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Notes on ants (Hymenoptera: Formicidae) of Zakynthos Island, Greece

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Abstract: Forty five ant species were recorded from the Zakynthos Island (Ionian Islands) in 2018, including seven not attributed to any formally described taxon. A comparison of ant fauna of Zakynthos with ant fauna of Samos islands is presented. Both islands have similar surface area (405.6 versus 476.4 km2) and are placed almost on the same latitude (37°) but represent the most western and the most eastern fauna complexes in Greece; 78 species and morphospecies were recorded from both islands but only 23 species are common.

Key words: ants, Greece, East Aegean Islands, Samos, faunistics, taxonomy.

INTRODUCTION

Zakynthos is a Greek island placed in the Ionian Sea. It is the third largest of the Ionian Islands, placed 13.5 km south of Kephalonia – the largest Ionian island, and 18 km west of the Peloponnese. It is also a separate regional unit of the Ionian Islands Region. The area of the island is 405.55 km^2 and it is 37 km long and 19 km wide. Its coastline is roughly 123 km. The island is very diverse, with a mountainous plateau on its western half, steep cliffs on southwest coast, and densely populated and fertile plain, with long sandy beaches and several isolated hills, on the eastern part. The mountains are not very high, gently vaulted, slightly rocky, with no distinct alpine zone. The two highest peaks (Vrahionas 756 m and Liva 737 m) have tops covered with pastures and bushy Mediterranean maquis. The eastern and southern parts of Zakynthos, especially their coast zone, are deeply influenced by well-developed and still growing tourism industry. In recent years most of forests have been destroyed by extensive fires. Post-fire regeneration of those areas is slow and most often ineffective as the forest is replaced by shrubby Mediterranean formations. Small fragments of coniferous and mixed forests have been preserved mainly in the northern part of the island, they cover less than 3.5% of the island surface (STEFANIDIS & KALINDERIS 2003). Mild Mediterranean climate and the plentiful winter rainfall endow the island with dense vegetation that develops even when there are no permanent watercourses or lakes in the period from May to November (DAVY *et al.* 2007).

The location of the island, and its proximity to the mainland, allows us to assume that the ant fauna of this area is a mixture of Ionian fauna and elements known from Peloponnese, or generally western Greece. This hypothesis, however, could not be verified or confirmed as there is scarce literature data regarding investigated area. So far only 24 ant species have been recorded from Zakynthos (Collingwood 1993). But, based on most recent data, a few of those records are uncertain.

In May 2018, during entomological trip to the island of Zakynthos, we collected ant samples from 42 localities, representing the main habitats found on the island, including anthropogenic ones. The results of this trip are presented below.

With materials from the recent exploration of the Aegean Islands, we tried to compare the complexes of ant fauna of two Greek islands – Zakynthos and Samos - representing the westernmost and easternmost type of distribution. Both islands have similar surface area (405.6 versus 476.4 km2) and are placed almost on the same latitude (37°). Both islands were explored on a one-week trip, using the same collection techniques. In both cases, the entire area of the islands was examined taking into account all natural and anthropogenic habitats.

MATERIAL AND METHODS

The main method, applied at all sites, was direct sampling (hand collecting and shaking to the entomological collapsible beating tray). Ant nests and individual specimens were collected on the ground, in leaf litter, under stones, in dead wood, on tree trunks and twigs. Ants were brushed off to the sweep net on the banks of roads and forest. The nests were searched for in the cracks of rocks and were exposed by means of a chisel. All specimens were preserved in pure 75% ethanol. Images of ant specimens were taken using a Nikon SMZ 1500 and Nikon SMZ 18 stereomicroscopes, Nikon D5200 photo camera and Helicon Focus software. Taxa in list of collected species are arranged alphabetically. Distribution in Greece is defined after Borowiec (2014) and unpublished data from the Database and Collection of Greek Ants (DCGA), preserved at the University of Wrocław. Geographical coordinates are given in decimal degrees. The numbers and symbols of localities refer to the position in the coding system used in the DCGA preserved at the University of Wrocław. Localities are arranged chronologically. Samples are deposited in Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław.

