

## *Didineis massaica*, New Species, the First Afrotropical Member of the Genus, and Redescription of *Didineis nigricans* Morice, 1911 (Hymenoptera: Apoidea: Crabronidae: Bembicinae)

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**Abstract.**—*Didineis massaica* Pulawski, new species, is the first member of the genus known to occur in subsaharan Africa. It can be recognized by its all black gaster and proportions of the flagellomeres. The type series was collected 27 km SSE of Naivasha in the Rift Valley Province of Kenya. *Didineis nigricans* Morice, 1911, from Algeria is redescribed.

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*Didineis* is a genus of 26 currently known species (Bohart and Menke 1976, Guichard 1990). Of them, 17 are Palearctic (ranging from Great Britain to Japan, and from Denmark to Algeria, Turkey, and Turkmenistan), 7 are Nearctic (Pennsylvania to Florida, Washington to Baja California, extending south to Nuevo Leon State in Mexico), 1 is Neotropical (Cuba only), and 1 Oriental (Bengal). During a recent expedition to Kenya, Jere S. Schweikert and I collected a series of specimens of a previously unknown species, the first to be found in subsaharan Africa. *Didineis nigricans* Morice, a little known species from Algeria, is redescribed as a byproduct of this study.

The family group names used in the title are based on Menke (1997) and Melo (1999). The morphological terminology follows Bohart and Menke (1976).

### *Didineis massaica* Pulawski, new species

**Derivation of name.**—*Massaica* is a Neolatin feminine adjective derived from the Massai people of Kenya in whose tribal area this species was collected.

**Diagnosis.**—*Didineis massaica* differs from most of its congeners in having an all black gaster (rather than red at least

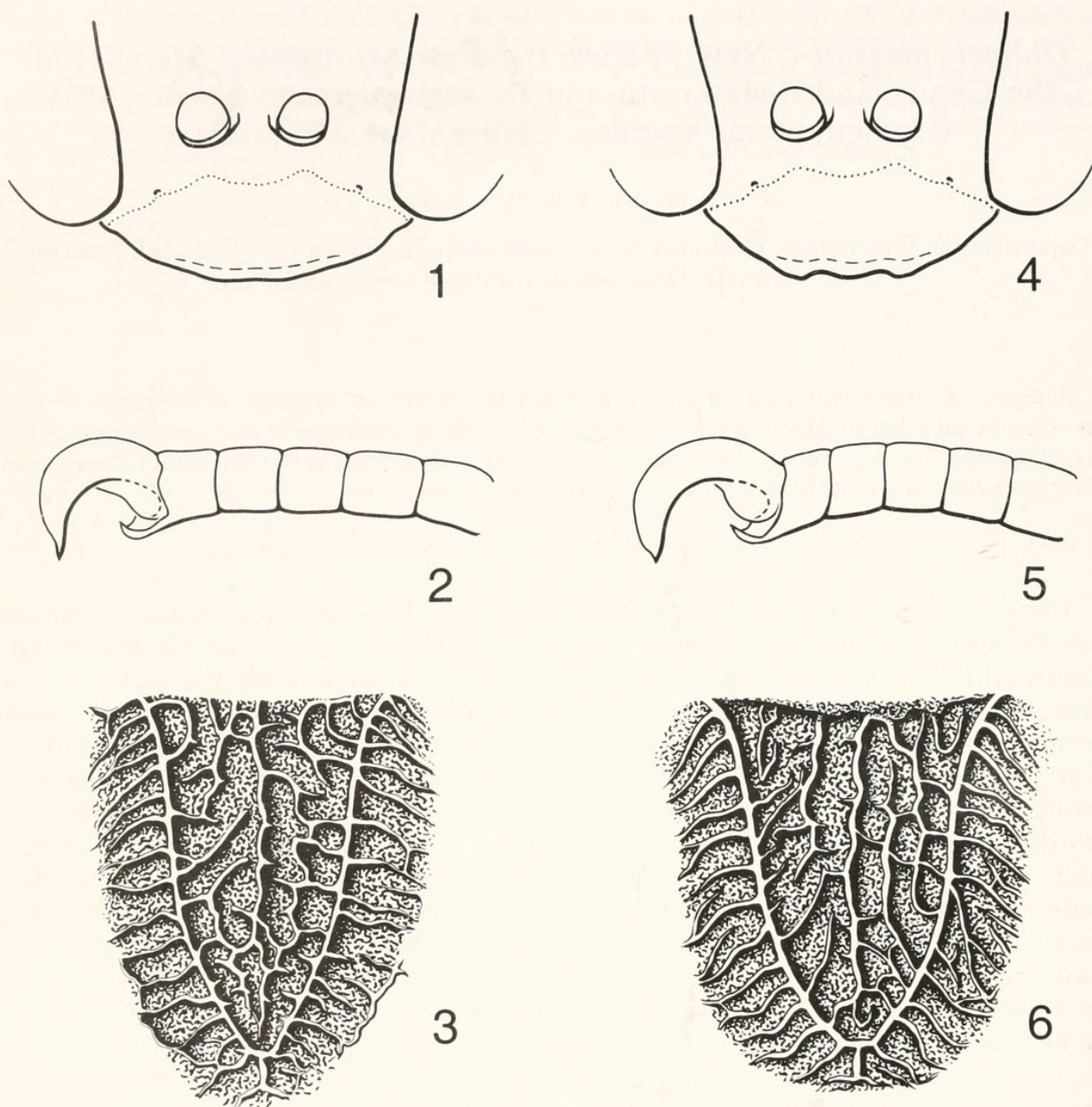
basally). The only other *Didineis* with an all black gaster are: *barbieri* (de Beaumont), *bucharica* Gussakovskij, the male of *latro* (de Beaumont), *nigricans* Morice (terga somewhat reddish apically), *orientalis* Cameron, *sibirica* Gussakovskij, and *turanica* Gussakovskij. Of these species, I have seen only the holotype of *nigricans* and one male of *latro*, but they can be distinguished from *massaica* by the characters detailed below following the original descriptions of Cameron (1897), de Beaumont (1967, 1968), and Gussakovskij (1937), Tsuneki's (1968) description of *Didineis sibirica nipponica*, and the key by Nemkov (1995):

