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A new species of *Amegilla* from northeastern Egypt (Hymenoptera: Apidae)

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Abstract: A new bee species of the genus *Amegilla* (Apinae: Anthophorini) is described and figured from northeastern Egypt. *Amegilla argophenax* nov.sp., belongs to the *A. fasciata* group and is most similar to *A. deceptrix* (PRIESNER) nov.comb. which occurs in the same region. Characters are provided to distinguish the species from its congeners. *Podalirius pyramidalis* KIRBY, from Socotra (Republic of Yemen), is resurrected from synonymy under *Amegilla albigena* (LEPELETIER DE SAINT FARGEAU) (as *A. pyramidalis* nov.comb.) where it is, like *A. argophenax* and *A. deceptrix*, a member of the *A. fasciata* group.

Key words: Anthophila, Apoidea, Africa, Anthophorini, Arabia, Socotra, taxonomy.

1. Introduction

The genus *Amegilla* is a diverse group of approximately 255 anthophorine bee species distributed in southern Europe and the Mediterranean basin, southward throughout Africa and Madagascar, east into Arabia and in Asia as far as northeast China, Korea, and Japan, and south into Sri Lanka, Indonesia, New Guinea, as well as Australia, Tasmania, and the Solomon Islands (MICHENER 2000). While the genus has received the attention of various authors (e.g., RAYMENT 1942, 1947, 1951; LIEFTINCK 1956, 1975; PRIESNER 1957; EARDLEY 1994), exceedingly similar or even cryptic coloration nonetheless continues to plague the taxonomy and identification of species, a situation further exacerbated by low sample sizes in most collections.

The purpose of the present contribution is to provide the description of a new species of *Amegilla* from northeastern Egypt (Figs 1-2) and correct the status of two from the general region of northeastern Africa and Arabia, particularly one that is closely allied to the species described herein. While BROOKS (1988) correctly recognized to be species of *Amegilla* several Egyptian taxa described by PRIESNER (1957) under *Anthophora*, he overlooked one and specifically included it in the subgenus *Heliophila*. The *fasciata* group of *Amegilla* (largely corresponding to *Micramegilla* of BROOKS 1988) includes several superficially *Heliophila*-like bees but upon close examination they are found to lack arolia; have anterior and posterior lumens on the galea; have a metasoma with appressed pubescence that is sometimes metallic in color (not the case in the species discussed herein); and have the articulation of the outer metatibial spur, in females,

sclerotically isolated from the inner metatibial spur and corium, all features of *Amegilla*. The group includes species, aside from *A. fasciata* (FABRICIUS), such as *A. byssina* (KLUG), *A. mucorea* (KLUG), *A. atrocincta* (LEPELETIER DE SAINT FARGEAU), *A. andresi* (FRIESE), and *A. velutina* (FRIESE). Morphological terminology generally follows that of ENGEL (2001) and MICHENER (2000).

2. Systematics

Amegilla argophenax nov.sp. (Figs 1-8)

H o l o t y p e : ♀ (Fig. 1), Egypt, Kom Awshim [also known as Kawm Awshim or Kawm Ushim, located just east of Birket Qarun (Lake Karun, known in Ancient times as Moeris) in El Fayyum], 23.x.1982 [23 October 1982], C.G. Roche. The holotype is deposited in the Snow Entomological Collection, Division of Entomology, University of Kansas Natural History Museum.
P a r a t y p e : ♂ (Fig. 2), same data and repository as holotype.

D i a g n o s i s : The new species is most similar and can be easily confused with *A. deceptrix* that occurs in the same area. *Amegilla argophenax* can be most readily separated in females by the reduced clypeal maculation, in which only the extreme apical margin is yellow along with a narrow, longitudinal strip extending from the apical margin posteriorly to about the clypeal midpoint (in *A. deceptrix* the clypeus is almost entirely yellow with the basilateral corners black). In addition, in females the white setae on the outer surface of the metabasitarsus are entirely confined to the basal margin (in *A. deceptrix* white setae cover the basal half of the outer metabasitarsal surface) and the ventral surface of the scape has a light brown patch near the apex (in *A. deceptrix* the ventral surface of the female scape is black); and in males by the entirely yellow ventral surface of the scape (Fig. 4) (in *A. deceptrix* there is only a very small yellow spot near the apex of the scape), the entirely white setae of the propodeum and metasomal terga (such setae are lightly tinged with yellow in *A. deceptrix*), and the more sparse tergal setae on the basal portions of the first three metasomal terga (Fig. 2) (uniformly covered with appressed setae in *A. deceptrix*).

