A Review of Ants of the Subgenus Myrmentoma, Genus Camponotus (Hymenoptera, Formicidae), from Asian Palaearctic

A. G. Radchenko

Institute of Zoology, Academy of Sciences of Ukraine, Kiev, Ukraine

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Abstract—Species from the subgenus Myrmentoma of the genus Camponotus from Asian Palaearctic are reviewed, their synonymy is examined (13 species names are placed into synonyms, three intraspecific forms are raised to the species rank), peculiarities of the distribution of the species and species groups are considered.

The subgenus Myrmentoma comprises about 50 species distributed chiefly in the S Holarctic; three species are known from India; one from Taiwan; and about 30 species from the Palaearctic (Bolton, 1995).

The subgenus was divided into species groups on the basis of a system proposed by Emery (1925a), with supplements and modifications to the group composition. For convenience, species are listed in alphabetical order within groups.

The present review was prepared using collections of the Zoological Institute, RAS, St. Petersburg (ZIN); the Zoological Museum, Moscow State University (ZM); Museum and Institute of Zoology, PAN, Warsaw (MIZ PAN); the Natural History Museum, Budapest (NHMB); the Natural History Museum, London (NHML); Institute of Zoology, Ukrainian Academy of Sciences, Ukraine (Kiev), including the collection of V.A. Karavaev (KK).

Subgenus MYRMENTOMA Forel, 1912

The type species Formica lateralis Olivier, 1792, subsequently designated: Wheeler, 1913: 80.

Group fallax

Diagnosis. Thorax without mesopropodial depression; propodeum not flattened dorsally, depressed laterally so, that dorsum seems in lateral view like a more or less regular arc. Head and thorax shining or semimat; abdomen always shining.

Of 10 species of this group, 7 species are reviewed in the present paper; among them, 3 species are known from S Europe (C. tergestinus Muller), Taiwan (C. truebi Forel), and India (C. wroughtoni Forel).

Camponotus fallax (Nylander, 1856)


Distribution. Europe (to S Sweden in the North), the Caucasus, NW Kazakhstan; reported by Ruzskii (1946) from the SW Siberia. C. fallax inhabits chiefly deciduous forests, building nests in dry branches of trees.

According to the description, ruzskyi ssp. differs from the nominative subspecies in red coloration of thorax. However, a study of vast material from different points of the habitat has shown that C. fallax thorax coloration varies from black (N part of the habitat) to red (S part), and individuals with transitional coloration occur even in the same nest. This fact enables one to abandon distinguishing ruzskyi as subspecies. Var. kamensis Ruzsky (described from one worker) is a specimen with such transitional coloration. Var. pagei (described from a female) is, beyond doubt, a color aberration of C. fallax.

Camponotus himalayanus Forel, 1893, stat. n.


= marginatus: Bingham, 1903: 369 (Camponotus) (part.), nec Latreille, 1798, syn. n.

Distribution. Known from the type locality.

The species differs from C. fallax in brightly orange coxae and femora and coarser sculptured semi-mat head and thorax.

Reports of a finding of C. marginatus Latreille in the Himalayas (Bingham, 1903) refer to C. himalayanus.

Camponotus jejuensis Kim, Kim, 1986

Kim, Kim, 1986: 140, φ (Camponotus), Korea; Bolton, 1995: 106.

Distribution. Known from the type locality.

Camponotus keithitoi Forel, 1913


The species is closely related to C. quadrinotatus Forel, being distinguished by the absence of erect hairs on propodeum.

Camponotus koltzoffi Stitz, 1934


Camponotus lameeri Emery, 1898


= barbatus Washkewitsch, 1926: 1, φ φ σ (fallax subsp.), Dzhambul, bank of Ili River, types lost, nom. praecocc., nec Roger, 1863, syn. n.

= barbiger Donisthorpe, 1941: 38 (Camponotus) nom. n. pro C. fallax var. barbatus Washkewitsch, 1926; Bolton, 1995: 88, syn. n.


Distribution. Middle Asia, Kazakhstan. The species populates vegetation-covered bottomland, oases, and mountain forests, inhabiting xylophages' tunnels in old tree trunks (Dlusskii et al., 1990).

