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Redescription of *Camponotus nitidescens* FOREL, 1889, new status and notes on ants from Kefalonia, Greece (Hymenoptera: Formicidae)

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ABSTRACT. *Camponotus kiesenwetteri* r. *nitidescens* FOREL, 1889 described from Kefalonia island is removed from synonyms of *C. piceus* (LEACH, 1825) and raised to the rank of species. List of 54 ant species collected in Kefalonia in 2014, with 24 species new to the island, and complete check-list of 76 ant species recorded hitherto from this island are given.

Key words: entomology, taxonomy, zoogeography, Hymenoptera, Formicidae, Greece, Ionian Islands.

INTRODUCTION

Kefalonia (Greek: Κεφαλονιά or Κεφαλλονιά), formerly also known as Kefallinia or Kephallenia (Κεφαλληνία) is the largest island of the Ionian Archipelago. It is also a separate regional unit of the Ionian Islands region, and the only municipality of the regional unit. The capital of Kephallonia is Argostoli. The size of the island is about 781 km² and the majority of the land is mountainous. The island's highest mountain is Mount Ainos, with an elevation of 1628 m; to the west-northwest are the Paliki mountains, with other high mountains including Roudi, Geraneia (Gerania) and Agia Dynati. The top of Mount Ainos is covered with fir forests and the dominant vegetation forms of the western slope of Roudi Mountain are deciduous oak forest of and numerous species of mediterranean shrubs. Both areas are protected as a national park. Logging is rare on the island; however its timber output is one of the highest in the Ionian islands. Forest fires were common during the 1990s and the early 2000s.

Ants of the island are poorly known. Most species recorded from Kefalonia were noted in end of XIXth and beginning of XXth century in various papers devoted to the fauna of the Mediterranean area, usually without precise locality data (FOREL 1886, EMERY 1901, 1914, FINZI 1930). The only paper with a significant number of species noted from Kefalonia was COLLINGWOOD's (1993) note published in the Proceedings of the International Congress on Zoogeography and Ecology of Greece and adjacent areas, which was held in Iraklion (Crete) in 1990. In his comparative studies of the ant fauna of five Greek islands he recorded generally 26 species from Kefalonia but noted that the small number of collected species was caused by late season when he collected on the island (September) and limited access due to raging fires.

A total of 56 ant species has been recorded from Kefalonia in the literature but the occurrence of seven taxa needs confirmation due to recent revisions and faunistic investigations on Mediterranean ants. The senior author collected in June 2014 in 19 localities spread over most of the island, recording 54 ant species, 24 previously not reported from Kefalonia (but 4 attributed to species complex only and 6 to numbered morphospecies). In this material we found a rare taxon originally described under name *Camponotus kiesenwetteri* r. *nitidescens* FOREL, 1889 and later synonymized with *C. piceus* (LEACH, 1825). In our opinion it represents a good species, very distinct from *C. piceus* and close to *C. boghossiani* FOREL, 1911 known from Crete, Aegean Islands and western Turkey. Its redescription is given below. We also list all newly collected material and compile a check-list of all ant species recorded from Kefalonia.

MATERIALS AND METHODS

Abbreviations:

- CI – clypeus index; $CW/CL \times 100$;
- CW – clypeus width; width of the posterior extension of the clypeus measured at the midpoint of the antennal sockets;
- CL – clypeus length; maximum length of clypeus;
- EL – eye length; measured along the maximum diameter of eye;
- HI – head index; $HW/HL \times 100$;
- HL – head length; measured in straight line from mid-point of anterior clypeal margin to mid-point of occipital margin; in full face view;
- HTI – hind tibia index ; $HTL/HW \times 100$;
- HTL – hind tibia length; maximum length of hind tibia;
- HW – head width; measured below the eyes in full-face view;
- MI – mesosoma index; $ML/MH \times 100$;
- ML – mesosoma length; measured as diagonal length from the anterior end of the neck shield to the posterior margin of the propodeal lobe;
- MH – mesosoma width; measured from the upper level of the mesonotum to the lower margin of the mesopleuron;
- SI1 – scapus index 1; $SL/HL \times 100$;
- SI2 – scapus index 2; $SL/HW \times 100$;
- SL – maximum straight-line length of scapus.

Explanation of measurements used in description:

HW: 1.217 ± 0.335 (0.813-1.626) = mean HW: average: $1.217 \pm$ standard deviation: 0.335 (minimum value: 0.813 - maximum value: 1.626).

Localities:

(Symbols e.g. KE164 refer to locality number in the database of Greek ants available in AntWeb resources: www.antweb.org; locality numbers correspond to the numbers in the table, map with localities is on Fig. 9).

