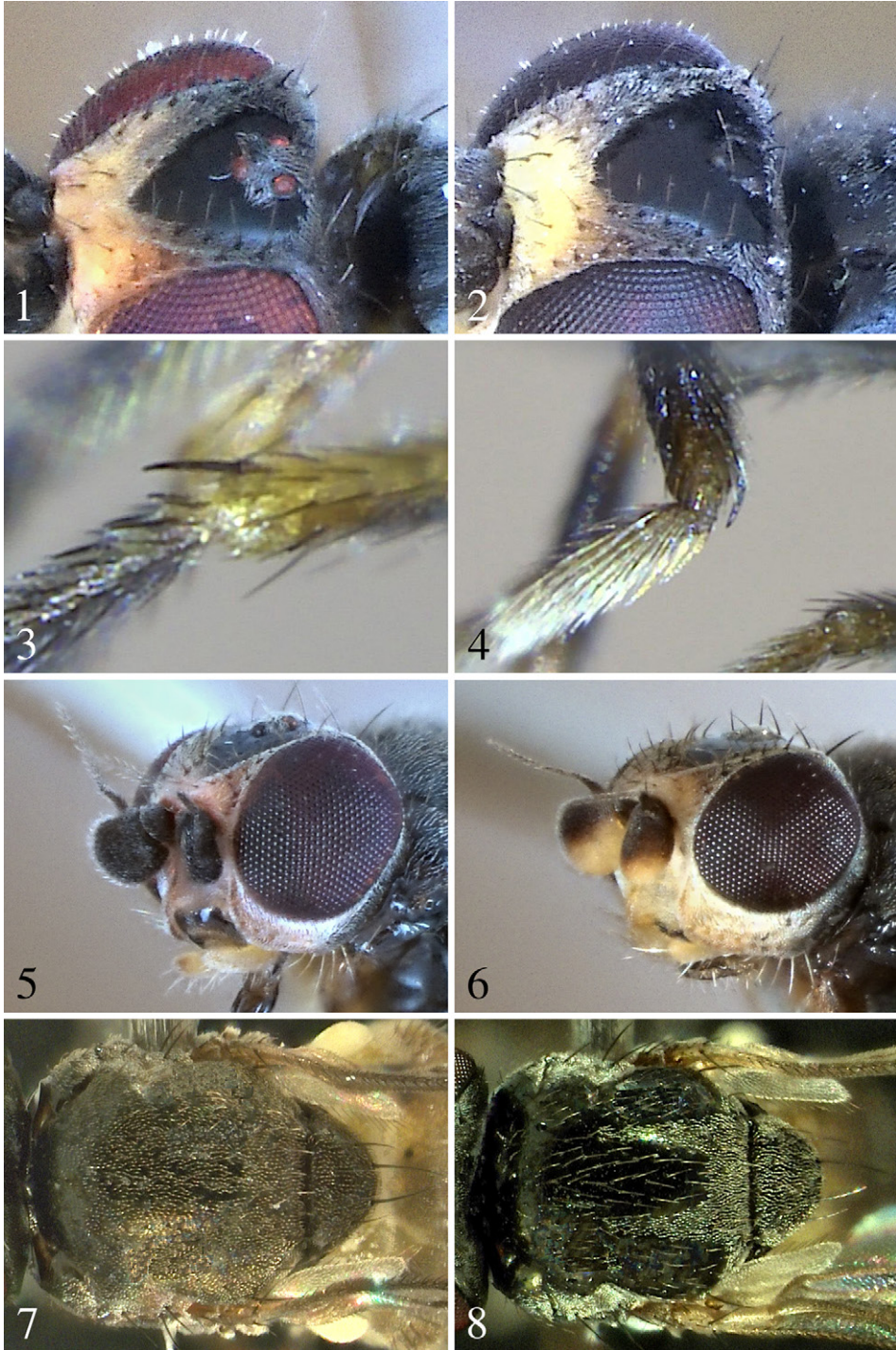
- extension, cercus not reaching surstylus apex (Fig. 10) *A. neocoxendix* (Sabrosky)
- Gena wider, 0.6 width of first flagellomere (Fig. 6), first flagellomere of male yellow on ventral half. Legs black. Prosternum black. Male genitalia as in Fig. 9 *A. coxendix* (Fitch)
- 3. Mesonotum mostly evenly pollinose (scattered shiny rubbed areas may be present) (Fig. 7). Frons yellow on anterior third. Male surstylus with a subapical extension (Figs. 11, 12) *A. dissidens* (Tucker)
- Mesonotum pollinose in two distinct dorsocentral lines (Fig. 8), remainder polished. Frons entirely black. Male surstylus wide, conical (Figs. 13, 14) *A. particeps* (Becker)

