

THE GENUS *PHENGODES* IN THE UNITED STATES
(COLEOPTERA: PHENGODIDAE)

WALTER WITTMER

Department of Entomology, Natural History Museum,
Basle, Switzerland

ABSTRACT

The species of *Phengodes* occurring in the United States of America are revised. Based on the structure of the maxillary palp, *Phengodes* is divided into *Phengodes* s. str. (type-species *plumosa* Ol.) and *Phengodes* (*Phengodella*) subg. nov. (type-species *frontalis* Lec.) The author examined 10 species and 4 subspecies. The following are described as new: *arizonensis*, *fenestrata*, *fusciceps intermedia*, *inflata*, *laticollis meridiana*, *nigromaculata*, and *mexicana*. *P. sallei* Lec. (1881) is synonymized under *fusciceps* Lec.

The genus *Phengodes* Ill., wide ranging in the United States, has never been studied in detail. The few specific descriptions are, in most cases, based upon single specimens, some of which have insufficient locality data.

I have examined the types of all species, even that of *Phengodes plumosa* Oliv. (the type-species), with the only exception of *P. floridensis* Blatchley. Even thus it has not in all cases been easy to determine the species. Generally, the species are rather uniform in size, coloration, and shape, especially when specimens from the same locality are compared. The interocular distance and the length of antennal segments 4 to 6 have been useful for distinguishing species. Figure 1 shows how these measurements were obtained. I used a Leitz dissecting microscope, with an 8× ocular and a 4× objective, together with an eyepiece micrometer in which one cm is divided into hundredths of a millimeter. All measurements in the tables are in millimeters.

When the mouthparts were examined, 2 types of galea were found, which made it possible to subdivide the genus. In one group, the galea is short, with a rounded apex (Fig. 9), glabrous or only with scattered short hairs. This type is found in *Phengodes* s. str., with *plumosa* Oliv. as type-species. In the other group, the galea is longer and its apex bears long, dense hairs forming a tuft or brush (Fig. 10). I propose *Phengodes* (*Phengodella*) subg. n. for this group, with *frontalis* Lec. as type-species. Among the species occurring in the United States, only the following belong here: *frontalis* Lec., *bella* Barber, and *fenestrata* sp. n.; all other species are placed in *Phengodes* s. str.

This paper was stimulated by specimens received for determination from Dr. C. W. O'Brien, Tallahassee, who in 1965 collected a large number of phengodids in Texas. I wish to express my sincere thanks to Dr. O'Brien for allowing me to retain most of the material for my collection.

I further wish to thank the following colleagues for sending me material from the collections under their care (abbreviations are those used in the text):

AMNH	=	American Museum of Natural History, New York (L. H. Herman, Jr.)
BM	=	British Museum, London (C. M. F. von Hayek)
BRI	=	Biosystematics Research Institute, Ottawa, (J. M. Campbell)
CAS	=	California Academy of Sciences, San Francisco (D. H. Kavanaugh)
FM	=	Field Museum of Natural History, Chicago (H. S. Dybas)
FSCA	=	Florida State Collection of Arthropods, Gainesville (R. E. Woodruff)
Hn	=	H. F. Howden, Ottawa
INHS	=	Illinois Natural History Survey, Urbana (J. K. Bouseman)
MCZ	=	Museum of Comparative Zoology at Harvard (J. C. Scott)
MNB	=	Museum für Naturkunde, Berlin (Humboldt-Universität) (F. Hieke)
MP	=	Muséum de Paris (A. Villiers, A. Bons)
USNM	=	United States National Museum, Washington (P. J. Spangler)
UM	=	University of Minnesota, St. Paul, (P. J. Clausen)
WW	=	W. Wittmer, Basel.

Phengodes s. str. fusciceps Lec.
(Fig. 2)

Phengodes fusciceps Lec., 1861, Class. Col. North Am.:186.

Phengodes sallei Lec., 1881, Trans. Am. Ent. Soc. 9:39, (**new synonymy**).

Thanks to the kindness of J. C. Scott, Cambridge, I had the opportunity to compare the holotype (typus 2808) of *P. sallei* with the lectotype of *P. fusciceps* Lec. The only slightly wider pronotal margin of *fusciceps* is within the range of variability of this species. Therefore, *sallei* is to be considered as a synonym of *fusciceps*. The interocular distance of *sallei* is 1.27mm., the length of antennal segments 4 to 6 is 0.60mm.

P. fusciceps can be recognized easily by the short antennae, in which especially the stems of segments 5 and 6 are widened on the inner side (Fig. 2). I examined an individual marked as type (MCZ typus 2807); the head is strongly punctured, and smooth between the punctures. The clypeus and labrum are somewhat convex, and not concave as in *plumosa*.

	Interocular distance	Length of antennal segments 4 to 6
Typus (MCZ)	1.27	0.60
Texas Nr. 1 (USNM)	1.23	0.77
Dallas Nr. 2 (USNM)	1.30	0.77
Mc Pherson Nr. 3 (USNM)	1.53	0.77
Mc Pherson Nr. 4 (USNM)	1.33	0.73
Texas Nr. 5 (WW)	1.53	0.77
Mc Pherson Nr. 6 (WW)	1.43	0.70
Stillwater Nr. 7 (MCZ)	1.33	0.73
Douglas Nr. 8 (MCZ)	1.37	0.67
Texas Nr. 9 (MCZ)	<u>1.33</u>	<u>0.73</u>
	1.37	0.72

This species is widely distributed in the United States.

Material examined: ARKANSAS: Hope, 12-VII, Knobel (MCZ); Washington Co., 4-VII-1941 & 6-V-1942, M. W. Sanderson (INHS); KANSAS: McPherson, 8-VII, W. Knaus (USM, FM, & CAS); Topeka, Popenoe, 15-VII-1876 (USNM); Douglas Co., 2-VI-1921, W. J. Brown (MCZ); without locality 4 spec. (CAS). LOUISIANA: Tallulah, 24-V-1910, V. I. Saftro (USNM); Lafayette, 31-III-1949, L. T. Graham (USNM); Forest Hill, Rapides Parish, 19-26-VIII-1945, R. L. Wenzel (FM). MISSISSIPPI: Biloxi, Harrison Co., 11-IV-1964, B. Mather (USNM). MISSOURI: Deer Park, Univ. T.V. Sta., 22-VI-1954, P. J. Spangler (USNM). NEW MEXICO: Torrance Co., J. R. Douglass (USNM). OKLAHOMA: Stillwater, 17-V-1939, K. C. Emerson (MCZ); idem 23-VI-1939, L. E. Rozeboom (INHS); UOBS, Lake Texoma (Willis), Marshall Co., 7-28-VII-1968, W. Suter (FM & WW). TEXAS: Western Texas (USNM); Tennessee Colony, Anderson Co., 10-VIII-1963, H. F. Howden (WW); Brazos Co., College Station, 10-VIII-1950, L. S. & E. S. Dillon (FM).

Phengodes (s. str.) *fusciceps floridensis* Blatchley
(new status)

Phengodes floridensis Blatchley, 1919, Canad. Ent. 51:30.

The type of this species is in the collections of the Department of Entomology, Purdue University, West Lafayette. The Curator, D. A. Provonsha, is not authorized to loan types, but has been kind enough to compare a specimen I sent him (Everglades National Park, Florida, 24-28-III-1972, D. M. Wood, ERI) with the type. He comments as follows: "The longitudinal wrinkles are present on the vertex and the hind angles of the prothorax are identical. The type specimen is the same but the wings of the type are slightly more brown. The labrum of the type is the same color as the rest of the head and is smoother than that of your specimen, which may not be of any significance. I examined both specimens closely and I could detect no other morphological differences. It is my opinion that they are the same species."

The 15 specimens from various parts of Florida before me all agree to a greater or lesser degree with the specimen compared by Dr. Provonsha with the type. The close affinity to *fusciceps* Lec. is remarkable. The antennal segments 5 to 10 are widened on their inner surface toward their apex in both species, but *floridensis* differs from *fusciceps* in many cases by the more lightly colored head which is only narrowly dark around the eyes, and by the anterior portion of the head which is uniformly less strongly punctate than in *fusciceps*. The tergites bear laterally more or less distinct dark spots which are only rarely absent, but in *fusciceps* these spots are absent in most specimens. The interocular distance and the length of antennal segments 4 to 6 is as in the nominal form. The differences mentioned are too insignificant to accept *floridensis* as a separate species; I therefore consider it a subspecies of *fusciceps*.