1 - KE164 - Hotel Panas n. Spartia, 23 m, 38,10398 N / 20,57470 E, 23 VI 2014 (garden and vicinity of a small hotel area);

2 - KE165 - n. Peratata, 211 m, 38,14058 N / 20,55038 E, 24 VI 2014 (pine forest on a rocky hill);

3 - KE166 - n. Troianata, 346 m, 38,16753 N / 20,55496 E, 24 VI 2014 (open oak woodland);

4 - KE167 - nr Razata, 159 m, 38,17166 N / 20,52268 E, 24 VI 2014 (open oak woodland on an archeological site with ancient stone walls);

5 - KE168 - Enos Mts. Loc. 1, 677 m, 38,19142 N / 20,59415 E, 25 VI 2014 (mountain pasture with clumps of low oaks);

6 - KE169 - Enos Mts. Loc. 2, 1336 m, 38,15273 N / 20,63930 E, 25 VI 2014 (fir forest);

7 - KE170 - Enos Mts. Loc. 3, 1571 m, 38,14105 N / 20,65708 E, 25 VI 2014 (fir forest);

8 - KE170A - Avithos Lake, 278 m, 38,17293 N / 20,71233 E, 25 VI 2014 (area near a small lake in a moist, shaded valley of a small creek);

9 - KE171 - Mt. Kalon Oros, 658 m, 38,34205 N / 20,56472 E, 26 VI 2014 (mountain pasture);

10 - KE172 - Andipata Erison, 67 m, 38,47108 N / 20,54327 E, 26 VI 2014 (dense oak forest);

11 - 173 - Psilithrias, 106 m, 38,45860 N / 20,56237 E, 26 VI 2014 (shady, dense, moist deciduous forest);

12 - KE174 - Vendourata, 202 m, 38,43202 N / 20,57021 E, 26 VI 2014 (open oak woodland);

13 - KE175 - Poros, 62 m, 38,14936 N / 20,77029 E, 27 VI 2014 (gorge in the limestone rocks);

14 - KE176 - rd. Poros-Skala, 13 m, 38,12813 N / 20,79509 E, 27 VI 2014 (shaded valley of a small creek);

15 - KE177 - Kateleios, 11 m, 38,07079 N / 20,75164 E, 27 VI 2014 (edge of a small river);

16 - KE178 - rd. Razata-Sami, 543 m, 38,20101 N / 20,60002 E, 28 VI 2014 (natural mountain deciduous forest);

17 - KE179 - n. Poulata, 102 m, 38,23170 N / 20,61041 E, 28 VI 2014 (open oak woodland);

18 - KE180 - Drongarati Cave, 56 m, 38,22711 N / 20,62839 E, 28 VI 2014 (entrance to a large cave);

19 - KE181 - rd. Sami-Razata, 553 m, 38,19937 N / 20,59685 E, 28 VI 2014 (open oak woodland).

RESULTS

Redescription of *Camponotus nitidescens* FOREL

***Camponotus nitidescens* FOREL, 1889 bona species, new status**

Camponotus kiesenwetteri r. *nitidescens* FOREL, 1889: 260; RADCHENKO 1997: 707 (as synonym of *Camponotus piceus*).

Camponotus kiesenwetteri nitidescens FOR.: EMERY 1914: 159; FINZI 1930: 310.

Camponotus (Myrmentoma) kiesenwetteri subsp. *nitidescens* Forel: EMERY 1925: 121.

DESCRIPTION

Measurements: Minor workers: HL: 1.1 ± 0.07 (1.008-1.193); HW: 0.908 ± 0.08 (0.813-1.019); CW: 0.469 ± 0.02 (0.447-0.492); CL: 0.28 ± 0.031 (0.235-0.313); SL: 1.149 ± 0.049 (1.089-1.213); EL: 0.277 ± 0.015 (0.263-0.296); ML: 1.472 ± 0.08 (1.373-1.549); MH: 0.989 ± 0.044 (0.934-1.041); HTL: 1.13 ± 0.131 (1.047-1.219); HI: 121.3 ± 2.7 (117.1–124.0); SI1: 104.6 ± 5.0 (102.7-110.2); SI2: 127.0 ± 8.4 (114.3-135.2); CI: 170.9 ± 16.9 (142.8-194.9); MI: 148.7 ± 2.7 (146.5-153.8); TI: 123.5 ± 5.0 (118.3-128.8);