Genus *Apallates* Sabrosky

Apallates Sabrosky, 1980: Type species *Oscinis dissidens* Tucker, 1908.

The species of *Apallates* treated in this paper can be distinguished from all other Nearctic oscinelline genera (Sabrosky 1987) by the combination of polished ocellar triangle with cruciate ocellar setae; yellow or grayish gena; 1+2 notopleural setae; black, polished or pollinose thorax with large pollinose area at the base of wing including part of anepisternum and anepimeron; scutum convex; scutellum short, convex; hind tibial spur may be absent, shorter, or longer than width of hind tibia and when present may be curved and appressed tightly to tibia and difficult to see (Figs. 3, 4); abdominal tergites black or brown, basal tergites may be dark yellow. These identifying characters apply equally to both males and females. It is not necessary to dissect the male or female genitalia to determine species identity.

The darker colored *Apallates* species, *A. dissidens* and *A. particeps*, can be particularly difficult to distinguish from



Figs. 1–8. *Apallates* morphology. 1, *Apallates neocoxendix* showing pollinose ocellar tubercle. 2, *Apallates dissidens* showing polished ocellar tubercle. 3, *Apallates neocoxendix* hind tibial spur. 4, *Apallates dissidens* hind tibial spur. 5, *Apallates neocoxendix* head lateral oblique. 6, *Apallates coxendix* head lateral oblique. 7, *Apallates dissidens* mesonotum dorsal view. 8, *Apallates particeps* mesonotum dorsal view.

the very common *Rhopalopteron* and *Oscinella* which, in our collecting experience, are often found with, and usually are as numerous, as species of *Apallates*. Commonly encountered eastern US species of both *Rhopalopteron* and *Oscinella* have black genae and palpi, while these features are whitish to yellowish in *Apallates*. Separation of *Rhopalopteron* from *Oscinella* is another matter, as they can appear identical upon initial examination. However, the notopleural formula of 1+1 in *Rhopalopteron* and 1+2 in *Oscinella* is definitive.

Apallates coxendix (Fitch)
(Figs. 6, 9)

Oscinella coxendix Fitch, 1856: 533 [orig. descr.]; Becker 1912 [key, discussion, var. *obscura* Coquillett]; Sabrosky 1935 [in key, discussion, biology, collection notes, resemblance to *texana*]; Malloch 1913 [discussion var. *obscura* Coq., 1900, type of var. *obscura* closer to *Oscinella frit*]; Sabrosky 1936b [in key, var. *pullicornis*, distrib.; var. *obscura* n. syn. of *O. coxendix*]; Sabrosky 1940 [in key, discussion, new syn. var. *pullicornis* Sabrosky, 1936b with *O. coxendix*, discussion of sexual dimorphism, color variation of western material, comparison of *O. coxendix* with *O. dissidens* in pollinosity of ocellar tubercle]; Sabrosky 1980 [new comb. in *Apallates* n. gen.]; Bickley and Seek 1975 [recorded from Maryland marshes].