Material examined: FLORIDA: Crescent City, Hubbard & Schwarz (USNM); Paradise Key, I-VI-1919, C. A. Mosier (USNM); Fisheating Creek, Palmdale, 7-10-V-1964, R. W. Hodges, (USNM); Ft. Myers, VI-1967 (BRI); Homestead, Dade Co., 11-V-1967, D. E. Bright (BRI); Lake Placid, Archbold Biology Station, 4-V-1969 (BRI); Tarpon Springs, 19-III-1950, H. & A. Howden (Hn); Titusville, 11-III-1956, Howden & Howell (Hn), Home-

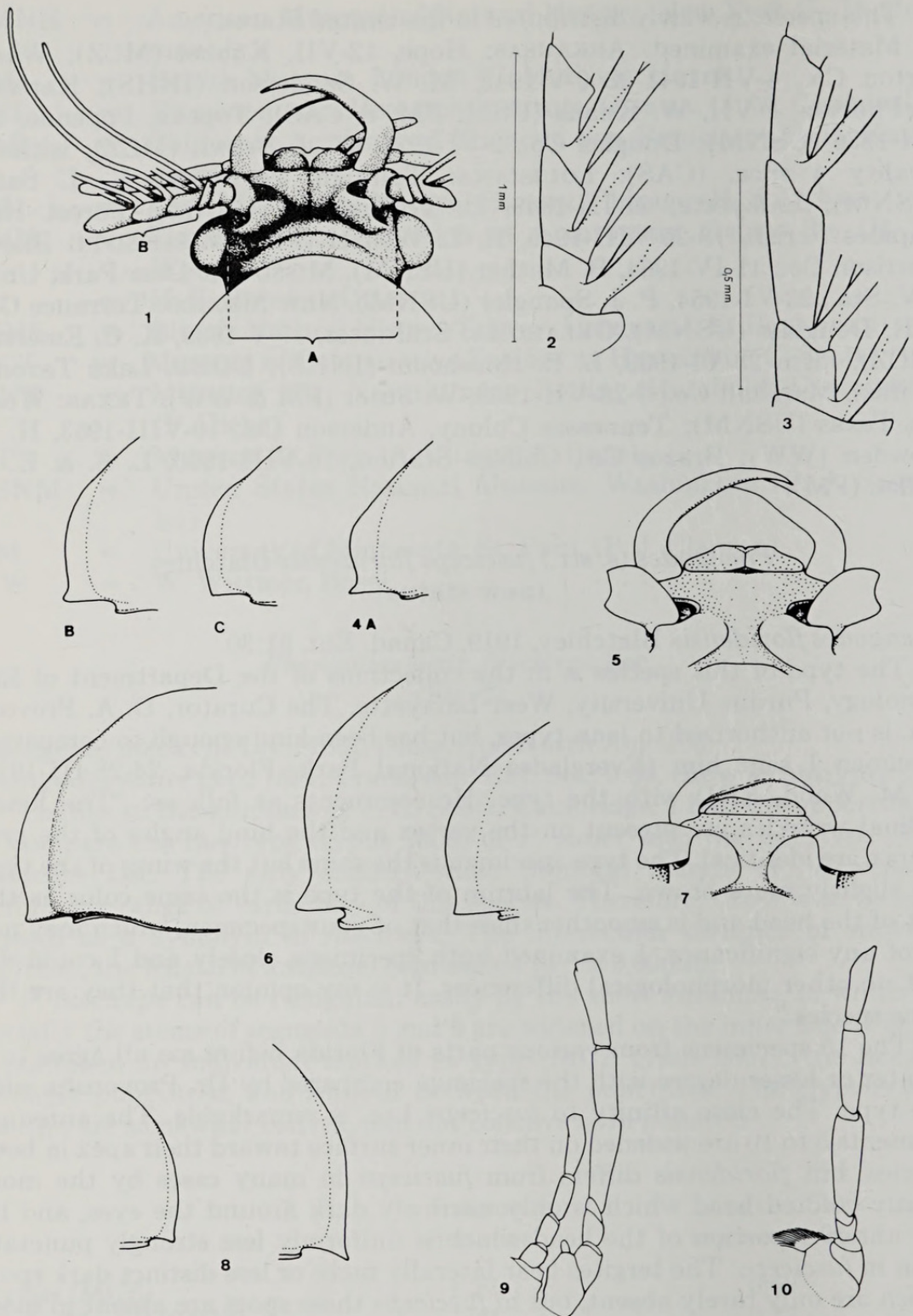


Fig. 1-10 *Phengodes* spp.: 1) (*Phengodella*) *fenestrata* n. sp. Head with basal antennal segments: A. interocular distance, B. length of antennal segments 4 to 6; 2) (s. str.) *fusciceps* Lec., antennal segments 4 to 6; 3) (s. str.) *plumosa* Ol. idem; 4) (s. str.) *mexicana* n. sp., explanate pronotal margins: A and B, 2 specimens, 10 mi W El Salto, Durango, Mex., C, 1 specimen, Arizona, 4 mi SW Forestdale; 5) (*Phengodella*) *frontalis* Lec., anterior portion of head; 6) (*Phengodella*) *frontalis* Lec., explanate margins of pronotum of 3 specimens from Texas; 7) (s. str.) *arizonensis* n. sp., anterior portion of head; 8) (s. str.) *arizonensis* n. sp., explanate margins of pronotum; 9) (s. str.) *laticollis* Lec., maxillary palpus and labial palpus; 10) (*Phengodella*) *frontalis* Lec., maxillary palpus.

stead, 16-I-1942, O. W. Calkins (FSCA); Plantation Key, 5-IV-1963 & 4-IV-1966, H. V. Weems (FSCA); Matheson, Hamm., 12-III-1959, D. R. Paulson (FSCA); Perrine, 2-VIII-1965, P. Herrmann (FSCA).

Phengodes (s. str.) *fusciceps intermedia* Wittmer, **new subspecies**

Among material from the Field Museum, Chicago, I found 6 specimens from Illinois very similar to the nominal form. They differ by the somewhat more widely explanate and more strongly rounded sides of the pronotum, somewhat as observed in *plumosa*. The antennal segments 4 to 6 are invariably longer (1.00 to 1.30mm.), as compared to 0.60 to 0.77mm. in the nominal form, and 1.17 to 1.60mm. in *plumosa*. The color agrees fully with that of the nominal form, as does the punctuation of the anterior portion of the head, clypeus, and labrum.

	Interocular distance	Length of antennal segments 4 to 6
Holotypus Edgebrook (FM)	1.23	1.07
Harvey (FM)	1.43	1.20
Palos Park (FM)	1.40	1.00
No locality (FM)	1.53	1.03
Palos Park (WW)	1.43	1.17
Chicago (WW)	1.33	1.03
Urbana (WW)	1.57	1.30
	1.48	1.11

Material examined: FLORIDA: Torreya State Park, Liberty Co., 9-17-V-1968 & 17-V-1970, H. V. Weems, Jr. (FSCA); Quincy, 4-V-1961, W. B. Tappan (FSCA). ILLINOIS: Edgebrook, 24-VI-1927, E. Ray, Holotypus in Field Museum, Chicago; Harvey, 12-VI-1902, H. Munzner (FM); Palos Park, 30-V-1911 (FM & WW); no locality (FM); Chicago, 8-VI-1946, A. K. Wyatt (WW); Chicago, 24-VI-1943, D. R. Johnson (UM); Urbana, 23-V-1910 (WW) one specimen each; Lacon, 16-VI-1938, 3, 15, and 27-VI-1940, 19-5-1941, R. M. Barnes (INHS); Normal, 9-12-VI-1882 (INHS); Fox Lake, 30-VI-1935, De-long & Ross (INHS); Rockford, VIII-1951, T. B. Blumenbach (FSCA). INDIANA: Beverley Shores, 30-VI & 2-VII-1966, C. E. White (FSCA); Dunes Beach, 9-24-VI-1966, C. E. White (FSCA).

Phengodes (s. str.) *fusciceps picicollis* Horn
(**new status**)

Phengodes picicollis Horn, 1891, Trans. Am. Ent. Soc. 18:40.

I have examined the holotype (no. 3594, MCZ), bearing the following locality data: Ramsey County, Minnesota. In the Department of Entomology, University of Minnesota, there is furthermore a series of 14 specimens which agree with the type. The size (interocular distance and length of antennae) does not show any differences with *fusciceps* Lec. The only constant difference is found in the color of the pronotum which has a more or less large black or occasionally dark brown macula. In only 1 specimen is the central macula very small and somewhat evanescent, and in several specimens the macula is very extensive and leaves only the sides narrowly light.

The head, scutellum, and also the abdomen are constantly darker than in the nominal race. Taking into account these constant differences, restricted so far to specimens from the state of Minnesota, *pivicollis* can at most be considered a subspecies of *fusciceps*.

