

# A revision of the genus *Duboisius* Abdullah (Coleoptera, Anthicidae, Pedilinae)<sup>1</sup>

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## Contents

I. Introduction .....	57
II. Key to the New World genera of Eurygeniini .....	58
III. Genus <i>Duboisius</i> Abdullah, 1961 .....	60
IV. Summary .....	82
V. Acknowledgments .....	82
VI. Literature Cited .....	82

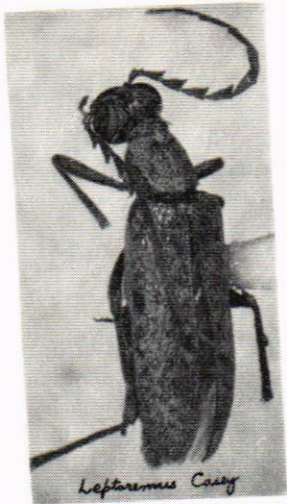
## I. Introduction

After having revised the North American species of *Pedilus* and the world species of *Stereopalpus* (Abdullah, 1964), and after examining thousands of specimens of a species of pediline beetles I am now able to appreciate the individual variation of characters better than I did many years ago when I did the original work on *Duboisius*, and when I proposed more specific names than there were species as I understand them now. Consequently, in the present work a number of synonymies, seven to be exact, are proposed and I hope that this will relieve the burden on our memory. Three species are transferred from *Eurygenius*, one of them (*arizonensis* Champion, 1916) has created a secondary homonymy, and a new name has been proposed for replacement. Three new species are described. Out of a total of eighteen nominal species treated in this paper only eleven are considered good species.

The genus *Duboisius* has been divided into four natural groups (A—D), although most of the species belong to one (C) group. Within a group the beetles are superficially extremely similar and an examination of the aedeagus (tegmen + median lobe) and the last abdominal sternites and tergites is necessary to identify the species. This would make it necessary to dissect out the external genitalia and examine the parts in alcohol or glycerine medium. The drawings were made in glycerine medium and in the case of sternites and tergites only the outline is drawn. This will not be clear in a dried

<sup>1</sup> Coleopterological contribution number 17.





*Leptaremus Casey*



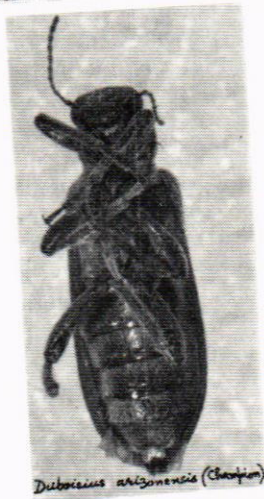
*Pseudobactrocera Abdullah*



*Stereopalpus Forti-Saintize*



*Pergetus Casey*



*Duboisius arizonensis (Champion)*



*Duboisius brevicornis Abdullah*



*Pedilus elegans (Hentz)*



*Duboisius mexicanus (Champion)*



*Pedilus collaris (Say)*

### III. Genus *Duboisius* Abdullah, 1961

(Figures 1—128)

*Duboisius* Abdullah, 1961, pp. 97—98.

Pubescence dimorphic on elytra consisting of small clusters of short, decumbent, white hairs responsible for elytral maculations, and of generally distributed, decumbent to suberect or even erect brown hairs; white and brown hairs also on head and pronotum; on undersurface and legs pubescence white to yellowish-white; metasternum usually with a patch of brown spinous hairs on either sides of longitudinal sulcus in males.

Punctures on head, pronotum and elytra coarse.

Head widest across eyes; tempora usually prominent; vertex without a median sulcus; eyes entire or only weakly sinuate near antennal insertions, large, coarsely-faceted. Labrum entire at apex. Mandibles entire at apices with only a few ridges on molar lobes. Apical (=fourth) segment of maxillary palp usually subcultriform to securiform, triangular-elongated, obconical, rarely cultriform, slightly excavated laterally. Apical (=third) segment of labial palp weakly securiform or nearly filiform. Antennae filiform.

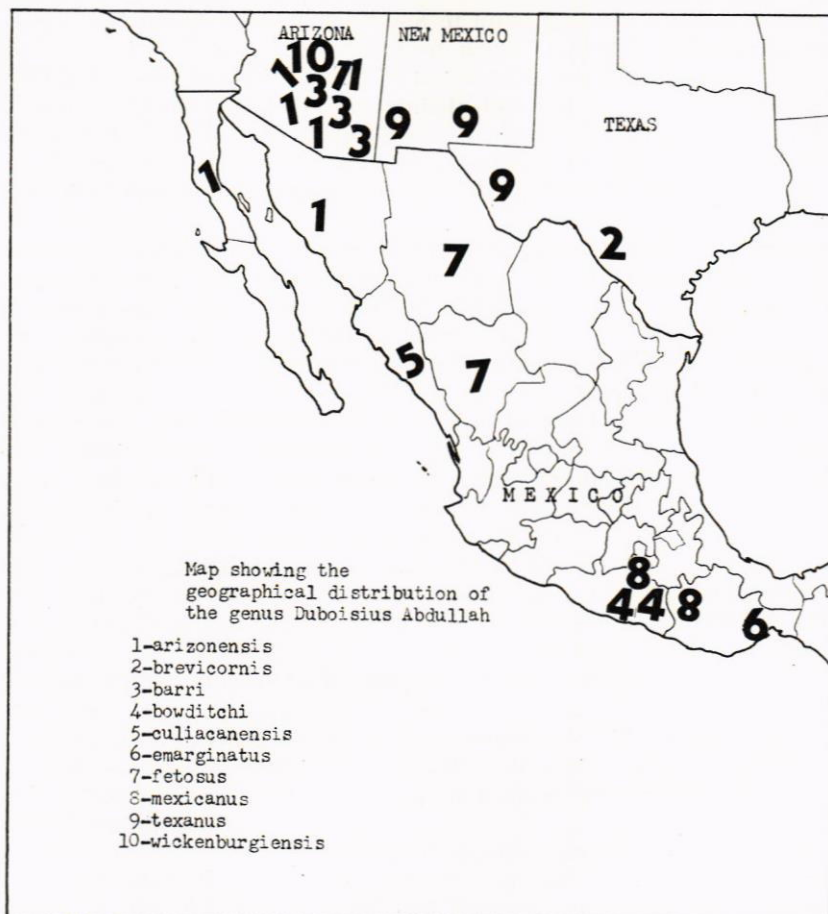
Pronotum nearly as long as wide; not campanulate, somewhat rounded, widest subapically near middle; produced into an apical flange, margined at base; surface sculpture partly visible, partly concealed by pubescence. Front coxal cavities visibly (=externally) open but internally closed behind. Mes-episterna meeting in front of mesosternum. Metasternum usually spinous in males. Wing with anal cell open or closed. Tibiae spinous.

In males, seventh (=fifth visible) abdominal sternite usually deeply emarginate, with large apical lateral arms or processes beset with short thick and long thin spines; seventh tergite entire or with a weak median process apically; eighth sternite with a pair of short median processes and a pair of long lateral processes apically; eighth tergite entire or emarginate at apex; parameres usually irregularly, dorsolaterally polyspined, without ridges on ventral surface; basal-piece of tegmen with a median ventral ridge and dorsally curved central hook-like process basally; median lobe with smooth cuticular blades and very short median struts. In females, seventh sternite usually entire at apex and with a dorsal central ridge or process; seventh tergite usually deeply emarginate at apex, with a central and a pair of lateral processes; ovipositor with styli borne on apices of (apparently incompletely) two-segmented coxites, sparsely, finely hairy at apex, valvifers reduced to baculi.

Type of the Genus: *Duboisius barri* Abdullah (new name for *D. arizonensis* Abdullah, 1961 — a junior secondary homonym of *D. arizonensis* (Champion, 1916) Abdullah, new combination).

#### Key to the species

1. Seventh abdominal sternite of male with long (see figure 85) and densely spinous lateral processes; seventh tergite of female usually with densely spinous apical processes ..... 3.
2. Seventh abdominal sternite of male with short (see figures 3 and 124) and sparsely spinous processes; seventh tergite of female with sparsely spinous or non-spinous processes ..... 2.

Karta utvisande utbredningen över *Duboisius* Abdullah.

2. Arizona; apical segment of maxillary palp subcultriform; in the male, metasternum usually not spinous, eighth tergite entire (figure 6), parameres with slender spines (figures 7, 10), cuticular blades of median lobe narrow (figures 8, 11); in the female seventh sternite without dorsal processes (figures 12, 15)

*arizonensis* (Champion).

Texas; apical segment of maxillary palp cultriform; in the male, metasternum spinous, eighth tergite entire (figure 24), parameres with thick and slender spines (figure 25), cuticular blades of median lobe wide (figures 26—27); in the female seventh sternite with dorsal processes (figures 28—29)

*brevicornis* Abdullah.

Mexico; apical segment of maxillary palp securiform; in the male, metasternum spinous, eighth tergite distinctly emarginate (figure 126), parameres with slender spines (figure 127), cuticular blades of median lobe narrow (figure 128); female not known ..... *lanuginosus* (Champion).

