



Preliminary data on the fauna of ants of the genus *Cataglyphis* Foerster, 1850 (Hymenoptera, Formicidae) of Pakistan

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Abstract. Provides preliminary data on the fauna of ants of the genus *Cataglyphis* Foerster, 1850 Pakistan, currently numbering 9 species – *C. aenescens* (Nylander, 1849), *C. bellicosa* (Karavaiev, 1924), *C. cinnamomea* (Karavaiev, 1910), *C. cugiai* Menozzi, 1939, *C. emeryi* (Karavaiev, 1911), *C. livida* (André, 1881), *C. pallida* Mayr, 1877, *C. rubra* (Forel, 1903), *C. setipes* (Forel, 1894). All species except *C. setipes* are given for the territory of Pakistan for the first time.

Keywords: Ants, Formicidae, Formicinae, *Cataglyphis*, Pakistan.

1. **INTRODUCTION**

The ant genus *Cataglyphis* Foerster, 1850 presently comprises 93 valid species and 18 subspecies (Bolton 2019). It is scattered mostly in South Palaearctic, while some species live in deserts and semi-deserts of the Afrotropical and Oriental Regions (India and Pakistan), and North Palaearctic (China and Mongolia) (Dlussky, 1981; Agosti, 1990, 1994; Collingwood and Agosti, 1996; Radchenko 1997a,b, 1998, 2001; Chang and He, 2002b; Pfeiffer, *et al.*, 2007; Cagniant, 2009; Radchenko and Paknia 2010; Amor and Ortega, 2014; Sharaf, *et al.*, 2015; Radchenko, 2016).

Members of this genus are great (up to 13 mm) ants, and entirely of them reside open dry territories (various types of deserts and semi-deserts, steppes, stony mountain slopes, etc.), reaching in highlands up to 3500–3700 m (Radchenko 1997a, 2001; Radchenko and Paknia 2010).

Although undescribed species in the *C. albicans*, *C. cursor* and *C. emmae* groups have been collected in Pakistan (Agosti 1990), only one identified *Cataglyphis* species has been reported: *C. setipes* (Forel, 1894) (Radchenko 1997a, 1998).

In the present work we follow the taxonomic system proposed by Agosti (1990) and Radchenko (1997a).

2. **MATERIAL AND METHODS**

The basis for writing this paper was the material collected by the first author (G. M. Lakho) in

the period from 2016 to 2017, in Pakistan. The field studies covered the plains, foothills, middle mountains of Pakistan.

The type material is preserved in the Department of Entomology, Sindh Agriculture University, Tandojam Sindh, Pakistan (SAU); Ghulam Mujtaba Lakho's personal collection (GMLK). All were collected more than 7000 specimen ants.

3. **RESULTS AND DISCUSSION**

As a result of the research, 9 species of ants of the genus *Cataglyphis* were identified: *C. aenescens* (Nylander, 1849), *C. bellicosa* (Karavaiev, 1924), *C. cinnamomea* (Karavaiev, 1910), *C. cugiai* Menozzi, 1939, *C. emeryi* (Karavaiev, 1911), *C. livida* (André, 1881), *C. pallida* Mayr, 1877, *C. rubra* (Forel, 1903), *C. setipes* (Forel, 1894). All species except *C. setipes* are given for the territory of Pakistan for the first time. The following is an annotated list of ant species of the genus *Cataglyphis* of Pakistan.

Family **Formicidae** Latreille, 1802
Subfamily **Formicinae** Latreille, 1809

1. *Cataglyphis aenescens* (Nylander, 1849).

Material examined: 13 w, Balochistan Prov., Mastung Khadi Kucha, Orchards Apple, 29°37'11.7"N, 66°45'05.2"E, h = 1789 m a.s.l Iranian highlands, 9.IV.2017; 7 w, Kuchlak yaru road, 30°26'23.5"N, 66°56'33.7"E, h = 1585 m a.s.l Iranian highlands, 11.IV.2017; 6 w, Khyber Pakhtunkhwa Prov., Parwak, 36°16'44.8"N, 72°25'05.4"E, h = 2283 m a.s.l Karakorum, 12.VII.2017.

