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## A Review of New World *Neodexiopsis* (Diptera, Muscidae) The *Ovata* Group

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The present paper is the first of a series in which the New World species of the coenosiine genus *Neodexiopsis* will be treated. As the genus can be divided into a number of distinct species groups, each will be treated separately as the material warrants.

*Neodexiopsis* is one of the few large muscid genera that has species confined exclusively to the Nearctic and Neotropical regions, and the only one known to me of which some of the species range through most of the New World.

Its members, as most of the Coenosiinae, are usually collected by sweeping over grass or other short vegetation, though species of *Neodexiopsis* are usually more numerous in this type of cover when the soil is moist and is adjacent to the margins of dense stands of trees. Collecting in this type of environment often yields teneral specimens of both sexes, but mature males can frequently be found on stems of bushes or even trunks of trees at the margins of forests.

The limits of *Neodexiopsis* (Malloch, 1920, p. 162), as here treated, are essentially the same as defined by Hockett (1934, p. 74) for this group as a subgenus of *Coenosia*, *sensu lato*. In the present paper *Neodexiopsis* is accorded generic rank, as Malloch originally proposed. The main characters separating it from other coenosiine genera are

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the presence of a preapical anterodorsal, dorsal to posterodorsal, and a posterior bristle on hind femora if coupled with two pairs of well-developed postsutural intraalar, and three pairs of postsutural dorso-central, bristles.

Males of the *ovata* group are readily separated from other *Neodexiopsis* by having the anal area of the wing modified into a posterior, thumb-like extension or with a prebasal incision on the hind margin adjacent to the anal area (figs. 1-3, 13) and in having a small portion of the lower part of the second and often the third visible tergite devoid of pruinescence and therefore glossy.<sup>1</sup> The abdomen in dorsal view is short and distinctly ovoid; in lateral view the second and third visible tergites are conspicuously narrowed ventrally, while the fourth is relatively longer dorsally but is likewise narrowed ventrally.

Females of the *ovata* group lack a thumb-like extension of the anal area of the wings and do not have glossy areas on the sides of the second or third visible tergites, nor are any of the tergites unusually modified in shape. Consequently, specimens of this sex are often difficult to associate with the group, but the more angular bend of the anal region of the wing (fig. 5) will usually distinguish them from other allied *Neodexiopsis* species (fig. 6).

Certain other characters also aid in the separation of both sexes of the *ovata* group and are especially useful when females with damaged wings are encountered. It should be noted that certain of these characters are found in other species groups, and only when all are present can they be considered of secondary significance for group definition. These characters are: the absence of a median posterodorsal bristle on the hind tibiae; anterior ocellar bristles longer and stronger than posterior pair; fore femora with the short clothing setulae at the base of the anteroventral surface somewhat stouter and slightly longer than the adjacent clothing setulae, and in females of some species these are almost raptorial and are often continued to the apex.

The only other species with the anal area modified to form a thumb-like extension is *Haroldopsis cambuquirensis* Albuquerque (1954, p. 119). The apical bristles on the hind femora are arranged in the typical *Neodexiopsis* pattern in this species. However, it has only two pairs of postsutural dorsocentral bristles, the costa bears a very long baso-

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<sup>1</sup> These areas should not be confused with the large polished portions on the sides of the third and fourth tergites in *calopyga* Loew, *floridensis* Malloch, and *rex* Curran, members of other species groups.

ventral bristle just beyond the epaulet, and the lower calyptrae have a fringe of long hairs along most of their margins. The bristling of the fore femora and tibiae, the shape of the anal lobe of the wing, and the shape of the abdomen are similar to, but not the same as, those of *hydrotaeiformis* described below.

Both sexes of all species of the *ovata* group possess certain characters which are enumerated here to avoid repetition in the descriptions: head higher than long; the single pair of posterior parafrontal bristles reclinate, but with three other pairs of parafrontal bristles, the anterior and median pair long, and with the intervening pair shorter; disc of scutellum with sparse clothing setulae; fore femora with a row of posterodorsal bristles; fore tibiae with a median posterior bristle; mid tibiae always with a median posterior and usually with a median anterior to anterodorsal bristle; hind femora with a complete row of anterodorsal bristles and usually with at least an anteroventral setula opposite the strong terminal anterodorsal bristle; wings without dark shadows adjacent to any vein; the posterior cross vein never strongly sigmoid; all veins except costa bare. The ventral portion of the third abdominal tergite in males with a variable number of clothing setulae adjacent to the shiny area on second tergite which are conspicuously shorter and usually more upright than the remaining decumbent clothing setulae on the third tergite; apical scutellar bristles are as strong as the subbasals in all species except *willistoni*.

The shape of the thumb-like area of the anal region of the wing appears to be quite constant in the males of species studied and provides good specific characters. However, the wings of specimens frequently dry in a position to make determination of the shape of this structure somewhat difficult. The accompanying figures in most cases were therefore made from wings that had been removed from the specimens. They were mounted in Euperal between pieces of cover slips and attached to plastic points on the specimen pin to make their association with the particular specimen certain. Illustrations were prepared with the use of an ocular grid and cross hatch papers. All were drawn to the same scale, except *obtusiloba* which was redrawn from Malloch's original figure. Comparison of the shape of the thumb and incision in different species can be made best when the wings are in the same position; consequently the portion of the fourth vein basad to the anterior cross vein is aligned horizontally with the bottom of the page or microscope field in the various species.

Most of the specimens treated in this paper are from the collections of the American Museum of Natural History, the United States Na-

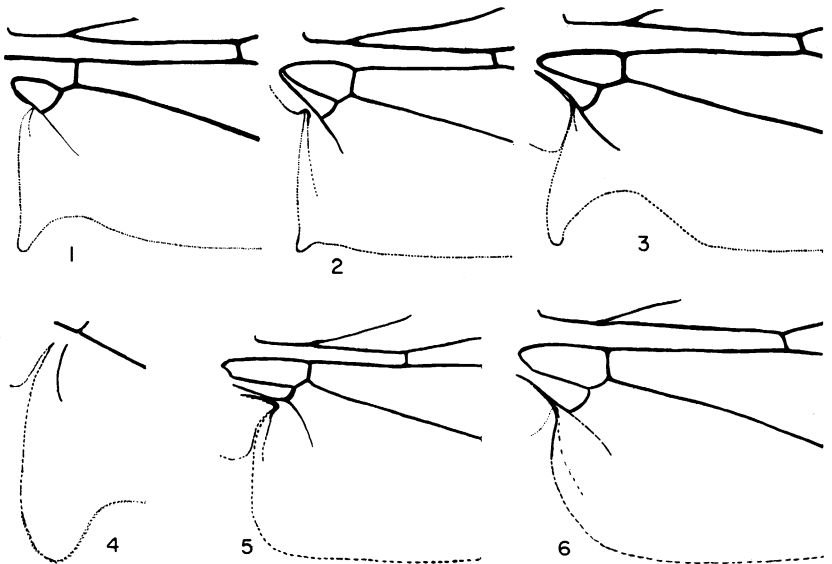
tional Museum, and the author. Unless otherwise stated, holotypes are deposited in the American Museum of Natural History.

Grateful acknowledgement is made to Drs. C. H. Curran, F. I. van Emden, C. W. Sabrosky, and M. Aczel for opportunity to study material in their care; to Drs. C. W. Sabrosky and H. C. Huckett, I am grateful for several worthwhile suggestions and to Dr. F. I. van Emden for valuable notes on certain type material in the British Museum (Natural History).