3. U.S.A. (possibly extending south to Sonora and Chihuahua) ..... 4.  
 Mexico (possibly extending north to Texas) ..... 5.
4. In males, parameres blunt at apex and without a wide central desclerotized area (figure 37), seventh sternite with slightly converging and thickly spinous lateral processes (figures 33, 39), eighth sternite with prominent central and lateral processes (figure 35); in females, seventh sternite pointed at apex (figure 42), seventh tergite with lateral processes much longer than central process (figure 43) ..... *barri* Abdullah.  
 In males, parameres tapering at apex and with a wide central desclerotized area (figure 98), seventh sternite with more converging and thickly spinous lateral processes (figures 95, 103), eighth sternite usually without prominent central processes (figures 96, 105); in females, seventh sternite emarginate at apex (figure 100), seventh tergite with a weakly emarginate central process not much shorter than lateral processes (figure 101) ..... *texanus* Abdullah.  
 In males, parameres tapering at apex and without or with a narrow central desclerotized area (figures 114—115), seventh sternite with slightly diverging and thinly spinous lateral processes (figure 110), eighth sternite with small central processes (figure 112); in females, seventh sternite pointed or blunt at apex (figures 117, 122), seventh tergite with weakly emarginate or entire, short central process only slightly shorter than comparatively short lateral processes (figures 118, 123) ..... *wickenburgiensis* Abdullah.
5. Metasternum spinous; last visible abdominal sternite with long lateral processes and densely spinous at apex ..... males .. 6.  
 Metasternum not spinous; last visible abdominal sternite without processes or spines at apex ..... females .. 9.
6. Seventh sternite with comparatively short lateral processes (figure 85); parameres with a row of spines on each side, central desclerotized area wide (figure 89); median lobe sharply pointed at apex (figure 90); Guerrero, Morelos, Oaxaca  
*mexicanus* (Champion).  
 Seventh sternite with comparatively long lateral processes (see figure 60); parameres with more than one pair of rows of spines or irregularly polyspinous, central desclerotized area less wide (see figure 55); median lobe less pointed at apex (see figure 56) ..... 7.
7. Parameres dome-shaped and less sclerotized just below apex (figure 70); seventh sternite with a distinct median process at apex (figure 66); seventh tergite without a median process at apex (figure 67); median lobe as in figures 71—72; Oaxaca ..... *emarginatus* Abdullah.  
 Parameres not as above; seventh sternite without a distinct median process at apex (see figure 60); seventh tergite with a median process at apex (see figure 46) ..... 8.
8. Seventh sternite with slightly diverging lateral processes and without a median process at apex (figure 76); parameres much narrowed and prolonged at apex (figure 80); median lobe rounded at apex (figure 81); Chihuahua and Durango  
*fetusus* Abdullah.  
 Seventh sternite with slightly converging lateral processes and a weak median process at apex (figure 60); parameres less narrowed and prolonged at apex (figure 64); median lobe rather blunt at apex (figure 65); Sinaloa  
*culiacanensis* Abdullah.  
 Seventh sternite with more converging lateral processes and without a median process at apex (figures 45, 51); parameres hardly narrowed or much prolonged

- at apex (figures 49, 55); median lobe pointed at apex (figures 50, 56); Guerrero, Morelos ..... *bowditchi* Abdullah.
9. Seventh sternite entire or slightly produced at apex ..... 10.  
Seventh sternite emarginate at apex ..... 11.
10. Seventh sternite entire at apex (figure 73); seventh tergite with central process slightly longer than lateral processes (figure 74); Oaxaca *emarginatus* Abdullah. Seventh sternite slightly produced at apex (figure 57); seventh tergite with central process much shorter than lateral processes (figure 58); Morelos, Guerrero ..... *bowditchi* Abdullah.
11. Seventh tergite with central process slightly emarginate and much shorter than lateral processes (figure 83); Chihuahua, Durango ..... *fetusus* Abdullah. Seventh tergite with central process entire and slightly longer than lateral processes (figure 92); Guerrero, Morelos, Oaxaca .... *mexicanus* (Champion).

## Group A

Tempora not prominent. Apical segment of maxillary palp subcultriform or triangular-elongated. Metasternum usually not spinous in males. Seventh abdominal sternite of male with short lateral processes, never densely spinous. Seventh tergite of female with three apical processes, central process sometimes short and visible only in a ventral view; never densely spinous.

(1) *Duboisius arizonensis* (Champion, 1916) Abdullah, new combination

(Figures 1—19)

*Eurygenius arizonensis* Champion, 1916, pp. 199—200.*Duboisius distinguendus* Abdullah, 1961, p. 104 (new synonymy).*Duboisius howdeni* Abdullah, 1961, p. 103 (new synonymy).*Duboisius terminalis* Abdullah, 1961, p. 104 (new synonymy).

*Lectotype*. Male (author's no. 475) U.S.A., Arizona: Florence, Pinal County, July, C. R. Biederman, in the British Museum (Natural History) London.

Colour. Brownish-black.

Vestiture. Pubescence dimorphic on pronotum, consisting of small clusters of short, decumbent, white hairs responsible for maculations, and of generally distributed, decumbent to suberect, brown hairs. Metasternum not spinous.

Head nearly equal to or slightly wider than pronotum at its widest part. Last (=eleventh) antennal segment slightly longer than tenth segment.

Pronotum without a distinct median sulcus. Wing with anal cell open.

Seventh abdominal sternite with lateral processes pointed, subapically depressed ventrally in middle (figure 3). Seventh tergite with a broad, weak median process apically (figure 4). Eighth sternite with two small median processes and two broader lateral processes at apex, all processes or lobes nearly equal length (figure 5). Eighth tergite as in figure 6. Tegmen dorsal, median lobe ventral in orientation. Parameres tapering at apex; minutely spinous from near apex to middle of length, with a weak median sulcus near base; basal-piece with a distinct median sulcus (perhaps a weak ventral ridge) (figure 7). Median lobe with pointed cuticular blades (figure 8).

Measurements in mm. Total length=7. Antennal segments I—XI: 0.28, 0.15, 0.26, 0.24, 0.24, 0.21, 0.20, 0.20, 0.18, 0.18, and 0.26 respectively. Maxillary palp segments I—IV: 0.09, 0.26, 0.17, and 0.29 respectively. Head: width

across eyes = 1.28; dorsal interocular distance = 0.44. Pronotum: length = 1.36; width at apex = 0.68; maximum width = 1.20; width at base = 1.02. Elytron: length = 4.5; maximum width = 1.05. Front tarsus, segments I—V: 0.35, 0.16, 0.13, 0.07, and 0.42 respectively. Middle tarsus, segments I—V: 0.36, 0.18, 0.15, 0.08, and 0.42 respectively. Hind tarsus, segments I—IV: 0.41, 0.26, 0.10, and 0.42 respectively. Hind tibial spur = 0.10.

*Female* (author's no. 329) U.S.A., Arizona: Wickenburg, Maricopa County, August 20, light trap, H. K. Gloyd, in the Chicago Natural History Museum (holotype of *D. distinguendus* Abdullah). Differs from the male as follows: head slightly wider than pronotum. Median pronotal sulcus distinct. Wing with anal cell closed. Seventh abdominal sternite entire at apex (figure 12). Seventh tergite with a median and two lateral processes at apex, shape as in figure 13. Apex of ovipositor as in figure 14. Length: 8.5 mm.

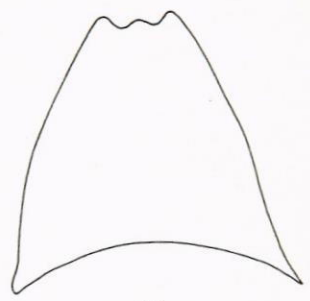
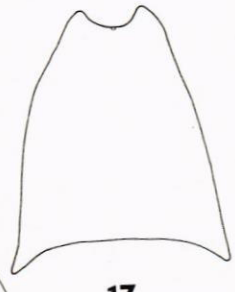
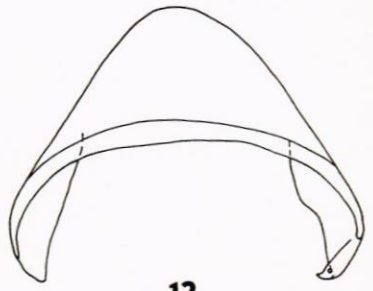
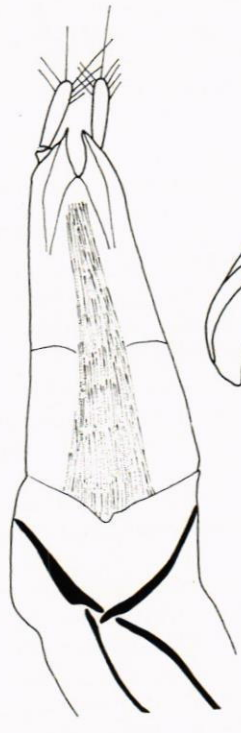
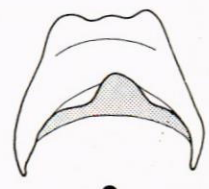
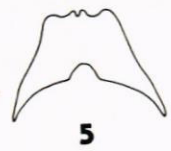
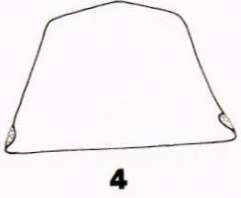
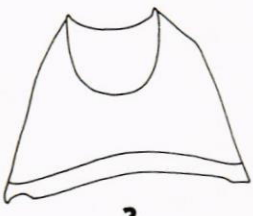
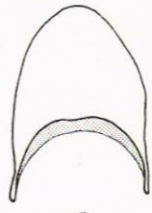
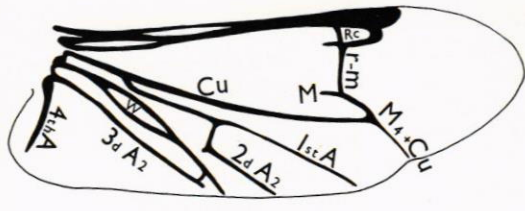
Type localities in Arizona: of *Eurygenius arizonensis*: Florence, Pinal County; of *D. distinguendus*: Wickenburg, Maricopa County; of *D. howdeni*: Cortaro, Pima County; of *D. terminalis*: ten miles east of Globe, Gila County.

*Paralectotypes*. Three males from the same locality as the lectotype are in the British Museum (N. H.). They vary from 6—7.5 mm in length. Area of head between eyes is black in some. A median pronotal sulcus is distinct in one specimen. Tegmen may be ventral and median lobe dorsal or both lateral in orientation. Two of the four male syntypes are no longer in the B. M. (N. H.).