D e s c r i p t i o n : **Female.** Total body length 9.7 mm; forewing length 6.7 mm. Head broader than long; inner margins of compound eyes converging ventrally (Fig. 3), upper interorbital distance 2.3 mm, lower interorbital distance 1.8 mm, compound eye length 2.27 mm. Mandible with weak subapical tooth. Clypeal protuberance in profile approximately one-half compound eye width. Scape relatively short, just reaching to level of ocelli; first flagellar article elongate, length approximately three-quarters of scape length, subequal in length to combined lengths of second through fourth flagellar articles; second flagellar article short, about one-half length of third flagellar article; third and fourth flagellar articles about equal in length. Forewing with basal vein distad cu-a by three times vein width; marginal cell apex broadly rounded, just surpassing apex of submarginal cells, marginal cell length shorter than distance from cell apex to wing apex, cell apex separated from anterior wing margin; combined lengths of second and third submarginal cells greater than length of first submarginal cell; 1m-cu entering second submarginal cell at two-thirds length of cell's posterior border; 2m-cu confluent with 2rs-m.

Face, including ocellocular area, with small, nearly contiguous punctures; similar punc-

tures present on clypeus and labrum although less well-defined and slightly broader, integument between punctures faintly imbricate. Mesosoma sculptured as described for face. Metasoma with sterna imbricate and punctate, punctures separated by 1-2 times a puncture width; terga punctate, punctures weak and nearly contiguous, integument between punctures (where evident) imbricate.

Integument of head and mesosoma black except as follows: labrum yellow (Fig. 3), antenna, mouthparts, and legs brown; outer surface of mandible yellow except apical one-half reddish brown; clypeus with extreme apical margin yellow, with a narrow, longitudinal strip of yellow extending from apical margin posteriorly to about clypeal midpoint; supraclypeal area with small yellow medioapical patch along border with clypeus; ventral surface of scape with light brown patch near apex; ventral surface of second through apical flagellar articles light brown (first flagellar article uniformly brown on all surfaces); tegula translucent light brown. Wing veins brown; membranes hyaline. Metasomal terga dark brown (apparently nearly black in some places – obscured by setal covering), sterna brown.

Pubescence snowy white and shaggy on head, mesosoma, and anterior-facing surface of first metasomal tergum (Fig. 1), setae long and largely obscuring integument. Setae of legs white except inner surface of protarsus light fuscous; inner surfaces of mesotibia and mesotarsus dark fuscous; inner surfaces of metatibia, metatarsus, and outer metatarsus dark fuscous (nearly black) except along extreme basal margin of metatarsus setae white. Setae of metasoma appressed, short, plumose, and largely obscuring integument; fifth metasomal tergum with medioapical patch of dense, moderately long, dark fuscous, erect setae; setae fuscous around pygidial plate on sixth metasomal tergum, such setae just surpassing pygidial plate apex; sternal setae suberect and fuscous.

Male. As described for the female except for typical sex differences and as follows: Total body length 8.6 mm; forewing length 6.1 mm. Head broader than long; inner margins of compound eyes converging ventrally (Fig. 4), upper interorbital distance 2.0 mm, lower interorbital distance 1.5 mm, compound eye length 2.0 mm. Mandible simple. Scape relatively short, just reaching level of ocelli; first flagellar article approximately one-half of scape length, slightly longer than second flagellar article, slightly shorter than third flagellar article; second flagellar article shorter than third article; third flagellar article slightly shorter than fourth article. Male terminalia depicted in figures 5-8.

Outer surface of mandible yellow except apical one-third reddish brown. Paraocular areas along clypeus yellow. Basal margin of clypeus black, otherwise clypeus yellow. Ventral surface of scape entirely yellow (Fig. 4).

Appressed setae of terga more widely separated (exposing more of the dark brown integument from beneath) on basal one-half of first and second metasomal terga and on basal one-third of third metasomal tergum. Setae of sixth metasomal tergum light fuscous; sternal setae fuscous except those setae at extreme apical margins white (forming the appearance of very narrow whitish bands).

Etymology: The specific epithet is a combination of the Greek words "argos" (meaning "white") and "phenax" (meaning "imposter") and is a reference to its deceptive similarity to *A. deceptrix*.

***Amegilla deceptrix* (PRIESNER) nov.comb.**

Anthophora deceptrix PRIESNER 1957: 105. BROOKS 1988: 492 [in *Heliophila*].

N e w r e c o r d s : ♀ ♂, Egypt, 15 km S of Safaga, 27.iv.1985 [27 April 1985], C.G. Roche. ♀ ♂, Egypt, Sinai: Hammam-al-Feraoun, 12.iv.1986 [12 April 1986], C.G. Roche. Deposited in the Snow Entomological Collection, Division of Entomology, University of Kansas Natural History Museum.