Additional localities are: MINNESOTA: Olmsted Co., July, C. N. Ainslie (UM); University Farm, St. Paul, 2-VI-1941, A. E. Pritchard (UM); Rock Co., 24-VI-1938, P. Nicholson (UM); Camden State Park, Lyon Co., 12-VI-1973 (UM); Pipestone Nat. Mon., Pipestone Co., 12-27-VI-1973 (UM); Glacial Lakes State Park, Pope Co., 6-27-VI-1973 (UM); Blue Mounds State Park, Rock Co., 3-VII-1973, E. F. Cook (UM); St. Anth. Park, A. Bolter (INHS).

Phengodes (s. str.) *plumosa* Olivier
(Fig. 3)

Lampyrus plumosa Oliv., 1790, Entom. II, No. 28:26, Pl. 3, Fig. 27.

This species has been described from the state of Georgia, and the type should be in the Francillon collection which, according to Horn and Kahle, ought to be deposited in the British Museum or in Oxford. Letters received from both museums indicate that they do not have the type. On the other hand, among material received from the Museum für Naturkunde an der Humboldt-Universität, Berlin, there were 2 specimens of a species of *Phengodes* with the number 52653, one of which bears the following label: "*Plumosa* n. *Lampyrus* p.01.F., Georg. Am. Franc." The abbreviation Franc. refers to the Francillon collection, and there is no doubt that these 2 specimens are the types; therefore, I have designated 1 specimen as lectotype, and the other as paralectotype.

	Interocular distance	Length of antennal segments 4-6 (fig. 3)
Lectotypus (MNB)	1.33	1.37
Paralectotypus (MNB)	1.50	1.60
Dorchester, Mass. Nr. 3 (MCZ)	1.27	1.33
Milton, Mass. Nr. 4 (MCZ)	1.37	1.23
Malcolm, Neb. Nr. 5 (MCZ)	1.33	1.17
Fonthill, Ont. Nr. 6 (WW)	1.47	1.40
Wattacoo, SC Nr. 7, (WW)	1.33	1.40
North East, Nr. 8 (WW)	1.43	1.43
Essex Falls, N.J. Nr. 9 (USNM)	1.40	1.33
Clemson College, S.C. Nr. 10 (USNM)	<u>1.47</u>	<u>1.40</u>
	1.40	1.37

P. plumosa is one of the smaller species and measures between 12 and 15mm.; it can be recognized easily by the head and labrum which are densely punctate and dull. The head is in most cases yellow to yellowish brown; I have seen only a few specimens from Canada and Georgia with a darkened head. The labrum is heavily punctate, slightly emarginate at center, and reminds one of *fusciceps*. The antennal segments 4 to 6 are twice or almost twice as long as in *fusciceps*.

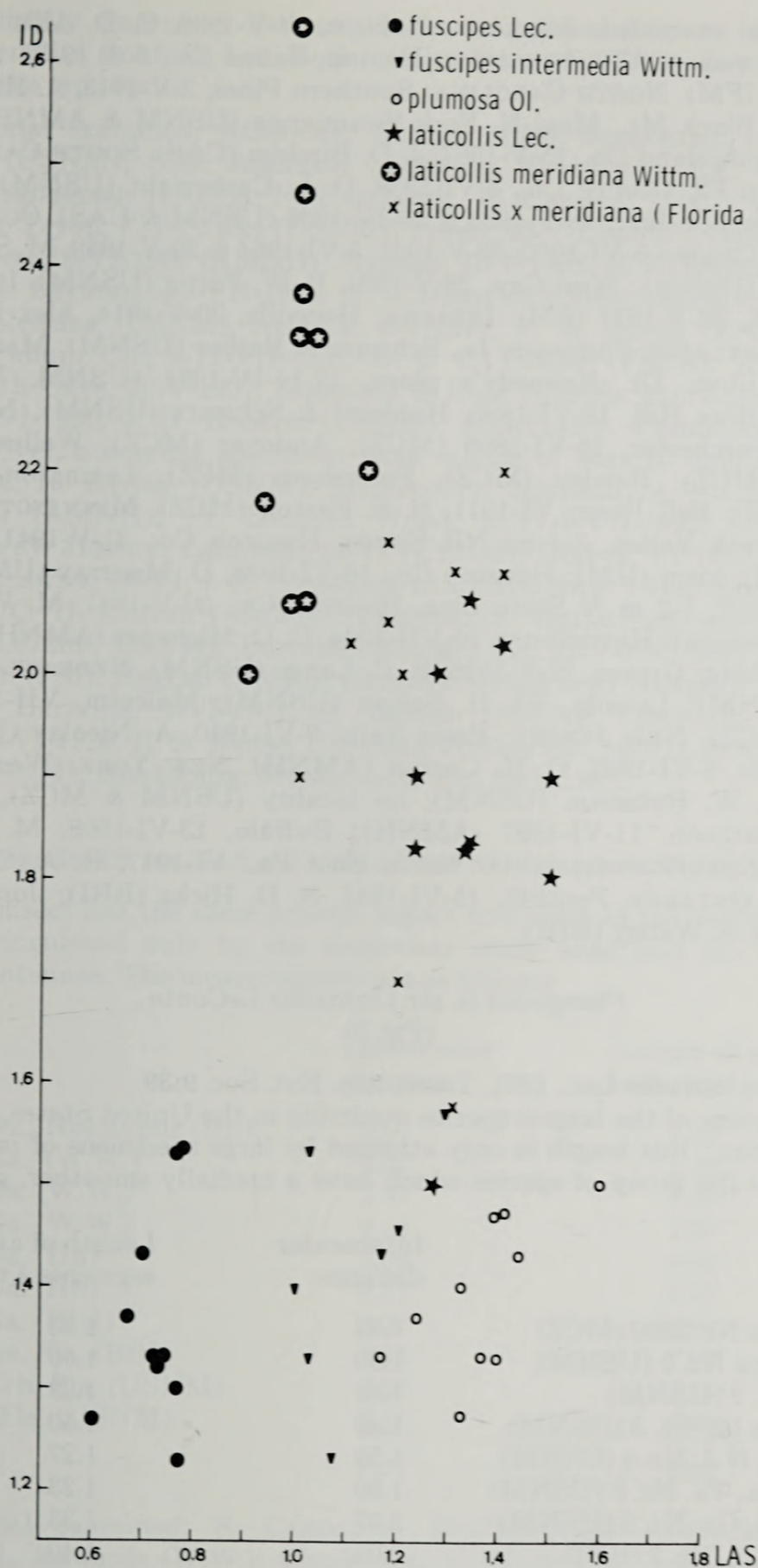


Fig. 11: Measurements of *Phengodes* s. str. *fusciceps* Lec., *fusciceps* ssp. *intermedia* Wittm., *plumosa* Ol., *laticollis* Lec., *laticollis* ssp. *meridiana* Wittm. and *laticollis* × *meridiana* (Florida).

Material examined: ALABAMA: Auburn, 14-V-1908, C. D. Allis (USM); idem, Sherman (CAS). ARKANSAS: Benton, Saline Co., 8 & 12-VI-1950, H. Ramstadt (FM). NORTH CAROLINA: Southern Pines, 2-V-1913, A. H. Manee (USNM); Black Mt., May, N. Fork Swannanoa (USNM & AMNH); Fort Bragg, Cumberland Co., 15-V-1967, J. D. Birchim (CAS). SOUTH CAROLINA: CCC Camp F2, Oconee Co., 6-VI-1938, O. L. Cartwright (USNM); Clemson College, 8-V-1927, 18-V-1933 & 25-IV-1936 (USNM & CAS). CONNECTICUT: New Canaan 5-VI-1950, 30-V-1951, 5-VI-1954 & 29-V-1959, M. Statham (AMNH). GEORGIA: Neel Gap, 28-V-1934, P. W. Fattig (USNM). ILLINOIS: Palos Park, 30-V-1911 (FM). INDIANA: Hessville, 30-V-1914, Alex K. Wiat (FM). MARYLAND: Plummerville Is., Schwarz & Barber (USNM). MASSACHUSETTS: Milton, Dr. Kennedy's place, 12-14-IV-1894 (USNM, MCZ & AMNH); Blue Hill, 18-VI-1893, Hubbard & Schwarz (USNM); Nor., Co. (MCZ); Dorchester, 15-VI-1898 (MCZ); Andover (MCZ); Wellesley, 15-VI-1916 (MCZ); Rowley (MCZ); Petersham (MCZ); Lexington, 17-VI-1934 (MCZ); Fall River, VI-1911, N. S. Easton (MCZ). MINNESOTA: Winnebago Creek Valley, 3-4 mi NE Eitzen, Houston Co., 31-V-1941, M. W. Wing (FM); idem (UM); Houston Co., 16-VI-1938, D. Mourray (UM); Mississippi Bluff, 1-2 m N State Line, Houston Co., 30-V-1941, M. W. Wing (UM). MISSOURI: Hattiesburg, 10-VII-1944, C. D. Michener (AMNH). MONTANA: Webster Groves, 22-V-1926, R. C. Lange (USNM). NEBRASKA: Crete, Neb. (USNM); Lincoln, VI, H. Soltan (USNM); Malcolm, VII-1909, R. Oertel (MCZ). NEW JERSEY: Essex Falls, 9-VI-1910, A. Nicolay (USNM); Branchville, 6-VI-1932, C. H. Curran (AMNH). NEW YORK: West Point, 7-VI-1912, W. Robinson (USNM); no locality (USNM & MCZ); Waterworks, Flatbush, 11-VI-1897 (AMNH); Buffalo, 13-VI-1908, M. C. van Duzee (CAS). PENNSYLVANIA: North East Pa., VI-1917, R. A. Cushman (USNM). ONTARIO: Fonthill, 15-VI-1941, S. D. Hicks (BRI); Jordan, 18-VI-1926, G. S. Walley (BRI).