*Didineis barbieri* from Algeria (female unknown) has flagellomere I and IX about  $1.3 \times$  and less than  $1.0 \times$  as long as wide, respectively. In *massaica*, these ratios are about 2.0 and 1.0 respectively.

*Didineis bucharica* from Uzbekistan (female unknown) has flagellomeres I–III somewhat expanded laterally, and flagellomeres III and IV no longer than wide. In the male of *massaica*, the respective flagellomeres are cylindrical and longer than wide.

*Didineis latro* from Turkey has a black scape, appressed tergal setae, and no tergal fasciae. In *massaica*, the scapal venter is yellow, tergum I bears several erect setae laterally, and at least tergum I has a broadly interrupted setal fascia.





Figs. 1-6. *Didineis* species: 1-3, *Didineis massaica*: 1, male clypeus. 2, apical male flagellomeres. 3, propodeal enclosure. 4-6, *Didineis nigricans*: 4, male clypeus. 5, apical male flagellomeres. 6, propodeal enclosure.

*Didineis nigricans* from Algeria (female unknown) has an obtusely tridentate clypeal free margin (Fig. 4) and flagellomere I about as long as wide. In the male of *massaica*, the clypeal free margin is evenly arcuate and flagellomere I is about  $2.0 \times$  as long as wide.

*Didineis orientalis* from Bengal (female unknown) has yellow markings on the tegula and tibiae, whereas such markings lack in *massaica*.

*Didineis sibirica* from Eastern Siberia and Japan

has female flagellomeres about  $2.0 \times$  as long as wide, and male flagellomeres I and IX about  $1.5 \times$  as long as wide, respectively. In *massaica*, female flagellomeres II and IX are about  $2.5 \times$  and  $1.5 \times$  as long as wide, respectively, and male flagellomeres I and IX are about  $2.0$  and  $1.0 \times$  as long as wide, respectively.

*Didineis turanica* (female unknown) has the median and penultimate flagellomeres longer than wide, forefemur with ventral margin



somewhat flattened, and foretibia slightly broader apically than near the midlength. In the male of *massaica*, flagellomeres VIII and IX are about as long as wide, the forefemur is not flattened (ventral margin evenly arcuate), and the foretibia is not broadened apically.

**Description.**—Frons finely, evenly punctate, punctures less than 1 diameter apart (averaging more than 1 diameter apart on interocellar area and between ocelli and orbits). Pronotum with no transverse carina. Mesoscutum evenly punctate, punctures about 1 diameter apart. Mesopleuron dull, punctate (punctures less than 1 diameter apart except more posteroventrally), without well-defined ridges posteroventrally. Propodeal enclosure narrow, acutely angulate apically (Fig. 3); side irregularly ridged, apicolateral spine well defined, as in *lunicornis* Fabricius (the type species of the genus). Tergal punctures well defined.

