



Second report on the occurrence of *Camponotus truncatus* (Spinola) (Hymenoptera: Formicidae) in Poland, with a key to the Polish species of the genus *Camponotus* Mayr

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Abstract: A second locality of *Camponotus (Colobopsis) truncatus* (Spinola), a Mediterranean dendrobionic ant species rare in Central Europe is reported from Poland. Single workers were collected from trunks of old oaks (*Quercus robur* L.) in the Rogalin Oak Wood within the Rogalin Landscape Park (Wielkopolsko-Kujawska Lowland, Western Poland). At the same time, besides *C. truncatus*, one more rare ant species, *Temnothorax corticalis* (Schenck), is reported from the Wielkopolsko-Kujawska Lowland for the first time. A key to workers of the Polish species of the genus *Camponotus* Mayr is given.

Key words: ants, *Camponotus truncatus*, *Temnothorax corticalis*, dendrobionts, oak forests, fauna of Poland

INTRODUCTION

Until recently, five species of the genus *Camponotus* Mayr, representing two subgenera, were known from Poland: *Camponotus (Camponotus) herculeanus* (L.), *C. (C.) ligniperda* (Latr.), *C. (C.) vagus* (Scop.), *C. (Myrmentoma) fallax* (Nyl.), and *C. (M.) piceus* (Leach). Two other previously reported species, *C. (M.) lateralis* (Olivier) and *C. (Tanaemyrmex) aethiops* (Latr.), have been crossed off the list of Polish myrmecofauna because of incredibility of the reports, based most probably on misidentifications (Czechowski et al. 2002; for the Polish species of *Camponotus* see also Pisarski 1961 and Krzysztofiak 1991). One more *Camponotus* species, *C. truncatus* (Spinola), a member of the subgenus *Colobopsis* Mayr, was found in Poland very recently (Borowiec 2007).

The subgenus *Colobopsis* includes about 115 species identified to date, distributed mainly in tropical and subtropical regions of India, South-Eastern Asia, Australasia and Central America. *C. truncatus*, a Mediterranean zoogeographical element, is the only representative of this subgenus which occurs in Europe (see Radchenko 1996, 1997, 2007). The European part of its compact range includes Southern and partly Central Europe, reaching a latitude of 50.4° north; single scattered sites of *C. truncatus* reach farther, in Germany to the latitude of Berlin (i.e. to around (52.3°N) (Seifert 2007). The present paper reports the second finding of this species in Poland.

OUTLINE OF BIOLOGY OF *C. TRUNCATUS*

C. truncatus is a thermo- and hemixerophilous species, an oligotope of warm, light and dry deciduous forests, encountered also in mixed forests, old parks and orchards. It prefers sparse woods, mainly oak and juniper. As a typical dendrobiont it nests in dead parts (mainly dry

branches) of living trees. Incipient colonies can also dwell in woody hollow stems of certain plants. Colonies are monogynous, numbering up to 500 workers. In mature colonies, the worker caste is strictly dimorphic (as in all members of the subgenus *Colobopsis*). Apart from ordinary (3–5 mm in length) workers, a number of soldiers (5–6 mm in length) are also seen; no intermediate morphs are present. A distinctive feature of soldiers is their strongly sclerotised plug-shaped anterior part of head, used by them to plug nest holes (see ‘phragmosis’ e.g. in Hölldobler & Wilson 1990). The same head structure is characteristic of *C. truncatus* queens, in which it serves to close the nest entrance during the claustral period. Ordinary workers forage in tree canopies feeding on honey dew and preying on small insects. They very seldom walk down tree trunks, which makes the species hard to record. Soldiers do not leave the nests (Stitz 1939, Bernard 1967, Atanasov & Dlusskij 1992, Seifert 2007). Most probably, soldiers of *C. truncatus*, besides their defensive role, serve also as a trophic subcaste in the colony, which is connected with their proportionately larger gasters. As has been found in *C. fraxinicola* M. R. Smith, a North-American member of the subgenus *Colobopsis*, the soldiers store large amounts of liquid food in their crops and their gasters are filled with large fat bodies (Wilson 1974).

C. TRUNCATUS IN POLAND

The first Polish record of *C. truncatus* was in an old urban park in Wrocław (51°12'N, 16°59'E; Lower Silesia) in 2006 (for more details see Borowiec 2007). The second finding, reported here, was at Rogalin (52°14'N, 16°56'E; UTM XT 38) near Poznań (Wielkopolsko-Kujawska Lowland, Western Poland), about 120 km north of the former site (Fig. 1).