Phengodes (s. str.) *laticollis* LeConte
(Fig. 9)

Phengodes laticollis Lec., 1881, Trans. Am. Ent. Soc. 9:39

This is one of the largest species occurring in the United States, measuring 14-20mm.; this length is only attained by large specimens of *inflata*. It belongs to the group of species which have a medially smoother, generally

	Interocular distance	Length of antennal segments 4 to 6
Holotypus Nr. 2806 (MCZ)	1.83	1.33
N. Carolina Nr. 1 (USNM)	1.90	1.50
Tryon Nr. 2 (USNM)	1.83	1.33
Plummerville Isl. Nr. 3 (USNM)	1.80	1.50
Lahaway, N.J. Nr. 4 (USNM)	1.50	1.27
Nelson Co., Va. Nr. 5 (USNM)	1.90	1.23
Savannah, Ga. Nr. 6 (USNM)	2.07	1.33
Forsyth, Ga. Nr. 7 (BRI)	2.03	1.40
Clemson, S.C. Nr. 8 (BRI)	1.83	1.23
Hilton Head Isl., S.C. Nr. 9 (WW)	<u>2.00</u>	<u>1.27</u>
	1.87	1.34

longitudinally impressed and anteriorly emarginate labrum, and therefore resembles *frontalis* Lec. Both species have rounded, widely explanate sides of the pronotum.

Material examined: ALABAMA: Auburn (FM). ARKANSAS: no locality 1 spec. (USNM); S.W. Arkansas (AMNH); Washington Co., 6-VI-1942, M. W. Sanderson (INHS). N. CAROLINA: N. Carolina (MCZ) Holotypus Nr. 2806; Tryon, F. W. Fiske (USNM); Tryon, 18-V-1903 (USNM). Clay Co., Brasstown, 16-VI-1968 (AMNH); Raleigh, 22-V-1952, B. K. Dozier (FSCA). GEORGIA: Savannah, 3-VII-1916, W. J. Hoxie (USNM); Demorest, V-VIII-1939, Valentine (USNM), Atlanta, 4-V-1949, P. W. Fattig (FSCA); Blue Ridge, Fannin Co., 6-12-VII-1955, R. & C. Patton (FSCA). KENTUCKY: Mammoth Cave, 20-V-1957, Stannard & Ross (INHS). LOUISIANA: Baton Rouge, 3-I-1930, J. H. Roberts (USNM). MARYLAND: Plummers Isl., Potomac River, numerous specimens from middle of May to middle of June 1908-1912, H. Barber (USNM). MISSISSIPPI: Hattiesburg, VI-1944, C. D. Michener (AMNH); Ft. Leonard Wood, 29-IV-9-VII-1952, D. Giuliani (CAS). NEW JERSEY: Lahaway, 24-VI (USNM); Orange, VI-1920 (USNM); New Brunswick, 16-VI, J. A. Grossbeck (AMNH). NEW YORK: Bear Mt., 20-VI-1948, C. H. Curran (AMNH). TENNESSEE: Gatlinburg, summer 1957, (1.93 & 1.67mm, USNM); Burrville, Morgan Co., 22-V-1-VI-1951 and 1952, B. Benesh (FM); English Creek at Carson's Spring, near Newport, 3-VI-1946 (INHS), Burrville, 1-VI-1961, B. Benesh (FSCA). VIRGINIA: Potomac River, 25-VI-1926, H. S. Barber (USNM); Nelson Co., 10-VII-1906, W. Robinson (USNM); Blacksburg, Montgomery Co., 20-V-1913.

Phengodes (S. str.) *laticollis meridiana* Wittmer, **new subspecies**

This insect has the same general aspect and color of the nominal form; it is distinguished only by the somewhat wider head and the distinctly shorter antennae. The measurements are as follows:

	Interocular distance	Length of antennal segments 4 to 6
Emory, Ga., Holotypus (Hn)	2.07	1.00
Emory, Ga., (W.W.)	2.07	1.00
Emory, Ga. (W.W.)	2.47	1.00
Emory, Ga. (W.W.)	2.33	1.03
Emory, Ga. (Hn)	2.00	0.90
Emory, Ga. (Hn)	2.17	0.93
Emory, Ga. (BRI)	2.37	1.00
Everglades, Fla. (BRI)	2.33	1.00
Palm Beach, Fla. (USNM)	2.20	1.13
Orlando, Fla. (USNM)	<u>2.67</u>	<u>1.00</u>
	2.27	1.00

Material examined: S. CAROLINA: McClellanville, 19-IV-1952, light trap, R. L. Edwards (W.W.); Charleston, 11-IV-1944, R. L. Wenzel (FM); FLORIDA: Levy Co., 7 and 11 miles NE Cedar Key, 8 & 29-VI-1970, D. L. Bailey (USNM); Orlando, 31-VI-1901, E. L. Worsham (2.67 & 1.00mm, USNM): the first number corresponds to the interocular distance, and the

second indicates the length of antennal segments 4 to 6. Palm Beach, IV-1907, W. Robinson (2.20 & 1.13mm, USNM); Belle Glade, 15-VII-1940, J. W. Wilson (2.37 & 1.13mm, USNM); Royal Palm State Park (2.20 & 1.03mm, USNM); L. Worth (2.10 & 1.03mm, USNM); Fisher Island, Miami Beach, 15-VIII-1955 (2.33 & 1.00mm, USNM); Homestead, 30-VII-1957, R. M. Baranowski (2.37 & 1.10mm, MCZ); Florida, 1883, coll. F. A. Eddy (2.27 & 1.13mm 1 spec. & 1.97 & 0.90 mm 1 spec., MCZ); Coconut Grove, 1925, G. B. Pearson (BM); Crescent City, Hubbard & Schwarz (USNM); Port Sewall, 16-22-II-1941 & 5-III-1944, L. J. Sanford (AMNH); W. Palm Beach, 11-VIII-1951, J. E. Porter (INHS). Gainesville, Alachua Co., 15 & 17-IV-1966, F. W. Mead, idem 23-29-III-1960, A. F. Wilson, idem 21-24-VIII-1969, F. W. Mead, idem 14-VIII-1972, K. E. Woodruff (FSCA); Gainesville, Doyle Conner Building, 25-VII-1970, F. W. Mead (FSCA); Big Pine Key, Monroe Co., 27-28-VI-1970, R. E. Woodruff (FSCA); Perrine, Dade Co., 28-VII-1960, J. H. Knowles (FSCA); Dade Co., H. F. Strohecker (FSCA); Ocala, 10-VIII-1962, 24-V & 9-VII-1963, T. R. Adkins (FSCA); Oneco, Manatee Co., P. Dillman (FSCA); Belle Glade, 23-IV-1957, E. D. Harris (FSCA); Miami, 10-VI-1948 & 13-VII-1959 (FSCA). GEORGIA: Emory University Field Sta., Newton, 25-VII-1952 & 22-III-1957, H. Howden, Holotype and 4 Paratypes in coll. Howden, 1 Paratype BRI, 4 Paratypes coll. W. Wittmer, 1 Paratype MCZ.