#### KEYS TO SPECIES OF THE *Neodexiopsis ovata* GROUP

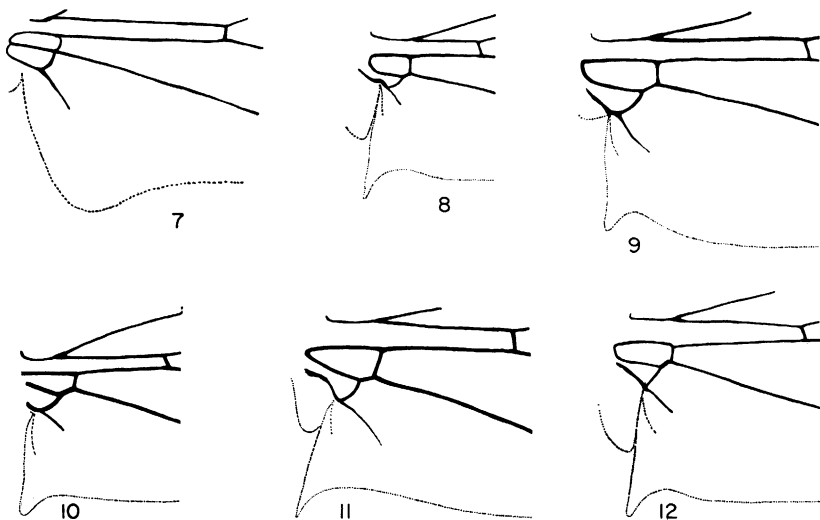
##### MALES

1. Hind tibiae with numerous long, adventitious, dorsal to posteroventral, curly, bristle-like hairs ..... *cavalata* Snyder  
Hind tibiae without numerous long, curly, dorsal to posteroventral, bristle-like hairs, but with the usual median anterodorsal bristle .... 2
2. Fore femora swollen on basal 0.66; the posteroventral bristles on this portion closely placed and with their apices curved towards tip of femora; the basal 0.6 of posterior surface bare, shiny; fore tibiae with a basoventral concavity which has short, thorn-like, anteroventral and posteroventral setulae (figs. 14 and 15); third antennal segment entirely pale, whitish yellow; humeri yellow, contrasting with the infuscated thoracic disc ..... *hydrotaeiformis*, new species



FIGS. 1-6. Anal region of wing. 1. *Neodexiopsis equator* (male). 2. *N. ovata* (male). 3. *N. peninsula* (male). 4. *N. obtusiloba* (male, redrawn from Malloch, 1934). 5. *N. ovata* (female). 6. *N. basalis* (female).

- Fore femora and tibiae not unusually swollen or curved; third antennal segment entirely infuscated or fulvous only on basal 0.5 or less; humeri infuscated, concolorous with disc .....3
3. Hind tibiae without an anteroventral bristle near middle .....4  
Hind tibiae with a weak or strong anteroventral bristle near middle ....8
4. Apical scutellars very short; hind femora with a very slight, basal, ventral swelling bearing numerous short, upright, black spinules .....  
.....*willistoni*, new species
- Apical scutellars long; hind femora not swollen basally and with only the usual short clothing setulae .....5
5. Thumb-like extension of the anal area of wing relatively short and broad (fig. 4) .....*obtusiloba* (Malloch)  
Thumb-like extension relatively long and slender (figs. 3 and 16) .....6
6. Longest hairs on arista not longer than its greatest diameter; mid and hind tarsi dark; glossy spot on sides of second abdominal tergite dark brown to black .....7  
Longest hairs on arista at least 0.5 as long as the greatest width of third antennal segment; mid and hind coxae mostly yellow to fulvous; glossy spot on sides of second abdominal tergite yellow to fulvous .....  
.....*emmesa* (Malloch)
7. Palpi entirely yellow; sides of abdomen at base yellowish; median anterior to anterodorsal bristle on mid tibiae short or absent; clothing setulae between the anteroventral bristles on hind femora very short, not conspicuous .....*punctulata* (van der Wulp)  
Palpi brownish to infuscate, occasionally lighter colored at base; abdominal ground color uniformly infuscate; the median anterior to antero-



FIGS. 7-12. Anal region of male wings. 7. *Neodexiopsis cavallata*. 8. *N. magnicornis*. 9. *N. cera*. 10. *N. peruviana*. 11. *N. preacuta*. 12. *N. arizona*.

- dorsal bristle on mid tibiae strong; clothing setulae between the anteroventral bristles on hind femora long and conspicuous .....  
 ..... *neoaustralis* Snyder
8. Fore femora mostly infuscated, only the apices narrowly yellow to fulvous ..... 9  
 Fore femora mostly fulvous, if dark in parts, the infuscated area confined to basal 0.5 or less, or to a linear posterodorsal streak ..... 10
9. Fore femora with an almost complete row of short but distinct anteroventral setulae; thumb-like extension of wing almost pointed apically (fig. 8) ..... *magnicornis*, new species  
 Fore femora without distinct anteroventral setulae or with only a few of the clothing setulae at base distinct; thumb-like extension of wing rounded apically (fig. 1) ..... *equator*, new species
10. Thumb-like extension of wing pointed apically (fig. 11) .....  
 ..... *preacuta*, new species  
 Thumb-like extension of wing rounded apically ..... 11
11. Fore femora with a row of short, spine-like, anteroventral setulae on apical 0.4 to 0.6; thumb-like extension of wing as in figure 10 .....  
 ..... *peruviana*, new species  
 Fore femora without distinct, spine-like, anteroventral setulae on apical 0.4 to 0.6 ..... 12
12. Longest hairs on arista 1.5 to 2.0 times as long as its greatest diameter; thumb-like extension of wing as in figure 9 ..... 13  
 Longest hairs on arista shorter than its greatest diameter ..... 14
13. Legs entirely yellow; the shiny spot on side of second tergite fulvous; thoracic vittae absent or much reduced; abdomen without a median vitta on second to fourth tergites ..... *cera*, new species  
 Legs with a dark posterodorsal stripe on fore femora and apical spots on hind femora; the shiny spot on side of second tergite black to brownish

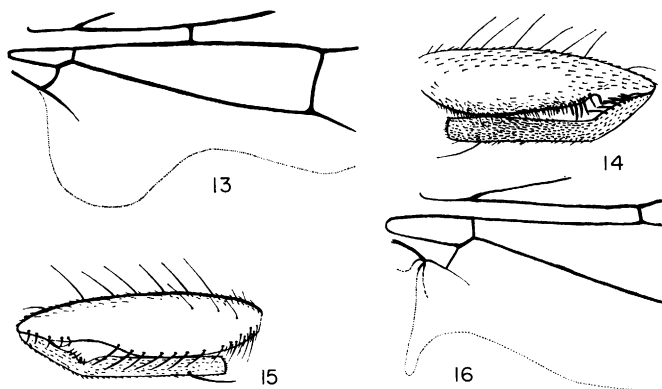


FIG. 13. Anal region of wing of *Neodexiopsis hydrotaeiformis* (male).

FIGS. 14, 15. Fore femora of *N. hydrotaeiformis* (male). 14. Anterior surface. 15. Posterior surface.

FIG. 16. Anal region of wing of *N. neoaustralis* (male).