LIST OF LOCALITIES

ZAK_469 – Argassi, 10 m, 4 V 2018, 37.76182 N / 20.92704 E, urban area;

ZAK_470 – 800 m SE of Xirokastello, 75 m, 5 V 2018, 37.73491 N/20.95139 E, roadsides along olive plantation;

ZAK_471 – 1.2 km SW of Ano Vasilikos loc. 1, 75 m, 5 V 2018, 37.72374 N/20.95964 E, roadsides along olive plantation;

ZAK_472 – 1.2 km SW of Ano Vasilikos loc. 2, 72 m, 5 V 2018, 37.72325 N/20.96123 E, roadsides along olive plantation;

ZAK_473 – 1.2 km N of Vasilikos, 30 m, 5 V 2018, 37.72456 N/20.97786 E, roadsides along olive plantation and pasture with oak shrubs;

ZAK_474 – Ag. Joannis, 165 m, 5 V 2018, 37.72924 N/20.94553 E, roadsides with shrubs;

ZAK_475 – 135 m N of Ag. Joannis, 135 m, 5 V 2018, 37.7335 N/20.94651 E, old limestone quarry;

ZAK_476 – 1.2 km SW of Skinaria, 375 m, 6 V 2018, 37.87694 N/20.69272 E, limestone hills, post-fire zone overgrown former by forests;

ZAK_477 – 1.4 km E of Ano Volimes, 430 m, 6 V 2018, 37.87594 N/20.68525 E, mixed forest;

ZAK_478 – 1.7 km NE of Ano Volimes, 445 m, 6 V 2018, 37.88627 N/20.68456 E, shrubs around pastures;

ZAK_479 – 1 km E of Elies, 300 m, 6 V 2018, 37.90173 N/20.68787 E, shrubs along roadsides;

ZAK_480 – 150 m N of Elies, 345 m, 6 V 2018, 37.90154 N/20.67653 E, mixed forest;

ZAK_481 – 1.3 km W of Lithakia, 235 m, 7 V 2018, 37.71999 N/20.81293 E, old limestone quarry;

ZAK_482 – 580 m SW of Lithakia, 225 m, 7 V 2018, 37.71491 N/20.8242 E, shrubs along roadsides;

ZAK_483 – 1.4 km S of Lithakia, 225 m, 7 V 2018, 37.70641 N/20.82342 E, shrubs around olive plantation;

ZAK_484 – Limni Keri, 1 m, 7 V 2018, 37.68656 N/20.83157 E, herbs around asphalt lake;

ZAK_485 – 500 m S of Apelati, 160 m, 7 V 2018, 37.66873 N/20.81407 E, pine forest;

ZAK_486 – 670 m NE of Keri, 185 m, 7 V 2018, 37.66532 N/20.8214 E, shrubs along roadsides;

ZAK_487 – 330 m S of Stimies, 245 m, 7 V 2018, 37.69009 N/20.79988 E, shrubs around olive plantation;

ZAK_488 – rd to Panagia Skopiotissa, 150 m, 7 V 2018, 37.75275 N/20.93194 E, shrubs along roadsides;

ZAK_489 – 1 km N of Exo Chora, 430 m, 8 V 2018, 37.81063 N/20.68459 E, mixed forest;

ZAK_490 – 1.5 km N of Exo Chora, 460 m, 8 V 2018, 37.81446 N/20.68826 E, shrubs around meadow;

ZAK_491 – Vrachionas Mts., 670 m, 8 V 2018, 37.81798 N/20.70621 E, mountain pastures with shrubs;

ZAK_492 – Liva Mts. loc. 1, 600 m, 8 V 2018, 37.83018 N/20.71619 E, shrubs along roadsides;

ZAK_493 – Liva Mts. loc. 2, 710 m, 8 V 2018, 37.82301 N/20.72734 E, mountain shrubs;