From the following localities in Florida, specimens were examined which show somewhat aberrant measurements:

	Interocular distance	Length of antennal segments 4 to 6
Crescent City (USNM)	1.58	1.30
Crescent City (USNM)	1.70	1.20
Crescent City (USNM)	1.90	1.10
Crescent City (USNM)	2.10	1.17
Archbold Biol. Station (AMNH)	2.00	1.20
Archbold Biol. Station (AMNH)	2.33	1.17
Archbold Biol. Station (AMNH)	2.03	1.17
Archbold Biol. Station (AMNH)	2.10	1.40
Archbold Biol. Station (WW)	2.20	1.40
Archbold Biol. Station (WW)	<u>2.10</u>	<u>1.20</u>
	2.00	1.22

It cannot be established at this time if the nominal form and the subspecies *meridiana* are intergrading here.

Phengodes (s. str.) *mexicana* Wittmer, **new species**

Fig. 4A, B and C

Male: Brown to reddish brown; stem of antennal segments 4 to 11 darkened for their greatest part, as are the lateral branches; apices of elytra dark brown to piceous, only in one specimen barely darkened.

Head with eyes distinctly narrower than pronotum at its base. Base of frons densely punctate at center, laterally with several curved longitudinal wrinkles; anterior portion of frons between antennal insertions with a few scattered punctures, from there to clypeus smooth at center, laterally again a few scattered punctures. Labrum with rounded and centrally

shallowly emarginate anterior border; a feeble longitudinal impression perceptible at middle, punctuation present, but absent at middle. Antennae comparatively long.

	Interocular distance	Length of antennal segments 4 to 6
Durango, Holotypus, Mex. (BRI)	1.60	1.50
Durango, Mexico (BRI)	1.70	1.53
Durango, Mexico (WW)	1.63	1.67
Durango, Mexico (WW)	<u>1.67</u>	<u>1.73</u>
	1.65	1.61

Pronotum (Fig. 4A, B and C) wider than long, somewhat widened at base, sides rounded with basal angles somewhat prominent or almost straight with basal corners not protruding; explanate lateral margin wide; punctures scattered, distinct, median impression shortly indicated near base, or absent. Elytra approximately 3 times as long as pronotum, with portions slightly rugose and others smooth, distinctly punctate in between ($64\times$); 1 or 2 longitudinal ribs indicated.

Length 14-16mm.

Type locality: MEXICO: 10 miles W of El Salto, Durango, 9000 ft., 13-VI, 4-15-VII-1964, J. E. H. Martin, holotype and paratype in BRI, 2 paratypes coll. W.W.

This species is related to *P. arizonensis* Wittm. It is distinguished by the more flattened space between the antennal insertions, the less heavily punctate anterior portion of the frons and the labrum which is furthermore widely emarginate at the center, and the dark apices of the elytra, which in *arizonensis* are uniformly yellowish brown, similar to the rest of the surface of the elytra. The average of the interocular distance is higher in *mexicana* than in *arizonensis*.

The species seems to be rather widely distributed because material from the following localities in the United States has been examined: ARIZONA: Sta. Rita Mts., 25-VII-1925, G. P. Engelhardt (WW); Madera Canyon, N slope Sta. Rita Mts., Sta. Cruz Co., 5380 ft., 31-VII-1948, F. Werner, W. Nutting (USNM); Box Canyon, Sta. Rita Mts., 27-VIII-1965, R. F. Sternitzky (BRI); Sierra Vista, Cochise Co., 21-VII-1966, R. F. Sternitzky (BRI); Graham Mts., Graham Co., 8000 ft., 16-VIII-1952, M. Cazier, R. Schrammel (AMNH); Prescott, Yavapai Co., 25-VII-1948, C. & P. Vaurie (AMNH); Sta. Catalina Mts., 20-VIII-1933, Bryant (CAS); Pine forest, 4 mi. SW Forestdale, Navajo Co., 23-24-VIII-1952, H. B. Leech, J. W. Green (CAS); Chiricahua Mts., 8-9000 ft., Rustler Park, 27-VII-1927, J. A. Kusche (CAS); idem Barfoot Park, 9000 ft., 29-VII-1927, (CAS). NEW MEXICO: McMillan Camp, 13 miles N Silver City, Grant Co., 6800 ft., 14 & 17-VII-1961, F. P. & J. Rindge (AMNH).

The specimens from Arizona and New Mexico do not entirely agree with those from Durango: the sides of the pronotum are straighter, and the basal angles are rarely protruding. It must be noted, however, that 1 specimen from Durango shows a pronotum similar to that of the specimens from Arizona and New Mexico.

Phengodes (s. str.) *arizonensis* Wittmer, **new species**

Fig. 7 and 8

Male: Concolorous, yellowish brown to orange brown, only stems of antennal segments 4 to 11 black or piceous.

Head (Fig. 7) with eyes in most cases slightly narrower than pronotum at level of basal angles. Base of frons rather coarsely punctured at center, laterally with 1 to 4 more or less distinct curved longitudinal wrinkles. Anterior portion of frons centrally between antennal insertions somewhat convex and punctate to and including clypeus; smooth between punctures. Labrum somewhat swollen, divided from clypeus by straight line, anterior border rounded and not or very slightly emarginate at middle, its punctation somewhat more delicate than on anterior portion of frons and on clypeus. Antennae of medium length. Interocular distance and length of antennal articles 4 to 6 subject to great variation; the following are the minimum and maximum (respectively) measurements obtained: interocular distance, 1.20, 1.80; antennal segments 4-6, 0.93, 1.43mm. Following are measurements of 10 specimens:

	Interocular distance	Length of antennal segments 4 to 6
Molino Basin, Ariz. Holotype (CAS)	1.50	1.17
Molino Basin, Ariz. (WW)	1.50	1.17
Molino Basin, Ariz. (WW)	1.80	1.30
Molino Basin, Ariz. (WW)	1.47	1.13
Molino Basin, Ariz. (WW)	1.27	0.97
Huach. Mts., Ariz. (BRI)	1.40	1.40
Huach. Mts., Ariz. (WW)	1.30	1.20
Sonoita, Ariz. (BRI)	1.20	1.33
Sonoita, Ariz. (WW)	1.60	1.40
Huach. Mts. Ariz. (BRI)	<u>1.33</u>	<u>1.33</u>
	1.44	1.24

Pronotum (Fig. 8) wider than long, sides at certain places in many cases almost parallel, or somewhat widened towards basal angles, the latter in most cases conspicuously pointed and somewhat protruding, slightly widened; explanate lateral margin narrow or very narrow. Punctation comparatively dense and conspicuous, denser at center of anterior margin than on remainder of disk. Elytra strongly abbreviated, 2.25 to 2.50 times as long as pronotum, slightly rugose, distinctly punctured (64×) between wrinkles, traces of 2 or 3 longitudinal ribs perceptible.

Length: 12-19mm.

Type locality: ARIZONA: Molino Basin, Sta. Catalina Mts., 4600 ft., 3 & 4-IX-1965, L. & C. W. O'Brien, holotype and 3 paratypes, (CAS); 4 paratypes (FSCA) 4 paratypes (BM), 6 paratypes C. W. O'Brien, further paratypes in coll. W. W.

Further material examined: ARIZONA, Cochise Stronghold, Cochise Co., 4600 ft., 6-IX-1965, 2 spec. L. & C. W. O'Brien; Huachuca Mts., Ramsey Cyn., 6000 ft., 15 mi. S Sierra Vista, 7-VI-1964, 22-VII-1967 & 13-IX-1968, R. F. Sternitzky (BRI, WW); Huachuca Mts., Canelo, 27-VIII-1966, R. F. Sternitzky (BRI); 5 miles SE Sonoita, 16-VIII-1967, R. F. Sternitzky (BRI); Ramsey Cyn., Huachuca Mts., Cochise Co., 14-IX-1969, R. F. Sternitzky

(BRI); Elgin, Santa Cruz Co., 29-VII- & 22-VIII-1966, R. F. Sternitzky (BRI, WW); Oslar, Huachuca Mts., 8000 ft., 10-VIII-1903 (USNM); 4 miles N Whiteriver, Navajo Co., (White Mts.), 5140 ft., 20-22-VII-1948, F. Werner & W. Nutting (USNM); Garden Canyon, N slope Huachuca Mts., 5700 ft., 1949, F. Werner & W. Nutting (USNM); Chiricahua Mts., Cochise Co., 5-6000 ft., 30-IX-1927, J. A. Kusche (CAS); Sta. Rita Mts., 5-IX-1933, Bryant (CAS); Southwestern Res. Sta., 5 Mi. W Portal, Cochise Co., 5400 ft., 11-21-IX-1966, P. H. Arnaud Jr. (CAS); Huachuca Mts., Van Dyke (CAS); S.W. Res. Sta., 5-6000 ft., 13 & 16-IX-1958, H. V. Weems, Jr. (FSCA); idem Cochise Co., 10-IX-1958 (FSCA).