- black; thorax with five distinct dark vittae presuturally; abdomen with a median vitta on second to fourth tergites .....  
 .....*priscipagus*, new species
14. Prebasal incision on posterior margin of wing shallow (figs. 2, 12) ....15  
 Prebasal incision on posterior margin of wing deep (fig. 3) .....16
15. Thumb-like extension of wing very short (fig. 2) .....*ovata* (Stein)  
 Thumb-like extension of wing moderately long (fig. 12) .....  
 .....*arizona*, new species
16. First visible abdominal tergite with a small, dark area opposite the glossy spot on side of second tergite; the spot on first tergite with a clump of brush-like clothing setulae in line with the apical row of setulae (Florida) .....*peninsula*, new species  
 First visible abdominal tergite without a darkened area, the marginal row of setulae not modified in the form of a brush-like tuft opposite the shiny mark on second .....17
17. Mid and hind coxae dark; third antennal segment entirely infuscated (South America) .....*australis* (Malloch)  
 Mid and hind coxae yellow; third antennal segment bright fulvous basad to arista (Wisconsin) .....*borea*, new species

## FEMALES

1. Hind tibiae without a submedian anteroventral bristle .....2  
 Hind tibiae with a submedian anteroventral bristle .....7
2. Hind tibiae with a long anterior to very slightly anterodorsal bristle on basal 0.33 in addition to the median anterodorsal bristle .....  
 .....*cavalata* Snyder  
 Hind tibiae without an anterior to anterodorsal bristle on basal 0.33 in addition to the median anterodorsal bristle .....3
3. Third antennal segment entirely light yellow .....  
 .....*hydrotaeiformis*, new species<sup>1</sup>  
 Third antennal segment mostly or entirely fuscous .....4
4. Apical scutellars very short .....*willistoni*, new species  
 Apical scutellars long and strong .....5
5. Longest hairs on arista at least 0.75 as long as width of third antennal segment .....*emmesa* (Malloch)  
 Longest hairs on arista shorter, or scarcely longer, than its greatest diameter .....6
6. Palpi yellow (Mexico) .....*punctulata* (van der Wulp)  
 Palpi black to fuscous (Brazil, Argentina) .....*neoaustralis* Snyder
7. Fore femora with a row of short but spine-like anteroventral bristles on apical 0.5 .....8  
 Fore femora without spine-like anteroventral bristles on apical 0.5, but some on the basal 0.5 may be rather spine-like .....9
8. Femora yellow, at most a very faint, dark, posterodorsal shadow on fore femora .....*peruviana*, new species  
 Femora mostly fuscous or black; only basal 0.33 to 0.5 of mid and hind femora and the extreme apices of fore femora yellow to fulvous .....

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<sup>1</sup> Female unknown; included on inference.

- .....*magnicornis*, new species
9. Palpi entirely testaceous yellow (southern South America) .....10  
 Palpi with at least the tip or more brown to fuscous .....11
10. Third antennal segment entirely fuscous .....*australis* (Malloch)  
 Third antennal segment broadly reddish fulvous at base .....  
 .....*cera*, new species
11. Mid and hind coxae mostly dark; femora usually with a variable darkened  
 portion which is most extensive on fore femora in the form of a  
 posterodorsal to posterior cloud and often with a dark anterodorsal to  
 posterodorsal shadow near apex of mid and hind femora or both ....  
 .....*ovata* (Stein) and *arizona*, new species  
 Mid and hind coxae yellow or with a very limited dark streak near base;  
 femora entirely yellow .....*peninsula*, new species

***Neodexiopsis hydrotaeiformis*, new species**

Figures 13-15

MALE: Length, 3.5 mm. Head black, grayish pruinose, frontal triangle very long and narrow, extending to base of antennae. Parafacials and parafrontals obscured in profile, only their juncture indistinctly visible. Antennae yellow, the third segment paler, 3.5 to 4.0 times as long as second. Arista yellow at base, remainder brown; the longest hairs 0.5 as long as width of third antennal segment. Palpi very slender, yellow.

Thorax black, except the fulvous humeri; grayish pruinose and with a very narrow brown vitta along planes of dorsocentral bristles. Acrostical setulae sparse; irregularly uniseriate. Intraalars two; propleural and stigmal bristles very short, weakly duplicated.

Legs yellow, mid and hind tarsi somewhat brownish yellow. Fore femora distinctly enlarged basally and slightly concave preapically on ventral surface; most of the posterior surface glossy and devoid of clothing setulae; fore legs bristled as in figures 14 and 15. Mid femora with all surfaces covered with normal, short clothing setulae, but some of the anterior ones on basal 0.33 slightly longer than others, and with a row of widely spaced, slender, posteroventral bristles. Hind femora with one or two strong anteroventrals on apical one-third and some much shorter ones basad, between which the clothing setulae are quite distinct, though short; and with two slender posteroventral bristles on the apical 0.5. Hind tibiae without a submedian anteroventral bristle.

Wings with a brownish hyaline tinge and with an extensive prebasal incision (fig. 13). Halteres yellow; calyptrae pale yellowish hyaline.

Abdomen short but quite thick; second segment very short, pruinose.



cent; with paired brown spots on second, third, and fourth tergites and a narrow median vitta on the last two. The sides of the abdomen in the two specimens of the type series are somewhat greased and shrunken, so it is impossible to determine the extent of the possible shiny spots on the sides of the second or third tergites.

TYPE MATERIAL: Holotype, male, Higuito, San Mateo, Costa Rica (Pablo Schild); paratype, one male, Balboa, Canal Zone, August, 1942 (P. A. Woke), with a "737" and "lab. window" on additional labels. Holotype in the United States National Museum collection.

The head and abdomen of both specimens are damaged, which makes a complete description impossible.

The unique structure and bristling of the forelegs will readily separate this species from all other *Neodexiopsis*. Their structure, however, suggests possible affinities with *Haroldopsis* Albuquerque.

Females will probably have strong anteroventral bristles on fore femora, but I hesitate to speculate on the shape of the forelegs.

#### *Neodexiopsis cavalata* Snyder

##### Figure 7

*Neodexiopsis cavalata* SNYDER, 1957, Jour. Agr. Univ. Puerto Rico, vol. 41, p. 224.

Males are readily distinguished from those of other species in the *ovata* group by the very long, crinkly hairs on the anterior, and antero-dorsal to dorsal surfaces of the hind tibiae, the longest of which are subequal to the hind tibial length.

Females lack the long hairs, but possess a characteristic anterior bristle at the basal 0.33 of the hind tibiae and have the posterior margin of the wing more incised than any other females of the *ovata* group, but the incision is less distinct than in the male.

SPECIMENS EXAMINED: The type series.

#### *Neodexiopsis willistoni*, new species

MALE: Length, 3.3 mm. Head black; cheeks and occiput gray, face seal brown, and front grayish brown pruinulent. Frontal triangle short, poorly defined; the parafrontals grayish anteriorly and somewhat brownish posteriorly, not sharply defined. Front at vertex 0.35 of head width, gradually broadened to 0.4 at base of antennae; anterior parafrontal bristles, both pairs of ocellars, and the outer verticals subequal, slightly longer and stronger than the inner verticals. In profile, juncture of parafacials and parafrontals 0.66 as long as width of third antennal segment; parafacials obscured below. Cheeks 0.6

as high as width of third antennal segment. Antennae seal brown, grayish pruinulent, and the apex of second segment reddish brown; inserted opposite dorsal 0.3 to 0.33 of eyes and terminating at oral margin; third segment 2.8 times as long as second. Longest hairs on arista 1.25 times as long as its greatest diameter. Palpi brownish.

Thorax black, brownish gray pruinulent, vittae not clearly defined, diffuse and merged over most of the central portion of disc. Clothing setulae on humeri and anterior declivities of mesonotum sparse, normal, but with a pair of accessory dorsocentral setulae inserted well ventrad on the anterior declivities; intraalars two; apical scutellars very short, the subbasals broken off, but the pores indicate they were large, normal, and probably two to three times as long as apicals; lower sternopleural bristle situated much closer to posterior than to anterior one.