ZAK_494 – 2.7 km E of Maries, 595 m, 8 V 2018, 37.82589 N/20.70716 E, rock on roadside;

ZAK_495 – 2.5 km NE of Maries, 475 m, 8 V 2018, 37.82990 N/20.70151 E, mixed forest;

ZAK_496 – 3.9 km NE of Maries, 370 m, 8 V 2018, 37.84202 N/20.70938 E, shrubs around olive plantation;

ZAK_497 – SW of Lagopodo, 190 m, 9 V 2018, 37.75097 N/20.80841 E, roadsides in olive plantation;

ZAK_498 – 900 m NW of Koiliomenos, 485 m, 9 V 2018, 37.75344 N/20.76609 E, rocks and shrubs in pine forest;

ZAK_499 – 600 m E of Ag. Leon, 435 m, 9 V 2018, 37.77045 N/20.72959 E, shrubs in pine forest;

ZAK_500 – 1 km S of Loucha, 495 m, 9 V 2018, 37.78414 N 20.72732 E, shrubs and stones in coniferous forest;

ZAK_501 – 1.2 km SE of Loucha, 445 m, 9 V 2018, 37.78617 N/20.73706 E, roadsides in cypress forest;

ZAK_502 – W of Kampi, 165 m, 9 V 2018, 37.78161 N/20.68078 E, pine forest;

ZAK_503 – 1.9 km W of Maries, 290 m, 9 V 2018, 37.81800 N/20.65556 E, roadsides in burned forests;

ZAK_504 – 1.2 km NE of Anafonitria, 475 m, 10 V 2018, 37.85489 N/20.64124 E, shrubs around burned forests;

ZAK_505 – Ag. Georgiou monastery, 330 m, 10 V 2018, 37.85971 N/20.63646 E, shrubs around monastery;

ZAK_506 – 1.8 km SW of Volimes, 350 m, 10 V 2018, 37.86472 N/20.64234 E, shrubs along roadsides;

ZAK_507 – 750 m S of Volimes, 360 m, 10 V 2018, 37.86762 N/20.66191 E, shrubs in cypress forest;

ZAK_508 – 880 m S of Orthonies, 390 m, 10 V 2018, 37.84462 N/20.69843 E, shrubs in cypress forest;

ZAK_509 – 470 m NE of Orthonies, 405 m, 10 V 2018, 37.85435 N/20.69843 E, shrubs along roadsides;

ZAK_510 – 700 m SW of Koroni, 290 m, 10 V 2018, 37.86582 N/20.71753 E, maquis.

LIST OF COLLECTED SPECIES

1. ***Aphaenoagster balcanica*** (Emery, 1898)

Localities: 469, 471, 472, 473, 476, 477, 480, 483, 484, 485, 486, 487, 489, 491, 492, 493, 495, 499, 500, 501, 502, 503, 504, 506, 508, 509.

Note: Recorded from Cyclades, Dodecanese, East Aegean Is., Epirus, Ionian Is., Macedonia, Peloponnese and Sterea Ellas.

2. ***Aphaenogaster*** cf. ***epirotes***

Localities: 472, 477, 482, 486, 490, 492, 495, 500, 501, 502, 503, 504, 508.

Note: Southern Greek populations of *Aphaenogaster epirotes* complex slightly differ form typical northern populations recorded from Albania and north and central Greece. The group is currently under revision, perhaps populations from southern Sterea Ellas, Zakynthos and Peloponnese represent a distinct subcryptic species.

3. ***Aphaenogaster muelleriana*** Wolf, 1915

Localities: 477, 499, 502.

Note: Western species, recorded from Ionian Islands, western Macedonia, Epirus and Peloponnese.

4. ***Aphaenogaster subterraneoides*** Emery, 1881

Localities: 495.

Note: Recorded from all island regions of Greece.

5. ***Bothriomyrmex communistus*** Santschi, 1919

Locality: 487, 491, 492, 493, 495, 501.