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Distribution: South and Central Europe, south East Europe, Caucasus, Transcaucasia, Turkey, Iran, Middle and Central Asia, south West Siberia, Kazakhstan, Tuva, Mongolia, and North China (Agosti and Collingwood, 1987a,b; Dlussky, 1981; Dlussky *et al.*, 1990; Arakelian, 1994; Radchenko 1997a, 1998; Chang and He, 2002b; Bračko, 2006; Bogusch *et al.*, 2007; Paknia and Kami, 2007; Pfeiffer *et al.*, 2007; Gratiashvili and Barjadze, 2008; Paknia *et al.*, 2008; Borowiec *et al.*, 2009; Borowiec and Salata, 2012; Czechowski *et al.*, 2012; Guenard and Dunn, 2012; Kiran and Karaman, 2012; Bayartogtokh *et al.*, 2014; Borowiec, 2014; Bračko, *et al.*, 2014; Moradloo *et al.*, 2015; Radchenko, 2016).

2. *Cataglyphis bellicosa* (Karavaiev, 1924).

Material examined: 7 w, Balochistan Prov., Kach stop-Ziarat road, 30°26'09.9"N, 67°19'00.4"E, h = 2030 m a.s.l Iranian highlands, 10.IV.2017.

Distribution: Iran (Radchenko 1997a, 1998; Paknia, *et al.*, 2008; Borowiec, 2014; Moradloo *et al.*, 2015; Rad *et al.*, 2018).

3. *Cataglyphis cinnamomea* (Karavaiev, 1910).

Material examined: 8 w, Balochistan Prov., Khuzdar District, Ratodero Gawadwer Moterwy, 27°50'19.4"N, 67°16'11.6"E, h = 908 m a.s.l, Iranian highlands, 14.IV.2017; 10 w, Khyber Pakhtunkhwa Prov., Jaglot road, 35°40'08.0"N, 74°37'02.0"E, h = 1467 m a.s.l W. Himalaya, 8.VII.2017.

Distribution: Middle Asia, S Kazakhstan, Afghanistan, Iran, N Africa, Arabian Peninsula (Dlussky, 1981; Dlussky *et al.*, 1990; Collingwood and Agosti, 1996; Radchenko 1997a, 1998; Paknia *et al.*, 2010; Collingwood *et al.*, 2011; Borowiec, 2014; Ghahari *et al.*, 2015).

4. *Cataglyphis cugiai* Menozzi, 1939.

Material examined: 10 w, Gilgit-Baltistan autonomous ter., Pasu Shisser view hotel, 36°27'28.9"N, 74°53'46.1"E, h=2479 m a.s.l Karakorum, 10.VII.2017.

Distribution: India (Menozzi, 1939; Bharti, 2008; Bharti, 2011; Bharti *et al.*, 2014; Wachkoo and Bharti, 2015; Bharti *et al.*, 2016). – Remarks: The information available in the literature on the finding of this species in Iran (Paknia *et al.*, 2010) seems to us to be erroneous. Most likely these finding is of another species.

5. *Cataglyphis emeryi* (Karavaiev, 1911).

Material examined: 10 w, Balochistan Prov., Mangocher Kallat Hilly area, N-25 TO N-40, S.Cut, 29°30'54.8"N, 66°27'35.7"E, h = 1725 m a.s.l, Iranian highlands, 13.IV.2017; 13 w, Surkh Waterfall Surab,

Kallat, 28°29'10.9"N, 66°18'00.5"E, h = 1789 m a.s.l Iranian highlands, 14.IV.2017.

Distribution: Middle Asia, Kazakhstan, Afghanistan, Iran, NW China (Collingwood, 1960, 1962; Dlussky, 1981; Dlussky *et al.*, 1990; Radchenko 1997a, 1998; Paknia *et al.*, 2008; Guenard and Dunn, 2012; Borowiec, 2014; Rad, *et al.*, 2018).

6. *Cataglyphis livida* (André, 1881).

Material examined: 2 w, Sindh Prov., Jamshoro Distt, Ranikot, 25°57'22.2"N, 68°03'47.6"E, h=73 m a.s.l Indus plain, 22.II.2016; 2 w, Thatta Distt, Jhirk, 25°02'53.0"N, 68°14'31.9"E, h = 30 m A.S.L., Indus plain, 30.V.2016; 7 w, Balochistan Prov., Noshki Desert, 29°34'30.3"N, 66°01'01.8"E, h = 1008 m a.s.l Iranian highlands, 16.VIII.2016 (Ahmed); 7 w, Saranan-Chaman road Clay, rocky soil, 30°34'09.4"N, 66°51'47.1"E, h = 1618 m a.s.l Iranian highlands, 11.IV.2017.