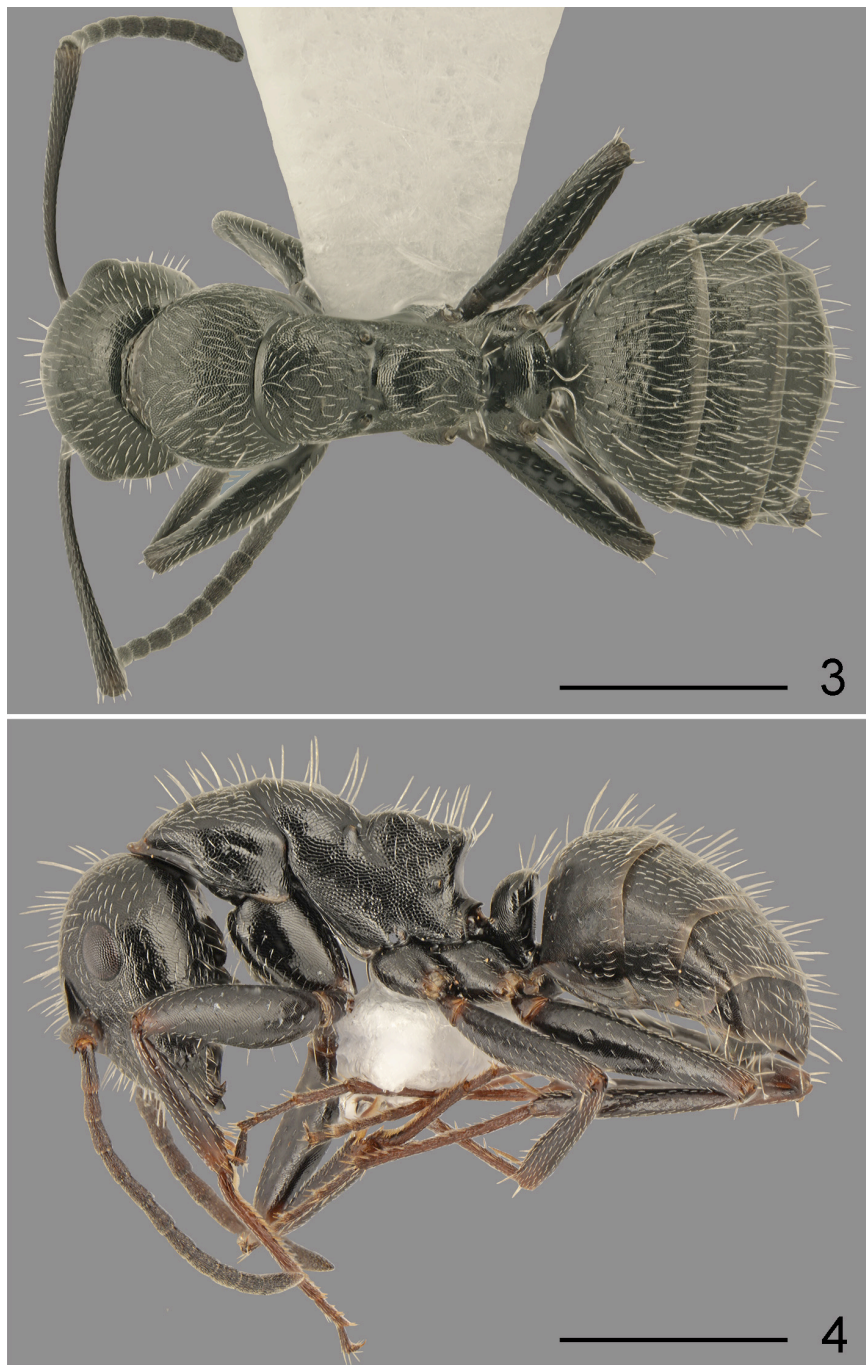
Major workers: HL: 1.569 ± 0.08 (1.478-1.652); HW: 1.525 ± 0.09 (1.413–1.626); CW: 0.657 ± 0.04 (0.615–0.715); CL: 0.531 ± 0.033 (0.492–0.581); SL: 1.361 ± 0.064 (1.252–1.421); EL: 0.344 ± 0.032 (0.293–0.38); ML: 1.999 ± 0.1 (1.882–2.132); MH: 1.361 ± 0.14 (1.263-1.605); HTL: 1.434 ± 0.09 (1.35-1.532); HI: 102.9 ± 1.2 (101.1-104.6); SI1: 86.8 ± 2.9 (84.1-92.1); SI2: 89.3 ± 3.6 (85.0-94.9); CI: 123.8 ± 4.4 (118.8-130.3); MI: 147.2 ± 8.4 (132.8-153.8); TI: 92.7 ± 3.8 (87.4-95.5).

Whole body black. Trochanters partly yellowish brown, in some specimens scapus, fore tibiae, and partly mid tibiae brown, tarsi in all specimens from brown to dark brown. (Figs. 1-4).

Distinctly polymorphic species, the largest major workers 1.5 times longer than the smallest minor workers. Head in major workers large, almost square in outline, the widest at eye height, softly narrowed anteriorly and rounded posteriorly (Fig. 5). Anterior margin of clypeus in the middle with triangular emargination. Eyes small, placed distinctly before mid length of head, small, 0.8 times as long as length of tempora and 0.4 times as long as length of genae. Scapes short, only slightly longer than width of head, at base 0.75 times as wide as in apex, gradually widened, straight, without preapical constriction. Funicle elongate and thin, 1.3 times as long as scape, first segment elongate, 2.3-2.4 times as long as wide on apex, 1.4 times as long as second segment, segments 3-6 equal in length and slightly longer than second segment, segments 7-11 slightly shorter than second segment. Surface of scape with fine microsculpture but



1, 2. *Camponotus nitidescens* FOREL, minor worker: 1 – dorsal, 2 – lateral (scale bar 1 mm)



3, 4. *Camponotus nitidescens* FOREL., major worker: 3 – dorsal, 4 – lateral (scale bar 1 mm)



5, 6. *Camponotus nitidescens* FOREL, head: 5 – major worker, 6 – minor worker (scale bar 0.5 mm)

appears slightly shiny, covered with very short and sparse adherent setae and 6-9 short erect setae. Head in minor workers oval, the widest at eye height, softly narrowed anteriorly and rounded posteriorly (Fig. 6). Anterior margin of clypeus without emargination. Eyes proportionally larger than in major worker, placed distinctly before mid-length of head, small, approximately as long as length of tempora and 0.6 times as long as



7, 8. *Camponotus boghossiani* FOREL, major worker (specimen from Samos): 1 – dorsal, 2 – lateral (scale bar 1 mm)

length of cheeks. Scares short, slimmer than in major worker, 1.1-1.2 times longer than width of head, at base 0.77-0.79 times as wide as in apex, gradually widened, straight, without preapical constriction. Funicle in shape and ratio of segments similar as in major worker. Surface of scape with fine microsculpture appears less shiny than in major worker, covered with very short and sparse adherent setae and 0-3 short erect setae. Whole surface of head in both major and minor worker with numerous white, erect setae (Figs. 5, 6).