C o m m e n t s : Close examination of specimens of Priesner's species demonstrates that it belongs to *Amegilla* rather than *Anthophora* (*Heliophila*). *Amegilla deceptrix*, aptly named given the challenging history of its identification, is very similar to the new species described above but can be distinguished most readily by the characters given in the Diagnosis of *A. argophenax* (vide supra).

***Amegilla pyramidalis* (KIRBY) nov.comb.**

Podalirius pyramidalis KIRBY 1900: 24.

C o m m e n t s : This species was synonymized with *A. albigena* (LEPELETIER DE SAINT FARGEAU) by KOHL (1907: p. 173), a decision followed by BROOKS (1988). *Amegilla albigena* was established by LEPELETIER DE SAINT FARGEAU (1841) for specimens of both sexes from the surroundings of Lyon and Oran, sent by his son, and from Sicily, received from Alexandre Lefébure. BROOKS (1988) designated as lectotype a female in the Museum National d'Histoire Naturelle a female labeled in an unknown hand only as "*A. albigena*" and without actual locality data but presumed to have come from Lyon. This designation is unfortunate given that definitive syntypes from southern France of *A. albigena* are present in the Hope Entomological Collection, Oxford (vide BAKER 1994). Regardless, the species is polytypic and can be readily confused with various other taxa. Quite contrary to the historical synonymy of *A. pyramidalis*, the genitalia and concealed sterna are similar to those of *A. mucorea*, although the antennae, form of the seventh metasomal sternum, and coloration differ somewhat, and outside of superficial coloration there is no affinity of the former to *A. albigena*. The status of *A. pyramidalis* in relation to *A. mucorea* is deserving of further investigation but is herein considered specifically distinct pending a more thorough revision of *Amegilla*. *Amegilla pyramidalis* is known only from Socotra (Republic of Yemen, Adan Governorate).

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Zusammenfassung

Eine Neue Bienenart der Gattung *Amegilla* (Apinae: Anthophorini) aus Nordwestägypten wird beschrieben und illustriert. *Amegilla argophenax* nov.sp. gehört in die *A. fasciata* Gruppe und ähnelt der gleich verbreiteten *A. deceptrix* (PRIESNER) nov.comb. Merkmale zur Unterscheidung verwandter Arten werden dargelegt. *Podalirius pyramidalis* KIRBY, aus Socotra (Republik von

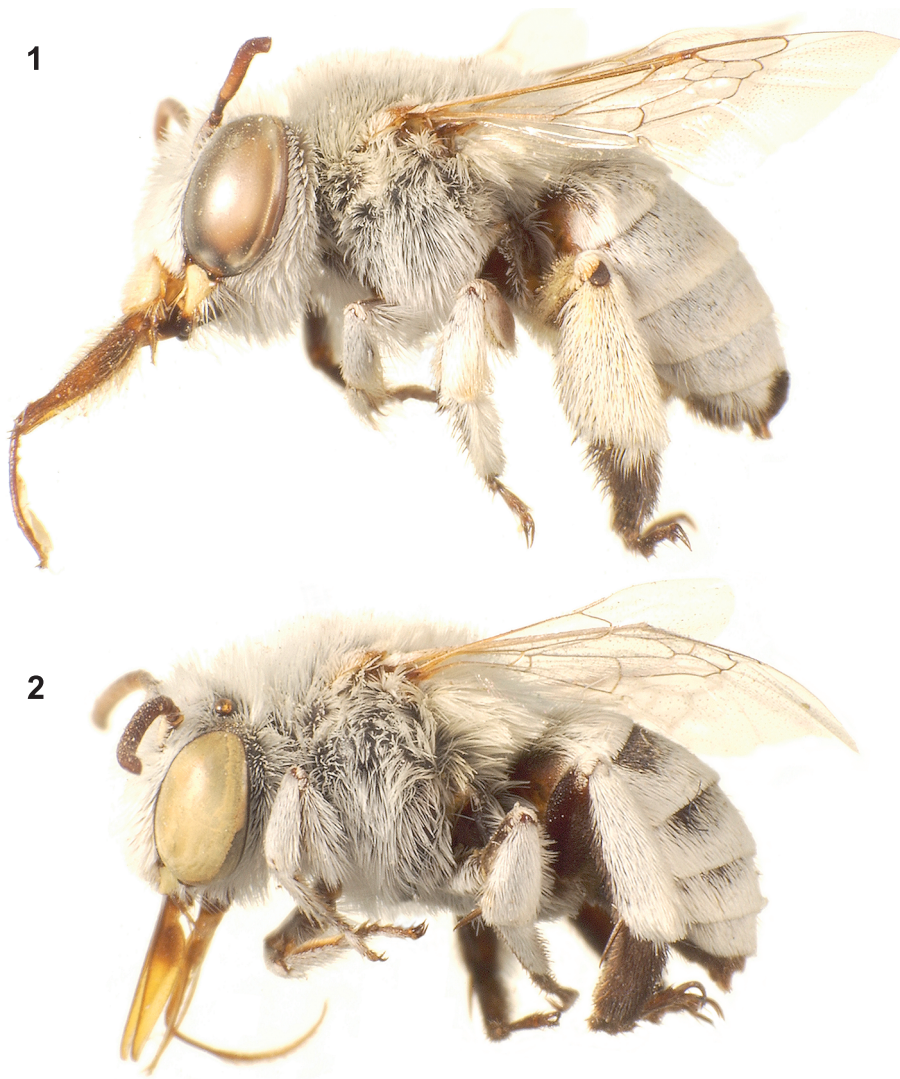
Jemen), wird unter *Amegilla albigena* (LEPELETIER DE SAINT FARGEAU) (als *A. pyramidalis* nov.comb.) aus der Synonymie geholt, wie *A. argophenax* und *A. deceptrix*, ein Vertreter der *A. fasciata*-Gruppe.