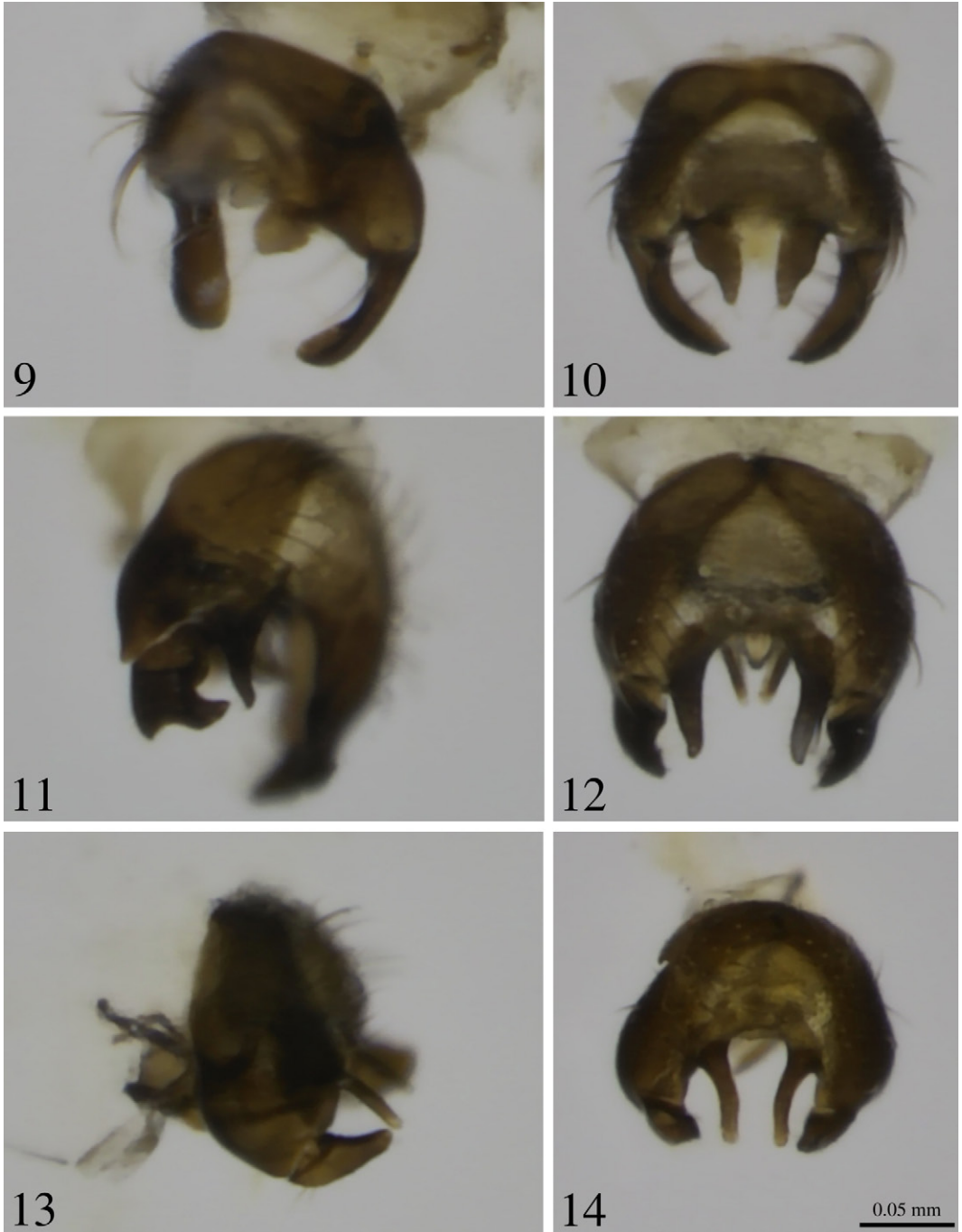
Oscinella coxendix var. *obscura* (Coq.); Sabrosky 1936b [jr. syn. of *coxendix*].