Promesonotum regularly, distinctly convex in profile or with distinct suture between pronotum and mesonotum, between promesonotum and propodeum deep cleft (Figs. 2, 4). Propodeum elongate, in major workers 1.3 in minor worker 1.5 times as long as wide, posterior margin truncate or very shallowly emarginate but posterior corners never forms tooth-like processes, upper surface of propodeum flat. Whole surface of pronotum, dorsal part of mesonotum and lateral parts of propodeum covered with sparse, adherent setae, dorsal part of whole mesosoma with numerous, long, white erect setae. Petiolar squama stout, with convex anterior and flat posterior surface, margin with row of long, white setae (Figs. 2, 4).

Mandibles short, dorsal surface with distinct microreticulation and several elongate setose punctures, dull, inner margin with one larger and 3-4 smaller teeth. Clypeus on whole surface microreticulate and sparse setose punctures, dull. Frontal carinae short, extending to the line connecting anterior margin of eyes, form regular arch, interantennal area flat with thin median line, microreticulate, with sparse setose punctures, dull. Area between eyes and top of head distinctly microreticulate, appears distinctly dull, microreticulation gradually diffused from dorsal to ventral part of head, gena, on underside of head tends to form linear sculpture, surface behind eyes and on ventral surface of head appears shiny. Mesosoma on dorsal surface with distinct microreticulation, cells of microsculpture with shallow impression, whole surface appears dull. On sides of mesosoma, especially on mesopleura microreticulation tends to form linear structures, cells of microreticulation with gradually shallower impression and surface from dorsum to basal parts change gradually from dull to more or less shiny. Petiole microreticulate but appears shiny. Gaster on dorsum with sparse, short adherent setae and numerous long erect setae, with distinct regular microsculpture, dull; on sides microsculpture ranges from dull to shiny, underside of gaster distinctly shiny.

Legs moderately long, hind femora 0.8 times as long as mesosoma, hind tibiae approximately as long as hind femora, hind tarsi 1.4 times as long as hind femora. Whole surface of femora and tibiae with short, sparse, adherent pubescence, posterior and ventral surface of fore femora, and ventral surface of mid and hind femora with numerous, long erect setae, surface of femora appears shiny, surface of tibiae slightly dull. Hind tibia with long apical spine and on inner surface with a row of 3-5 short spines.

DIAGNOSIS

Deep cleft between mesonotum and propodeum and dull, strongly microreticulate dorsum places this species in the subgenus *Myrmentoma* in *Camponotus kiesenwetteri* group (RADCHENKO 1997). Only one other species of this group, *C. kiesenwetteri*,

occurs in Ionian Islands. It is well distinguished by emarginated posterior margin of the propodeum, with posterior angle forming broad tooth-like processes, while in *C. nitidescens* the posterior margin of propodeum is truncate or very shallowly emarginated. At first glance *C. nitidescens* is very similar to *C. boghossiani* known from Crete, Aegean Islands and western Turkey. Both species have similarly shaped propodeum but in *C. nitidescens* the cleft between mesonotum and propodeum is distinctly deeper and promesonotum is more convex than in *C. boghossiani* (Figs. 2, 4, 8). Microsculpture in *C. boghossiani* is more distinct and in dorsal and lateral views this species appears more dull than *C. nitidescens*. This clearly more matte sheen is caused by a different development of the cell of microsculpture, in *C. boghossiani* deeply impressed, while in *C. nitidescens* only shallowly impressed. On the sides of the mesosoma and gaster this microsculpture in *C. nitidescens* tends to be gradually shallower, cells lengthen and tend to lay in a linear pattern and the surface integument becomes gradually more shiny so that the lower part of the mesosoma and the underside of the gaster are entirely shiny, while in *C. boghossiani* the microsculpture is regular on the whole mesosomal surface and abdominal ventrites are only slightly less dull than tergites. The two other species of *C. kiesenwetteri* group occurring in eastern Greece are *Camponotus aegaeus* EMERY and *C. libanicus* ANDRÉ and differs in the upper surface of mesosoma forming a regular arch, with distinct meso-propodeal suture but without a cleft between mesonotum and propodeum.

BIOLOGICAL NOTES

The nest of *Camponotus nitidescens* was on a cracked rock wall under a loose piece of rock. The rock was situated on the edge of a natural deciduous forest composed of low oaks and underbrush heavily overgrown with Mediterranean macchia. The wall with the nest was on north-western exposure. Syntopic ant species collected in this area (species collected on the same cracked rock are marked with bold) included ***Aphaenogaster balcanica*** (EMERY), ***Camponotus aethiops*** (LATREILLE), ***Camponotus dalmaticus*** (NYLANDER), *Camponotus honaziensis* KARAMAN & AKTAÇ, ***Plagiolepis pygmaea*** (LATREILLE), ***Ponera testacea*** EMERY, ***Stigmatomma denticulatum*** ROGER, *Temnothorax bulgaricus* (FOREL), *Temnothorax* cf. *interruptus*, *Temnothorax laconicus* CSÖSZ, SEIFERT, MÜLLER, TRINDL, SCHULZ & HEINZE, and *Tetramorium semilaeve* ANDRÉ.