This species is superficially very similar to *P. frontalis* Lec., but is distinguished easily by the concolorous yellowish brown elytra and the antennal segments 4 to 6 which are somewhat longer on the average. Additional differences are found in the shape and punctuation of the labrum and the pronotum, and the punctuation of the head, as shown in the keys.

Phengodes (s. str.) *inflata* Wittmer, **new species**

Male: Concolorous yellowish brown to orange brown; stem of antennal segments 4 to 6 somewhat darkened in many cases.

Head with eyes only little narrower than pronotum at base. Base of frons rather strongly elevated at center between antennal insertions and punctate to and including clypeus, between punctures from smooth to delicately microchagriné ($64\times$). Labrum swollen, anterior margin rounded, its punctures more delicate and denser than on anterior portion of frons. Antennae comparatively short.

	Interocular distance	Length of antennal segments 4-6
Corona, N. Mex. Holotype (BRI)	2.00	1.07
Corona, N. Mex. (BRI)	2.10	1.10
Corona, N. Mex. (WW)	1.83	0.90
Corona, N. Mex. (BRI)	1.77	0.77
Sta. Rita Mts., Ariz. (BRI)	1.80	1.00
Sta. Rita Mts., Ariz. (WW)	1.97	1.07
Huach. Mts., Ariz. (BRI)	1.90	1.00
Huach. Mts., Ariz. (WW)	1.90	1.07
Huach. Mts., Ariz. (BRI)	1.50	0.80
Patagonia, Ariz. (BRI)	1.97	1.10
	1.87	0.99

Pronotum wider than long, slightly widened towards basal angles, explanate lateral margin rather uniformly wide, relatively wide, basal angles somewhat salient. Punctuation relatively dense and conspicuous, denser at center near anterior margin than on rest of disk. Elytra strongly abbreviated, about 2.5 times as long as pronotum, slightly rugose, distinctly punctured in between wrinkles ($64\times$); traces of 2 or 3 ribs perceptible.

Length: 15-20mm.

Material examined: NEW MEXICO: 4 miles NW Corona, 6400 ft., 18-IX-1968, D. F. Hardwick, Holotype (BRI), Paratypes (BRI & WW); ARIZONA: Box Canyon, N of Greaterville, 5800 ft., Sta. Rita Mts., 27-VIII-1965 & 12-VIII-1966, R. F. Sternitzky (BRI & WW); Ramsey Canyon, 15 miles S Sierra

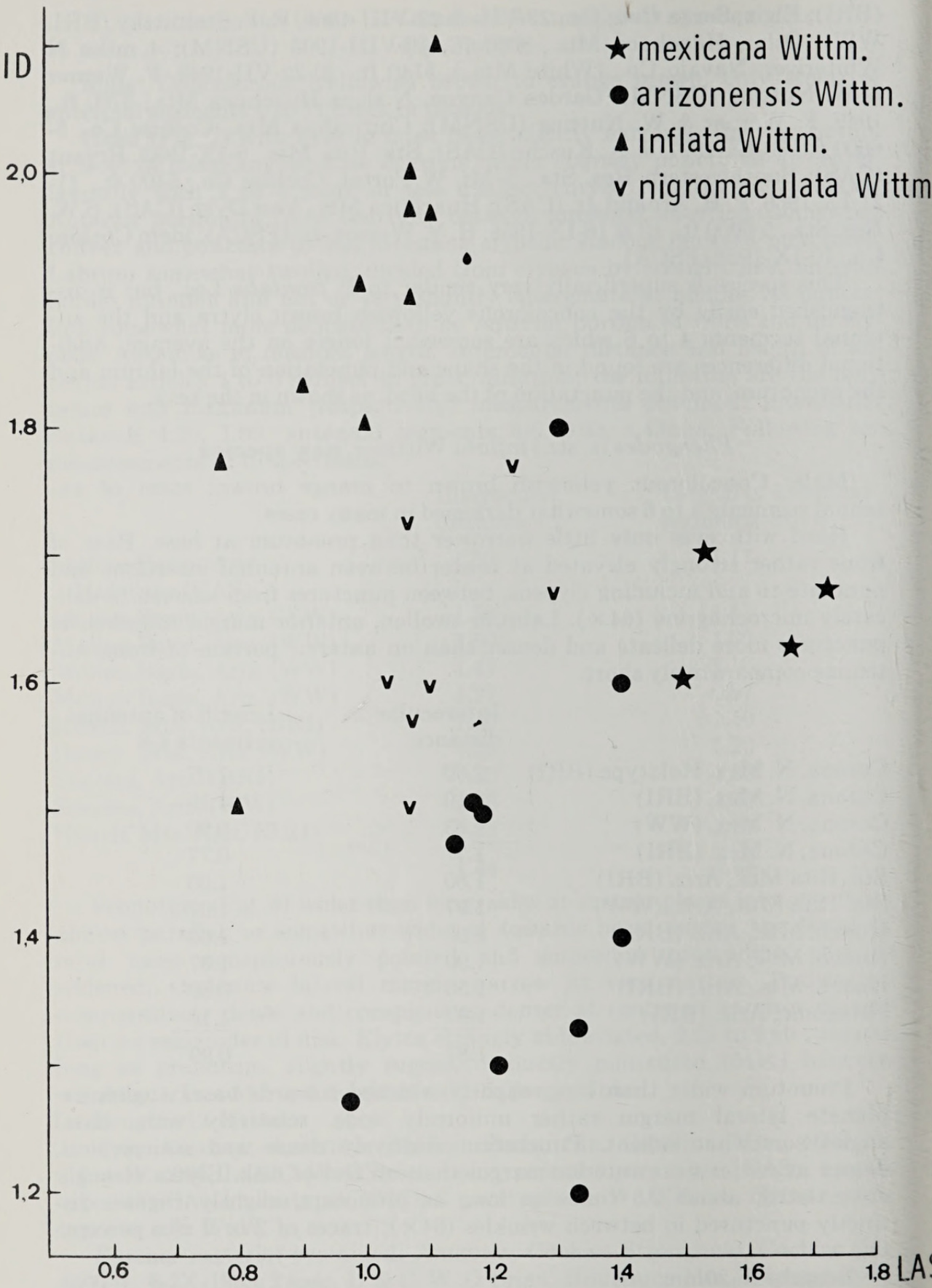


Fig. 12: Measurements of *Phengodes* s. str. *mexicana* Wittm., *arizonensis* Wittm., *inflata* Wittm. and *nigromaculata* Wittm.

Vista, Huachuca Mts., 6000 ft., 20-X-1964 (BRI & WW); Sabino Canyon, Pima Co., 3-4-IX-1961, J. S. Buckett (CAS); Tucson, 26-VIII-10-X-1935, Bryant (CAS); Baboquivari Mts., 18-20-VIII & X-1924, O. C. Poling (CAS); Wickenburg, 2-IX-1961, J. S. Buckett (CAS), Brown's Canyon, E slope Baboquivari Mts., 3800 ft., F. Werner & W. Nutting (USNM). TEXAS: Presidio, 7-X-1953, J. H. Russell (USNM); Mohave Co., 8-15-IX-1933, Wickham (USNM).

This species is closely related to *P. arizonensis* Wittm., together with which it seems to occur occasionally. It is distinct from *arizonensis* by the wider head (interocular distance 1.87mm, as compared to 1.44 in *arizonensis*), the shorter antennae (length of segments 4 to 6 0.99mm, as against 1.24mm in *arizonensis*), and, in most cases, by the more widely explanate pronotum. Furthermore, the labrum is thicker in *inflata*, and the tubercle in the center of the anterior portion of the frons between the antennal insertions is higher than in *arizonensis*. Only larger series from identical localities or the study of reared material will make it possible to establish if these 2 forms represent separate species, or subspecies comparable to those we find, for instance, in *fusciceps* and *laticollis*.

Phengodes (s. str.) *nigromaculata* Wittmer, **new species**

Male: Head, antennae and scutellum brown; mandibles brown with black base; pronotum brown with a wide longitudinal anteriorly somewhat tapered black band, basal margin brown; elytra brown at base, with dark or black coloration beginning at middle or even more basal, and extending all the way to apex. Under surface for the greatest part black, tergites and sternites more or less widely bordered with brown; legs brown, tarsi slightly darkened.

Head with eyes narrower than pronotum, longitudinal wrinkles of base of frons more distinct at sides than at middle, anterior transverse impression smooth, protuberance roundly projecting towards antennal insertions. Labrum widely and shallowly emarginate at center, with a few coarse punctures, anterior portion of frons just behind labrum equally with large, but less dense punctures. Antennae moderately elongate.