The Rogalin Oak Wood (Dęby Rogalińskie or Dąbrowa Rogalińska), the biggest cluster of old oaks in Europe, stretches out on the flooded terrace of the Warta river valley, within the Rogalin Landscape Park. The wood, consisting of about 2000 oaks, mainly *Quercus robur* L., several hundred years old, is a remnant of old ash-elm carrs of the association Ficario-Ulmetum (=Fraxineto-Ulmetum), in which *Q. robur* is a constant component of the tree stand



Fig. 1. Localities of *C. truncatus* in Poland: 1 – Wrocław (after Borowiec 2007), 2 – Rogalin ad Poznań (new locality) (W-KL – Wielkopolsko-Kujawska Lowland, LS – Lower Silesia).

(see Matuszkiewicz 1981). The edge of the oak wood is within the palace park at Rogalin, where it constitutes an English-style part of the park. Among other ants, two workers of *C. truncatus* were collected there from the oak trunks by the first author on 4th and 5th July, 2007. These specimens were found on different distant trees, possibly indicating (based on the biology of the species; see above) that they represented two separate colonies.

OTHER RESULTS

Besides *C. truncatus*, eight more ant species were recorded on the Rogalin oaks: *Dolichoderus quadripunctatus* (L.), *Temnothorax corticalis* (Schenck), *Camponotus fallax* (Nyl.), *Lasius platythorax* Seifert, *L. brunneus* (Latr.), *Lasius fuliginosus* (Latr.), *Myrmica ruginodis* Nyl., and *Formica cunicularia* Latr. The first six species are dendrobionts, so their presence on the old trees was not accidental. The most interesting of them is *T. corticalis*, which was recorded from the Wielkopolsko-Kujawska Lowland for the first time. It is a little known Euro-Caucasian species, very rare in Poland and found only in xerothermal sites, an oligotope of light and dry deciduous forests, nesting in dead tree branches (mainly oak), in bark crevices and in dry fallen wood (see Czechowski et al. 2002). Another dendrobiont, *C. fallax*, was recorded from the Wielkopolsko-Kujawska Lowland for the second time (formerly it was reported exactly from the Rogalin Oak Wood; Banaszak 1977).

DISCUSSION

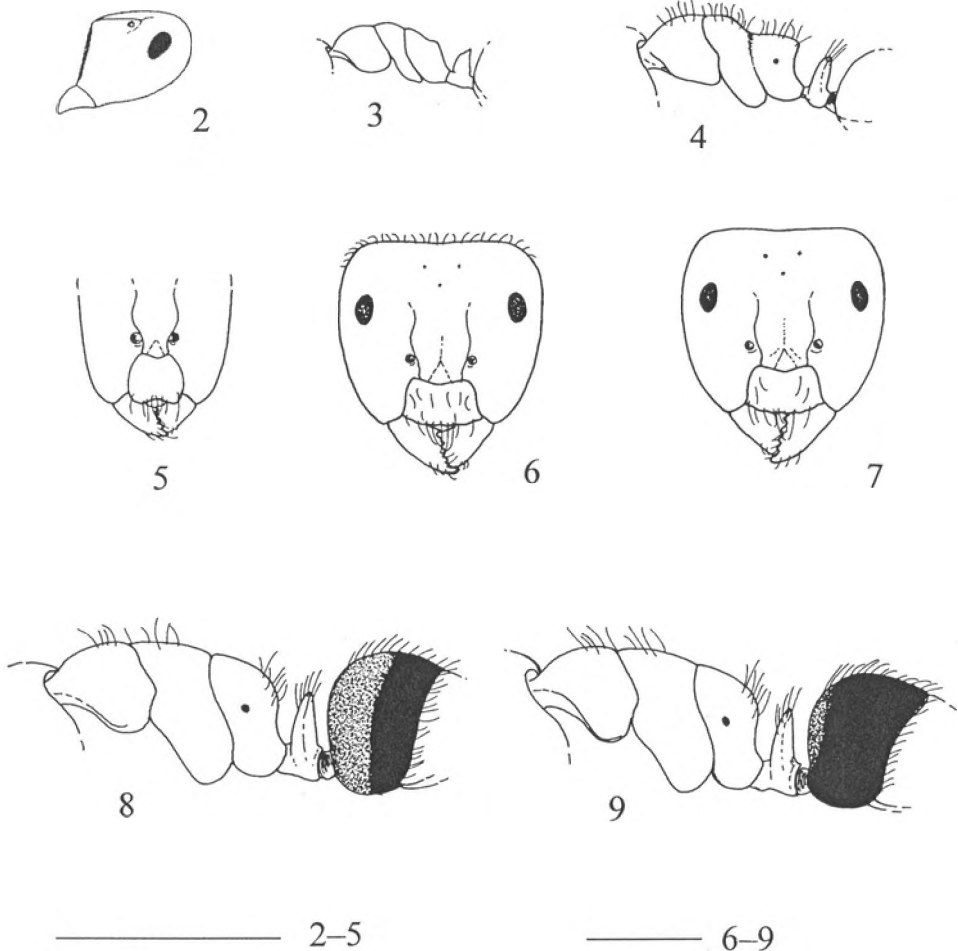
Although the ants of Poland are rather well known (Czechowski et al. 2002), species new for the country are still occasionally recorded (e.g. Radchenko et al. 2003, 2004, 2005). Recently (Borowiec 2007 and the present report), *C. truncatus* is an addition to the list of the Polish myrmecofauna. It should be mentioned here that there is one more, unpublished (based on a personal communication), recent report of the species under discussion reputedly found in Western Poland – halfway between the two “official” sites, but it requires confirmation. This series of recent finds is puzzling, especially in the context of a long tradition of faunistic myrmecological research in the western regions of Poland. The question arises whether *C. truncatus* has started to extend its range in Central Europe in recent years. It is possible the more so because *C. truncatus* was not found on the Rogalin oaks when the occurrence of hymenopterans was studied there in the mid-1970’s (Banaszak 1977). On the other hand, those results are not too reliable as regards ants since only five ant species were recorded then, including only two dendrobionts (*C. fallax* and *Lasius fuliginosus*), during a two-year fairly systematic investigation, i.e. fewer than recently collected by one person over two days.