Records. Mexico, Baja California: 10 miles south of [Santa] Catarina, July 29, Michelbacher and Ross, 2 males, in the California Academy of Sciences. Sonora: Hermosillo, July 25, H. E. Evans, 2 males, at Cornell University. U.S.A., Arizona: Arivaca, Pima County, July 12, L. J. Lipovsky, 1 female, at University of Kansas; Florence, Pinal County, July 23, E. P. Van Duzee, 20 males, 3 females, in the California Academy of Sciences; Gila River Valley, San Carlos, Gila County, August 9, D. K. Duncan, 1 female, in the California Academy of Sciences; 10 miles north of Gila Bend, Maricopa County, July 22, 1 male, in the California Academy of Sciences; Globe, Gila County, August 20—24, Parker, 1 male (author's no. 543), 2 females, in the California Academy of Sciences, 4 males in the British Museum (N. H.); 3 miles west of Magma, Pinal County, August 18, E. P. Van Duzee, 3 males, 1 female, in the California Academy of Sciences; Maricopa County, August 23, E. R. Leach, 6 males, in the California Academy of Sciences; Morrison\*, Sharp, 1 male, in the British Museum (N. H.); Oracle, 4, 500 feet, Pinal County, July 25, Wheeler, 3 males, 1 female, at Harvard University; Sabino Canyon\*, July 7, H. O. Wright, 3 males, 1 female at University of Kansas, 1 female (author's no. 547) in the California Academy of Sciences; Santa Cruz Village, 3, 100 feet, Cobabi Mountains, Pima County, July 6—20, 2 males, in the California Academy of Sciences; San Xavier, near Tucson, Pima County, July 24, 1 male, in the British Museum (N. H.); Tucson, Pima County, July 5—August 1, 1 male, in the British Museum (N. H.), 1 male in the California Academy of Sciences, 1 female at Harvard University, 5 males at University of Kansas; Wickenburg, Maricopa County, light trap, August 9—28, H. K. Gloyd, 60 males, 2 females, in the Chicago Natural History Museum.

Figs. 1—19. *Duboisius arizonensis* (Champion). 1, left hind wing of male; 2, portion of first two anal veins in right hind wing of male; 3, seventh sternite of male, ventral view; 4, seventh tergite of male, dorsal view; 5, eighth sternite of male, ventral view; 6, eighth tergite of male, dorsal view; 7, tegmen of male, ventral view; 8, median lobe of male, ventral view; 9, eighth sternite of male, ventral view; 10, tegmen of male, ventral view; 11, median lobe of male, ventral view; 12, seventh sternite of male, ventral view; 13, seventh tergite of male, dorsal view; 14, apex of ovipositor, ventral view; 15, apex of seventh sternite of female, ventral view; 16, seventh sternite of female, ventral view; 17, seventh tergite of female, dorsal view; 18, apex of seventh sternite of female, ventral view; 19, apex of seventh tergite of female, dorsal view.





Figs. 1—19.

Entomol. Ts. Arg. 85. H. 1—2, 1964

Intraspecific variation occurs in the following characters: anal cell of the wing open or closed; cross-vein between  $2dA_3+3dA_1$  and  $3dA_2$  present or absent;  $2dA_2$  with one or two branches (figures 1, 2). Shape of aedeagus varies as in figures 7—8 and 10—11. Eighth abdominal sternite of male has one (figure 9) or two (figure 5) median processes. Seventh sternite of female is usually emarginate (figures 15, 16, 18) but may be rarely entire (figure 12). Seventh tergite of female has three distinct apical lobes (figures 13, 19) or the central process may be ventrally curved and scarcely visible from above (figure 17). Length varies from 5—7 mm among males and from 6—9 mm among females.

Seasonal Distribution. The species has been collected from July 6 to August 28.

#### Group B

Tempora not prominent. Apical segment of maxillary palp cultriform. Metasternum spinous in the male. Seventh abdominal sternite of male with short lateral processes, never densely spinous. Seventh tergite of female with three apical processes, central process short and visible only in a ventral view, never densely spinous.

#### (2) *Duboisius brevicornis* Abdullah, new species

(Figures 20—32)

*Holotype*. Male (author's no. 511), U.S.A., Texas, Dimmit County, May 1, in the British Museum (Natural History) London.

Colour. Brownish-black, appearing whitish due to rather dense white pubescence; eyes light brown.

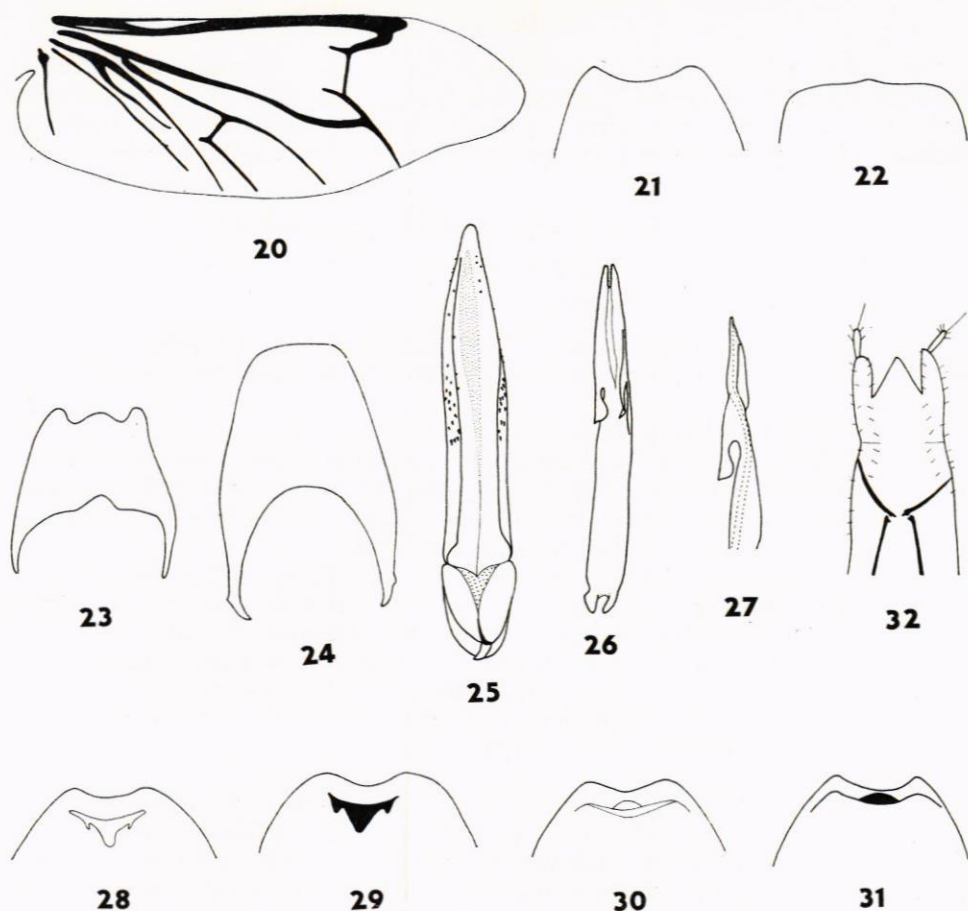
Head nearly equal to or slightly narrower than pronotum at its widest part. Apical segment of maxillary palp laterally excavated. Eyes slightly protuberant. Antennae with last (=eleventh) segment longest, longer than preceding two segments combined.

Pronotum slightly longer than wide, median sulcus distinct but not impressed. Wing with radial and anal cells open (figure 20). Tibiae not much spinous.

Seventh abdominal sternite with lateral processes rounded at apex; sub-apical depression slight or negligible (figure 21). Seventh tergite with a broad, weak median process at apex (figure 22). Eighth sternite with a median and two lateral processes at apex, latter only slightly longer than former (figure 23). Eighth tergite truncate at apex (figure 24). Parameres tapering at apex; spines along lateral margins thick, short, numerous and irregular, those near apex and dorsally placed slender or thin; with a weak median sulcus near base; central portion near apex less sclerotized (figure 25). Median lobe with basally pointed cuticular blades (figures 26—27).

Length: 6.5 mm.

*Allotype*. Female (author's no 512), U.S.A., Texas: Uvalde, May 23, in the British Museum (N. H.). Differs from the holotype as follows: vestiture absent from a median portion between eyes and on pronotum. Eleventh antennal segment slightly longer than tenth segment but smaller than preceding two segments combined. Head distinctly narrower than pronotum. Wing



Figs. 20—32. *Duboisius brevicornis* Abdullah. 20, right hind wing of male; 21, apex of seventh sternite of male, ventral view; 22, apex of seventh tergite of male, dorsal view; 23, eighth sternite of male, ventral view; 24, eighth tergite of male, dorsal view; 25, tegmen of male, ventral view; 26, median lobe of male, ventral (slightly ventro-lateral) view; 27, apex of median lobe, lateral view; 28, apex of seventh sternite of female, ventral view; 29, apex of seventh sternite of female, dorsal view; 30, apex of seventh tergite of female, dorsal view; 31, apex of seventh tergite of female, ventral view; 32, apex of ovipositor, ventral view.

with radial and anal cells closed. Seventh abdominal sternite emarginate at apex, with three dorsal hook-like processes (figures 28—29). Seventh tergite emarginate at apex, with a small, median, ventral process (figures 30—31). Apex of ovipositor as in figure 32. Length: 9 mm.

Remarks. In the male the radial cell of the wing is open as in Meloidae (Kaszab, 1959: 68) but in the female of the same species the cell is closed as in most other pediline beetles (see Abdullah, 1964). This similarity with Meloidae is due to convergence as in primitive pediline beetles (e.g., *Pedilus* Fischer) the radial cell is closed. The anal cell of the wing is open in the male but closed in the female of the same species here.

## Group C

Tempora prominent. Apical segment of maxillary palp securiform or subcultriform (triangular, slightly elongated). Metasternum spinous in the male. Seventh abdominal sternite of male with long lateral processes; densely spinous. Seventh tergite of female with a distinct central and two lateral processes; usually densely spinous.

(3) *Duboisius barri* Abdullah, new name

(Figures 33—44)

*Duboisius arizonensis* Abdullah, 1961, p. 100.

*Holotype*. Male (author's no. 325), U.S.A., Arizona: 28 miles north of Sonoita, Pima County, July 20, J. J. duBois, in the California Academy of Sciences.

Colour. Brownish-black, head and pronotum piceous.

Head slightly narrower than pronotum at its widest part. Eyes protuberant. Last (=eleventh) antennal segment only slightly longer than tenth segment.

Pronotum nearly as long as wide or only slightly wider than long, without a distinct median sulcus. Wing with anal cell open.