Oscinella coxendix var. *pullicornis* Sabrosky 1936b [new name for this variety]; Sabrosky 1965 [syn. of *coxendix*].

Diagnosis.—Length: 1.45–1.99 mm. This species can be differentiated from the other eastern U.S. *Apallates* species by the following combination of characters: pollinose ocellar tubercle (Fig. 1);

ratio of the width of the gena to width of first flagellomere (0.61–0.63); first flagellomere in male yellow on ventral half, in female all black; gena whitish; scutellum entirely black; prosternum black; fore coxa yellow otherwise legs black; spur on hind tibia shorter than width of hind tibia; male surstylus wide spatulate; and cerci smoothly triangulate on ventral margin and about 0.25 as long as surstylus.

Material examined.—UNITED STATES. MARYLAND. Howard: Ellicott City, Stormwater Basin on Centennial Lane, (39°15'44.15"N 76°51'47.43"W), 21 June, 14–15 Oct 2020, G.A. & A.M. Foster (2m; GAF); Columbia, field at ClemensCrossElemSch, (39°11'39.16"N 76°52'17.84"W), 06 Sept 2021, G.A. & A.M. Foster (1f; GAF); Columbia, Dry Storm Water Basin/Beth Shalom, (39°11'05.25"N 76°52'48.28"W), 26 Mar 2021, G.A. & A.M. Foster (2m, 1f; GAF); Columbia, residential yard, (39°12'33.23"N 76°53'26.02"W), 06 June, 24 Oct 2021, G.A. & A.M. Foster (2m; GAF); Columbia, lawn nr. Harper's Choice Middle School, (39°13'26.90"N 76°53'10.37"W), 26–27, 29–30 June 2021, G.A. & A.M. Foster (3m, 2f; GAF); Ellicott City, Font Hill Wetlands Park, (39°16'20.23"N 76°51'39.35"W), 02 May 2021, G.A. & A.M. Foster (1m; GAF). Montgomery: *prob. Gaithersburg*, (39°06'58.00"N 77°16'16.98"W), 01 Apr [det. Sabrosky], 09 Aug 1972, G. Foster (2f; GAF). Queen Anne's: Kent Is., (38°51'12.86"N 76°22'16.90"W), no date, 16-B-1, Seek & Nixon [det. Sabrosky] (1f; GAF); same data, 16-B-1(13), Seek & Nixon, [det. Sabrosky](1f, GAF). NEW HAMPSHIRE. Rockingham: Hampton, (42°56'14.65"N 70°50'20.04"W), 08 May 1905, 07, 10 May 1909, 27 April 1911, 10 June 1922, S. Albert Shaw (2m, 3f; UNHC); Odiorne Point St. Pk., (43°02'56.48"N 70°43'12.69"W), sweep lawn, 26 Sept 2020, D.S. Chandler (1f; UNHC); Seabrook, (42°53'18.62"N 70°50'03.58"W), back dunes,



Figs. 9–14. 9, *Apallates coxendix* male terminalia dorsal oblique view. 10, *Apallates neocoxendix* male terminalia posterior view. 11, *Apallates dissidens* male terminalia ventrolateral oblique view. 12, *Apallates dissidens* male terminalia posterior view. 13, *Apallates particeps* male terminalia lateral view. 14, *Apallates particeps* male terminalia posterior view.

sweep dune vegetation, 06 July 1989, D.S. Chandler, (1m; UNHC). CANADA. Prince Edward Island: P. E. I. National Park, (46°25'34.82"N 63°10'26.09"W), 13 August 1991, D.S. Chandler, (1m, 1f; UNHC).

Apallates neocoxendix Sabrosky
(Figs. 1, 3, 5, 10)

Oscinella neocoxendix Sabrosky, 1940 [orig. descr., color variation, comparison with *O. coxendix*]; Sabrosky 1980 [new comb. in *Apallates* n. gen.]; Bickley and Seek 1975 [recorded from Maryland marshes].