Legs fulvous yellow, coxae mostly brown to fulvous brown and tip of hind femora brownish. Fore femora of normal shape and with the usual bristles, except the anteroventral setulae at base are short, numerous, and in several irregular rows. Fore tibiae with median posterior very short; only the mid dorsal apical bristle longer than the tibial diameter, the apical posterodorsal and posteroventral distinctly shorter. Mid femora with an anteroventral bristle on basal 0.33, a row of four to six long ventrals on basal 0.75 and four to six short anterior bristles on basal 0.5. Mid tibiae with a median anterior and posterior bristle, the former longest; apical anterodorsal and posterodorsal shorter than tibial diameter. Hind femora with a very slight, basal ventral swelling which bears numerous short, upright spines on its ventral surface, remainder of ventral surface with only the usual short setulae, though one or two near middle are somewhat spinose; with three widely separated anteroventrals on apical 0.75, and one long and one short posteroventral on apical 0.5. Hind tibiae with a median anterodorsal and posterodorsal bristle; the middorsal situated at apical 0.33, and the preapical anterodorsal at apical 0.15. Tarsi somewhat elongated, slender; pulvilli and claws small.

Wings hyaline. Costal thorns and setulae short, decumbent. Posterior cross vein very slightly curved, inserted at basal 0.3 of first posterior cell; anterior cross vein situated opposite apical 0.3 of discal cell; the ultimate section of fifth vein about as long as posterior cross vein and terminating distinctly before wing margin. The posterior incision similar to that in *hydrotaeiformis* (fig. 13) and *cavalata* (fig. 7), but shallower than in the former and slightly deeper than in the latter;

without a narrow, thumb-like extension. Calyptrae hyaline, very faintly tinged with pale fulvous yellow. Halteres fulvous.

Abdomen black, base of first tergite fulvous ventrally; all parts grayish pruinulent. The abdomen is somewhat greased in the single specimen, but there appears to be a median brown vitta on second to fourth tergites and paired brown spots on second and third; shiny areas on first tergite black, long, narrow, and confined to the dorsal portion of the declivities.

TYPE MATERIAL: Holotype, male, without date or locality labels, but with a label "S. W. Williston collection." This label is similar to many on specimens from Chapada and Rio de Janeiro, Brazil, from the Williston collection in the American Museum of Natural History. It seems probable that this species is Brazilian.

The short apical scutellar bristles, the presence of a median postero-dorsal bristle on the hind tibiae, and the shallow posterior incision of the wings, coupled with the group of short, stout spines at the base of the ventral surface of the hind femora, should readily distinguish this species from all others in the *ovata* group.

*Neodexiopsis obtusiloba* (Malloch)

Figure 4

*Coenosia obtusiloba* MALLOCH, 1934, *Diptera of Patagonia and South Chile*, pt. 7, fasc. 2, p. 216.

The holotype is not in the United States National Museum collection as noted by Malloch, and I have not seen specimens that could be considered conspecific with the description. Its inclusion is based on the original description, and figure 4 is redrawn from Malloch's illustration.

*Neodexiopsis emmesa* (Malloch)

*Coenosia emmesa* MALLOCH, 1934, *Diptera of Patagonia and South Chile*, pt. 7, fasc. 2, p. 216.

Type material of this species was not studied. Its inclusion in the key is based on the original description and notes graciously supplied by Dr. F. I. van Emden from a paratype in the British Museum (Natural History).

I believe that the specimens listed below are conspecific.

MATERIAL EXAMINED: One male, three females, Caracas, Venezuela, May 23, 1943; one female, September 25, 1943 (F. M. Snyder); one male, one female, Barro Colorado Island, Canal Zone, February 3,

1929 (C. H. Curran); one female, Barro Colorado Island, Panama Canal Zone, May 11, 1956 (C. W. and M. E. Rettenmeyer), with label "from over swarm raid of *Eciton burchelli*"; two females, Barro Colorado Island, Panama Canal Zone, February 27 and July 25, 1956 (C. W. and M. E. Rettenmeyer), with labels "from over swarm raid of *Labidus predator*."

*Neodexiopsis punctulata* (van der Wulp)

*Coenosia punctulata* VAN DER WULP, 1896, *Biologia Centrali-Americana*, ser. C, vol. 2, p. 342.

MALE: Head cinereous brown, marked as in *ovata*. Cheeks almost as high as width of third antennal segment, the parafacials very slender in profile. Antennae dark, apex of second and base of third segments yellowish, the latter about two times as long as wide, not reaching to oral margin. Antennae inserted opposite middle of eyes. Longest arisal hairs scarcely as long as greatest diameter of arista. Palpi yellow.

Thorax fuscous, brownish gray pruinose, and without distinct vittae. Without spine-like setulae on anterior thoracic declivities.

Legs yellow, the coxae darkened and with a darkened tinge on dorsum of fore femora and at apex of hind femora. Fore femora without spine-like, anteroventral bristles on the apical 0.5. Fore tibiae with the median posterior bristle short and weak, the apical dorsal strong, the apical posterodorsal more slender but equal to the length of dorsal bristle; the apical posteroventral one weak but as long as tibial diameter. Mid femora with only a short basal anterior bristle and with four ventrals at middle. Mid tibiae with the median anterior to anterodorsal bristle very weak or absent; the apical ventral bristle is the only apical one which is well developed. Hind femora with four widely separated and well-developed anteroventral bristles, the intervening setulae very short, not conspicuous. Hind tibiae as in *neoaustralis*.

Wings with thumb as in *peninsula* (fig. 3) and *neoaustralis* (fig. 16).

Abdomen as in *ovata*, but the basal segment more extensively tinged with yellow and the glossy areas on sides of second tergite brownish.

FEMALE: Similar to male, but with a median, brown, thoracic vitta and another narrower one along planes of dorsocentral bristles. Fore tibiae with a stronger, median, posterior bristle. Mid femora with a strong, median, anterior and one to three shorter bristles on basal 0.5. Mid tibiae with the median anterior to anterodorsal bristle strong, other apical bristles longer and stronger, but the apical ventral one is the most well developed. Hind femora with a few short posteroventral

bristles on the basal 0.5. Halteres extensively tinged with brown and calyptrae yellowish tinged.

**MATERIAL EXAMINED:** Two males and two females, 7000 feet, Xucumanatlan, Guerrero, Mexico, July (H. H. Smith); one female, Patzcuaro, Mexico, "F.D.G."; all are cotypes in British Museum (Natural History); two females, 8000 feet, Amecameca, Morelos, Mexico, August 15, 1943 (F. M. Snyder).

*Neodexiopsis australis* (Malloch)

*Coenosia australis* MALLOCH, 1934, *Diptera of Patagonia and South Chile*, pt. 7, fasc. 2, p. 215.

*Neodexiopsis australis*, SNYDER, 1957, *Bull. Amer. Mus. Nat. Hist.*, vol. 113, p. 457.

The thumb of the anal lobe of the wing in this species is similar to that of *peninsula* and *neoaustralis*.

**SPECIMENS EXAMINED:** Those listed in Snyder (1957b).

*Neodexiopsis neoaustralis* Snyder

Figure 16

*Neodexiopsis neoaustralis* SNYDER, 1957, *Bull. Amer. Mus. Nat. Hist.*, vol. 113, p. 458.

The femora in the males lack clothing setulae on the anterior and posterior to posterodorsal surfaces, which produces a characteristically shiny appearance on these areas.