Note: Common species, recorded from Dodecanese, Eastern Aegean Is., Epirus, Ionian Is., Macedonia, Peloponnese, Sterea Ellas, Thessaly and Thrace.

6. ***Camponotus aethiops*** (Latreille, 1798)

Localities: 73. 474, 476, 478, 479, 480, 481, 482, 486, 488, 491, 492, 495, 496, 497, 498, 499, 501, 502, 503, 504, 505, 506, 508, 509, 510.

Note: Common species recorded from Crete, Cyclades, Dodecanese, East Aegean Is., Epirus, Ionian Is., Macedonia, Peloponnese, Sterea Ellas, Thessaly, Thrace.

7. ***Camponotus dalmaticus*** (Nylander, 1849)

Localities: 469, 470, 471, 472, 473, 477, 478, 479, 480, 482, 483, 485, 486, 488, 489, 490, 491, 496, 497, 498, 499, 501, 503, 504, 505, 506, 507, 508, 509.

Notes: Recorded from most of Greek regions except Crete, Cyclades and Dodecanese, most common in western parts of Greece.

8. ***Camponotus gestroi*** Emery, 1878

Localities: 476, 478, 481, 482, 484, 501, 507.

Notes: Known from all provinces except Epirus. In Greece occur two subspecies: *C. gestroi gestroi* Emery, 1878, recorded from northern and western regions of Greece, and *C. gestroi creticus* Forel, 1886, recorded from southern and south-eastern parts of the country, but in border regions some samples are intermediate morphologically. Populations from Zakynthos belong to the nominotypical subspecies.

9. ***Camponotus ionius*** Emery, 1920

Locality: 476.

Note: Common Greek species recorded from most regions, except Crete.

10. ***Camponotus kiesenwetteri*** (Roger, 1859)

Localities: 469, 470, 471, 473, 473, 475, 476, 478, 479, 480, 481, 482, 483, 486, 487, 488, 489, 490, 491, 492, 493, 495, 497, 499, 500, 501, 503, 504, 506, 508, 509, 510.

Note: Common Greek species recorded from most regions, except Epirus and Thessaly.

11. ***Camponotus lateralis*** (Olivier, 1792)

Localities: 470, 471, 472, 473, 474, 478, 479, 481, 482, 484, 485, 486, 488, 490, 497, 498, 499, 501, 507, 508, 510.

Note: The commonest Greek species of Camponotus recorded from all regions.

12. ***Camponotus oertzeni*** Forel, 1889

Locality: 469, 470, 471, 472, 476, 479, 483, 487, 489, 490, 491, 493, 500.

Note: Common Greek species, often misidentified with Camponotus aethiops, recorded from all regions except Cyclades.

13. ***Cataglyphis nodus*** (Brullé, 1833)

Localities: 472.

Note: Common species, recorded from most of the regions, except Cyclades and with one doubtful record from Crete.

14. ***Colobopsis truncata*** (Spinola, 1808)

Localities: 469, 470, 473, 486.

Note: Common species, recorded from most regions, except Cyclades.

15. ***Crematogaster ionia*** Forel, 1911

Localities: 485.

Note: Very common arboricole species, recorded from all Greek regions.

16. ***Crematogaster schmidti*** (Mayr, 1853)

Locality: 469, 470, 471, 472, 473, 474, 477, 478, 479, 481, 482, 483, 485, 486, 487, 488, 489, 490, 491, 492, 495, 496, 497, 498, 499, 500, 501, 502, 504, 505, 506, 507, 508, 509.

Note: Common species, known from all Greek regions.

17. ***Crematogaster sordidula*** (Nylander, 1849)

Localities: 469, 471, 472, 473, 474, 476, 478, 482, 483, 487, 489, 492, 493, 495, 497, 503, 506, 507, 509.

Note: Common species, recorded from all Greek regions.

18. ***Lasius alienus*** (Förster, 1850)

Localities: 469, 486.

Note: Common species, recorded from most regions, new to Ionian Islands.

19. ***Lasius lasioides*** (Emery, 1869)

Localities: 481.