By Vashkevich (1926), subsp. barbatus (nom. praecocc., nom. n.—C. barbiger Donisthorpe) differs from C. lameeri in the presence of erect hairs on lower part of head. However, this is an evident mistake, because C. lameeri also has the same hairs there.

Camponotus quadrinotatus Forel, 1886

Camponotus aegaeus Emery, 1915, stat. n.


Distribution. Asia Minor, Rhodes Island.
The species differs from C. libanicus in pointed apex of petiole scale.

Camponotus boghossiansi Forel, 1911
Forel, 1911: 357, ♂ (Camponotus), Turkey; 1914: 273; Emery, 1925a: 121; Bolton, 1995: 89.

Distribution. Asia Minor.

Emery (1915) believed var. stenotica (nom. n. pro C. kiesenwetteri var. angustata Forel, 1888, nom. praeocc., nec Latreille, 1802, nec Mayr, 1870) to belong to this species. Prior to studying the type material, I cannot conclusively establish the taxonomical status of the indicated form.

Camponotus kiesenwetteri Roger, 1859

Distribution. Greece, Aegean Sea Islands, Asia Minor. The species inhabits dry grassy areas and thin forests, building nests in soil, often under rocks.

The three forms were described within C. kiesenwetteri: r. nitidescens Forel, 1888 (Cephalonia Island), r. angustatus Forel, 1888 (nom. praeocc., see notes to C. boghossiansi Forel) and var. cyprica Emery, 1920 (Cyprus). r. nitidescens possesses shining body and, apparently, its name should be taken as a junior synonym of C. piceus Leach. Only a study of the type material will conclusively determine the taxonomical status of these forms.
Camponotus libanicus E. André, 1881


**Distribution.** Asia Minor, Middle East. The species populates dry, often semi-desert habitats, building nests in soil.

Forel (1913) distinguished r. sahlbergi from C. libanicus s. str. by more massive petiole scale. However, he probably compared the described specimens not with types but with figures of E. André (1881, p. 54, Figs. 14, 15) where the scale shape is not given quite correctly (cf. Emery, 1915). Emery (1915) classified the specimens, compared with r. sahlbergi by Forel, with the new variety aeagea which is, in my opinion, an independent species.

**Group lateralis**

**Diagnosis.** Propodeum flattened dorsally, with straight or concave posterior surface; thorax with or without mesopropodeal depression. Body only slightly sculptured, shining.

The group consists of 16 species, of which 11 are reviewed below; others are distributed in S Europe and NW Africa (candliotes Emery, dalmaticus Nylander, figaro Emery, guanchus Santschi, sicheli Mayr).

Camponotus abrahami Forel, 1913


**Distribution.** Lebanon.

The species was initially described as a variety of C. libanicus, belonging to the group kiesenwetteri and characterized by mat body. However, C. abrahami is distinguished by very delicately sculptured and shining integuments. This species is close to C. piceus, differing from it in much thinner petiole scale.

Camponotus gestroi Emery, 1878


**Distribution.** Mediterranean, Asia Minor, Iraq, S Transcaucasia. The species populates dry open areas; building nests in soil, often under rocks.

Camponotus interjectus Mayr, 1877


**Distribution.** Middle Asia, Afghanistan; known from Middle East (Wheeler and Mann, 1916) and Dagestan (Kuznetsov-Ugamskii, 1929). Arnoldi (1949) reported from Talysh the name C. interjectus transcaucasicus (nomen nudum). C. interjectus inhabits semi-deserts and mountain steppes, building nests in soil.

Camponotus kopeidaghensis Dlussky, Zabelin, 1985


**Distribution.** Asia Minor, Iraq; indicated for Azerbakiyan (Emery, 1925b).

Camponotus lateralis (Olivier, 1792)

Olivier, 1792: 497, ♂ (Formica), France; Mayr, 1853a: 103; 1855: 50, Nylander, 1856: 58, ♂ ♂ ♂; Mayr, 1861: 36 (Camponotus); Forel, 1874: 40; 1892: 307; E. André, 1881: 150; Nasonov, 1889: 57; Dalla
The group *kiesenwetteri*; (2) the group *fallax*; (3) *himalayanus*; (4) *jejuensis*; (5) *kolthoffii*; (6) *lameelii*; (7) *quadrinotatus*; (8) *tergestinus*; (9) *kthitoi*; (10) *truebi*; (11) *wroughtoni*.