KEY TO THE POLISH SPECIES OF THE GENUS *CAMPONOTUS* (WORKERS)

(after Czechowski et al. 2002, supplemented)

1. Head of soldiers (and queens) sharply truncated anteriorly, lower part of frons and clypeus forming flat rounded plate (Fig. 2). Head of workers rounded, not truncated, and propodeal dorsum distinctly concave transversally (seen in profile) (Fig. 3). Head and alitrunk reddish, gaster brownish black *C. truncatus* (Spinola)
 - Head of soldiers and queens not truncated anteriorly, propodeum of workers has another shape (Figs 4–9). Body colour various 2
2. Alitrunk in profile with distinct, often deep, metanotal groove, dorsal surface of propodeum flattened and meets its declivity at an acute or right angle (Fig. 4) *C. piceus* (Leach)
 - Alitrunk in profile gradually convex, without metanotal groove, its dorsum not flattened, forming more or less regular arch (Figs 8, 9) 3

3. Anterior clypeal margin distinctly notched medially (Fig. 5) *C. fallax* (Nyl.)
 - Anterior clypeal margin not notched medially (Figs 6, 7) **3**
4. (3) Whole body black; occipital margin of head with numerous standing hairs (Fig. 6)
 *C. vagus* (Scop.)
 - Alitrunk from yellowish red to brownish red, head and gaster brownish black; occipital margin of head without or, at most, with a few standing hairs (Fig. 7) **5**
5. (4) At least basal third of first gastral tergite reddish, remainder of gaster brownish black (Fig. 8) *C. ligniperda* (Latr.)
 - At most declivity of first gastral tergite could be reddish, remainder of gaster brownish black (Fig. 9) *C. herculeanus* (L.)



Figs 2-9. Details of structure of *Camponotus* species (workers): 2, 3 - *C. truncatus*, 4 - *C. piceus*, 5 - *C. fallax*, 6 - *C. vagus*, 7, 8 - *C. ligniperda*, 9 - *C. herculeanus*; 1 - head (of soldier; lateral view), 3, 4, 8, 9 - alitrunk, petiole and base of gaster, lateral view, 5 - lower part of head, dorsal view, 6, 7 - head, dorsal view. Scale bars: 1 mm.

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STRESZCZENIE

[Drugie doniesienie o występowaniu *Camponotus truncatus* (Spinola) (Hymenoptera: Formicidae) w Polsce, z kluczem do oznaczania krajowych gatunków z rodzaju *Camponotus* Mayr]

Praca zawiera informację o wykryciu w Polsce drugiego stanowiska *Camponotus (Colobopsis) truncatus* (Spinola). Jest to medytterraneński gatunek dendrobotyczny, oligotop jasných, ciepłych i suchych lasów liściastych, głównie dębowych. Robotnice *C. truncatus* znaleziono na pniach Dębów Rogalińskich w obrębie Rogalińskiego Parku Krajobrazowego (Nizina Wielkopolsko-Kujawska). Stanowisko to leży na północnej granicy zasięgu gatunku. Wcześniej w Polsce *C. truncatus* został stwierdzony na dębach w parku miejskim we Wrocławiu (Borowiec 2007). Spośród innych gatunków mrówek zebranych z pni starych dębów w Rogalinie na szczególną uwagę zasługuje – po raz pierwszy wykazany z Niziny Wielkopolsko-Kujawskiej – *Temnothorax corticalis* (Schenck), mało znany dendrobiont euro-kaukaski, również oligotop jasných i suchych lasów liściastych. Do pracy dołączony jest klucz do oznaczania krajowych gatunków z rodzaju *Camponotus* Mayr na podstawie robotnic.

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