**SPECIMENS EXAMINED:** The type series.

*Neodexiopsis magnicornis*, new species

FIGURE 8

**MALE:** Length, 2.2 to 2.4 mm. Head black; face, cheeks, back of head, and the anterior part of parafrontals grayish pruinulent; the posterior portion of parafrontals brownish pruinulent and concolorous with the frontal triangle which reaches to base of antennae; frontal vitta velvety black. Front at vertex 0.28 of head width; the face slightly narrower opposite base of third antennal segment. In profile, juncture of parafacials and parafrontals protruding anteriorly a distance equal to height of cheeks; parafacials narrowed to about 0.125 of this distance below. Anterior ocellar bristles stronger than anterior parafrontal bristles, and about 0.8 as long and strong as the median parafrontals, the latter slightly shorter than the inner verticals. Outer verticals and postocellars subequal, 0.4 to 0.6 as long as anterior ocellar bristles.

Palpi fuscous. Antennae black, grayish pruinulent, especially at apex of second antennal segment, inserted opposite the dorsal 0.35 of eyes and extending to within a distance equal to the arisal diameter above oral margin. Third antennal segment long, and broader than usual, 3.5 to 4.0 times as long as second, and at its widest part, as broad as length of second segment. Longest arisal hairs equal to maximum diameter of arista.

Thorax black, pleura grayish, the dorsum brownish pruinulent, but the latter with four faint, brownish gray vittae which are most prominent on the anterior mesonotal declivities. Acrostical setulae biseriate; both intraalar distinct, though short. One or two of the clothing setulae on each humerus, and one on anterior declivity of mesonotum in line with the dorsocentral bristles, stout and somewhat spike-like.

Coxae, fore femora except apex, and the apical one-half of mid and hind femora fuscous; the tibiae, trochanters, and remainder of femora yellow to fulvous, the tarsi brownish fulvous. Fore femora with a row of short, stout, closely placed setulae of almost uniform length along the entire anteroventral surface. Fore tibiae with the apical bristles subequal, moderately well developed. Mid femora with a median anterior bristle and three or four ventrals on the basal 0.5 to 0.66. Mid tibiae with the submedian anterior and posterior bristles short. Hind femora with two long anteroventral bristles on apical 0.5 and without well-defined ones basad, but with one or two median posteroventrals. Hind tibiae with a long anterodorsal bristle slightly before the middle, and a very short median anteroventral; the mid bristle almost 0.5 as long as the length of the hind tibiae and situated its own length from the apex; the preapical anterodorsal small, and inserted on the apical 0.15 to 0.2 of the hind tibiae.

Wings hyaline, slightly tinged. Costal thorns and setulae not prominent; anterior cross vein situated opposite middle of discal cell. Thumb-like extension of anal area as in figure 8. Calyptrae white. Halteres pale yellow.

Abdomen short, ovate, black, yellowish gray pruinulent; with an interrupted median brown dorsocentral vitta on first three visible tergites and with large paired brown spots on second to fourth visible tergites. Only the latter tergite with a strong row of discal bristles and these slightly longer than the apical row. The shiny area on second visible tergite occupying most of the ventrolateral portion. First without a ventrolateral shiny area, and the apical row of clothing setulae not tufted. Hypopygium dark, concolorous with remainder of abdomen.

**FEMALE:** Length, 2.9 to 3.2 mm. Similar to the male, the grayish pruinescence on head more extensive; the frontal triangle more diffuse; third antennal segment not so broad and somewhat shorter, reaching only to a level equal to about one-half of the width of third antennal segment above oral margin. Aristal hairs subequal to greatest aristal diameter.

Thorax grayish pruinulent and with a broad, brown, median vitta, another narrower one along planes of dorsocentral bristles, and frequently with a fainter one along planes of posthumeral and intraalar bristles.

All leg bristles longer and stronger than in male; hind femora with a few short, weak, anteroventral clothing setulae, with two anteroventral bristles on apical 0.33 to 0.5 and three or four posteroventrals on median 0.5 to 0.66; without distinctly differentiated interspersed setulae. Hind tibiae with a median anteroventral bristle.

**TYPE MATERIAL:** Holotype, male, Boquete, Panama (no other data); allotype, female; paratypes, two males and 10 females, same data as type.

### *Neodexiopsis equator*, new species

#### Figure 1

**MALE:** Length, 3.4 mm. Head black, grayish pruinulent, frontal vitta reddish brown anteriorly. Ocellar triangle very narrow apically and ending slightly before base of antennae. With the usual long and short parafrontal bristles. Parafacials in profile distinctly narrower below than at their juncture with parafrontals. Antennae black, third segment about twice as long as second. Longest aristal hairs 1.25 times as long as greatest aristal diameter; those on both surfaces together, including aristal diameter, where situated 0.25 to 0.33 as long as maximum width of third antennal segment. Palpi fuscous.

Thorax black, slightly bluish gray pruinulent; a well-defined median brown vitta which reaches slightly lateral to the acrostical row of setulae, a much narrower vitta along planes of dorsocentrals, and another broader one which extends from humeri to postalar callosities. Thorax without spine-like setulae on anterior declivities. Apical and prebasal scutellars strong, subequal. Presuturally the acrostical setulae irregularly biseriate; postsuturally with more numerous ones in four irregular rows.

Legs with coxae and femora, except extreme apex of latter, fuscous; trochanters shiny brown; apices of femora and all tibiae yellow; tarsi darker yellow than tibiae. Fore femora without distinct anteroventral,

spine-like setulae. The apical dorsal, posterodorsal, and posteroventral bristles on fore tibiae subequal and distinctly longer than tibial diameter. Mid femora with a median anterodorsal area glossy and devoid of clothing setulae, and without median or basal anterior bristles or setulae, but with an almost complete row of ventral to posteroventral bristles. Hind femora with three short anteroventrals on basal one-half and three longer ones on apical one-half, and with two to four posteroventrals on basal one-half. Hind tibiae with a very short anteroventral slightly beyond middle; the mid dorsal bristle about midway between the median and preapical anterodorsal bristles.

Wings hyaline; anal area as in figure 1. Calyptrae whitish hyaline; halteres pale yellow.

Abdomen concolorous with thorax; with a complete, well-defined, median brown stripe on first to fourth visible tergites and with large trapezoidal brown spots lateral to it on second to fourth. The glossy spots on sides of second tergite seal brown and somewhat linear dorso-centrally along posterior margin; the shiny area invades the basal ventral portion of third segment linearly. The first tergite without indications of dark or shiny areas and with the apical row of setulae normal. Hypopygium brownish.

TYPE MATERIAL: Holotype, male, Ecuador, 1914 (H. A. Parish), with label reading "J. M. Aldrich collection," in United States National Museum.

The specimen is somewhat teneral and for this reason various head proportions have not been given. The fifth abdominal sternite is rotated at a 90-degree angle, so the processes are directed mesially, a condition that I have not previously observed in even more teneral specimens of other species.

### ***Neodexiopsis preacuta*, new species**

#### Figure 11

MALE: Length, 2.9 mm. Head black, gray pruinulent; the ocellar triangle narrow and extends to base of antennae. Front at vertex about 0.33 of head width, parallel sided; the face very slightly constricted opposite middle of third antennal segment. Juncture of parafacials and parafrontals projecting anteriorly a distance equal to 0.7 of the maximum width of third antennal segment; the parafacials narrowed to 0.3 to 0.5 of this width below. Cheeks 0.5 as high as width of third antennal segment. Antennae black except the yellowish fulvous apices of second antennal segment; antennae inserted opposite dorsal 0.3 of



eye and not extended to opposite their lower level, but are approximately 0.4 of the width of third antennal segment above oral margin. Third segment 2.6 times as long as second. Longest arisal hairs 1.3 times as long as greatest arisal diameter; the arisal hairs on both surfaces together, including arisal diameter, about 0.4 as long as maximum width of third antennal segment. Palpi fuscous, somewhat brown at base.