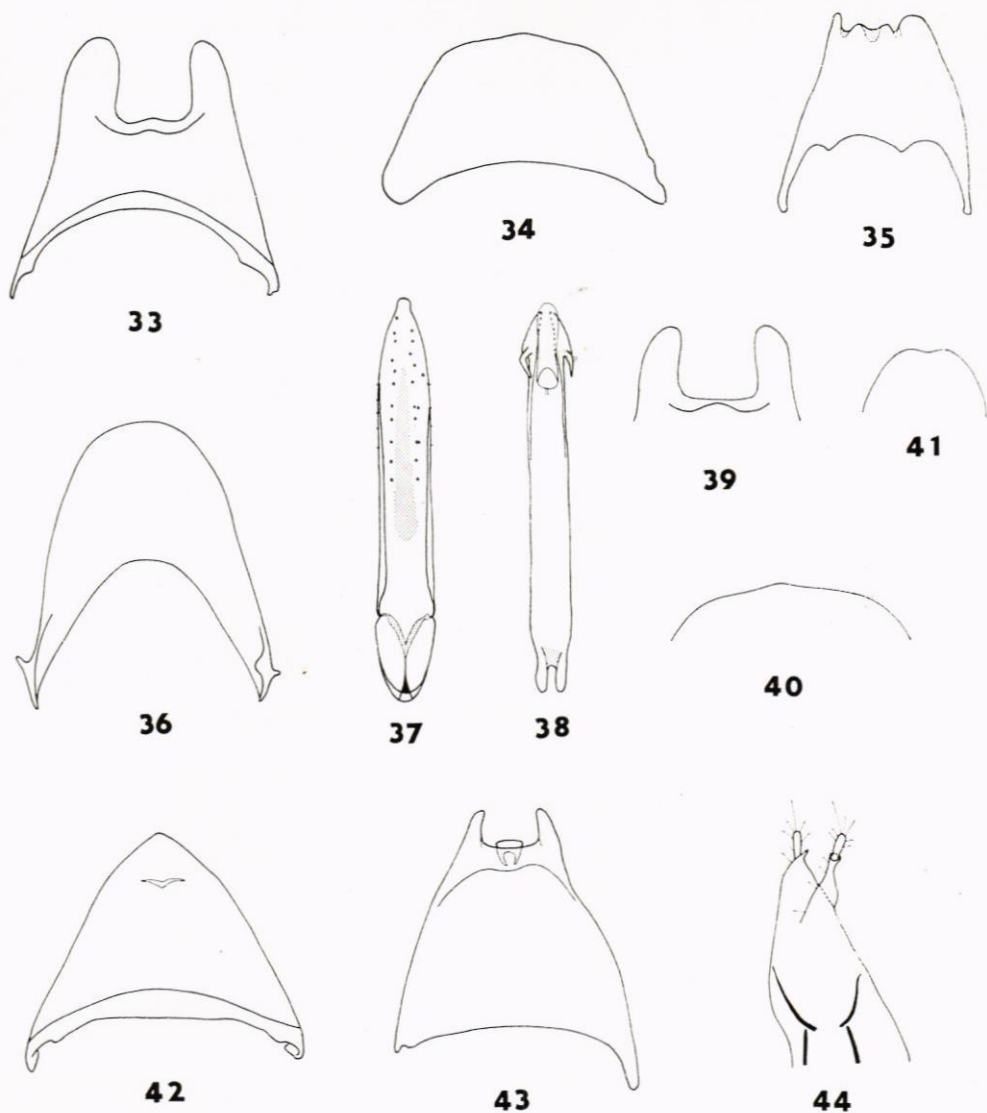
Seventh abdominal sternite with slightly converging lateral processes; a weak, broad, central process apically (figure 34). Eighth sternite as in figure 35. Eighth tergite entire at apex (figure 36). Parameres rather blunt at apex; apical half sparsely spinous, with more or less two longitudinal rows of spines, dorsal row apparent as large punctures in a ventral view; central portion less sclerotized and lighter in colour (figure 37). Median lobe with slender, pointed cuticular blades (figure 38).

Length: 6 mm.

*Allotype*. Female (author's no. 326), U.S.A., Arizona: 28 miles north of Sonoita, Pima County, July 20, J. J. duBois, in the California Academy of Sciences. Differs from the holotype as follows: seventh abdominal sternite pointed and triangular at apex, with a dorsal, subapical hook-like process (figure 42). Seventh tergite with lateral process nearly twice as long as median process (figure 43). Apex of ovipositor as in figure 44. Length: 6.5 mm.

Records. U.S.A., Arizona: Coyote Mountains\*, 3, 500 feet, August 3—7, 1 male, in the American Museum of Natural History, New York; Fort Huachuca, Santa Cruz County, August 3, J. O. Martin, 3 females, in the California Academy of Sciences; Huach. [uca], Mountains, Cochise County, April 14, E. D. Ball, 1 female, in the California Academy of Sciences; Maricopa County, August 23, E. R. Leach, 4 males, in the California Academy of Sciences, 1 female in the Chicago Natural History Museum; Palmerlee, Cochise County, July 20, 1 male, in the California Academy of Sciences, 2 specimens at Cornell University; Patagonia, Santa Cruz County, August 7—8, E. P. Van Duzee, 1 male, 2 females, in the California Academy of Sciences; 30 miles east of Quijota, Pima County, 1 specimen, at Cornell University; Ruby, Pima County, July 27, 5 males, one each in the British Museum (N. H.), California Academy of Sciences, Harvard University, Paris Museum, and University of Kansas; Sabino Canyon\*, July 7, R. H. Beamer, 1 male, at University of Kansas; Santa Cruz Village, 3, 100 feet, Cobabi Mountains, 2 males, in the American Museum of Natural History; 28 miles north of Sonoita, Pima County, July 20, J. J. duBois, paratypes, in the British Museum (N. H.), Canadian National Collection at Ottawa, California Department of Agriculture at Sacramento, and Cornell University.

Intraspecific variation occurs in the following characters: a median pronotal sulcus may be visible and anal cell of the wing may be closed in some



Figs. 33—44. *Duboisius barri* Abdullah. 33, seventh sternite of male, ventral view; 34, seventh tergite of male, dorsal view; 35, eighth sternite of male, ventral view; 36, eighth tergite of male, dorsal view; 37, tegmen of male, ventral view; 38, median lobe of male, ventral view; 39, apex of seventh sternite of male, ventral view; 40, apex of seventh tergite of male, dorsal view; 41, apex of eighth tergite of male, dorsal view; 42, seventh sternite of female, ventral view; 43, seventh tergite of female, dorsal view; 44, apex of ovipositor, ventro-lateral view.

specimens. In males, the apices of parameres may be slightly tapering and less blunt; seventh abdominal sternite may lack any median elevated process (figure 39); seventh tergite may be without a median process or with a wide and less prominent one (figure 40); and eighth tergite may be slightly emar-

ginate at apex (figure 41). Length varies from 4—6 mm among males and from 5.5—7 mm among females.

Seasonal Distribution. The species has been collected from April 14 to August 29.

Remarks. I have transferred the species *Eurygenius arizonensis* Champion, 1916 to this genus and thereby created a secondary homonymy. In a letter (December 10, 1963), W. F. Barr, Professor of Entomology, University of Idaho, U.S.A., informs me that many of these Eurygeniini specimens bearing the collection label of Jack duBois were jointly collected by him, Burdette E. White and John J. duBois. I have much pleasure in renaming the species in his honour.

(4) *Duboisius bowditchi* Abdullah, 1961

(Figures 45—59)

*Duboisius bowditchi* Abdullah, 1961, p. 102.

*Duboisius mexicaliensis* Abdullah, 1961, p. 103; 1963, p. 20 (new synonymy).

*Holotype*. Male (author's no. 345), Mexico, Guerrero: Rio Balsas, Wickham, F. C. Bowditch, at Harvard University, Cambridge, Mass., U.S.A.

Colour. Brownish-black; elytra dark brown.

Head nearly as wide as pronotum. Eyes protuberant. Last (=eleventh) antennal segment only slightly longer than tenth segment.

Pronotum without a distinct median sulcus (in a dried specimen, sulcus clear in alcohol medium). Wing with anal cell open.

Seventh abdominal sternite with converging lateral processes, without any central process (figure 45). Seventh tergite with a broad median process apically (figure 46). Eighth sternite as in figure 47. Eighth tergite entire at apex (figure 48). Parameres rounded at apex, sparsely, minutely spinous from near apex to middle, with a longitudinal, median desclerotized or less pigmented area; basal-piece deep (figure 49). Median lobe pointed at apex and at basal end of cuticular blades (figure 50).

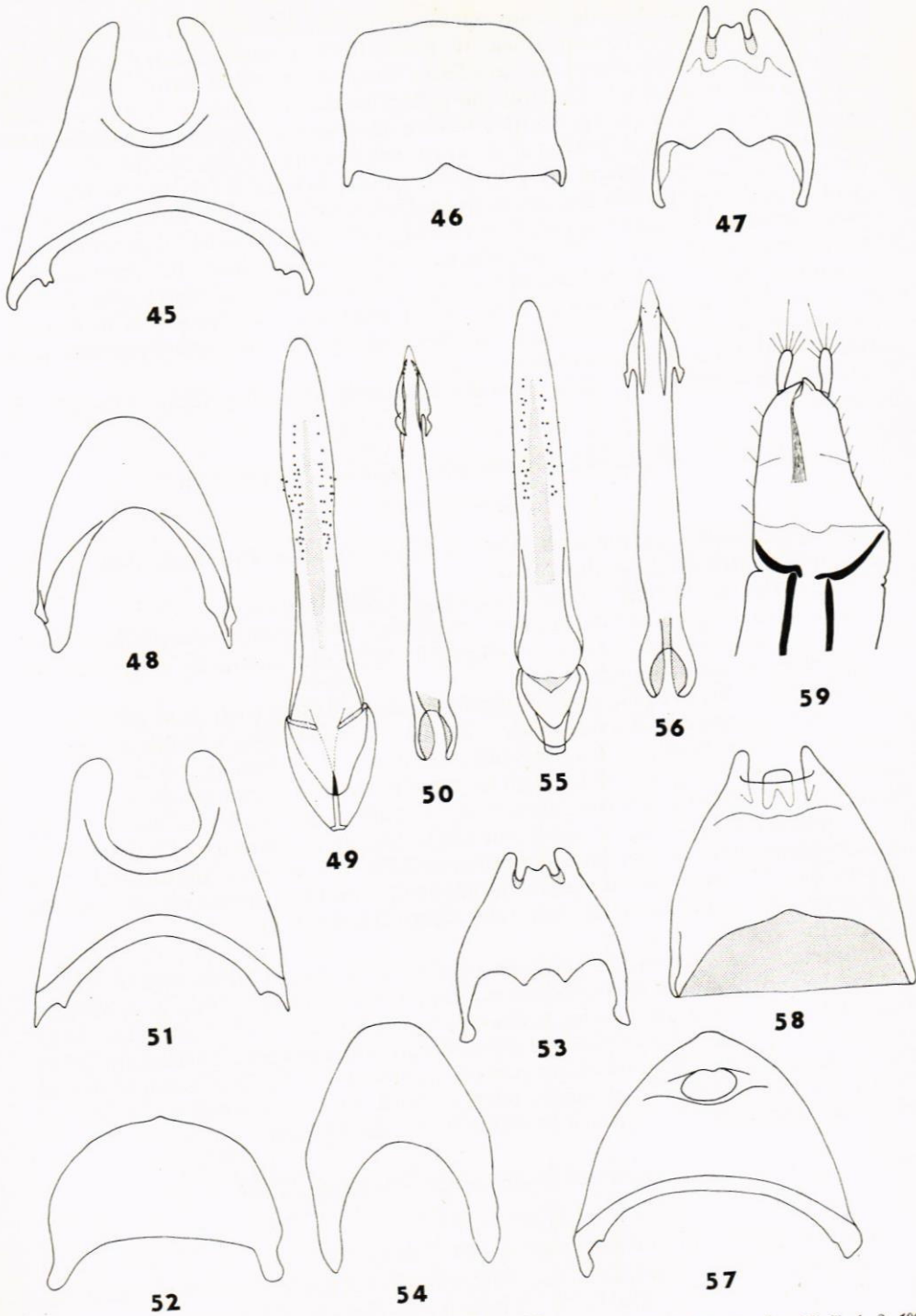
Length: 7.5 mm.