DISTRIBUTION

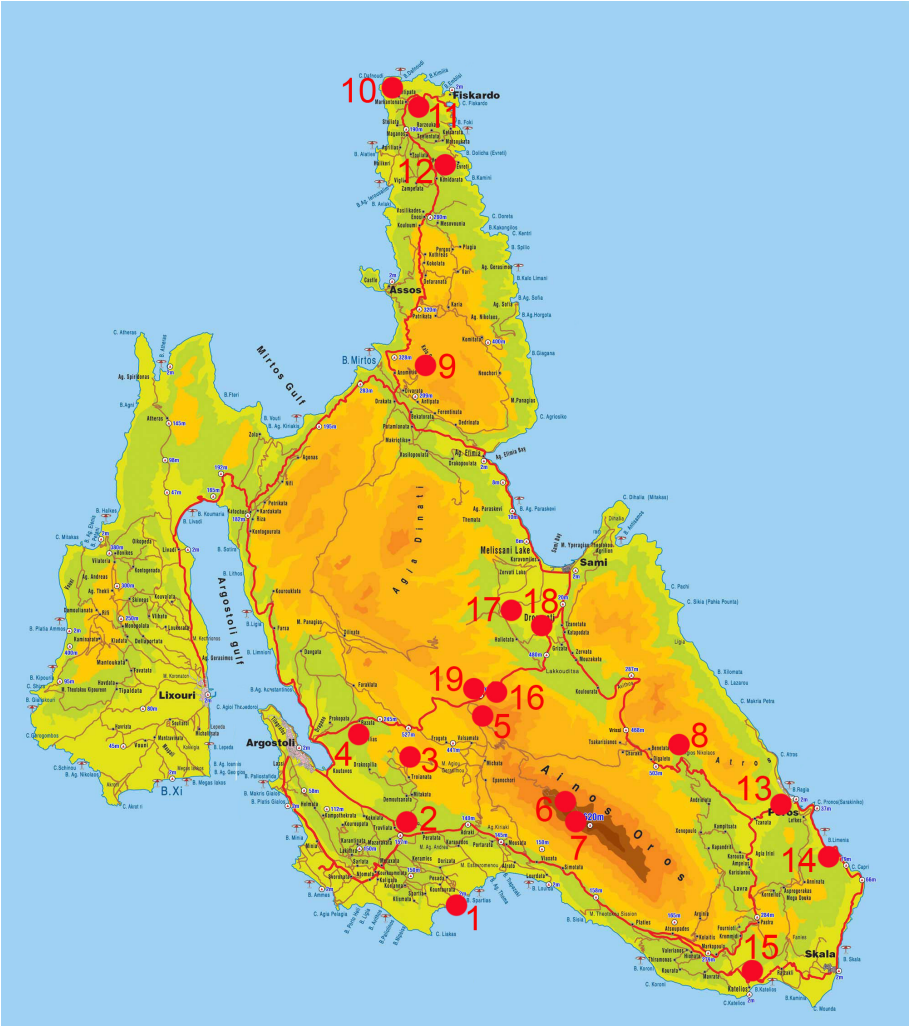
Camponotus nitidescens is known only from Kefalonia but its occurrence on other Ionian islands is possible, especially on Zakynthos which has some similar habitats. We have in collection a sample of very similar *Camponotus* species of *kiesenwetteri*-group collected in SW Turkey with characters intermediate between typical *C. boghossiani* and *C. nitidescens*. In morphological features Turkish taxon is more similar to *C. boghossiani* with the same shape of mesosoma, shallow cleft between mesonotum and propodeum and distinctly areolate microsculpture of head and mesosoma but similar to *C. nitidescens* in shiny abdominal sternites. The taxonomic status of this Turkish form need further study.

ANTS COLLECTED IN KEFALONIA IN JUNE 2014

List of all species collected in Kefalonia is given in table 1.

CHECK-LIST OF ANTS OF KEPHALONIA
(*species need confirmation; **species new to Kefalonia)

Aphaenogaster balcanica (EMERY): EMERY 1901: 57 (as *Stenamma (Aphaenogaster) testaceo-pilosum* var. *balcanica*); FINZI 1930: 310 (as *Aphaenogaster testaceopilosa ionia*); COLLINGWOOD 1993: 194 (as *Aphaenogaster ionia*); present paper;



9. Map of Kefalonia with marked localities

*****Aphaenogaster epirotes*** (EMERY): present paper;

Aphaenogaster muelleriana WOLF: EMERY 1914: 156 (as *Aphaenogaster ovaticeps muelleriana*); present paper;

****Aphaenogaster ovaticeps*** (EMERY): FINZI 1930: 310; COLLINGWOOD 1993: 194 [the status of Kefalonian populations of *muelleriana-ovaticeps* complex needs revision; our materials suggest that in Kefalonia occurs only *A. muelleriana* WOLF];

Aphaenogaster sangiorgii (EMERY): EMERY 1901: 57 (as *Stenamma (Aphaenogaster) sangiorgii*); FINZI 1930: 310;

****Aphaenogaster subterranea*** (LATREILLE): FOREL 1886: 168; FINZI 1930: 310; present paper [status of Kefalonian population is unclear; our material suggest that they represent at least local geographic form or even distinct species];

Aphaenogaster subterraneoides EMERY: EMERY 1914: 156 (as *Aphaenogaster pallida cypriotes*); FINZI 1930: 310 (as *Aphaenogaster pallida subterraneoides*);