Mesopleural setae in female denser below scrobal sulcus than on remaining surface, almost forming a discrete patch. Tergum I with apical, broadly interrupted setal fascia (also II and III in one of the males examined). Tergum I laterally with erect setae (some setae on remaining terga also erect).

Head, thorax, and gaster black (including flagellum and pronotal lobe), but mandible yellowish red mesally, scapal venter pale yellow, and tegula dark brown in one of the males. Femora black in female except forefemur reddish brown ventrally and apically; in male forefemur reddish brown except dorsum black in basal half, midfemur reddish brown except dorsum black, and hindfemur all black or with brownish outer surface. Tibiae reddish brown, mid- and hindtibiae darkened apically. Tarsi dark brown. Wing membrane slightly infumate, with darker fascia that covers all marginal cell, distal portion of submarginal I, all of submarginal II, distal part of discoidal II, an area of varying

width distad of discoidal II, and in female submarginal III.

♀—Clypeus uniformly, closely punctate except impunctate and shiny anteromesally (impunctate area about as long mesally as basal punctate area); free margin tridentate. Length of flagellomere II about  $2.5 \times$  width, of flagellomere IX about  $1.5 \times$  width. Dorsoexternal hindtibial setae suberect, shorter setae interspersed with longer ones.

♂—Clypeus uniformly, closely punctate, free margin nearly straight mesally (Fig. 1). Scape not concave laterally. Flagellomeres I–X cylindrical (flagellomere X with usual apicoventral expansion); dorsal length of I about  $2.0 \times$  apical width, equal to that of II whose length is about  $1.7 \times$  width, following articles progressively shorter, VIII and IX about as long as wide; flagellomere XI markedly curved, with sharp apex (Fig. 2). Foretibia and foretarsus not widened.

**Records.**—Holotype: ♂, Kenya: Rift Valley Province, 27 km SSE Naivasha at  $0^{\circ}54.6'S$   $36^{\circ}31.0'E$ , 3 June 1999, W.J. Pulawski and J.S. Schweikert (California Academy of Sciences). Paratypes: same data and depository (1 ♀, 2 ♂).

### *Didineis nigricans* Morice (Figs. 4–6)

*Didineis nigricans* Morice, 1911:111, ♂. Holotype: ♂, Algeria: Biskra (Oxford University Museum).—Gussakovskij, 1937: 616 (original description copied, discussion of characters); R. Bohart and Menke, 1976:459 (listed).

This distinctive species is known from a single specimen collected more than 100 years ago that has never been reexamined since the original description. The latter omits some important structures (e.g., the shape of the propodeal enclosure) and inaccurately depicts some structures (e.g., “clypeus evidenter tridentatus”).

**Diagnosis.**—The male of *nigricans* can be immediately recognized by its obtusely tridentate clypeal free margin (Fig. 4) and by the proportions of the flagellomeres



(flagellomere I about as long as wide, II about  $1.5 \times$  as long as wide, VIII and IX as long as wide).

*Description.*—Frons finely, evenly punctate, punctures about 1 diameter apart (several diameter apart on interocellar area and between ocelli and orbits). Pronotum without transverse carina. Mesoscutum evenly punctate, punctures averaging about 2 diameters apart. Mesopleuron dull, somewhat irregularly punctate, with punctures no more than 1 diameter apart except episcrobal area shiny, with punctures more than 1 diameter apart, without well-defined ridges posteroven- trally. Propodeal enclosure somewhat broadened and not acutely angulate at apex (Fig. 6); side irregularly ridged, apicolateral spine slightly shorter than in *lun-icornis*. Tergal punctures well defined, but markedly smaller on tergum I than on remaining terga.

Gastral terga without setal fasciae. Tergum I laterally with erect setae.

Head, thorax, and gaster black (including flagellum and pronotal lobe), but mandible reddish mesally and scapal venter reddish brown, and apical depressions of terga reddish from certain angles. Femora reddish brown (hindfemur somewhat darkened basally), tibiae and tarsi reddish. Wings membrane slightly infumate, with marginal cell, submarginal cell II, and dorsoapical portion of discoidal cell II minimally darker.

♂.—Clypeus uniformly, closely punctate, free margin obtusely tridentate mesally (Fig. 4). Scape not concave laterally. Flagellomeres I-X cylindrical (flagellomere X with usual apicoventral expansion); dorsal length of I about equal to apical width and equal to 0.75 of II (whose dorsal length is  $1.5 \times$  apical width); III-VII becoming gradually shorter, VIII and IX as long as wide; flagellomere XI markedly curved, with apex sharp (Fig. 5). Foretibia and foretarsus not widened.

*Collecting date.*—29 May 1898.

*Material examined.*—Only the holotype was seen.

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