*Allotype*. Female (author's no. 346), Mexico, Guerrero: Rio Balsas, Wickham, F. C. Bowditch, at Harvard University. Differs from the holotype as follows: seventh abdominal sternite slightly produced at apex, truncate, with a median dorsal hook (figure 57). Seventh tergite as in figure 58. Apex of ovipositor as in figure 59. Length: 8 mm.

Type localities: Mexico, Guerrero: of *bowditchi*: Rio Balsas; of *mexicaliensis*: Mexcala.

Records. Mexico, Guerrero: Mexcala, June 29, H. Evans, 2 males including author's no. 342, holotype of *mexicaliensis*, at Cornell University; July 9, R. B. and J. M. Selander, 3 females, in author's collection. Rio Balsas, Wickham, F. C. Bowditch, 6 paratypes at Harvard University, 1 female in the British Museum (N. H.).

Figs. 45—59. *Duboisius bowditchi* Abdullah. 45, seventh sternite of male, ventral view; 46, seventh tergite of male, dorsal view; 47, eighth sternite of male, ventral view; 48, eighth tergite of male, dorsal view; 49, tegmen of male, ventral view; 50, median lobe of male, ventral view; 51, seventh sternite of male, ventral view; 52, seventh tergite of male, dorsal view; 53, eighth sternite of male ventral view; 54, eighth tergite of male, dorsal view; 55, tegmen of male, ventral view; 56, median lobe of male, ventral view; 57, seventh sternite of female, ventral view; 58, seventh tergite of female, dorsal view; 59, apex of ovipositor, ventral view.



Figs. 45—59.

Three syntypes of *Eurygenius mexicanus* Champion, 1890 have been removed to this genus and species by restriction. A male (author's no. 480) and a female (author's no. 535) are from Mexcala (mislabelled Mescala). The third specimen, a female bearing the following label, "Puente de Ixtla, 3, 500 feet, Morelos, June, H. H. Smith" has reddish-brown elytra with extremely reduced vestiture, and only a few white microscopic spots are present near the apices. The specimens are deposited in the British Museum (N. H.).

Intraspecific variation occurs in the following characters: median pronotal sulcus may be scarcely visible or not at all. Lateral processes of seventh sternite in the male may be more (figure 45) or less (figure 51) converging. A median process on the seventh tergite of male may be more (figure 52) or less (figure 46) prominent. Aedeagus of male may be shaped as in figures 49—50 or as in 55—56. Length varies from 7—7.5 mm among males and from 7—11 mm among females.

Seasonal Distribution. The species has been collected from June 29 to July 9.

(5) *Duboisius culiacanensis* Abdullah, new species

(Figures 60—65)

*Holotype*. Male (author's no. 558), Mexico, Sinaloa: Culiacan, July 21, at light, in the British Museum (N. H.).

Colour. Brownish-black to piceous, eyes reddish-brown.

Head nearly equal to or slightly narrower than pronotum at its widest part. Eyes protuberant. Last (=eleventh) antennal segment only slightly longer than tenth segment.

Pronotum with a weak, apical, median sulcus. Wing with anal cell closed.

Seventh abdominal sternite with wide lateral processes, without a distinct central process (figure 60). Seventh tergite with a broad, weak, central process apically (figure 61). Eighth sternite with central processes much shorter than lateral processes (figure 62). Eighth tergite entire at apex (figure 63). Parameres tapering at apex; densely, minutely spinous in apical one-third region; with a narrow, central desclerotized or less pigmented area (figure 64). Median lobe not tapering at apex; cuticular blades narrow, sharp and divergent; median struts not very short (figure 65).

Length: 7 mm.

Remarks. The species has some resemblance to *wickenburgiensis* to which it may be more closely related than to other species in the Group C. Similarities exist in the shapes of the aedeagus (see figures 64—65 and 114—116) but the seventh sternite of male (figure 60) in *culiacanensis* is different from the same structure in *wickenburgiensis* (figure 110). In the last-mentioned character *culiacanensis* resembles *barri* (figure 33) and *emarginatus* (figure 66). The female of this species remains to be discovered.

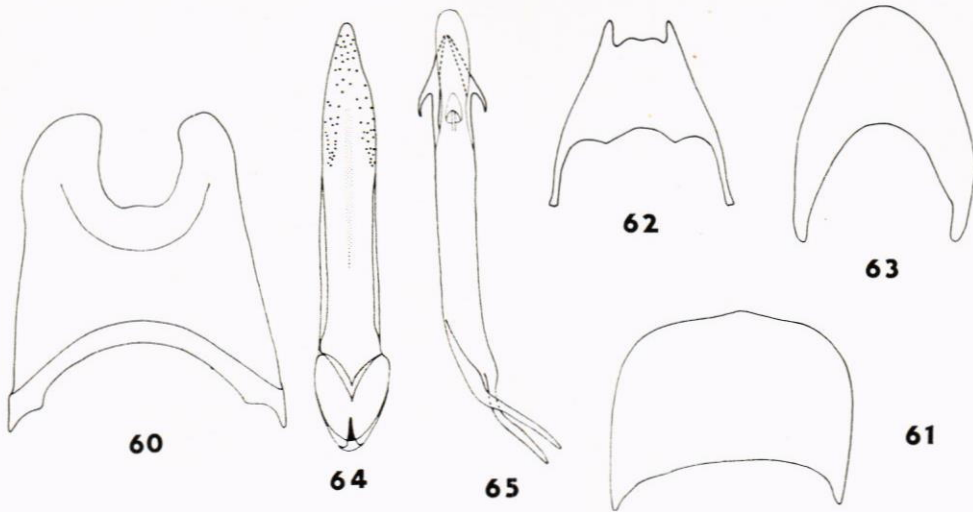
(6) *Duboisius emarginatus* Abdullah, 1961

(Figures 66—75)

*Duboisius emarginatus* Abdullah, 1961, p. 103; 1963, p. 20.

*Holotype*. Female (author's no. 337), Mexico, Oaxaca: 16 miles west of Tehuantepec, 700 feet, July 8, at University of Kansas, Lawrence.





Figs. 60—65. *Duboisius culiacanensis* Abdullah. 60, seventh sternite of male, ventral view; 61, seventh tergite of male, dorsal view; 62, eighth sternite of male, ventral view; 63, eighth tergite of male, dorsal view; 64, tegmen of male, ventral view; 65, median lobe of male, ventral view.

Colour. Brownish-black; heal piceous, eyes with a whitish tinge; pronotum and elytra with white spots.

Head nearly as wide as pronotum at its widest part. Eyes protuberant. Last (=eleventh antennal segment slightly longer than tenth segment).

Pronotum without a distinct median sulcus. Wing with anal cell open.

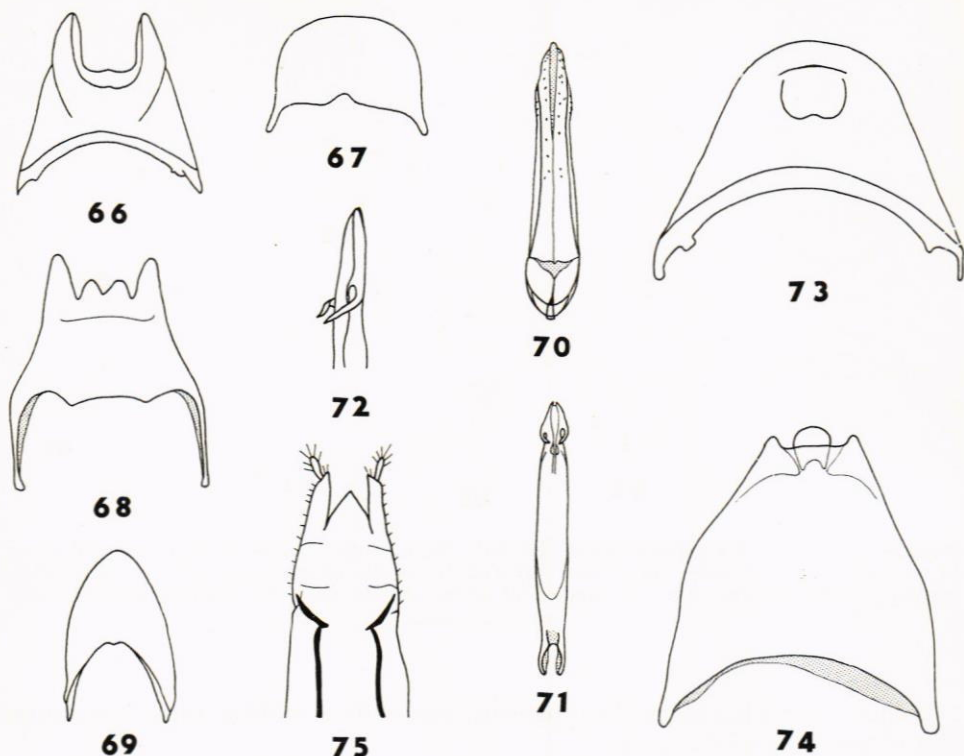
Seventh abdominal sternite entire at apex, with a dorsal median ridge below apex, followed by a rounded, less pigmented area (figure 73). Seventh tergite not deeply emarginate at apex, central (ventral) process slightly longer than lateral processes (figure 74). Apex of ovipositor as in figure 75.