A number of intraspecific forms were described for this species. Var. *candidior* Emery, 1894 is classified as an independent species (Agosti and Collingwood, 1987a, b); var. *rebeceae* Forel, 1913, as an independent species in the present paper; var. *ebneri* Finzi, 1930, judging from the description, is a junior synonym of *C. piceus*. A study of the *C. kosswigi* types has shown the identity of these to *C. lateralis*. *C. kosswigi* differs in the only character, sparser erect pubescence on body, but similar individuals occur among typical *C. lateralis* over the whole habitat. At British Museum 1 ♀ of *C. kosswigi* is designated as the holotype; 3 others, as paratypes. However, describing the species, Donisthorpe (1950) separated no holotype. In this connection, I designate the specimen, labeled as "holotype," as lectotype (W. Turkey, Erbeyli, 14.V.1947, leg. C. Kossig); others, as paralectotypes. For additional data on the synonymy, see Collingwood, 1978; Bolton, 1995.

**Camponotus piceus** (Leach, 1825)

Leach, 1825 : 294, ♀ ♀ ♂ *(Formica picea)*, Italy; Roger, 1863 : 1 *(Camponotus)*; Emery, 1925b : 67;
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= ebeninus Emery, 1869: 2, ♀ ♂ (Camponotus), Italy, syn. Emery, 1925a.

= ebneri Finzi, 1930: 24, ♀ (lateralis var.), Lebanon, syn. n. (provisorius).

Distribution. S and C Europe, NW Africa, SE Europe, the Caucasus, Asia Minor, Middle East, N Kazakhstan. The species inhabits steppes, including

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mountain ones, often occurs in dry light forests; building nests in soil, often under rocks.

The synonymy of C. atricolor, C. merula, and C. piceus was substantiated in detail by Atanasov and Dlusskii (1992). C. kiesenwetteri var. nitidescens from Lebanon is characterized by shining body; thus, it can not be classified with the group of mat species including C. kiesenwetteri. Judging by the description, its name is the synonym of C. piceus. Var. ebneri differs from C. lateralis in black body, but does not differ from C. piceus.

**Camponotus rebecca Forel, 1913, stat. n.**

Forel, 1913 : 436, ♀ (lateralis var.), Syria; Emery, 1925a : 120; 1925a : 69; Menozzi, 1933 : 81; Bolton, 1995 : 120 (lateralis subsp.).

**Distribution.** Syria.

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**Fig. 3.** Scheme of species relations within the subgenus *Myrmentoma* from Eurasia. C. cornis, C. minus, C. nadimi, and C. varius are difficult to relate to any of the indicated groups.
This species differs from *C. lateralis* in weak mesopropodeal depression, being, in all probability, closely related to *C. kurdistanicus* and *C. vogti* from Asia Minor and Anterior Asia.

Camponotus semirufus Emery, 1925

**Distribution.** Middle Asia, S Kazakhstan. The species inhabits saxaul and tamarix thickets, building nests in soil (Dlusskii et al., 1990).

The species name given by Kuznetsov-Ugamskii (1923) was invalid; Emery (1925b) gave the first valid name and should be considered the author of *C. semirufus*.

Camponotus staryi Pisarski, 1971
Pisarski, 1971 : 730, φ (Camponotus), Iraq, holotype and paratypes deposited at MIZ PAN, examined; Bolton, 1995 : 125.

**Distribution.** The type locality.

Camponotus vogti Forel, 1906

**Distribution.** Yugoslavia, Asia Minor.

Morrista et al. (1991) classified *C. nipponensis* Santschi 1937 with the subgenus Myrmentoma, but this opinion was erroneous. As correctly indicated by Santschi (1937), the species belongs to the subgenus Myrmambis.