Apallates neocoxendix, Todd and Foote, 1987 [wetland resource partitioning]; Foote 2004 [association with stands of *Carex*]; Foote 2007 [association with spike rush].

Diagnosis—Length: 1.26–1.77 mm. This species can be differentiated from the other eastern U.S. *Apallates* species by the following combination of characters: pollinose ocellar tubercle (Fig. 1); ratio of the width of cheek to width of first flagellomere (about 0.4); first flagellomere of both sexes completely black; gena yellowish brown; prosternum yellow; fore coxa yellow, otherwise legs black; spur on hind tibia shorter than width of hind tibia (Fig. 3); male surstylus spatulate; cerci quadrate with caudal, medial extension (Fig. 10).

Material examined.—UNITED STATES. DELAWARE. Sussex: Millsboro, Residential yard on Helmsman Lane, (38°39'24.98"N 75°12'26.39"W), 15 June 2021, G.A. & A.M. Foster (1f; GAF); Angola, Sally Cove, sweeping salt marsh grasses, (38 38'51.65" N, 75 07'40.17" W), 24–27 Aug 2021, G.A. & A.M. Foster (1f; GAF). MAINE. York: Isles of Shoals, Appledore Island, (42°59'20.73"N 70°36'51.31"W), 19–20 Aug 1981, W.J. Morse (1m; UNHC, det. Sabrosky). MARYLAND. Howard: Columbia, Stormwater Mgmt Pond at Columbia Gym/

sweeping drainage area between ponds, (39°12'36.90"N 76°55'59.70"W), 03 July 2021, G.A. & A.M. Foster (3m; GAF); Columbia, residential yard, (39°12'33.23"N 76°53'26.02"W), 06, 10–12, 24 June, 02 Sept 2021, G.A. & A.M. Foster (7m, 4f; GAF); Columbia, lawn nr. Harper's Choice Middle School, (39°13'26.90"N 76°53'10.37"W), 26–27, 29–30 June 2021, G.A. & A.M. Foster (10m, 8f; GAF); Columbia, field at ClemensCrossElemSch, (39°11'39.16"N 76°52'17.84"W), 09 Aug 2021, G.A. & A.M. Foster (1m; GAF); Columbia, Dry Storm Water Basin/Beth Shalom, (39°11'05.25"N 76°52'48.28"W), 03–04, 06 July 2021 G.A. & A.M. Foster (4m, 2f; GAF); Ellicott City, Stormwater Basin on Centennial Lane, (39°15'44.15"N 76°51'47.43"W), 06, 14–15 Oct 2020, G.A. & A.M. Foster (1m, 2f; GAF). MONTGOMERY: Gaithersburg, (39°06'58.00"N 77°16'16.98"W), 14 Apr 1972, G. Foster (1f; GAF). Prince George's: USGS Bee Lab @ PaxWildlifeRef, (39°02'13.20"N 76°47'22.23"W), 09 July 2021, G.A. Foster (1m; GAF). Queen Anne's: Kent Is., (38°51'12.86"N 76°22'16.90"W), no date, 80-B-3(3), Seek & Nixon (1f; GAF) [det. Sabrosky, in *Oscinella*]; same data, and 6/1/78, Seek & Nixon (1f; GAF) [det. Sabrosky, in *Oscinella*]. MASSACHUSETTS. Essex: Parker River N.W.R., (42°47'27.08"N 70°48'35.61"W), swept from *Spartina alterniflora*, 14 Aug 1984, B.A. Foote coll., (4m, 15f; PADA). NEW HAMPSHIRE. Rockingham: Hampton, (42°56'14.65"N 70°50'20.04"W), 08 July 1905, S. Albert Shaw (1f; UNHC); Odiorne Point, malaise trap, (43°02'56.48"N 70°43'12.69"W), 09–13 Sept 1983, D.S. Chandler, (1m; UNHC, det. Sabrosky); 1 mile west of Odiorne Pt., malaise trap, (43°02'56.13"N 70°44'26.20"W), 17–19 Aug 1983, D.S. Chandler, (1f; UNHC, det. Sabrosky); Odiorne Point St. Pk., (43°02'56.48"N 70°43'12.69"W), sweep salt marsh vegetation, 15 Sept 2012, (1f; UNHC); same data, sweep early succession