Length: 7 mm.

*Male* (author's no. 566), Mexico, Oaxaca: Tehuantepec, June 24, at light, in the British Museum (N. H.). Differs from the holotype as follows: maxillary palp slightly more elongated. Seventh abdominal sternite with slightly diverging lateral processes; a weak central process apparent (figure 66). Seventh tergite entire at apex (figure 67). Eighth sternite as in figure 68. Eighth tergite entire at apex (figure 69). Parameres slightly dome-shaped at apex; irregularly spinous dorso-laterally for more than half the length below apex; apical, central, longitudinal portion less sclerotized, continued as a median sulcus upto base; shape characteristic (figure 70). Median lobe with slender, pointed cuticular blades (figures 71—72). Length: same.

*Records and Variation.* Three more females from Tehuantepec, one in the Paris Museum is like the above specimen but has a distinct median pronotal sulcus, and others collected by R. B. Selander on June 24 at light are in the author's collection.

*Seasonal Distribution.* The species has been collected from June 24 to July 8.



Figs. 66—75. *Duboisius emarginatus* Abdullah. 66, seventh sternite of male, ventral view; 67, seventh tergite of male, dorsal view; 68, eighth sternite of male, ventral view; 69, eighth tergite of male, dorsal view; 70, tegmen of male, ventral view; 71, median lobe of male, ventral view; 72, apex of median lobe of male, lateral view; 73, seventh sternite of female, ventral view; 74, seventh tergite of female, dorsal view; 75, apex of ovipositor, ventral view.

(7) *Duboisius fetusus* Abdullah, new species

(Figures 76—84)

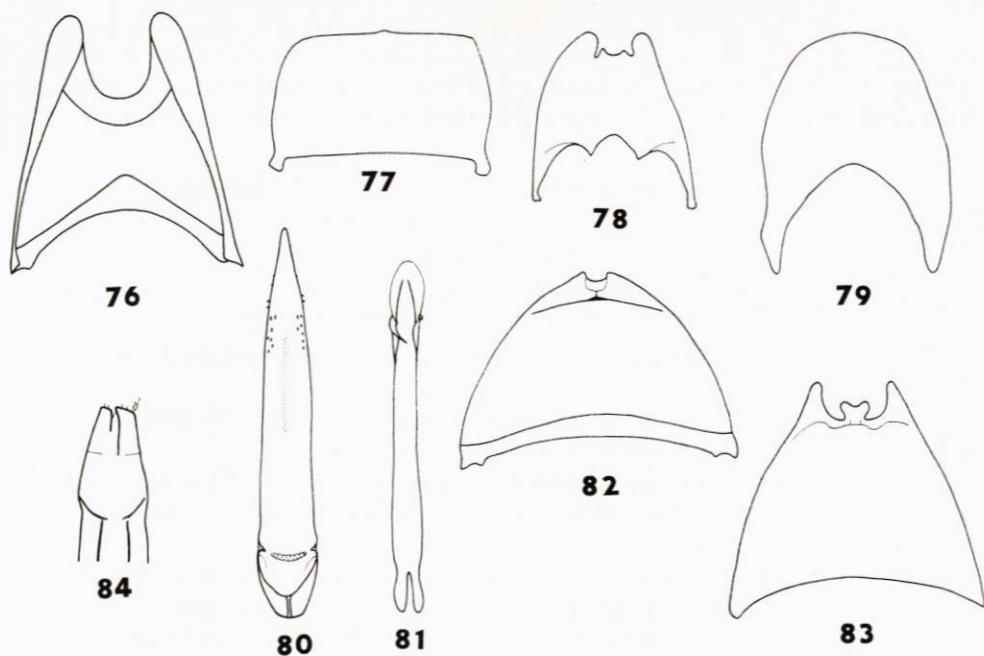
*Holotype*. Male (author's no. 442), Mexico, Durango: Durango, in the British Museum (N. H.).

Colour. Dark brown; head and pronotum brownish-black, apices of mandibles black, eyes shining and lighter in colour; undersurface appearing whitish due to pubescence, around longitudinal sulcus of metasternum dark brown due to spines.

Head slightly narrower than pronotum at its widest part. Eyes protuberant. Antennae with distal four or five segments slightly thickened, last (=eleventh) segment nearly as long as tenth segment.

Pronotum without a distinct median sulcus. Wing with anal cell closed; 4th A branched near apex in the specimen.

Seventh abdominal sternite with slightly diverging lateral processes, without a central process (figure 76). Seventh tergite with a narrow, weak,



Figs. 76—84. *Duboisius fetosus* Abdullah. 76, seventh sternite of male, ventral view; 77, seventh tergite of male, dorsal view; 78, eighth sternite of male, ventral view; 79, eighth tergite of male, dorsal view; 80, tegmen of male, ventral view; 81, median lobe of male, ventral view; 82, seventh sternite of female, ventral view; 83, seventh tergite of female, dorsal view; 84, apex of ovipositor, ventral view.

central process apically (figure 77). Eighth sternite as in figure 78. Eighth tergite entire at apex (figure 79). Parameres tapering and much narrowed at apex; sparsely, irregularly spinous over a short distance below apex; narrow, central, longitudinal area desclerotized or less pigmented (figure 80). Median lobe not tapering at apex, somewhat oval, with slender, pointed cuticular blades (figure 81).

Length: 6.5 mm.

*Allotype*. Female (author's no. 443), Mexico, Durango: Tepehuanes (Santa Catarina de), in the British Museum (N. H.). Differs from the holotype as follows. Median pronotal sulcus slightly distinct. Wing with anal cell open. Seventh abdominal sternite slightly, narrowly emarginate at apex, with a dorsal median ridge (figure 82). Seventh tergite with central process emarginate, nearly half as long as lateral processes (figure 83). Apex of ovipositor as in figure 84. Length: 7.5 mm.

*Paratypes*. 53 specimens, 32 males and 21 females: Mexico, Chihuahua: Chihuahua, Wickham, F. C. Bowditch, 2 females, at Harvard University. Durango: Durango, Wickham, 22 males, 13 females, in the British Museum (N. H.); Tepehuanes (Santa Catarina de), H. F. Wickham, 8 males, 3 females, in the British Museum (N. H.), 2 males and 2 females at Harvard University, and 1 female in the Paris Museum.

Intraspecific variation occurs as follows: anal cell of the wing may be open or closed. Length varies from 6—7.5 mm among males and from 6—8 mm among females. The male aedeagus, and last visible sternites and tergites of males and females afford only reliable characters for identification.

(8) *Duboisius mexicanus* (Champion, 1890) Abdullah,  
new sense & new combination

(Figures 85—94)

*Eurygenius mexicanus* Champion, 1890, pp. 191—192, *partim*.

*Duboisius abnormis* Abdullah, 1961, pp. 102—103 (new synonymy).

*Lectotype*. Male (author's no. 536), Mexico, Guerrero: Iguala, Höge, in the British Museum (N. H.).

Colour. Dark brown; head brownish-black, apices of mandibles black; undersurface appearing whitish due to pubescence.

Head slightly narrower than pronotum at its widest part. Eyes protuberant. Antennae with last (=eleventh) antennal segment nearly as long as tenth segment.

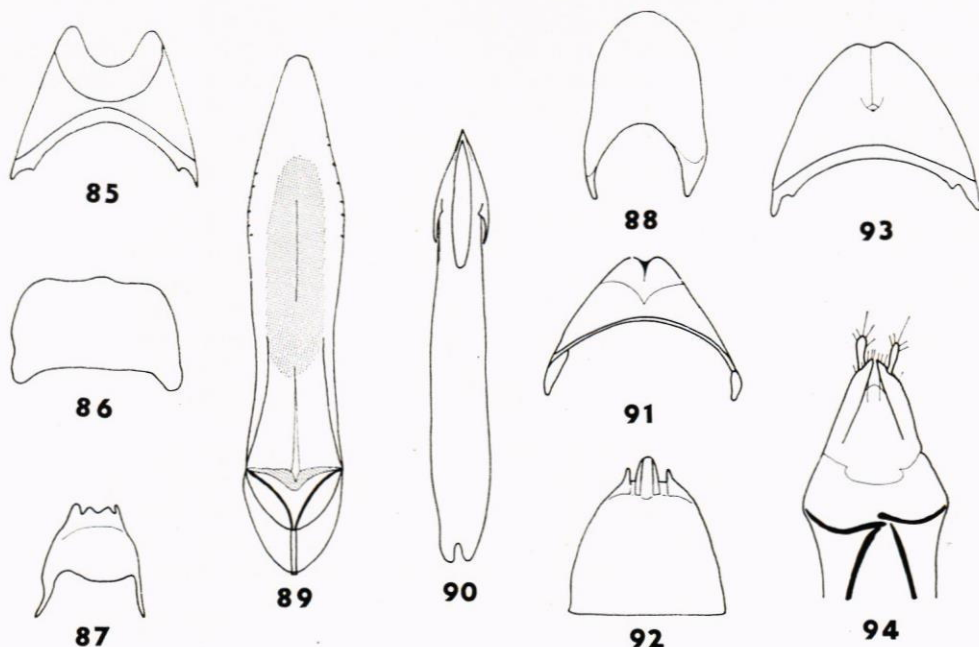
Pronotum without a distinct median sulcus. Wing with anal cell closed.

Seventh abdominal sternite with lateral processes divergent; a circular area around and below apex depressed (figure 85). Seventh tergite with a weak, central process apically (figure 86). Eighth sternite as in figure 87. Eighth tergite entire at apex (figure 88). Tegmen large, apical and broadly tapering; parameres with a pair of rows of short, sparse spines below apex; central longitudinal area of parameres less sclerotized and medially sulcate; basal-piece deep (figure 89). Median lobe sharply pointed at apex; cuticular blades each with only one sharp tooth near base (figure 90).