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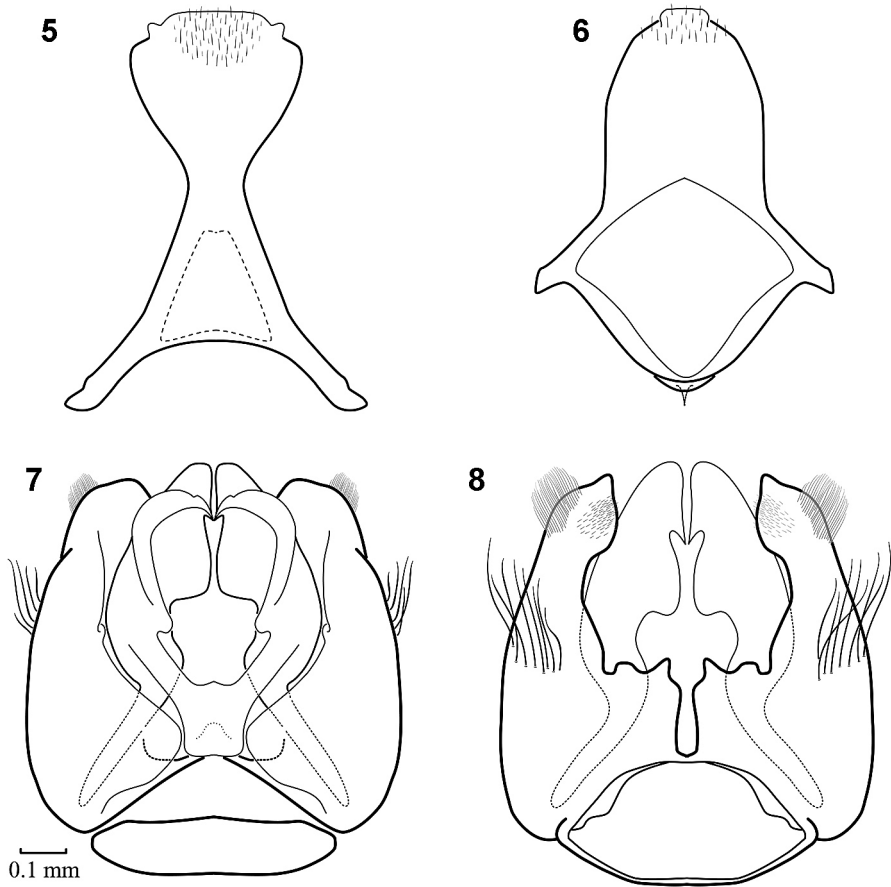
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Figs 1-2: Photomicrographs of *Amegilla argopenax* nov.sp., lateral habitus. (1) female holotype; (2) male paratype.



Figs 3-4: Photomicrographs of *Amegilla argopenax* nov.sp., facial aspects. (3) female holotype; (4) male paratype.



Figs 5-8: Male terminalia of *Amegilla argophenax* nov.sp. (5) seventh metasomal sternum; (6) eighth metasomal sternum; (7) genitalic capsule, dorsal aspect; (8) genitalic capsule, ventral aspect.

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