Thorax black, grayish pruinulent, with a narrow median brown vitta and a trace of two narrower ones on each side. Without spine-like setulae on the anterior declivities.

Legs yellow (tarsi missing in type); apical 0.1 of femora brownish. Fore femora without modified anteroventral clothing setulae. Hind femora with the clothing setulae on anteroventral and posteroventral surfaces somewhat longer than in other species, but not spine-like.

Wings hyaline, with a faint brownish tinge; thumb as in figure 11. Calyptrae white; halteres yellow.

Abdomen grayish pruinulent, with large, round, paired spots on second to fourth visible tergites. The shiny brownish spot on ventral declivities of second segment as in *peninsula*, but first visible tergite without a subshiny area opposite, and none of the apical row of setulae on first tergite brush-like.

FEMALE: Length, 2.9 mm. Similar to the male. Parafrontals with the usual long and short bristles. Fore femora with a purplish brown posterodorsal cloud on the basal one-half. Tarsi dark brown to fuscous. Some of the basal anteroventral clothing setulae on fore femora slightly more spine-like than those on apical one-half, but not unusually conspicuous. Hind femora with four strong anteroventral bristles on apical one-half and with two to three widely separated posteroventrals on the median three-fifths.

TYPE MATERIAL: Holotype, male, San Jose, Costa Rica, July (H. Schmidt); allotype, female, same data as type. Both are in the United States National Museum.

The male is badly rubbed and so mounted that the one mid leg that is present is obscured. Only one hind leg is present, and the apical anterodorsal and anteroventral bristles are broken off or absent, but it is possible to see the scars of the bristles, which place this species in *Neodexiopsis*. The usual preapical anteroventral bristle on the hind femora usually situated opposite the terminal anterodorsal is missing in the specimen, and in this character it is similar to the Nearctic species *major* Malloch. However, it would be desirable to have

more material before this is used as a diagnostic character for distinguishing *preacuta*, especially as only one hind leg is present in the male, and the female that I associate with it has this anteroventral hind femoral bristle present. Mid legs are missing in the allotype.

***Neodexiopsis peruviana*, new species**

Figure 10

**MALE:** Length, 2.75 mm. Head black; parafrontals, cheeks, and entire face yellowish gray pruinose; back of head gray pruinose. Frontal vitta black, overlain with sparse yellowish gray pruinoscence; ocellar triangle densely yellowish gray and extending to base of antennae. Front at vertex 0.355 of head width. Anterior parafrontals and posterior ocellars and the outer verticals subequal, about 0.8 as long as the strong median parafrontals and 0.66 as strong as inner verticals. Junction of parafacials and parafrontals about 0.25 as long as greatest width of third antennal segment; parafacials narrowed below to greatest arisal diameter. Cheeks 0.5 as high as width of third antennal segment. Antennae fuscous, the second segment with an indistinct fulvous apical area densely overlain with gray pruinoscence. Antennae inserted opposite dorsal 0.375 of eyes and end slightly above their lower margin, or about three times the arisal diameter above oral margin. Third antennal segment 2.3 times as long as second. Longest arisal hairs as long as maximum arisal diameter. Palpi fuscous.

Thorax black, yellowish gray pruinose, with three short, narrow, brownish vittae, the median one most distinct. Bristled as in *magnicornis*.

Legs entirely yellow, except tarsi which become slightly brownish apically. Fore femora with a row of very short, spine-like, anteroventral setulae as in *magnicornis*. Fore tibiae with the apical dorsal bristle longer and stronger than either the posterodorsal or posteroventral ones. Mid femora with a short median anterior, and three ventral, bristles on basal 0.4, some of the anteroventral setulae on the apical 0.4 slightly stronger than usual. Hind femora with two or three short anteroventral bristles on basal 0.33 and two stronger ones on apical 0.33, the intervening clothing setulae not unusually developed, and with two or three short, slender, median, posteroventral setulae. Hind tibiae with an anteroventral bristle on the apical 0.33, which is situated about midway between insertion of the strong subapical dorsal and the median anterodorsal bristle.

Wings hyaline; anal area as in figure 10. Calyptrae hyaline; halteres pale fulvous yellow.

Abdomen black, yellow to slightly brownish gray pruinose, and with round, brown spots on second to fourth visible tergites and a trace of much smaller spots on first; an indistinct median brown line on second and third. Ventral portion of second tergite with an extensive, semilunar, shiny, fuscous spot, and without a shiny area on first tergite opposite the spot on second segment; apical row of setulae on first tergite not tufted. Hypopygium concolorous with remainder of tergite.

FEMALE: Length, 3.5 mm. Similar to the male except for the usual secondary sexual characters. Antennae shorter and reaching only to opposite lower one-sixth of eyes. Mid femora without even slightly modified anteroventral setulae on apical 0.4. The anterodorsal and posterior bristles on mid tibiae long and strong.

TYPE MATERIAL: Holotype, male, Peru, "S. A.," 1914 (H. A. Parish), with label "collection J. M. Aldrich"; allotype, female, same data as type. Both specimens in the United States National Museum.

#### *Neodexiopsis cera*, new species

##### Figure 9

MALE: Length, 3.0 mm. Head black; with yellowish pruinescence except on occiput which is grayish. Frontal triangle complete to base of antennae, but almost linear apically. Front at vertex 0.35 of head width, broadened to 0.4 opposite the strong, median, parafrontal bristle, and narrowed to width of vertex opposite apex of second antennal segment. In profile, juncture of parafacials and parafrontals extend anteriorly a distance equal to 0.25 to 0.33 of the width of third antennal segment; the parafacials and parafrontals become gradually narrowed ventrally and posteriorly, respectively, to a distance equal to basal diameter of arista. Cheeks 1.2 times as high as width of third antennal segment. Antennae fuscous, fulvous on basal 0.2 to 0.33 of third segment, and usually the fulvous area is more extensive on inner surface. Third segment two times as long as second. Longest arisal hairs 0.33 to 0.4 of width of third antennal segment. Palpi yellow.

Thorax black, densely yellowish gray pruinose, not vittate, or with very faint traces of three narrow vittae. None of the setulae on anterior declivities or humeri spine-like.

Legs entirely yellow. Fore femora with only the anteroventral setulae on basal one-fourth differentiated. Mid femora with a short, median, anterior setula and sometimes with a much shorter one on basal one-third, and with two to four slender ventral to posteroventral bristles. Mid tibiae with submedian anterior to anterodorsal bristle

longer than the median posterior one. Hind femora with three anteroventral bristles on apical 0.66 and with three posteroventrals on basal 0.66, the intervening setulae on both ventral surfaces very short, scarcely differentiated from the clothing setulae on the anterior surface. Hind tibiae with a short, median, anteroventral bristle.

Wings hyaline, veins fulvous yellow, thumb-like extension of anal area as in figure 9.

Abdomen with a variable basodorsal and apicoventral portion yellow in ground color, the remainder fuscous; pruinescence yellow at base and becoming grayer apically. The paired brown spots on second to fourth visible tergites very small; those on third tergite largest; at most with only a trace of a median vitta on second tergite. Shiny area on sides of second tergite fulvous, somewhat linear. The apical clothing setulae on first tergite not brush-like and without a differentiated subshiny area on sides of this tergite opposite the shiny spot on second.

FEMALE: Length, 3.5 mm. Head as in male. Thorax with a distinct median brown vitta, with or without less well-defined ones in the dorsocentral planes. Legs as in male, except apices of hind femora have a limited dark apical dorsal spot and the setulae on the ventral surfaces of hind femora short and spinulose, being clearly differentiated from the shorter clothing setulae.