Note: Common species, recorded from all regions.

20. ***Lepisiota frauenfeldi*** (Mayr, 1855)

Localities: 471, 473, 477, 481, 483, 484, 488, 489, 490, 497, 499, 501, 504, 508.

Note: Common species, recorded from most regions, except Cyclades.

21. ***Lepisiota melas*** (Emery, 1915)

Locality: 469, 470, 472, 475, 476, 483, 486, 488, 493, 499, 503, 508, 509, 510.

Note: Balkan species, in Greece recorded from most regions, except Epirus and Thrace.

22. ***Messor ibericus*** Santschi, 1931

Locality: 469, 482, 499.

Note: *Messor structor* group was revised recently (Steiner *et al.* 2018). Four species from this group were recorded from Greece and occurrence of one more species is very likely. *M. ibericus* without doubts is known from Crete, Dodecanese, Epirus, Ionian Islands, Macedonia, Peloponnese and Thessaly but probably occurs in all regions. It is well distinguished from other species of the group by small gynes.

23. ***Messor wasmanni*** Krausse, 1910

Localities: 470, 472, 475, 476, 477, 479, 481, 482, 483, 485, 486, 487, 488, 490, 491, 492, 497, 499, 501, 503, 507.

Notes: The commonest Greek member of the genus *Messor* recorded from all regions.

24. ***Monomorium monomorium*** Bolton, 1987

Locality: 469.

Notes: Probably tramp Mediterranean species recorded from Crete, East Aegean Is., Epirus, Ionian Is. and Peloponnese. In Greece noted mostly from tourist resorts and anthropogenic habitats.

25. ***Myrmecina graminicola*** (Latreille, 1802)

Locality: 485.

Notes: Recorded from all Greek regions except Aegean islands.

26. ***Nylanderia jaegerskioeldi*** (Mayr, 1904)

Locality: 469.

Notes: Tramp species, in Greece noted only from tourist resorts and anthropogenic habitats in Crete, Dodecanese, Ionian islands, Peloponnese and Sterea Ellas.

27. ***Pheidole*** cf. ***pallidula***

Localities: 469, 472, 474, 475, 476, 477, 478, 483, 486, 487, 489, 499, 502, 503, 504, 510.

Note: Mediterranean populations of the taxon named *Pheidole pallidula* (Nylander, 1849) have recently been divided into four species, three of them recorded in Greece (Seifert 2016), but this revision is still under discussion owing to the great local variability of this very common Mediterranean ant. Material examined by B. Seifert suggests that in Ionian islands occurs *Pheidole balcanica* Seifert, 2016.

28. ***Plagiolepis pallescens*** sensu Radchenko, 1920

Localities: 469.

Note: The status and nomenclature of taxon named by Radchenko (1996) as *Plagiolepis pallescens* was discussed in detail by Bračko *et al.* (2016). *Plagiolepis pallescens* sensu lato was recorded from eastern part of Mediterranean Basin. Revised localities of true *Plagiolepis pallescens* sensu Radchenko are in Greece, Caucasian countries and the Near East. In Greece known from all regions but in Ionian Islands prefers anthropogenic habitats, what suggests that it is an introduced species on these islands.

29. ***Plagiolepis pygmaea*** (Latreille, 1798)

Locality: 469, 470, 471, 472, 473, 475, 476, 477, 479, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 493, 495, 497, 498, 499, 500, 502, 503, 504, 505, 506, 507, 508, 509, 510.

Note: Very common species recorded from all Greek regions.

30. ***Prenolepis nitens*** (Mayr, 1853)

Localities: 477, 491, 492, 496.

Note: Local forest species known from most Greek regions, except Crete, Cyclades and Dodecanese.

31. ***Solenopsis*** cf. ***lusitanica***

Localities: 474, 497, 500, 502.