Distribution: Bulgaria, Egypt, Middle East, Arabian Peninsula, Afghanistan, Turkey, and South Transcaucasia (Arnoldi, 1964; Collingwood, 1985; Arakelian, 1994; Collingwood and Agosti, 1996; Radchenko 1997a, 1998; Collingwood and Harten, 2001; Paknia and Kami, 2007; Paknia *et al.*, 2008; Ghahari *et al.*, 2009; Vonshak *et al.*, 2009; Collingwood *et al.*, 2011; Kiran and Karaman, 2012; Sharaf *et al.*, 2013; Borowiec, 2014; Moradloo *et al.*, 2015; Rad *et al.*, 2018; Sharaf *et al.*, 2018).

7. *Cataglyphis pallida* Mayr, 1877.

Material examined: 6 w, Balochistan Prov., Mastung Jungle Zafran Orchards, 29°49'30.2"N, 66°50'51.5"E, h = 1657 m a.s.l Iranian highlands, 9.IV.2017.

Distribution: SE European part of Russia, Kazakhstan, Middle Asia, Afghanistan (Dlussky, 1981; Dlussky *et al.*, 1990; Radchenko 1997a, 1998; Dubovikoff, 2002; Guenard and Dunn, 2012; Borowiec, 2014).

8. *Cataglyphis rubra* (Forel, 1903).

Material examined: 3 w, Sindh Prov., Hyderabad District Shah bhukhari fellow land, 25°27'38.8"N, 68°21'23.4"E, h = 23 m a.s.l Indus plain, 9.XII.2016.

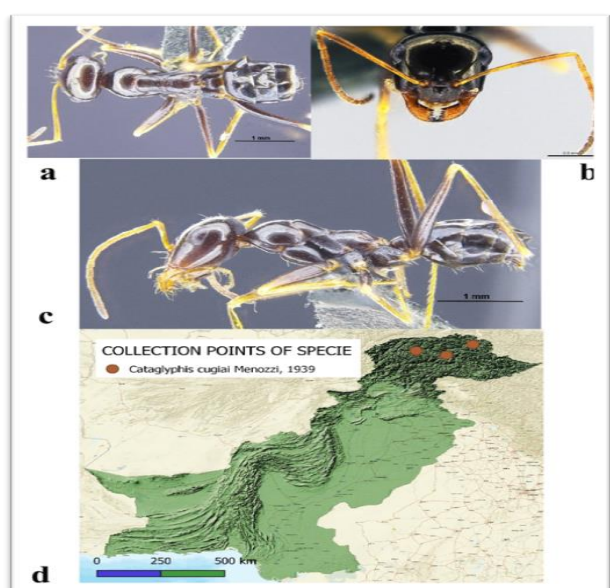
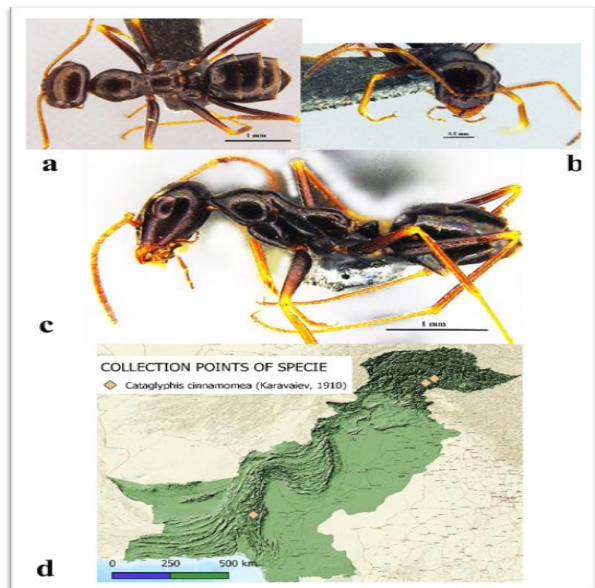
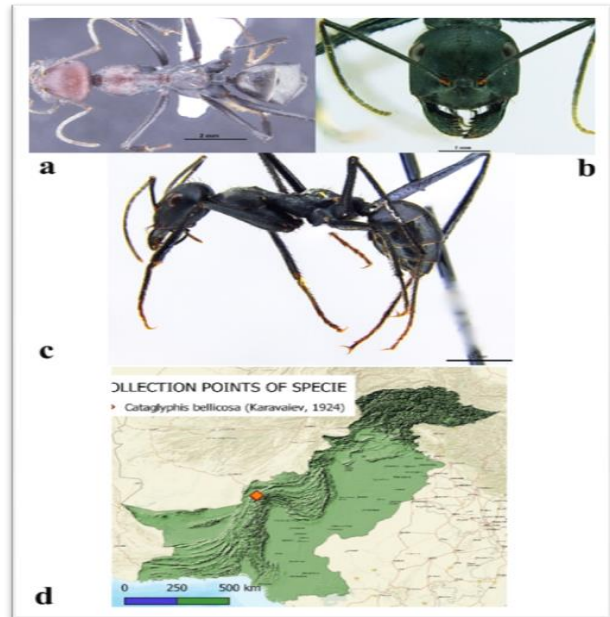
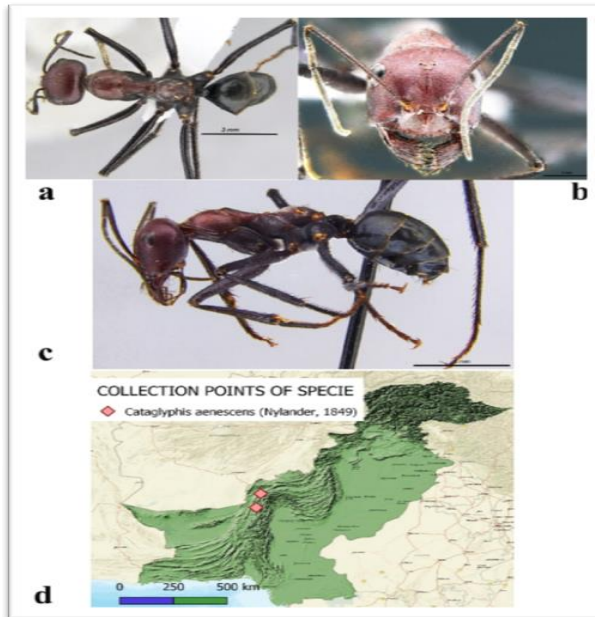
Distribution: N Africa, Middle East, Asia Minor, Arabian Peninsula, South Transcaucasia, Iran (Collingwood, 1985; Collingwood and Agosti, 1996; Radchenko 1997a, 1998; Cagniant, 2006; Paknia *et al.*, 2008; Cagniant, 2009; Vonshak *et al.*, 2009; Collingwood *et al.*, 2011; Kiran and Karaman, 2012; Borowiec, 2014; Moradloo *et al.*, 2015; Rad *et al.*, 2018; Sharaf, *et al.*, 2018).