Measurements in mm. Total length=8. Antennal segments I—XI: 0.35, 0.22, 0.28, 0.33, 0.34, 0.28, 0.28, 0.27, 0.26, 0.23, and 0.26 respectively. Maxillary palp segments I—IV: 0.06, 0.28, 0.25, and 0.38 respectively. Head: width across eyes=1.50; dorsal interocular distance=0.44. Pronotum: length=1.70; width at apex=0.68; maximum width=1.62; width at base=1.36. Elytron: length=5.5; maximum width=1.53. Front tarsus, segments I—V: 0.52, 0.25, 0.20, 0.09, and 0.51 respectively. Middle tarsus, segments I—V: 0.52, 0.28, 0.20, 0.09, and 0.51 respectively. Hind tarsus, segments I—IV: 0.62, 0.28, 0.15, and 0.57 respectively. Hind tibial spur=0.09.

*Paralectotypes*. 2 females in the British Museum (N. H.). A female (author's no. 481) from Cordoba (mislabelled Cordova) is probably from Vera Cruz State but could as well be from the State of Durango, although the latter possibility appears less likely to me at present. The specimen differs from the lectotype as follows: eyes dark brown with small black patches. Seventh abdominal sternite slightly emarginate at apex, depressed subapically, dorsally ridged in middle (figure 91). Seventh tergite with central process blunt at apex and nearly twice as long as lateral processes (figure 92). Length: 8.5 mm. The other female is from Chilpancingo (de los Bravos), Guerrero, and is 7.5 mm in length.

The holotype of *D. abnormis* is a female specimen from Mexcala, Guerrero, was taken on light by H. Evans on June 29, and is deposited at Cornell



Figs. 85—94. *Duboisius mexicanus* (Champion). 85, seventh sternite of male, ventral view; 86, seventh tergite of male, dorsal view; 87, eighth sternite of male, ventral view; 88, eighth tergite of male, dorsal view; 89, median lobe of male, ventral view; 90, tegmen of male, ventral view; 91, seventh sternite of female, ventral view; 92, seventh tergite of female, dorsal view; 93, seventh sternite of female, ventral view; 94, apex of ovipositor, ventral view.

University. The seventh abdominal sternite has a dorsal ridge and a median dorsal hook-like process (figure 93). Apex of ovipositor is shaped as in figure 94.

Additional Records. Mexico, Guerrero: Mexcala, June 29, at light, H. E. Evans, 2 males, at Cornell University. Morelos: Alpuyecá, June 27, at light, H. Evans, 1 male, at Cornell University; 2 miles south of Alpuyecá, May 18, 2 males, 2 females, H. E. Evans, at Cornell University; Matamoros (Izucar de), May, A. Fenyes, 1 male, 1 female, in the California Academy of Sciences. Oaxaca: Valerio Trujano, 4, 500 feet, July 28, M. A. Embury, 1 male, 1 female, in the California Academy of Sciences.

Remarks. Of the remaining five syntypes of Champion, only three are now represented in the British Museum (N. H.), and they belong to *Duboisius bowditchi* Abdullah.

(9) *Duboisius texanus* Abdullah, 1961

(Figures 95—108)

*Duboisius texanus* Abdullah, 1961, pp. 100—102.

*Duboisius benedicti* Abdullah, 1961, p. 98; 1963, p. 20 (new synonymy).

*Duboisius punctulatus* Abdullah, 1961, p. 102 (new synonymy).

*Holotype*. Male (author's no. 320), U.S.A., Texas: 1 mile north of Fort Davis, Jeff Davis County, July 16, J. J. duBois, in the California Academy of Sciences.

Colour. Brownish-black, head and pronotum rather piceous.

Head slightly narrower than pronotum at its widest part. Eyes protuberant. Last (=eleventh) antennal segment slightly longer than tenth segment.

Pronotum nearly as long as wide or only slightly longer than wide, without a distinct median sulcus. Wing with anal cell open (or nearly closed).

Seventh abdominal sternite with slightly converging lateral processes; with a prominent, pointed central process at apex (figure 95). Seventh tergite without a distinct central process at apex (see figure 104). Eighth sternite as in figure 96. Eighth tergite truncate at apex (figure 97). Parameres slightly pointed at apex; slightly less than apical half sparsely spinous, with two longitudinal rows of spines, dorsal row apparent as punctures in a ventral view; much of central portion desclerotized and less pigmented; a basal median longitudinal sulcus distinct (figure 98). Median lobe with rather broad, oval apex; cuticular blades slender, pointed (figure 99).

Length: 6.5 mm.

*Allotype*. Female (author's no. 322), U.S.A., Texas: 1 mile north of Fort Davis, Jeff Davis County, July 16, J. J. duBois, in the California Academy of Sciences. Differs from the holotype as follows: seventh abdominal sternite emarginate at apex, with a dorsal central subapical ridge (figure 100). Seventh tergite with an emarginate central process, not much shorter than lateral processes (figure 101). Apex of ovipositor as in figure 102.

Type localities: of *texasus*: see above; of *benedicti*: New Mexico: White Sands; of *punctulatus*: Texas: Fort Davis.

Records. U.S.A., New Mexico: Lordsburg, 2 specimens, at Harvard University, 2 at Cornell University; White Sands, July 23, W. Benedict, 1 male, holotype of *punctulatus*, at University of Kansas. Texas: Fort Davis, May 15—June 8, 4 males, 4 females, at Cornell University; Davis Mountains, June 8, 1 male, 1 female, in the British Museum (N. H.), 1 specimen at Cornell University, 1 male and 1 female at Paris Museum; same locality, O. C. Poling collector, 13 males, 7 females, at Harvard University; Van Horn, Culberson County, July 22, E. G. Matthews, 1 male, at Cornell University.

Intraspecific variation occurs in the following characters: a median pronotal sulcus may be distinct (specially when viewed in alcohol medium) or indistinct; anal cell of wing open or closed; seventh abdominal sternite of male with a prominent central process (figure 95) or less distinct one (figure 103); eighth sternite of male centrally more emarginate (figure 105) or less (figure 96); and eighth tergite of male truncate at apex (figure 97) or emarginate (figure 106). In the aedeagus, shape of tegmen may be as in figures 98 or 107, and median lobe as in figures 99 or 108. Length varies from 6.5—8 mm among males and from 7—9 mm among females.

Seasonal Distribution. The species has been collected from May 15 to July 23.

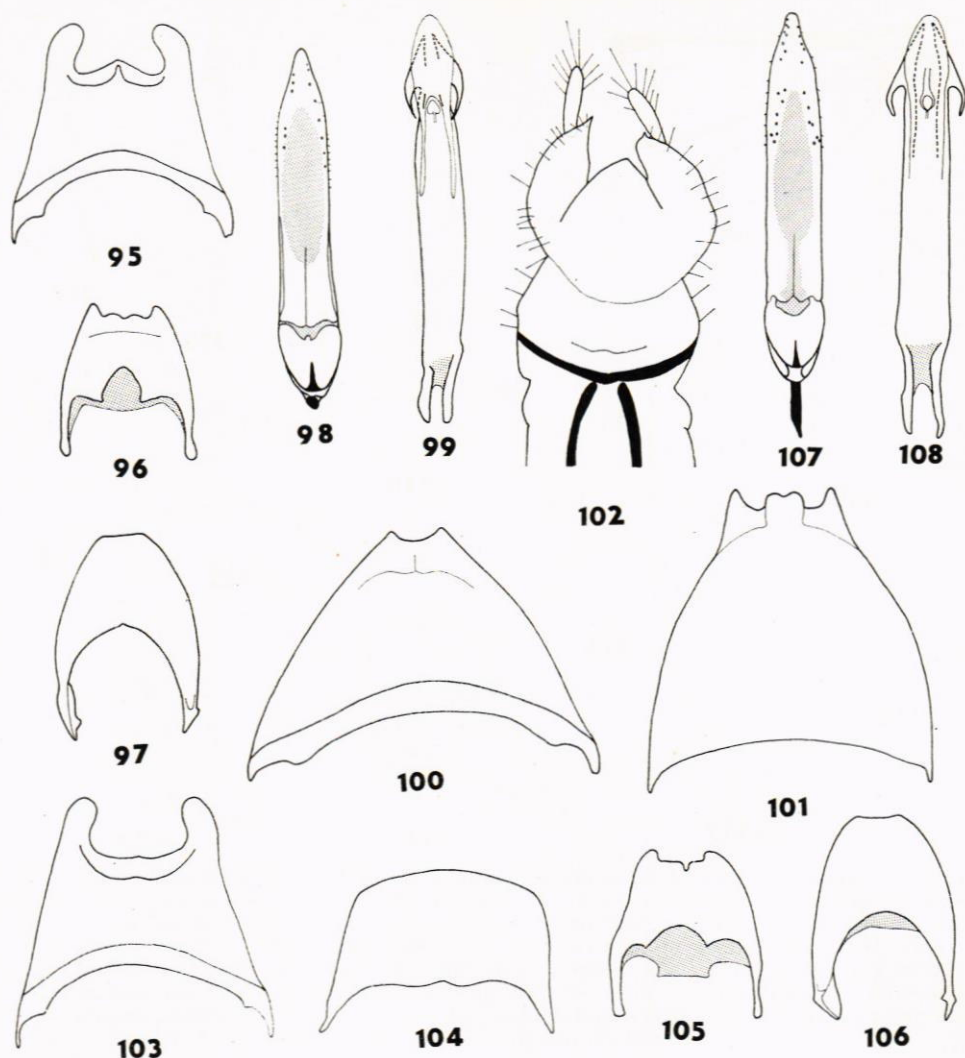
(10) *Duboisius wickenburgiensis* Abdullah, 1961

(Figures 109—123)

*Duboisius wickenburgiensis* Abdullah, 1961, p. 103.

*Holotype*. Male (author's no. 328), U.S.A., Arizona: Wickenburg, Maricopa County, August 18, light trap, H. K. Gloyd, in the Chicago Natural History Museum.

Colour. Brownish-black, head and pronotum rather piceous.