Within the subgenus *Myrmentoma*, four more species were described from the Palaearctic: *C. cornis* Wang, Wu, 1994 (China), *C. minus* Wang, Wu, 1994 (China), *C. nadimi* Tohme, 1969 (Lebanon), and *C. varius* Donisthorpe, 1943 (India). I have not seen any representatives of these and cannot refer them to any of the groups discussed above.

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In regard to the formation of the *Myrmentoma* fauna, it should be emphasized that the genus is divided into three groups of species; among them, *piceus* and *kiesenwetteri* are morphologically close to each other, but the group *fallax* stands apart from the others within the genus.

The rather restricted habitat of *kiesenwetteri* species includes Greece, Islands of the Aegean Sea, Asia Minor, and the Middle East (Fig. 1). This area may be with good reason considered the center of formation of *kiesenwetteri* species.

The habitat of the group *lateralis* as a whole envelops the Ancient Mediterranean (Fig. 2); however, the species of the group belong to different complexes distributed rather far from one another. For example, the habitat of the complex *gestroi* (*rebecae*, *gestroi*, *kurdistanicus*, *vogti*) is basically similar to that of the group *kiesenwetteri*, and *gestroi* species are more closely related in morphology to species of the latter group rather than to any *lateralis* species. Most likely Anterior Asia is the center of the species formation of the *gestroi* complex as well as of the group *kiesenwetteri*.

For the most part, the European Mediterranean is populated by species of the complex *piceus* (*piceus*, *figaro*, *abrahami*, and *dalmaticus*); in this case *C. piceus* has a very wide habitat, being distributed far into NW Africa and as far as N Kazakhstan to the East. *C. figaro* (Spain) and *C. abrahami* (Middle East) are closely related to *C. piceus*, being, in all probability, its derivatives. The same is true for Balkanian *C. dalmaticus*.

More southern parts of the Ancient Mediterranean, in particular N Africa and Middle Asia, are the centers of the species diversity for two other, rather close to each other, species complexes of the group *lateralis*: *sicheli* (*sicheli*, *guanchus*, *candiates*, *interjectus*, and *semirufus*) and *lateralis* (*lateralis*, *staryi*, and *kopetdaghenus*) (Fig. 2). Among these, only *C. lateralis* is widely distributed in S Europe, the Crimea, and the Caucasus, and reaching Kopet Dag and NW Africa. The second European species, *C. candiates*, is distributed in Balkans.

Thus, the group *lateralis* has four rather isolated centers of the species diversity: Balkan-Middle Eastern (including Asia Minor), Northern-Mediterranean (chiefly S Europe), Southern-Mediterranean (chiefly N Africa), and Anterior-Middle Asian.

An absolutely different pattern is observed for the group *fallax* (Fig. 1): the centers of its species diver-
sity and probably of origin, too, are located in the E Palaearctic, from Middle Asia to Japan exclusive. The argument in support of the Eastern origin of fallax species is the fact that nearly all Nearctic species of the subgenus Myrmentoma are closely related to the very close, if not identical, group caraye. Of 10 Eurasian fallax species, only two very closely related to each other species, C. fallax and C. tergestinus, are distributed in Europe. The former species is distributed in deciduous forests of Middle, Southern, and Eastern Europe (as far as the Urals to the East), and the latter is known from Italy and Balkans.

The species of the complex quadrinotatus (quadrinotatus, keithtoi, jejuensis, truebi) are typical of E Palaearctic, being distributed from the S Far East to the Taiwan Island.

The species of the complex himalayans (himalayans, klothschi, wroughtoni) populate mountains of Middle Asia.

In this way, the following diversity centers of different species complexes are observed for the group fallax: Southern-European, Central-Middle Asian, and Far Eastern. Whereas species of the remaining groups within the subgenus Myrmentoma have clearly Mediterranean origin, the fallax species are distributed, apparently, from the East to the West via S Palaearctic, in contrast to a similarly directed, but more northern way of species distribution of the subgenus Camponotus s. str.

The scheme of species relations within the subgenus Myrmentoma is shown in Fig. 3.

REFERENCES