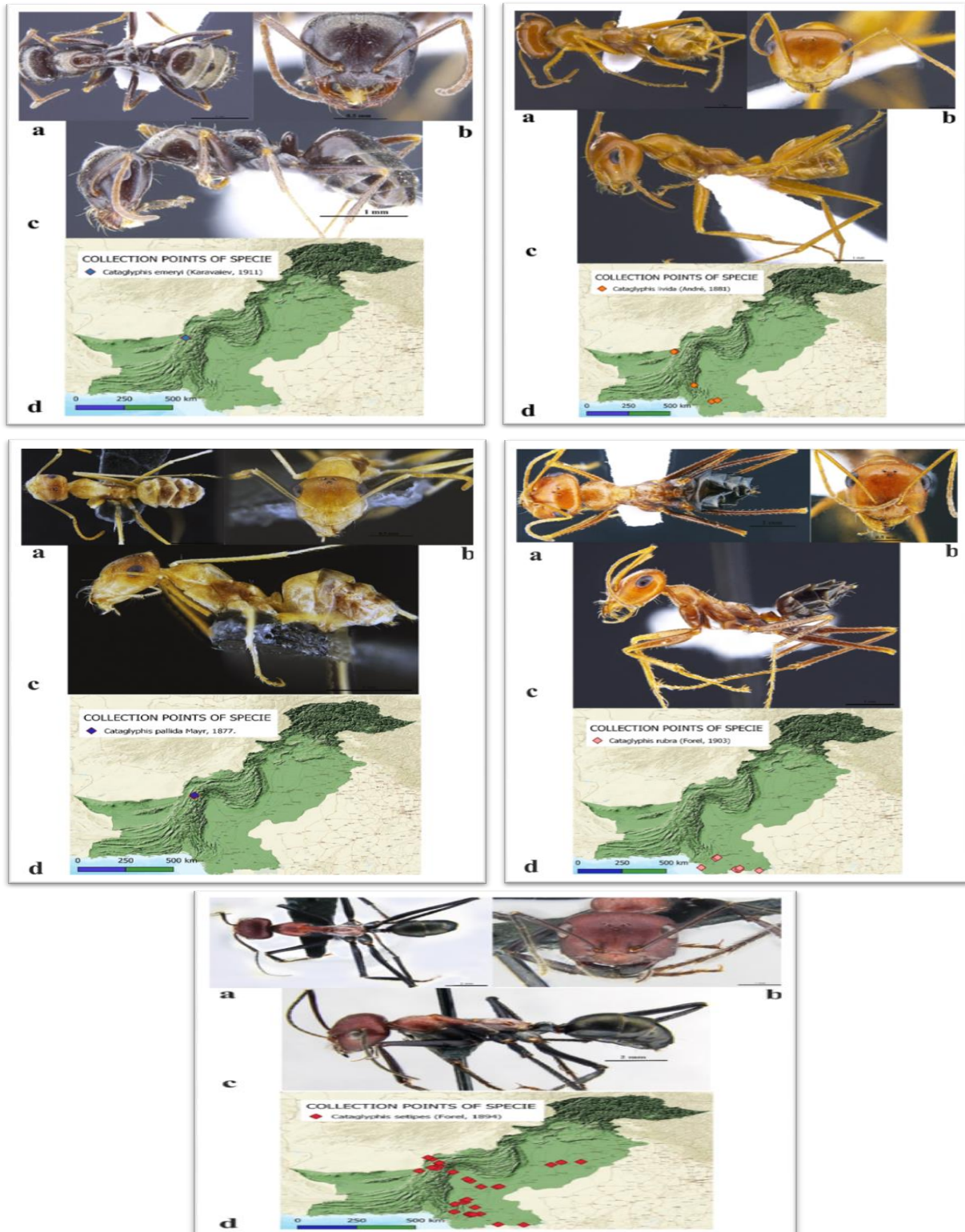
9. *Cataglyphis setipes* (Forel, 1894).