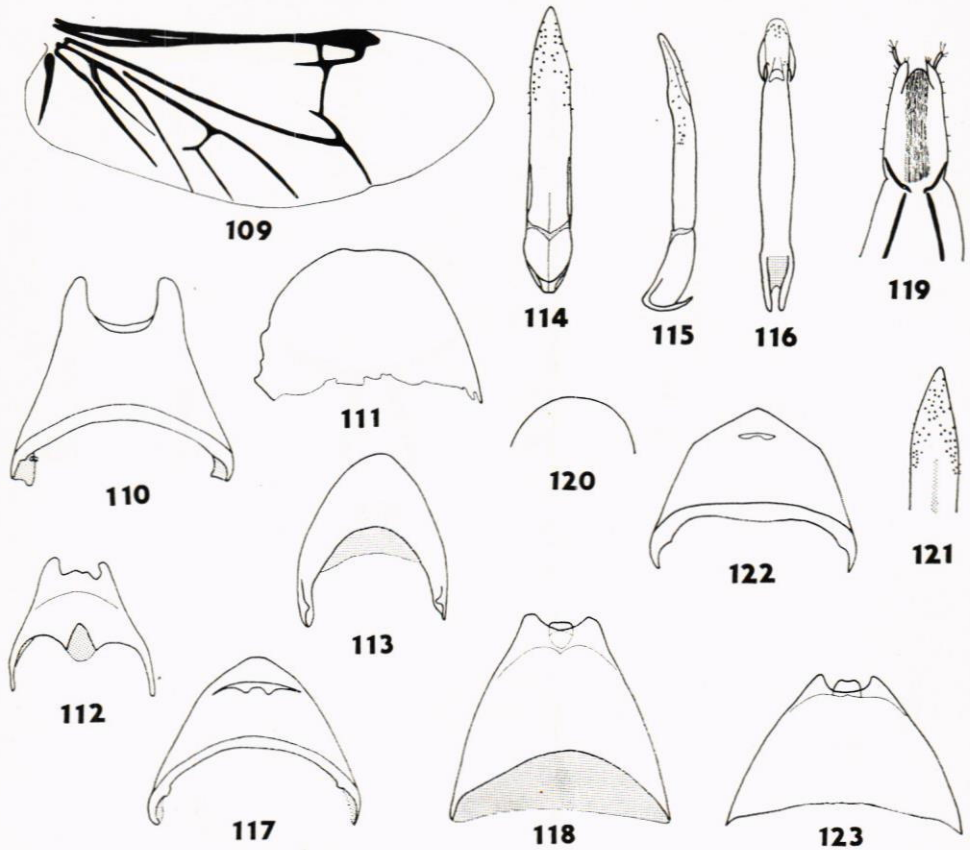


Figs. 95—108. *Duboisius texanus* Abdullah. 95, seventh sternite of male, ventral view; 96, eighth sternite of male, ventral view; 97, eighth tergite of male, dorsal view; 98, tegmen of male, ventral view; 99, median lobe of male, ventral view; 100, seventh sternite of female, dorsal view; 101, seventh tergite of female, dorsal view; 102, apex of ovipositor, ventral view; 103, seventh sternite of male, ventral view; 104, seventh tergite of male, dorsal view; 105, eighth sternite of male, ventral view; 106, eighth tergite of male, dorsal view; 107, tegmen of male, ventral view; 108, median lobe of male, ventral view.

Head slightly narrower than pronotum at its widest part. Eyes protuberant. Last (=eleventh) antennal segment slightly longer than tenth segment.

Pronotum nearly as long as wide or only slightly longer than wide, without a distinct median sulcus. Wing with anal cell closed.

Seventh abdominal sternite with not or slightly diverging lateral processes;



Figs. 109—123. *Duboisius wickenburgiensis* Abdullah. 109, left hind wing of male; 110, seventh sternite of male, ventral view; 111, seventh tergite of male, dorsal view; 112, eighth sternite of male, ventral view; 113, eighth tergite of male, dorsal view; 114, tegmen of male, ventral view; 115, tegmen of male, lateral view; 116, median lobe of male, ventral view; 117, seventh sternite of female, ventral view; 118, seventh tergite of female, dorsal view; 119, apex of ovipositor, ventral view; 120, apex of eighth tergite of male, dorsal view; 121, apex of parameres of male, ventral view; 122, seventh sternite of female, ventral view; 123, seventh tergite of female, dorsal view.

without a central processes (figure 110). Seventh tergite without a central process (figure 111). Eighth sternite as in figure 112. Eighth tergite entire at apex (figure 113). Parameres pointed at apex; apical half sparsely, irregularly spinous; a basal, median sulcus distinct (figures 114—115). Median lobe with rather broad, rounded apex; cuticular blades slender, pointed (figure 116).

Length: 5.5 mm.

*Female* (author's no. 540) from the same locality and with the same data on labels as the holotype. Differs from the male as follows: seventh abdominal sternite broadly tapering at apex, with a centrally emarginate dorsal ridge (figure 117). Seventh tergite with entire, small central process (figure 118). Apex of ovipositor as in figure 119.



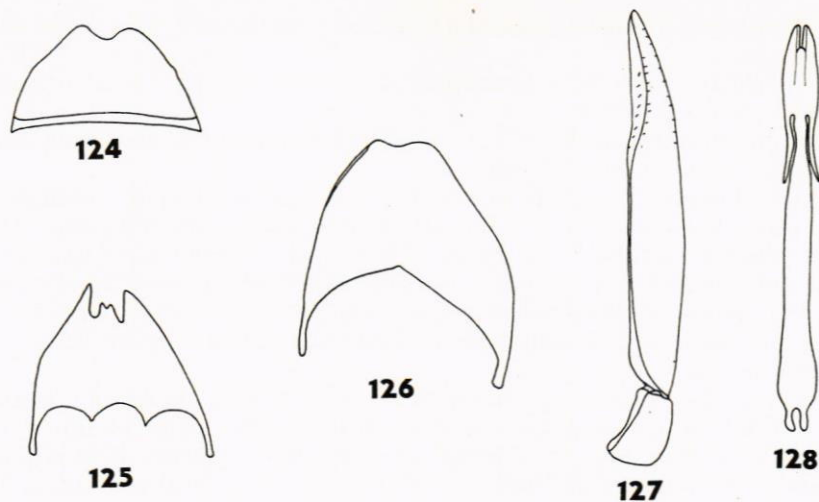


Fig. 124—128. *Duboisius lanuginosus* (Champion). 124, seventh sternite of male, ventral view; 125, eighth sternite of male, ventral view; 126, eighth tergite of male, dorsal view; 127, tegmen of male, lateral view; 128, median lobe of male, ventral view.

Records. Arizona: Maricopa County, August 17—23, Nunemacher, 16 males, in the Chicago Natural History Museum; Palmerlee, Cochise County, August 10, Liebeck, 1 male, at Harvard University; San Bernardino Ranch, Douglas, 3, 750 feet, F. H. Snow, 1 male, at University of Kansas; Wickenburg, Maricopa County, August 18—30, light trap, H. K. Gloyd, 28 males, in the Chicago Natural History Museum, 1 male in the British Museum (N. H.), and 1 male in the Paris Museum.

Intraspecific variation occurs in the following characters: in some males spines on metasternum are not visible, but in every other respect they are typical *wickenburgiensis*. Eighth abdominal tergite of male may be wide at apex (figure 120) or narrow (figure 113). Parameres may be more pointed at apex and with a central, longitudinal, narrow, desclerotized or less pigmented area (figure 121) or as in figure 114. Seventh sternite of female may be more pointed at apex (figure 122) or less so (figure 117). Seventh tergite of female may have an entire central apical ventral process (figure 118) or a slightly emarginate one (figure 123). Length varies from 3.5—5.5 mm among males.

Seasonal Distribution. The species has been collected from August 10 to August 30.

#### Group D

Tempora prominent. Apical segment of maxillary palp securiform. Metasternum spinous in the male. Seventh abdominal sternite of male with short lateral processes, not spinous. Female not known.

(11) *Duboisius lanuginosus* (Champion, 1890) Abdullah, new combination  
(Figures 124—128)

*Eurygenius lanuginosus* Champion, 1890, p. 192.

*Holotype*. Male (author's no. 530), Mexico, Durango or Vera Cruz: Cordoba (=Cordova), Sallé, in the British Museum (N. H.).

Colour. Brownish-black; eyes black; elytra dark brown with white macroscopic spots.

Head slightly wider than pronotum at its widest part. Apical segment of maxillary palp securiform.

Pronotum weakly, medially sulcate. Elytral punctures becoming fine towards apex. Wing with anal cell open.

Seventh abdominal sternite not deeply emarginate at apex, without large lateral processes (figure 124). Seventh tergite with a weak central process at apex. Eighth sternite as in figure 125. Eighth tergite emarginate at apex (figure 126). Tegmen (artificially) laterally compressed; most spines arranged in two pairs of longitudinal rows; shape characteristic (figure 127). Median lobe with long, slender, pointed cuticular blade (figure 128).

Length: 8 mm.

Remarks. The unique specimen bears the locality label of "Cordova" which I think is a wrong spelling for Cordoba. This place could be either in the State of Durango or Veracruz. Without new evidence it is impossible to decide in favour of any State. As in the case of a paralectotype of *mexicanus*, it is possible that the place in question is in Durango.

#### IV. Summary

The genus *Duboisius* Abdullah, a member of the tribe Eurygeniini, is distributed in Mexico and the south-western United States. Out of a total of eighteen nominal species treated here only eleven are considered good species. Three species (*arizonensis*, *lanuginosus*, and *mexicanus*) of Champion are transferred here from the genus *Eurygenius*. A new name (*barri*) is proposed for the type of the genus, *D. arizonensis* Abdullah which became a junior secondary homonym. New synonymies are: *D. arizonensis* = *distinguendus* = *howdeni* = *terminalis*; *bowditchi* = *mexicaliensis*; *mexicanus* = *abnormis*; and *texanus* = *benedicti* = *punctulatus*. Three new species (*D. brevicornis*, *culiacanensis*, and *fetusus*) are described. The male of *D. emarginatus* is described for the first time. A key to the New World genera of Eurygeniini is presented.

#### V. Acknowledgments

I am grateful to the authorities of the museums and universities cited in the text for the loan, and to Dr. Richard B. Selander, University of Illinois, U.S.A., for the gift of specimens. I wish to record my thanks to the following: Dr. M. Ian Crichton for his kind interest in my work; Professor Alastair Graham for research facilities in this department; and the University of Reading for a research grant (Postgraduate Studentship) in support of my work. I am specially grateful to Mr. Roy A. Crowson, University of Glasgow, Scotland for his advice on certain matters in connexion with the work. The photographs were taken by the University Photographer. Mr. Ian Maclean.

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