Interocular distance and length of antennal segments 4 to 6 measured in 7 specimens:

	Interocular distance	Length of antennal segments 4 to 6
Holotype (BRI)	1.60	1.03
Emory, Ga. (BRI)	1.57	1.07
Emory, Ga. (WW)	1.60	1.10
Emory, Ga. (WW)	1.73	1.07
Gainesville, Fla. (BRI)	1.50	1.07
Bellair, Fla. (USNM)	1.67	1.30
Archer, Fla. (USNM)	<u>1.77</u>	<u>1.23</u>
	1.63	1.12

Pronotum wider than long; sides narrowly explanate; basal angles in most cases pointed, projecting, disk completely smooth and without impressed longitudinal line along middle. Elytra from rugose to almost glabrous, with scattered evanescent punctures.

Length 11-16mm.

Material examined: GEORGIA: Emory University Field Stn., Newton, 1-V-1959 (Holotype BRI); idem 2 Paratypes each (BRI & WW); FLORIDA: Gainesville, 9-V-1957, H. A. Denmark (BRI); Bellair, Mrs. Slossen (USNM); Archer, III-1882 (USNM); Atlantic Beach, (AMNH); Jacksonville, Duval Co., 1-IV-5-V-1957, Dave Ribble; Gainesville, 1-IV-1958, 29-IV-1959, 10-V-1962, 25-V-1964, 27-IV-1966, 2-V-1966, 11-V-1966, 28-III-1967 & 13-IV-1967; J. W. Perry (FSCA); idem 9-IV-1963, R. E. Woodruff (FSCA); idem 23-V-1957, L. A. Hetrick (FSCA); idem 2, 23, & 30-IV-1968, 4-V-1968, 12-VI-1968 & 18-IV-1969, F. W. Mead (FSCA); idem 21-IV & 4-V-1955, H. A. Denmark (FSCA); Pine Hills Estate, Gainesville, 22, 24, & 25-VI-1969, D. Weems & H. V. Weems, Jr. (FSCA); Ocala, 24-V-1963, T. R. Adkins (FSCA).

A species sufficiently characterized by its coloration, and furthermore distinguished by the completely smooth pronotum with its narrowly explanate sides and the smooth head. The species approaches *frontalis* Lec. in the interocular distance and the length of antennal segments 4 to 6, but the latter species has a completely different coloration and the pronotum is distinctively punctate; furthermore, the 2 species belong to different subgenera.

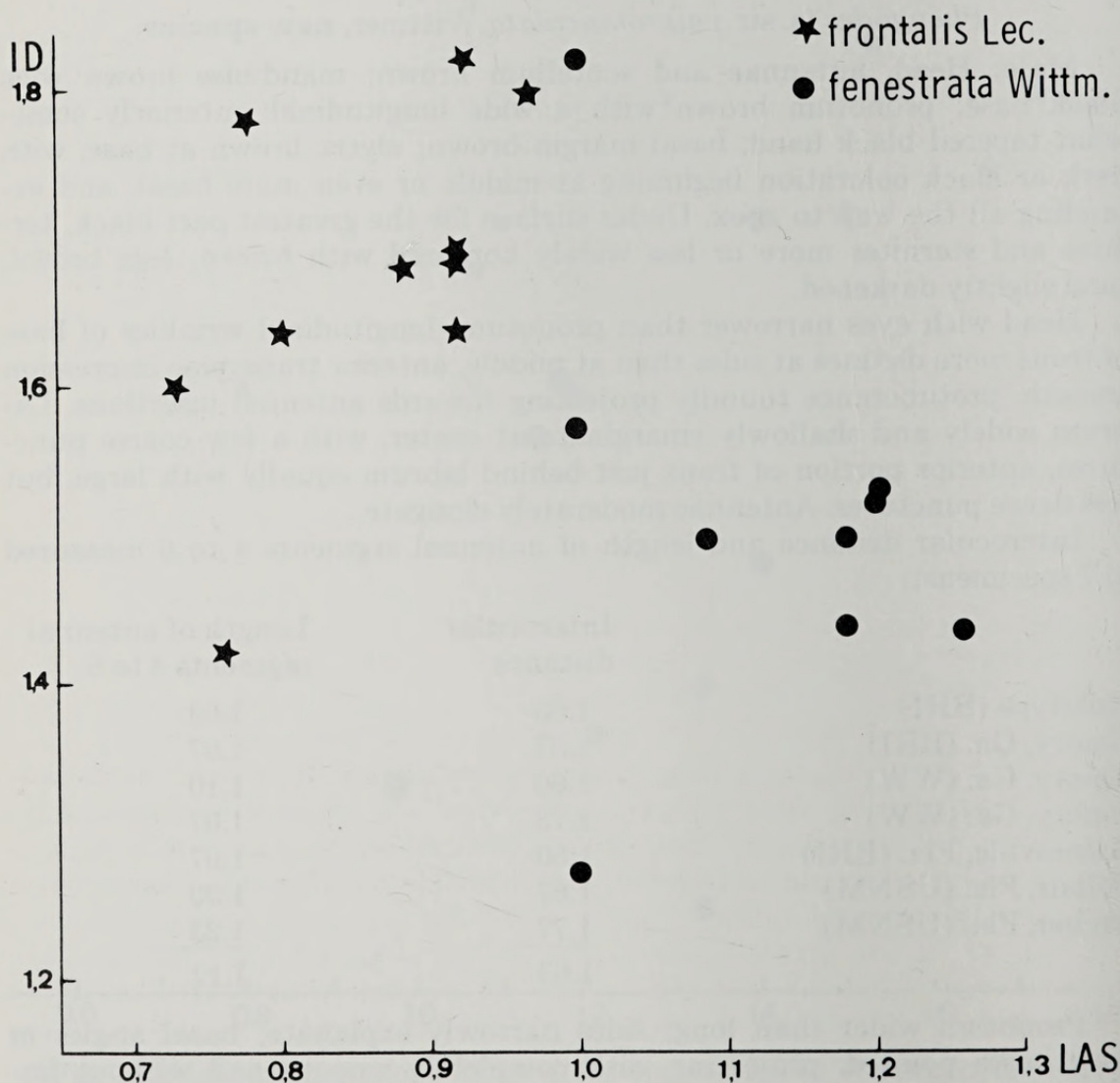


Fig. 13: Measurements of *Phengodes (Phengodella) frontalis* Lec. and *fenestrata* Wittm.

Phengodes (*Phengodella*) *bella* Barber

Phengodes bella Barber, 1913, Canad. Ent. 45:343.

This and *fenestrata* are the only species with concolorous dark elytra occurring in the United States. The type (no 16332) is in the USNM; it was collected in Southern California, San Bernardino Co., late June or early July, H. G. Klages. An additional specimen should be in the Klages collection, Carnegie Museum, Pittsburgh.

Phengodes (*Phengodella*) *fenestrata* Wittmer, **new species**

Fig. 1

Male: Black. Mandibles for their greatest part, and anterior portion of frons below the antennal insertion, reddish brown, in some specimens also clypeus and labrum somewhat lightened. Pronotum with 2 reddish brown maculae basally, touching the basal margin only for a short extension on each side of middle; the narrow black longitudinal stripe separating the spots in many cases with 1 short interruption. Abdomen reddish brown.

Head (Fig. 1) with eyes narrower than pronotum. Longitudinal wrinkles on basal portion of frons distinct, somewhat evanescent in parts, anterior transverse impression smooth, with obsolescent, scattered hair punctures. Labrum somewhat emarginate at center, with longitudinal impression, smooth, with coarse obsolescent punctures. Antennae comparatively short.

Interocular distance and length of antennal segments 4 to 6 measured in 10 specimens (see also Fig. 1):

Nr.	Interocular distance	Length of antennal segments 4 to 6
1	1.77	0.83
2	1.67	0.93
3	1.63	0.93
4	1.67	0.93
5	1.63	0.80
6	1.43	0.77
7	1.60	0.73
8	1.83	0.90
9	1.80	0.97
10	1.67	0.87
	<hr/> 1.67	<hr/> 0.87

Pronotum wider than long, lateral margins broadly explanate (similar to *laticollis* Lec.), basal angles only very slightly projecting. Surface smooth, with a delicate longitudinal linear impression along middle, which does not attain anterior or basal margin; explanate lateral margin with obsolescent punctation.

Length: 12-14mm.

Material examined: TEXAS: Big Bend Nat. Park, Chihuahan desert near Nugent Mt., 10-IV-1967, A. & M. E. Blanchard, holotypes and 148 paratypes. Holotype and 125 paratypes in USNM, 20 paratypes WW and 3 paratypes MCZ. Presidio, at light, 9-IV-1953 & 15-IV-1955, J. H. Russel, one specimen each (USNM). ARIZONA: Sacaton, 19-V-1920, H. F. Loomis, 1 spec. (USNM).