Bothriomyrmex corsicus SANTSCHI: COLLINGWOOD 1993: 195 (as *Bothriomyrmex gibbus*);

Camponotus aethiops (LATREILLE): FOREL 1886: 167 (as *Camponotus sylvaticus* st. *aethiops*); EMERY 1901: 57 (as *Camponotus maculatus aethiops* var. *concava*); EMERY 1914: 159 (as *Camponotus maculatus aethiops*); FINZI 1930: 310; COLLINGWOOD 1993: 195; present paper;

****Camponotus candiotes*** EMERY: COLLINGWOOD 1993: 195 [recent revision of European members of *C. lateralis* group (SEIFERT in prep.) suggests that *C. candiotes* does not occurs in the Ionian Archipelago and specimens determined previously under this names represent an undescribed species];

Camponotus dalmaticus (NYLANDER): FOREL 1886: 167 (*Camponotus lateralis* var. *dalmaticus*); EMERY 1914: 159 (*Camponotus lateralis* var. *dalmatica*); FINZI 1930: 310; COLLINGWOOD 1993: 195; present paper;

Camponotus gestroi EMERY: EMERY 1914: 159 (as *Camponotus gestroi creticus*); FINZI 1930: 310 (as *Camponotus gestroi creticus*); present paper;

*****Camponotus honaziensis*** KARAMAN & AKTAÇ: present paper;

Camponotus ionius EMERY: EMERY 1901: 57 (as *Camponotus maculatus samius* var. *ionia*); EMERY 1914: 159 (as *Camponotus maculatus samius* var. *ionia*); FINZI 1930: 310 (as *Camponotus samius ionia*); COLLINGWOOD 1993: 195; present paper;

Camponotus jaliensis DALLA TORRE: COLLINGWOOD 1993: 195;

Camponotus kiesenwetteri (ROGER): FOREL 1886: 167; EMERY 1901: 57; COLLINGWOOD 1993: 195; present paper;

Camponotus lateralis (OLIVIER): EMERY 1901: 57; FINZI 1930: 310; present paper;

Camponotus nitidescens FOREL: EMERY 1914: 159 (as *Camponotus kiesenwetteri nitidescens*); FINZI 1930: 310 (as *Camponotus kiesenwetteri nitidescens*); present paper;

****Camponotus oertzeni*** FOREL: COLLINGWOOD 1993: 195 [the status of this taxon is unclear; our recent materials suggests that all bicoloured specimens of the *C. aethiops* group collected in Kefalonia represent a mere colour form of *C. aethiops*];

Camponotus piceus (LEACH): EMERY 1914: 159 (as *Camponotus lateralis* var. *merula*); FINZI 1930: 310;

Camponotus truncatus (SPINOLA): EMERY 1901: 57; FINZI 1930: 310; COLLINGWOOD 1993: 195;

Camponotus vagus (SCOPOLI): EMERY 1901: 57; FINZI 1930: 310; present paper;

Cardiocondyla elegans EMERY: COLLINGWOOD 1993: 194;

Cataglyphis nodus (BRULLÉ): FOREL 1910: 24 (19); FINZI 1930: 310 (as *Cataglyphis bicolor nodus*);

Chalepoxenus muellerianus (FINZI): FINZI 1930: 310; present paper;

Crematogaster schmidtii (MAYR): EMERY 1901: 57 (as *Crematogaster scutellaris* subsp. *Schmidtii*); EMERY 1914: 157 (as *Crematogaster scutellaris schmidtii*); FINZI 1930: 310 (as *Crematogaster scutellaris schmidtii*); COLLINGWOOD 1993: 194; present paper;

Crematogaster sordidula (NYLANDER): EMERY 1901: 57 (*Crematogaster sordidula* var. *Flachi*); EMERY 1914: 157 (*Crematogaster sordidula* var. *flachi*); FINZI 1930: 310 (*Crematogaster sordidula mayri*); COLLINGWOOD 1993: 194; present paper;

Formica fusca LINNAEUS: EMERY 1901: 57; FINZI 1930: 310; present paper;

**Lasius brunneus* (LATREILLE): EMERY 1901: 57; FINZI 1930: 310 [likely the species present in Kefalonia is *Lasius lasioides*, in the past often misidentified as *L. brunneus*];

Lasius flavus (FABRICIUS): FOREL 1886: 167; EMERY 1901: 57; FINZI 1930: 310; present paper;

Lasius illyricus ZIMMERMANN: EMERY 1901: 57; FINZI 1930: 310 (as *Lasius emarginatus*); present paper;

***Lasius lasioides* (EMERY): present paper;

Lasius mixtus (NYLANDER): EMERY 1901: 57; FINZI 1930: 310;

Lepisiota frauenfeldi (MAYR): EMERY 1901: 57 (as *Acantholepis Frauenfeldi*); EMERY 1914: 158 (as *Acantholepis frauenfeldi*); FINZI 1930: 310 (as *Acantholepis frauenfeldi*); COLLINGWOOD 1993: 195 (as *Acantholepis frauenfeldi*); present paper;

**Lepisiota karawaiewi* (KUZNETSOV-UGAMSKY): COLLINGWOOD 1993: 195 (as *Acantholepis karawajewi*) [because AGOSTI & COLLINGWOOD (1987) misinterpreted several species of the genus *Lepisiota* in their key to the Balkan ants, occurrence of *L. karawaiewi* in Ionian Islands should be confirmed];