First abdominal tergite yellowish, others dark except the fulvous apex of fourth; all tergites grayish pruinulent, but the second and third with a median brown vitta and a pair of round, brown spots on second to fourth.

TYPE MATERIAL: Holotype, male, Cera, Brazil (D. da Rocha), in the United States National Museum. Allotype, female, Rio de Janeiro, Brazil, July, with label stating "S. W. Williston collection," in the American Museum of Natural History. Paratypes, two males and one female, same data as type, except the collector label on one male is "F. D. da Rocha."

### *Neodexiopsis pricipagus*, new species

MALE: Length, 2.9 mm. Very similar to that of *cera* in structure. Front at vertex 0.36 of head width, parallel sided. Cheeks as high as width of third antennal segment. Pruinescence on head gray except for a blackish region on frontal vitta and the yellowish gray frontal triangle. Antennae and palpi as in *cera*.

Thorax black, grayish pruinulent; with a well-defined median brown stripe and a narrower one in places of dorsocentral bristles presuturally which become gradually obscured postsuturally; and with a

complete, broad, irregular stripe in planes of posthumeral bristles pre-suturally and in supraalar to intraalar planes postsuturally.

Legs with a dark linear posterodorsal stripe on fore femora and an apical spot on mid and hind femora, and irregular dark areas on coxae; remainder of legs fulvous yellow. Bristled as in *cera*, except that the ventral setulae on hind femora are more spinulose.

Wings as in *cera*, except the thumb-like extension is somewhat longer and the incision deeper but not so extreme as in *peninsula* or *australis*. Abdomen black, grayish pruinulent. With a linear brown stripe and a pair of brown spots on second to fourth tergites. Shiny areas on side of second tergite small, black.

TYPE MATERIAL: Holotype, male, with label reading "2-26-34, P. Viejho." I have been informed that it is quite possible that P. Viejho refers to a suburb of San Juan (Puerto Rico), west of Rio Piedras, called Pueblo Viejo. The collector's name is not known. I had assumed that "P. Viejho" was the collector's name and therefore did not include this species when treating the *Neodexiopsis* of Puerto Rico (Snyder, 1957a).

### *Neodexiopsis ovata* (Stein)

#### Figures 2 and 5

*Coenosia ovata* STEIN, 1897, Berliner Ent. Zeitschr., vol. 42, p. 263. MALLOCH, 1934, Diptera of Patagonia and South Chile, pt. 7, fasc. 2, pp. 211, 215-216.

*Coenosia (Neodexiopsis) ovata*, HUCKETT, 1934, Trans. Amer. Ent. Soc., vol. 60, p. 79.

MALE: Head black, grayish pruinulent, the ocellar triangle narrowly complete to base of antennae. Front at vertex 0.3 to 0.36 of head width, slightly wider at middle, then narrowed to vertical width at base of antennae; the face about as wide as frontal width at vertex and becoming gradually wider ventrally. In profile, juncture of parafacials and parafrontals distinctly projecting anteriorly a distance about equal to maximum width of third antennal segment, parafacials narrowed below to a distance subequal to greatest arisal diameter. Cheeks about as high as width of third antennal segment. With a few short parafrontal setulae between the inwardly directed three pairs of anterior parafrontal bristles; postocellars and outer verticals subequal, about 0.5 as long and strong as the well-developed inner verticals. Antennae fuscous, apex of second lighter colored and overlain with dense grayish pruinulence. Antennae inserted opposite the dorsal 0.3 of eyes and reaching to about opposite their lower margin, or about the width of third antennal segment above oral margin. Third segment 2.33 to 2.66

times as long as second. Arista almost bare, the longest hairs less than 0.3 as long as its maximum diameter.

Thorax black, grayish pruinulent; with three to five narrow brown vittae; the median one does not reach onto the base of scutellum. Acrostical setulae sparse, irregularly biseriate.

Legs with fore coxae yellow to fuscous, the mid and hind coxae dark, densely gray pruinulent, but occasionally with a limited apical fulvous area; remainder of legs yellow. Fore femora often with a posterodorsal fuscous area which may occupy most of the length, is sometimes reduced to a small median area, or is entirely absent; sometimes apices of mid and hind femora with a very limited darkened area. Tarsi usually darker apically. Fore femora without spine-like, anteroventral setulae on apical one-half. Fore tibiae with the apical dorsal, posterodorsal, and posteroventrals subequal, longer than diameter of tibiae where situated. Mid femora with a short but distinct median anterior setula and often with two or three shorter setulae on anterior surface at base; with several short anteroventral setulae on basal one-half; and with three to six bristles on posteroventral surface which become shorter apically. Hind femora with one to three anteroventral bristles on basal and apical portions, the intervening clothing setulae very short and not conspicuously differentiated; and with two or three slender posteroventral bristles on basal one-half; the clothing setulae on apical one-half shorter than those on basal one-half. Hind tibiae with a long median anterodorsal bristle and a much shorter anteroventral one beyond, the strong apical middorsal bristle situated about midway between the insertions of the submedian and apical anteroventral bristles.

Wings hyaline, thumb-like extension very short, as in figure 2. Calyptrae white to yellowish white; halteres yellow.

Abdomen black; gray, blue-gray, to greenish gray pruinulent. The ventral angles of first tergite often pale in ground color to a variable extent. With paired round, brown spots on second to fourth visible tergites, and usually with a linear median brown spot on first to fourth; the spot on first and fourth less distinct than the one on second and third. The glossy black mark on declivities of second tergite linear and confined to posterior margin and without a dark mark on first tergite opposite the glossy one on second. The apical row of setulae on first tergite short and nowhere brush-like. Hypopygium fuscous.

FEMALE: Similar to the male except in the usual secondary sexual characters. The mid and hind coxae tend to vary more in the extent

of the limited apical yellow area, while the darkened areas on fore and hind femora are usually more extensive than in male.

**MATERIAL EXAMINED:** Eighty-eight specimens of both sexes from California, Arizona, New Mexico, Colorado, Texas, Louisiana, Georgia, Florida, Maryland, Wisconsin, Missouri, Kansas, and British Columbia. These include cotypes of *ovata* and specimens determined as this species by Stein in the United States National Museum.

Stein (1911, p. 176) has recorded this species from South America, but it seems probable, as Malloch (1934, p. 215) suggests, that other species were involved.

***Neodexiopsis peninsula*, new species**

**Figure 3**

**MALE:** Length, 3.3 to 3.9 mm. Head black, gray to yellowish gray pruinulent, except the brownish frontal vitta. The narrow ocellar triangle almost reaches base of antennae, concolorous with parafacials and parafrontals. Maximum head length 0.7 of head height. Front at vertex 0.3 of head width, widened to 0.367 at a level slightly beyond middle of front, then narrowed to the vertical width at a point opposite base of arista. With a strong anterior and median pair of parafrontal bristles, and a weaker one between them; and with one or two short accessory hairs between all. The reclinate parafrontals about as long as anterior ocellar bristles and both approximately 0.7 as long as the anterior parafrontal bristles. Inner verticals strong, slightly longer than the strongest parafrontals. Postocellars and outer verticals very short. In profile, juncture of parafacials and parafrontals projecting anteriorly a distance almost equal to width of third antennal segment; the parafacials narrowed to 0.2 this distance below. Cheeks as high as width of third antennal segment. Lower margin of head well maintained posteriorly. Antennae black, second segment at apex and articulation of third sometimes fulvous. Antennae inserted opposite dorsal 0.39 of eyes and not quite reaching the lower level. Third segment 2.25 times as long as second. Longest arisal hairs as long as or slightly shorter than maximum diameter of arista. Palpi brownish fuscous to fulvous yellow.