Note: The status of most European species of the genus *Solenopsis* requires extensive revision. Galkowski *et al*. (2010) redescribed *Solenopsis fugax* and suggested that four distinct species groups occur in Europe and the Mediterranean region. They also suggested that several taxa proposed by Bernard (1950) are probably synonyms, but they did not take any formal decisions regarding the nomenclature. Our samples from Zakynthos, characterized by short and sparse hairs on the mesosoma and small gynes belong to the *Solenopsis lusitanica* group as proposed by Galkowski *et al.* (2010).

32. ***Stigmatomma denticulatum*** Roger, 1859

Locality: 500.

Note: Rare species recorded mostly from insular regions, except Cyclades, in mainland Greece known from Epirus, Peloponnese and Thrace.

33. ***Tapinoma erraticum*** (Latreille, 17980

Localities: 469, 481, 501.

Note: Common species, known from all Greek regions.

34. ***Temnothorax*** cf. ***affinis***

Locality: 470, 473, 474, 476, 482, 483, 485, 487, 489, 496, 497, 499, 501, 503, 504, 505, 506, 508, 509, 510.

Note: This is probably a new species characterized at first glance by very long propodeal spines like in *T. affinis* (Mayr, 1885) but differs in their shape, head microsculpture and yellow antenna. Except material from Ionian Islands we collected this taxon also on Peloponnese and in Thessaly.

35. ***Temnothorax*** cf. ***aveli***

Localities: 469, 470, 471, 472, 473, 474, 476, 477, 478, 479, 485, 489, 490, 491, 492, 495, 496, 502, 503, 504, 505, 506, 507, 508, 509, 510.

Note: Very common and probably still undescribed arboricole species, collected in various parts of Greece. At first glance, based on very regular reticulate microsculpture of head, can be confused with known from western Europe *Temnothorax aveli* (Bondroit, 1918) but differs from it in some details. Its description is in preparation.

36. ***Temnothorax bulgaricus*** (Forel, 1892)

Localities: 477, 489, 490, 498, 499, 501, 507, 508, 509.

Note: Recorded from most of Greek regions, except Crete and Cyclades.

37. ***Temnothorax exilis*** (Emery, 1869)

Localities: 470, 471, 472, 473, 475, 476, 482, 486, 487, 493, 497, 498, 501, 504, 509, 510.

Note: *Temnothorax exilis* complex from Greece needs revision. At least 7 morphospecies of unclear taxonomic status were collected in Greece. Specimens from Zakynthos belong to the morphospecies with mostly shiny surface of head and pronotum. They appear to be conspecific with true *T. exilis* (Emery, 1869). This species is common in Greece, recorded from all regions.

38. ***Temnothorax graecus*** (Forel, 1911)

Localities: 473, 474, 480, 481, 487, 501.

Note: Greek members of *Temnothorax graecus* need a revision. Samples from Zakynthos belong to the typical *Temnothorax graecus* (Forel). Confirmed records of this species are from Ionian Islands, Macedonia, Peloponnese and Thrace.

39. ***Temnothorax muellerianus*** (Finzi, 1922)

Localities: 493, 504.

Note: Social parasite, on Zakynthos found in nests of *Temnothorax exilis* (Emery). Widely

spread in Greece, recorded from most regions except Aegean Islands, Cyclades, Dodecanese and Thrace.

40. ***Temnothorax*** cf. ***parvulus***

Localities: 444, 446.

Note: Collected on Zakynthos populations of species belonging to the *Temnothorax nylanderi* group morphologically reminiscent *Temnothorax parvulus* (Schenck, 1852) but differ from this species in very shallow metanotal impression, in many specimens almost invisible. Members of *T. parvulus* from other Ionian Islands have the impression more distinctly marked. Status of populations from Zakynthos needs more detailed morphometric studies.

41. ***Temnothorax rogeri*** Emery, 1869

Localities: 469, 473, 474, 476, 483, 486, 489, 494, 495, 497, 498, 499, 501, 502, 507, 508.

Note: Western species, recorded from Epirus, Ionian islands, western Peloponnese and western Sterea Ellas.

42. ***Tetramorium diomedeum*** Emery, 1908

Localities: 476, 482, 496, 500, 501.