Lepisiota melas (EMERY): COLLINGWOOD 1993: 195 (as *Acantholepis melas*); present paper;

Lepisiota nigra (DALLA TORRE): EMERY 1901: 57 (as *Acantholepis Frauenfeldi* var. *nigra*); EMERY 1914: 158 (as *Acantholepis frauenfeldi nigra*); FINZI 1930: 310 (as *Acantholepis frauenfeldi nigra*);

***Liometopum microcephalum* (PANZER): present paper;

Messor orientalis (EMERY): FOREL 1910: 24 (19); COLLINGWOOD 1993: 194;

Messor cf structor (LATREILLE): FOREL 1886: 168 (as *Aphaenogaster structor*); EMERY 1914: 156 (as *Messor barbarus structor*); FINZI 1930: 310; present paper [nest samples collected in Kefalonia contained small gynes and represent an eastern morpho-species of the *M. structor* complex]

Messor wasmanni KRAUSSE: EMERY 1901: 57 (*Stenamma (Messor) barbarum meridionale*); FINZI 1930: 310 (as *Messor semirufus wasmanni*); COLLINGWOOD 1993: 194; present paper;

*****Monomorium monomorium*** BOLTON: present paper;

*****Monomorium perplexum*** RADCHENKO: present paper;

Myrmecina graminicola (LATREILLE): RIGATO 1999: 88; present paper;

*****Nylanderia jaegerskioeldi*** (MAYR): present paper;

Pheidole pallidula (NYLANDER): EMERY 1901: 57; FINZI 1930: 310; COLLINGWOOD 1993: 194; present paper;

Plagiolepis pygmaea (LATREILLE): FINZI 1930: 310; COLLINGWOOD 1993: 195; present paper;

*****Ponera testacea*** EMERY: present paper;

Proceratium melinum (ROGER): EMERY 1914: 156 (as *Sysphincta europaea*); FINZI 1930: 309 (as *Sysphincta europaea*); BARONI URBANI 1977: 91; BARONI URBANI & DE ANDRADE 2003: 259;

*****Solenopsis cf fugax*** (LATREILLE): present paper;

Stenamma debile (FOERSTER): RIGATO 2011: 8;

Stigmatomma denticulatum ROGER: EMERY 1914: 156; FINZI 1930: 309; BARONI URBANI 1978: 43; present paper;

Tapinoma erraticum (LATREILLE): FOREL 1886: 167; FINZI 1930: 310; present paper;

Tapinoma festae EMERY: COLLINGWOOD 1993: 195 (as *Tapinoma festai*);

Tapinoma nigerrimum (NYLANDER): FOREL 1886: 167 (as *Tapinoma erraticum* var. *nigerrimum*); FINZI 1930: 310;

*****Temnothorax bulgaricus*** (FOREL): present paper;

*****Temnothorax cf. clypeatus*** (MAYR): present paper;

*****Temnothorax exilis*** (EMERY): present paper;

*****Temnothorax flavicornis*** (EMERY): present paper;

*****Temnothorax cf interruptus*** (SCHENCK): present paper;

Temnothorax laconicus CSÓSZ, SEIFERT, MÜLLER, TRINDL, SCHULZ & HEINZE: EMERY 1914: 157 (as *Leptothorax tuborum* ssp. *nylanderi*); FINZI 1930: 310 (as *Leptothorax nylanderi*); present paper;

Temnothorax rogeri EMERY: COLLINGWOOD 1993: 194 (as *Leptothorax rogeri*); present paper;

*****Temnothorax sordidulus*** (MÜLLER): present paper;

Temnothorax unifasciatus (LATREILLE): FOREL 1886: 168 (as *Leptothorax tuborum* r. *unifasciatus*); FINZI 1930: 310 (as *Leptothorax unifasciatus*); COLLINGWOOD 1993: 194 (as *Leptothorax unifasciatus*);

*****Temnothorax* sp_ke01**: present paper [this is the species recorded by BRAČKO et al. (2014) from Montenegro as *Temnothorax* sp. 1];

*****Temnothorax* sp_ke02**: present paper;

*****Temnothorax* sp_ke03**: present paper;

*****Temnothorax* sp_ke04**: present paper;

*****Temnothorax* sp_ke05:** present paper;

*****Temnothorax* sp_ke06:** present paper;

Tetramorium* cf *caespitum (LINNAEUS): COLLINGWOOD 1993: 195; present paper;

*****Tetramorium diomedaeum*** EMERY: present paper;

***Tetramorium ferox* cf_ke01:** present paper [in our material we found a nest sample with very large workers characterized by extremely wide postpetiole but, unfortunately, without gynes; in our collection we have similar specimens from Crete, collected as a nest sample with a gyne of extremely broad postpetiole typical of the *T. ferox* group but workers of both Kefalonian and Cretean populations distinctly differs from all species of *T. ferox*-group revised by CSÖSZ & SCHULZ (2010);

Tetramorium punicum (SMITH): EMERY 1914: 158 (as *Tetramorium caespitum punicum*); FINZI 1930: 310 (as *Tetramorium caespitum punicum*);

Tetramorium semilaeve ANDRÉ: EMERY 1914: 158 (as *Tetramorium caespitum semilaeve*); FINZI 1930: 310; present paper;

****Tetramorium splendens*** RUZSKY: COLLINGWOOD 1993: 195 [status of this taxon needs a revision; it is undetectable in any study on the genus *Tetramorium*].