natural area, 26 Sept 2020, D.S. Chandler (1m; UNHC); same data., sweep *Panicum* etc. along road, 26 Sept 2020, D.S. Chandler (1m; UNHC); same data., sweep low wet area near beach, 26 Sept 2020, D.S. Chandler (1f; UNHC); same data., sweep salt marsh, 21 Sept 2020, D.S. Chandler (1m; UNHC); same data., sweep grasses/low vegetation, 21 Sept 2020, D.S. Chandler (1m; UNHC); Rye, (42°59'51.12"N 70°45'06.47"W), 31 July 1979, J.F. Burger, (2m, 1f; UNHC); Seabrook, (42°53'18.62"N 70°50'03.58"W), back dunes, sweep dune vegetation, 06 July, 10, 23 Aug, 06 Sept 1989, D.S. Chandler, (8m, 5f; UNHC); same data, fore dunes, 07, 12 July 1989, (2f; UNHC); same data, sweep beach vegetation, 21 June 1984, (1f; UNHC, det. Sabrosky); PENNSYLVANIA. Dauphin: 2301 N. Cameron St., (40°17'15.41"N 76°52'50.32"W), 20 June 1977, K.R. Valley (1m; PADA). SOUTH CAROLINA. Charleston: 6mi. S. of Adams Run, (32°38'17.45"N 80°20'40.04"W), swept from salt marsh, 12 Apr 1984, B.A. Foote coll. (1m; PADA). CANADA. Prince Edward Island: P. E. I. National Park, Stanhope Campground, sweep, (46°25'21.79"N 63°06'34.36"W), 13 August 1991, D.S. Chandler, (1f; UNHC).

Apallates dissidens (Tucker)
(Figs. 2, 4, 7, 11, 12)

Oscinis dissidens Tucker, 1908 [orig. descr.]; Sabrosky, 1936a [placement in *Hippelates*, syn. of *texana* Malloch, 1913]; Sabrosky 1936b [ref. to prev. (1936a) paper, synonymy of *texana* Malloch, 1913]; Sabrosky 1941 [in key to *dissidens* group of *Hippelates*]; Sabrosky 1980 [new comb. in *Apallates* n. gen., illustration of male genitalia].
Hippelates texana Malloch, 1913 [orig. descr., noted biological observation of rearing from "cotton squares"].
Apallates dissidens, Bickley and Seek, 1975 [recorded from Maryland marshes]; Rey and McCoy 1986 [recorded from salt marshes in Florida].

Diagnosis.—Length: 1.42–1.64 mm. This species can be differentiated from the other eastern U.S. *Apallates* species by the following combination of characters: polished ocellar tubercle (Fig. 2); mesonotum clearly and evenly pollinose with some shiny rubbed spots (Fig. 7); fore coxa black; spur on hind tibia as long as or longer than width of hind tibia (Fig. 4), often curved and closely appressed to hind tibia and difficult to see; male surstylus with large subapical tooth-like projection; cerci nearly as long as surstylus and with distal curvature (Figs. 11, 12).

Biological Note.—Malloch (1913) noted that this species had been reared from cotton squares by examining a large series of this species reared from cotton squares in Texas, which are the "tiny buds of growing bolls" (eHow.com 2021).