The only known species with a black upper surface, except the 2 basal maculae on the pronotum. It resembles *laticollis* which shows a similarly widened explanate pronotal margin.

Phengodes (*Phengodella*) *frontalis* Lec.

Fig. 5, 6 & 10

Phengodes frontalis Lec., 1881, Trans. Am. Ent. Soc. 9:39.

I have examined the type (holotype no. 2805, MCZ).

	Interocular distance	Length of antennal segments 4 to 6
Holotype, Tex. (MCZ)	1.53	1.20
New Braunfels, Tex. Nr. 1 (USNM)	1.53	1.20
Brownwood, Tex. Nr. 2 (USNM)	1.50	1.17
Kerville, Tex. Nr. 3 (USNM)	1.47	1.27
The Basin, Tex. Nr. 4 (USNM)	1.27	1.00
Uvalde, Tex. Nr. 5 (USNM)	1.67	1.17
Kingsville, Tex. Nr. 6 (USNM)	1.83	1.00
Kingsville, Tex. Nr. 7 (USNM)	1.57	1.00
Victoria, Tex. Nr. 8 (USNM)	1.50	1.07
Texas Nr. 9 (USNM)	<u>1.47</u>	<u>1.17</u>
	1.53	1.12

The explanate margins of the pronotum are variable (Fig. 6)

The species has only been found in TEXAS, as follows: Welder Wildlife Ref., near Sinton, 4-7-VIII-1963, H. F. Howden (BRI); Big Bend Nat. Park, Chisos Basin, 13-V-1959, Howden & Becker (BRI); New Braunfels, 28-VI, R. C. Shannon (USNM); Brownwood, 17-VI-1919, W. A. Hoffman (USNM); Cypress Mills, 18-VI-1887 (USNM); Kerville, 24-VI-1948 & 20-VI-1947, L. J. Bottimer (USNM); Victoria, 7-VI-1916, J. D. Mitchell (USNM); Basin, Chisos Mts., 10-VI-1948, L. J. Bottimer (USNM); Uvalde, 1-VII-1929, R. A. Roberts (USNM); Kingsville, 1927, C. T. Reed (USNM); Varr, 4-15-VI-1946, G. B. Vogt (USNM); Columbus, 10-VII (USNM); Big Bend Nat. Park, Chihuahuan desert near Nugent Mt., 10-IV-1967, A. & M. E. Blanchard (USNM); Ottine Palmetto St. Pk., 12-13-VIII-1963, P. J. Spangler (USNM); Brownwood, 30-VI-1919 (AMNH); Christoval, Tom Green Co., 29-VI-1918, C. & P. Vaurie (AMNH); Texas (INHS); Sierra Diablo Wildlife Mgt. Area, 26-30-V-1973, A. Blanchard (INHS); Davis Mts., 29-VI & 1-VII-1946, Van Dyke (CAS); San Antonio 7 & 29-VII-1942, E. S. Ross (CAS).

Key to the species of *Phengodes* in the U.S.

- | | | | |
|-----|---|----------------------------------|----|
| 1. | Galea with apex rounded, latter at most with scattered, isolated setae (Fig. 9) | <i>Phengodes</i> s. str. | 2 |
| 1'. | Galea elongate, apically with long setae forming tuft or brush | <i>Phengodella</i> n. subg. | 12 |

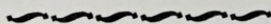
Phengodes s. str.

- 2(1). Elytra yellow, concolorous 10
 2'. Elytra more or less extensively brown only at base, remainder from dark to black 3
- 3(2'). Pronotum concolorous, yellowish brown to orange brown 4
 3'. Pronotum with large macula, its color from piceous to black; in rare instances, macula strongly reduced 11
- 4(3). Antennal segments 4 to 6 less than 0.9mm long 5
 4'. Antennal segments 4 to 6 longer than 0.9mm 6
- 5(4). All tergites brown. In most cases, only narrowed tips of elytra black, in many cases dark color extending along suture to scutellum. Head always largely black.....
 *f. fusciceps* Lec.
 5'. All tergites dark at sides. In most cases, at least half of surface of elytra black. Head frequently lightened to a larger or lesser degree *fusciceps floridensis* Blatchley
- 6(4'). Entire head including labrum appearing slightly dull (spaces between punctures not smooth) *plumosa* Oliv.
 6'. Entire head, or much of it, shining (space between punctures almost entirely smooth, especially on anterior portion of frons and on labrum) 7
- 7(6'). Head black, at most somewhat lightened on anterior portion 8
 7'. Head yellow, concolorous *mexicana* n. sp.
- 8(7). Smaller species, length 10-13mm. Head smaller, interocular distance averaging less than 1.6mm .. *fusciceps intermedia* n. ssp.
 8'. Larger species: length 13-18 mm. Head larger, interocular distance averaging more than 1.8mm 9
- 9(8'). Antennal segments 4 to 6 longer, their length 1.27-1.50mm. Interocular distance smaller, 1.50-2.07mm *laticollis* Lec.
 9'. Antennal segments 4 to 6 shorter, their length 0.90-1.13mm. Interocular distance larger, 2.00-2.67mm.. *laticollis meridiana* n. ssp.
- 10(2). Antennal segments 4 to 6 longer, their length 0.97-1.40mm, average 1.24mm. Interocular distance smaller, between 1.20 and 1.80mm, average 1.44mm. Punctuation of clypeus stronger. Labrum less thick. Lateral border of pronotum narrowly explanate *arizonensis* n. sp.
 10'. Antennal segments 4 to 6 shorter, their length 0.77-1.10mm, average 0.99mm. Interocular distance larger, between 1.50 and 2.10mm, average 1.87mm. Clypeus less strongly punctated. Labrum thicker. Lateral border of pronotum broadly explanate *inflata* n. sp.
- 11(3'). Pronotum with distinct punctuation; macula piceous to black. Length of antennal segments 4 to 6 as in *fusciceps* (nominal form) *fusciceps picicollis* Horn
 11'. Pronotum smooth, at most (at 64× magnification) with isolated fine punctures; macula black. Antennal segments 4 to 6 from 1.03 to 1.30mm long *nigromaculata* n. sp.

Subgenus *Phengodella*

- 12(1'). Elytra and head yellow, concolorous *frontalis* Lec.
 12'. Elytra concolorous, from piceous to black 13
- 13(12'). Head, pronotum, and scutellum yellowish orange *bella* Barber
 13'. Head and scutellum black, pronotum black with 2 light
 colored spots near base, spots in rare cases confluent.....
 *fenestrata* n. sp.

The biometric justification to separate the species may be easily understood by consulting Fig. 11 to 13. The species which are closely related, have been grouped in the same Fig. Ordinate shows interocular distance (ID) and length of antennal joints 4 to 6 (LAS) all in mm and is represented on the abscissa.



FIRST RECORD OF THE GENUS *TROGLOPS* ER.
 (COLEOPTERA: MALACHIIDAE) IN THE UNITED STATES

W. Wittmer

Museum of Natural History, Basel, Switzerland

Mr. Raymond Angelo, Bedford, Mass., sent me a male of a malachiid, which he suspected to be a representative of the genus *Troglops* Er. I eventually identified these as *Troglops cephalotes* Er. The species was described from Central Europe, where it has a wide range, but is rare. It probably has been introduced into the United States in the larval or pupal stage with a shipment of lumber, and it is apparently established there. Mr. Angelo found 1 male 18-V-1974, and a male 20-V-1975 in a room at the window.

The genus *Troglops* is easily recognized by its wide head, which is deeply excavated between the eyes, and the 4-segmented fore tarsi in the male. In my generic key (*in* Arnett, 1963, The Beetles of the United States: 612), which is valid only for males, *Troglops* can be included as follows:

- 41(40) Head simple in both sexes 41A
 Head excavated between eyes in the male *Troglops*
 41A(41) Head long, first segment of antennae cylindrical *Trophimus*
 Head short, first segment of antennae with a recurrent
 process *Temnosophus*



Wittmer, W. 1975. "The Genus *Phengodes* in the United States (Coleoptera: Phengodidae)." *The Coleopterists' Bulletin* 29(4), 231–250.

View This Item Online: <https://www.biodiversitylibrary.org/item/271414>

Permalink: <https://www.biodiversitylibrary.org/partpdf/372728>

Holding Institution

University Library, University of Illinois Urbana Champaign

Sponsored by

University of Illinois Urbana-Champaign

Copyright & Reuse

Copyright Status: In copyright. Digitized with permission of the rights holder.

Rights Holder: The Coleopterists Society

License: <http://creativecommons.org/licenses/by-nc-sa/4.0/>

Rights: <https://www.biodiversitylibrary.org/permissions/>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.