DISCUSSION

Ant fauna of Kefalonia is rich in species and represents 78.3% of all species known from the Ionian Islands (97 species). Thus, Ionian Islands archipelago is the third in the number of recorded species of the Greek archipelagos, and only slightly less diverse than the fauna of the Aegean Isles (104 species) and Dodecanese (102 species), and exceeds the number of species reported from Crete - the largest Greek island (87 species, but our unpublished material shows that the real number of species occurring on Crete is above 100) and the less numerous in species Cyclades (50 species). In comparison with the more northern Korfu, the second largest Ionian island, Kefalonia is characterized by a smaller number of species with northern type of distribution (e.g. no *Myrmica* species, only one *Formica*) and the more common species of Mediterranean type of distribution (LEGAKIS 2011; BOROWIEC & SALATA 2012, 2013; BOROWIEC 2014). This is due to a much smaller area of afforestation on Kefalonia with dominant, especially in mountainous areas, dry pastures with rare stands of small oak trees while on Korfu deciduous forests or olive plantations of natural character dominate (due to the religious tradition in historic times olive trees on Korfu have not been pruned and trees reach large sizes which provides under the crowns of trees fairly wet and shady habitats). The most interesting species collected recently are several taxa of *Temnothorax* attributed by us to numbered morphospecies only and species complexes. In our opinion at least some of them represent species new to science but their formal description requires a revision of several species groups within the genus.

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Table 1. Ants collected ants collected at Kefalonia in June 2014

Species	Locality																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<i>Aphaenogaster balcanica</i>		+	+	+	+				+		+	+	+	+	+	+			
<i>Aphaenogaster epirotes</i>														+					
<i>Aphaenogaster muelleriana</i>		+		+				+			+	+	+	+				+	
<i>Aphaenogaster subterranea</i>						+													
<i>Camponotus aethiops</i>		+	+	+	+		+		+	+	+	+	+	+		+			+
<i>Camponotus dalmaticus</i>		+	+		+			+			+		+	+		+			
<i>Camponotus gestroi</i>								+				+							
<i>Camponotus honaziensis</i>		+								+	+		+	+		+			+
<i>Camponotus ionius</i>	+							+				+	+						
<i>Camponotus kiesewetteri</i>	+			+						+			+	+					
<i>Camponotus lateralis</i>								+					+	+	+				
<i>Camponotus nitidescens</i>																+			
<i>Camponotus vagus</i>						+													
<i>Chalepoxenus muellerianus</i>														+			+		
<i>Crematogaster schmidtii</i>		+		+				+		+	+	+	+	+	+				+
<i>Crematogaster sordidula</i>		+			+			+		+		+							+
<i>Formica fusca</i>						+	+												
<i>Lasius flavus</i>						+	+												
<i>Lasius illyricus</i>						+	+												
<i>Lasius lasioides</i>		+																	
<i>Lepistota frauenfeldi</i>	+		+	+	+			+				+							

Table 1. Ants collected ants collected at Kefalonia in June 2014 (continuation)

Species	Locality																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<i>Lepisiota melas</i>				+						+									
<i>Lepisiota nigra</i>					+														
<i>Liometopum microcephalum</i>								+											
<i>Messor cf. structor</i>		+																	
<i>Messor wasmanni</i>	+				+			+					+						
<i>Monomorium monomorium</i>								+											
<i>Monomorium perplexum</i>												+							
<i>Myrmecina graminicola</i>								+											
<i>Nylanderia jaegerskioeldi</i>	+																		
<i>Pheidole pallidula</i>		+		+				+		+	+		+						+
<i>Plagiolepis pygmaea</i>		+		+				+				+	+			+			
<i>Ponera testacea</i>																+			
<i>Solenopsis cf. fugax</i>														+					
<i>Stigmatomma denticulatum</i>																+			+
<i>Tapinoma madeirense</i>																			
<i>Tennothorax bulgaricus</i>			+					+					+		+	+			
<i>Tennothorax cf. clypeatus</i>		+											+						
<i>Tennothorax exilis</i>								+				+							
<i>Tennothorax cf. interruptus</i>			+		+						+			+		+			+
<i>Tennothorax flavicornis</i>																			+
<i>Tennothorax laconicus</i>				+				+			+	+	+	+		+	+	+	+

Table 1. Ants collected ants collected at Kefalonia in June 2014 (continuation)

Species	Locality																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<i>Temnothorax rogeri</i>			+	+					+	+	+	+	+	+			+		
<i>Temnothorax sordidulus</i>						+	+												
<i>Temnothorax sp_ke01</i>		+									+								
<i>Temnothorax sp_ke02</i>								+											
<i>Temnothorax sp_ke03</i>								+			+								
<i>Temnothorax sp_ke04</i>															+				
<i>Temnothorax sp_ke05</i>														+					
<i>Temnothorax sp_ke06</i>											+								
<i>Tetramorium cf. caespitum</i>						+	+												
<i>Tetramorium diomedum</i>	+		+		+					+	+	+							
<i>Tetramorium cf. ferox</i>			+																
<i>Tetramorium cf. semilaeve</i>					+			+	+							+			