Note: Recorded from most Greek regions except Cyclades, Sterea Ellas and Thrace.

43. ***Tetramorium immigrans*** Santschi, 1927

Localities: 469, 484.

Note: Recent revision of members of the *Tetramorium caespitum* complex of Europe showed that Greek populations belong to six species (Wagner *et al.* 2017). *T. immigrans* is common in Mediterranean Europe and Central Europe, north to southern Poland. It was recorded mostly in anthropogenic habitats what can suggest that it is a tramp species. In Greece recorded from all mainland regions, Aegean Islands and Crete. New to Ionian Islands.

44. ***Tetramorium kephalosi*** Salata & Borowiec, 2017

Localities: 474, 476, 477, 484, 490, 493, 495, 497, 499.

Note: Recent revision of Balkan members of *Tetramorium semilaeve* complex showed that Greek populations recorded hitherto under name *T. semilaeve* belong to a different species described as *Tetramorium kephalosi* (Salata & Borowiec 2017). This species is very common in Greece, known from all regions.

45. ***Tetramorium*** cf. ***punctatum***

Localities: 469, 470, 491, 492.

Note: There are at least two Greek morphospecies with characters of workers similar to those occurring in *Tetramorium punctatum* Santschi, 1927, known from Italy (Sanetra *et al.* 1999). Nevertheless, gyne characters of Greek taxa suggest that both species are not conspecific with true *T. punctatum*. A proper identification of species of this group requires complete nest samples, with workers, gynes and males. Since we did not collect males in Greek samples, their taxonomical status needs further studies.

DISCUSSION

Ant fauna of Zakynthos is moderately rich in species and represents 46.3% of all species known from the Ionian Islands (97 species). In comparison with Korfu, the second largest and northernmost big Ionian island, Zakynthos is characterized by a smaller number of species with northern type of distribution (e.g. no *Myrmica* and *Formica* species) and more numerous in Mediterranean species (Legakis 2011, Borowiec & Salata 2012, 2013, Borowiec 2014). In comparison with geographically closer, but distinctly larger, Kephalonia island Zakynthos is less species rich (45 versus 54, see Borowiec & Salata 2014) and predominant with thermophilous species, characteristic for open habitats and Mediterranean bushes. Presence of species with preferences to more humid habitats i.e. *Aphaenogaster* cf. *epirotes*, *Aphaenogaster muelleriana*, *Myrmecina graminicola* and *Temnothorax bulgaricus* can suggest their relict character. Historical data indicates that in the past Zakynthos was largely covered by forests and more humid habitats (Avramidis *et al.* 2013).

It is interesting to compare the fauna of ants of Zakynthos and Samos, islands similar in size, but located at a distance of 540 km from each other (Table 1.). Samos is richer in the number of species (45 versus 56, see Borowiec & Salata 2018) but only 23 species are common for both islands (29.5 % of all recorded species). It shows that the islands of the Ionian Sea and the islands of the eastern part of the Aegean Sea represent completely different faunal complexes. All common for both islands species belong to taxa wide spread in the eastern part of Mediterranean Basin. None of species with distribution limited to Ionian Islands is known from Zakynthos, while Samos hosts three Aegean species (*Aphaenogaster subcostata*, *Temnothorax* cf. *bulgaricus* sp. 2 and *Temnothorax curtisetosus*). The rich diversity of Samos fauna can be explained by more diverse habitats and greater proximity to mainland. Samos is separated from the coast of Asia Minor only by the 1.6-kilometre wide Mycale Strait.

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Table 1. Comparison of species composition of ants of the Zakynthos and Samos islands.