Material examined: 6 w, Sindh Prov., Sand Desert, 4 km Daulatpur city, 26°29'01.7"N, 67°58'42.3"E, h = 37m a.s.l desert sand, small bushes and weeds, Indus plain, 7.IV.2017; 8 w, Sakhi Mahar shah Graviyard Jacobabad, 28°00'22.5"N, 68°37'35.3"E, h = 65 m a.s.l graveyard water, logged plain area, Indus plain, 8.IV.2017; 7 w, Balochistan Prov., Khichi P. S, Nasirabad, 28°45'48.6"N, 68°04'21.3"E, h = 80 m a.s.l Indus plain, 8.IV.2017; 10 w, Sobdar Bangalzai Apple Orchard Lakhpas, Quetta, 30°02'03.4"N, 66°55'07.5"E, h=1841m a.s.l Iranian highlands, 9.IV.2017; 10 w, Mastung Khadi Kucha, Orchards Apple, 29°37'11.7"N, 66°45'05.2"E, h=1789 m a.s.l Iranian highlands, 9.IV.2017; 6 w, Khaluwal dam Nushki Deserted weeds, clay soil, 29°31'51.3"N, 65°53'16.9"E, h = 947 m a.s.l

Iranian highlands, 13.IV.2017; 16 w, Punjab Prov., Forest park Kahnawal tehsil kabirealla, 30°25'29.8"N, 71°51'23.6"E, h = 129 m a.s.l Indus plain, 29.VI.2017; 7 w, Kishwal forest chechawatni, 30°30'07.8"N, 72°33'55.9"E, h = 127 m A.S.L Indus plain, 29.VI.2017; 10 w, Khyber Pakhtunkhwa Prov., Tik Jal, 35°18'58.6"N, 74°17'06.2"E, h = 2019 m a.s.l W. Himalaya, 8.VII.2017.

Distribution: Kazakhstan, Middle Asia, Iran, Afghanistan, Pakistan, India (Arnoldi, 1964; Dlussky, 1981; Dlussky *et al.*, 1990; Radchenko 1997a, 1998; Bharti, 2008; Paknia *et al.*, 2008; Ghahari, *et al.*, 2011; Kiran and Karaman, 2012; Borowiec, 2014; Ghahari, *et al.*, 2015; Moradloo *et al.*, 2015; Wachkoo and Bharti, 2015; Bharti *et al.*, 2016; Rad *et al.*, 2018).
Pictures file





(Plate 1-9 1. *Cataglyphisaenescens* (Nylander, 1849). 2. *Cataglyphisbellicosa*(Karavaiev, 1924). 3. *Cataglyphiscinnamomea* (Karavaiev, 1910).4. *Cataglyphiscugiai*Menozzi, 1939. 5. *Cataglyphisemeryi*(Karavaiev, 1911). 6. *Cataglyphislivida*(André, 1881). 7. *Cataglyphispallida*Mayr, 1877.8. *Cataglyphisrubra* (Forel, 1903).9. *Cataglyphissetipes* (Forel, 1894). a. dorsal view b. Full face view c. Profile view d. Distribution map)

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