Material examined.—DELAWARE. Sussex: Angola, Sally Cove, salt marsh/dry sand zone *Spartina*, (38°38'51.65"N 75°07'40.17"W), 15–16 June 2021, G.A. & A.M. Foster (1m, 2f; GAF); same data, sweeping beach grasses, 24–27 Aug 2021, G.A. & A.M. Foster (5m, 3f; GAF). MARYLAND. Howard: Ellicott City, Stormwater Basin on Centennial Lane, (39°15'44.15"N 76°51'47.43"W), 06, 14–15 Oct 2020, G.A. & A.M. Foster (4m, 2f; GAF); Columbia, lawn nr. Harper's Choice Middle School, (39°13'26.90"N 76°53'10.37"W), 26–27, 29–30 June 2021, G.A. & A.M. Foster (2m; GAF); Ellicott City, Stream/marsh off Coventry Ct. Dr., Perimeter of small pond, (39°16'27"N 76°52'22"W), 02 May 2021, G.A. & A.M. Foster (3m; GAF); Ellicott City, Font Hill Wetlands Park, (39°16'20.23"N 76°51'39.35"W), 22 May 2021, G.A. & A.M. Foster (1m; GAF); Columbia, Stormwater Mgmt Pond at Columbia Gym/sweeping drainage area between ponds, (39°12'36.90"N 76°55'59.70"W), 03 July 2021, G.A. & A.M. Foster (3m; GAF); Columbia, Dry Storm Water Basin/Beth Shalom, (39°11'05.25"N 76°52'48.28"W),

22 Mar, 03–04, 06 July 2021, G.A. & A.M. Foster (7m, 7f; GAF); Columbia, residential lawn, (39°12'33.23"N 76°53'26.02"W), 03, 11, 18–20 Apr, 23, 24 June, 08 Aug 2021, G.A. & A.M. Foster (14m, 3f; GAF); Columbia, Dry strmwtr basin at BirdSongPass, (39°12'32.11"N 76°53'20.17"W), 23 June 2021, G.A. & A.M. Foster (4m; GAF). Queen Anne's: Kent Is., (38°51'12.86"N 76°22'16.90"W), no date, 67-B-1(5), Seek & Nixon (1f; GAF) [det. Sabrosky, in *Oscinella*]; same data, 80-B-1(4), Seek & Nixon (1f; GAF) [det. Sabrosky, in *Oscinella*]. NEW HAMPSHIRE. Rockingham: Odiorne Point St. Pk., (43°02'56.48"N 70°43'12.69"W), sweep lawn, 26 Sept 2020, D.S. Chandler (1m; UNHC); same data., sweep vegetation dried pond area, 21 Sept 2020, D.S. Chandler (1m; UNHC). SOUTH CAROLINA. Charleston: 6mi. S. of Adams Run, swept from salt marsh, (32°38'17.45"N 80°20'40.04"W), 12 Apr 1984, B.A. Foote coll., (1m; PADA).

Apallates particeps (Becker)
(Figs. 8, 13, 14)

Oscinella particeps Becker, 1912 [orig. descr.]; Sabrosky 1936a [placement in *Hippelates*, syn. with *Hippelates subvittata* Malloch, 1913]; Sabrosky 1936b [ref. to prev. (1936a) paper; syn. with *subvittata* Malloch, 1913]; Sabrosky 1980 [new comb. in *Apallates* n. gen.]; *Apallates particeps*, Bickley and Seek, 1975 [recorded from Maryland marshes]; Rey and McCoy 1986 [recorded from salt marshes in Florida]; Foote 2007 [association with spike rush]
Hippelates subvittata Malloch, 1913 [orig. descr.]; Sabrosky 1936a [jr. syn. of *Hippelates particeps* (Becker)]

Diagnosis.—Length: 1.43–1.87 mm. This species can be differentiated from the other eastern U.S. *Apallates* species by the following combination of characters: polished ocellar tubercle (as in Fig. 2); scutum

pollinose on dorsocentral lines, beginning at transverse suture and extending posteriorly, merging in front of scutellum, shiny on remaining areas (Fig. 8); fore coxa black; spur on hind tibia as long as or longer than width of hind tibia (as in Fig. 4), often curved and closely appressed to tibia and difficult to see; male surstylus wide, triangulate (Figs. 13, 14); cercus long and narrow, nearly reaching surstylus apex.