No.	Name of species	Zakynthos	Samos
1.	*Aenictus rhodiensis*	–	+
2.	***Aphaenogaster balcanica***	+	+
3.	*Aphaenogaster* cf. *epirotes*	+	–
4.	*Aphaenogaster festae*	–	+
5.	*Aphaenogaster muelleriana*	+	–
6.	*Aphaenogaster sporadis*	–	+
7.	*Aphaenogaster subcostata*	–	+
8.	*Aphaenogaster subterraneoides*	+	–
9.	***Bothriomyrmex communistus***	+	+
10.	*Camponotus aegaeus*	–	+
11.	***Camponotus aethiops***	+	+
12.	*Camponotus baldaccii*	–	+
13.	*Camponotus boghossiani*	–	+
14.	*Camponotus candiotes*	–	+
15.	*Camponotus dalmaticus*	+	–
16.	*Camponotus gestroi*	+	–
17.	***Camponotus ionius***	+	+
18.	***Camponotus kiesenwetteri***	+	+
19.	***Camponotus lateralis***	+	+
20.	***Camponotus oertzeni***	+	+
21.	*Camponotus samius*	–	+
22.	***Cataglyphis nodus***	+	+

No.	Name of species	Zakynthos	Samos
23.	*Cataglyphis viaticoides*	–	+
24.	***Colobopsis truncata***	+	+
25.	*Crematogaster erectepilosa*	–	+
26.	***Crematogaster ionia***	+	+
27.	*Crematogaster schmidti*	+	–
28.	***Crematogaster sordidula***	+	+
29.	*Dolichoderus quadripunctatus*	–	+
30.	*Hypoponera eduardi*	–	+
31.	***Lasius alienus***	+	+
32.	***Lasius lasioides***	+	+
33.	*Lasius turcicus*	–	+
34.	***Lepisiota frauenfeldi***	+	+
35.	*Lepisiota melas*	+	–
36.	*Messor hellenius*	–	+
37.	*Messor ibericus*	+	–
38.	*Messor macarthuri*	–	+
39.	***Messor wasmanni***	+	+
40.	***Monomorium monomorium***	+	+
41.	*Myrmecina graminicola*	+	–
42.	*Nylanderia jaegerskioeldi*	+	–
43.	***Pheidole*** cf. ***pallidula***	+	+
44.	*Plagiolepis* cf. *pallescens*	+	–
45.	***Plagiolepis pygmaea***	+	+
46.	*Plagiolepis taurica*	–	+
47.	*Ponera coarctata*	–	+
48.	*Ponera testacea*	–	+
49.	***Prenolepis nitens***	+	+
50.	*Solenopsis* cf. *lusitanica*	+	–
51.	***Stigmatomma denticulatum***	+	+
52.	*Tapinoma erraticum*	+	–
53.	*Temnothorax aeolius*	–	+
54.	*Temnothorax* cf. *affinis*	+	–
55.	*Temnothorax angustifrons*	–	+
56.	*Temnothorax antigoni*	–	+
57.	*Temnothorax* cf. *aveli*	+	–
58.	***Temnothorax bulgaricus***	+	+
59.	*Temnothorax* cf. *bulgaricus* sp. 1	–	+
60.	*Temnothorax* cf. *bulgaricus* sp. 2	–	+
61.	*Temnothorax curtisetosus*	–	+
62.	*Temnothorax exilis*	+	–
63.	*Temnothorax* cf. *exilis*	–	+

No.	Name of species	Zakynthos	Samos
64.	*Temnothorax flavicornis*	–	+
65.	*Temnothorax graecus*	+	–
66.	*Temnothorax* cf. *graecus*	–	+
67.	*Temnothorax muellerianus*	+	–
68.	*Temnothorax* cf. *parvulus*	+	–
69.	*Temnothorax rogeri*	+	–
70.	*Temnothorax smyrnenis*	–	+
71.	*Temnothorax* cf. *smyrnensis* (= *ionia*)	–	+
72.	***Tetramorium diomedeum***	+	+
73.	*Tetramorium galaticum*	–	+
74.	*Tetramorium hippocratis*	–	+
75.	*Tetramorium immigrans*	+	–
76.	*Tetramorium kephalosi*	+	–
77.	***Tetramorium*** cf. ***punctatum***	+	+
78.	*Trichomyrmex perplexus*	–	+
	Number of species	**45**	**56**

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