Thorax black, brownish gray pruinulent, with three narrow brownish vittae of variable intensity, the median one broadest and sometimes invading base of scutellum. Acrostical setulae biserial. Without an accessory anterior dorsocentral setula adjacent to the strong bristles.

Legs mostly yellow; the tarsi become more brownish yellow apically,

and the predominantly yellow coxae occasionally with very narrow, dark, dorsocentral streaks. Mid femora with a short, median, anterior bristle and two or three much weaker setulae at base, and with two to four strong ventrals on basal one-half, and a few shorter ones interspersed between them. Hind femora usually with four widely spaced anteroventral bristles, the apical one opposite the apical anterodorsal and posterodorsal bristles, and without conspicuous interspersed anteroventral setulae; with two to four posteroventral bristles on basal one-half to one-third. Hind tibiae with a long, strong, median anterodorsal, and a much shorter anteroventral, bristle situated on apical two-fifths.

Wings hyaline, thumb and incision very distinct, as in figure 3. Calyptrae white; halteres yellow.

Abdomen concolorous with thorax. Second to third visible tergites with a median, linear, brown spot which extends from base to middle of each tergite, and the fourth sometimes with a faint, median, basal spot; second to fourth tergites with a small, round, brown spot on each side of the median mark. The shiny area on ventral portion of the second visible tergite extensive and invading the anterior part of the ventral portion of third; and with a very narrow, dark spot on first tergite opposite the shiny one on second which is sometimes subshiny. Some of the setulae on the first tergite form a brush-like clump on this darkened area, but the remainder of the setulae in the apical row are normal. Superior forceps and fourth tergite fulvous yellow apically.

FEMALE: Length, 3.8 to 4.8 mm. Similar to the male, except for the usual primary and secondary sexual characters. The femoral and tibial bristles stronger than in male.

TYPE MATERIAL: Holotype, male, Merritt Island, Florida, February 26, 1946. Allotype, female, topotypical, February 14, 1946. Paratypes: Thirty-nine males and 83 females, topotypical, February 12 to March 12, 1946; three males and nine females, Orlando, Florida, February 9 to March 20, 1946; three females, Cocoa, Florida, March 7, 1946; one female, Oak Hill, Florida, February 21, 1946; three females, Christmas, Florida, March 7, 1946; one female, Fort Meyers, Florida, January 12, 1946; one female, Copeland, Florida, January 11, 1946; one female, Titusville, Florida, March 5, 1946; one female, Fort Pierce, Florida, January 8, 1946; one female, Mims, Florida, February 21, 1946; (all Fred M. Snyder). One male, Miami, Florida, November 16 (Mrs. C. H. T. Townsend), in the United States National Museum collection.

This species was usually taken when sweeping over relatively moist, meadow-like areas adjacent to highways that run through tall stands of



palm and palmetto. Specimens of *ovata* were also taken in the same environment and frequently in the same series of net sweeps, especially at Merritt Island and Orlando.

*Neodexiopsis arizona*, new species

Figure 12

**MALE:** Length, 2.9 mm. Similar to that of *ovata*, but differs in having the median anterior portion of frontal vitta fulvous, palpi entirely yellow, and the area adjacent to the juncture of second and third antennal segments more extensively fulvous.

Thorax non-vittate, or with only a trace of a median brown shadow.

Legs entirely yellow except for brownish yellow coxae. The median anteroventral bristle of hind tibiae very short and slender.

Wings hyaline, the thumb more elongate and the incision deeper, as in figure 12. Calyptrae white; halteres yellow.

Abdomen black on dorsum, grayish pruinulent; the yellow ground color at base of ventral surface extends posteriorly to the ventral portion of second visible tergite. The median linear brown spots very obscure. The glossy marks on sides of second tergite as in *ovata* and also with a similar shiny, linear spot on posterior portion of third tergite.

**FEMALE:** Length, 2.9 mm. Very similar to the male and to females of *ovata*. Legs entirely yellow except the fore femora have a faint but distinct linear posterodorsal shadow of dense bluish gray pruinoscence; and the coxae, which are dark, become more extensively yellow on anterior surfaces from the hind to fore pairs, respectively.

Thorax with three narrow, brown vittae.

Legs bristled as in the male, but the median anteroventral bristle on hind tibiae is very short and slender.

Abdomen with yellowish ventral area less extensive, and more variable than in the male, though this character may not be diagnostic.

**TYPE MATERIAL:** Holotype, male, Tuscon, Arizona, June 17, 1917; allotype, female, Tempe, Arizona, June 19–24, 1917, both collected by J. M. Aldrich and in the United States National Museum collection.

There is also a badly damaged male specimen from Chapingo, labeled "Mex.," Mexico, "F. Pacheco M. collector," with no other data, from the collection of the Rockefeller Foundation Agricultural Program in Mexico. I believe this specimen to be conspecific, but because of its damaged condition it is not included in the type series.

The different shape of the thumb of the wing and the linear glossy area on the third abdominal tergite in males are sufficient, I believe, to justify the consideration of these specimens as specifically distinct from

*ovata*, and, while very slight variation exists in the shape of the thumb and extent of the linear glossy spot on the second tergite in *ovata*, I have not seen any specimens of *ovata* which tend to grade into *arizona*.

***Neodexiopsis borea*, new species**

MALE: Length, 3.4 mm. Very similar to that of *peninsula*. Head slightly bluish gray pruinescent and ocellar triangle reaching to base of antennae. Maximum head length 0.8 of head height. Front at vertex 0.369 of head width and 0.383 at its widest part. Juncture of parafacials and parafrontals projecting anteriorly 0.7 of the width of third antennal segment; the parafrontals narrowed to greatest arisal diameter below. Cheeks 0.6 times as high as width of third antennal segment. Without short accessory parafrontal setulae, but otherwise bristled as in *peninsula*. Antennae black, but apex of second segment, and third basad to insertion of arista, intensively fulvous; antennae inserted opposite dorsal 0.38 of eyes, and terminating distinctly above their lower margin; third segment 2.68 times as long as second. Longest arisal hairs as long as maximum arisal diameter.

Thorax as in *peninsula*, but the vittae very much reduced and present only as very narrow shadows.

Legs as in *peninsula*, but mid femora with a glossy anterodorsal area devoid of clothing setulae from base to middle, and the median anterior setula very weak.

Wings as in *peninsula*.

Abdomen dark, grayish pruinescent, with more blue than yellowish tinge, and the paired lateral brown spots on second to fourth visible tergites less conspicuous than in *peninsula*. The median brown spots absent and replaced by a very obscure bluish green vitta which extends from middle of first to almost the apex of third tergite and is best seen when the abdomen is viewed posterolaterally. The glossy spot on sides of second tergite as in *peninsula*, but the first tergite opposite this spot is uniformly grayish pruinescent, and none of the lateral apical row of clothing setulae is in a brush-like tuft. The setulae uniformly arranged and becoming gradually longer from the ventral to the lateral dorsal portion of tergite. The usual visible portions of hypopygium fuscous, but the median portion of fourth tergite apicad to the row of bristles is somewhat fulvous.

TYPE MATERIAL: Holotype, male, Dane County, Wisconsin, July 18, 1936 (F. M. Snyder).

This species is quite similar to *peninsula*, but the absence of a darkened area on the first tergite opposite the glossy spot on second bear-

ing a brush-like tuft of setulae should separate it; in addition the entirely yellow palpi and the fulvous base of the third antennal segment will aid in distinguishing it from *peninsula*.

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