Material examined.—DELAWARE. Sussex: Angola, Sally Cove, sweeping beach grasses, (38°38'51.65"N 75°07'40.17"W), 24–27 Aug 2021, G.A. & A.M. Foster (4m, 4f; GAF). MAINE. York: Appledore Island, Shoals Marine Lab, sweep marsh area, (42°59'20.73"N 70°36'51.31"W), 20 July 2019, D.S. Chandler (1m; UNHC). MARYLAND. Howard: Columbia, residential lawn, (39°12'33.23"N 76°53'26.02"W), 04 June 2020, 23–24 June, 08 Aug 2021, G.A. & A.M. Foster (25m, 2f; GAF); Columbia, Dry strmwtr basin at BirdSongPass, (39°12'32.11"N 76°53'20.17"W), 13 May, 23 June 2021, G.A. & A.M. Foster (2m; GAF); Columbia, Dry Storm Water Basin/Beth Shalom, (39°11'05.25"N 76°52'48.28"W), 03–04, 06 July 2021, G.A. & A.M. Foster (2m; GAF); Columbia, stormwater mgmt. pond, grassy area between ponds, (39°12'40.54"N 76°56'00.82"W), 19 May, 03 July 2021, G.A. & A.M. Foster (4m; GAF); Columbia, lawn nr. Harper's Choice Middle School, (39°13'26.90"N 76°53'10.37"W), 29–30 June 2021, G.A. & A.M. Foster (2m; GAF); Ellicott City, Stormwater Basin on Centennial Lane, (39°15'44.15"N 76°51'47.43"W), 14–15 Oct 2020, G.A. & A.M. Foster (1m; GAF); Ellicott City, Stream/marsh off Coventry Ct. Dr., Marsh areas adjacent to stream, (39°16'27"N 76°52'22"W), 28 Apr, 19 May 2021, G.A. & A.M. Foster (2m, 1f; GAF); Ellicott City, Stream/marsh off Coventry Ct. Dr., Vegetation along edge of stream, (39°16'27"N 76°52'22"W), 22 May 2021, G.A. & A.M. Foster (1m;

GAF); Ellicott City, Font Hill Wetlands Park, (39°16'20.23"N 76°51'39.35"W), 04 Apr, 19 May 2021, G.A. & A.M. Foster (1m, 1f; GAF). Prince Georges: Magruder Landing, (38°39'10.46"N 76°41'30.77"W), no date, 76-D-1, Seek & Nixon (1f; GAF) [det. Sabrosky, in *Oscinella*]; same data, 61-D-2, Seek & Nixon (1f; GAF) [det. Sabrosky, in *Oscinella*]. Queen Anne's: Kent Is., (38°51'12.86"N 76°22'16.90"W), no date, 63-B-(1)7, Seek & Nixon (1f; GAF) [det. Sabrosky, in *Oscinella*] (1f; GAF). NEW HAMPSHIRE. Rockingham: Odiorne Point St. Pk., (43°02'56.48"N 70°43'12.69"W), sweep salt marsh, 21 Sept 2020, D.S. Chandler (1m; UNHC); Seabrook, (42°53'18.62"N 70°50'03.58"W), back dunes, sweep dune vegetation, 23 Aug 1989, D.S. Chandler, (1m; UNHC); same data, fore dunes, sweep, 12 July, 04, 17, 31 Aug 1989, (8m, 2f; UNHC). NORTH CAROLINA. Dare: Hatteras Island, Salvo, (35°32'22.47"N 75°28'01.12"W), 05 Jul 1975, G. Foster (1m, 1f; GAF). SOUTH CAROLINA. Charleston: 6mi. S. of Adams Run, (32°38'17.45"N 80°20'40.04"W), swept from salt marsh, 12 Apr 1984, B.A. Foote coll., (1f; PADA).

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