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Rove-beetles (*Coleoptera*, *Staphylinidae*) of ant nests
of the vicinities of Leżajsk

Kusakowate (*Coleoptera*, *Staphylinidae*) gniazd mrówek okolic Leżajska

SUMMARY

In the year 2005 studies on the *Staphylinidae* assemblages inhabiting ant nests of 13 ant species in the vicinities of Leżajsk (the Sandomierska Lowland; UTM: EA87) were conducted. In total, 671 individuals of rovebeetles were collected, among which 88 *Staphylinidae* species were identified. The most numerous rove-beetle inhabiting the nests of the studied ant species was *Thiasophila angulata*. The characteristic feature of rove-beetle assemblages is superior share of myrmecophiles, despite the fact that with respect to the number of species they are in the minority. *Gabrius splendidulus* and *Sepedophilus marshami* were associated with the nests of the highest number of ant species. The best conditions for rovebeetles associated with ants are provided by moist and moulding tree trunks and nests in shape of mounds of pine needles where the highest numbers of species as well as specimens of the described beetles were caught relatively. The highest species similarity joins *Staphylinidae* occurring in the nests of *Formica fusca* and *Myrmica ruginodis*. Index of qualitative similarity of the examined rove-beetle assemblages was strictly connected with the structure and localization of inhabited ant nests. The dependence of relationship proximity among ants building the nests was not found. Seasonal dynamic of rove-beetle numbers showed two maxima (spring and autumn). Its course is in large part dependent on quantitative fluctuation of myrmecophilous species as well as migration of rove-beetles to wintering sites. Some relationships between ant and rove-beetles species that have not been unknown so far were observed. Among all of the recorded species 13 ones were distinguished with respect to their faunistics and as many as 73 have been discovered for the first time in the Sandomierska Lowland.

STRESZCZENIE

W 2005 r. prowadzono badania nad zgrupowaniami *Staphylinidae* zasiedlającymi gniazda 13 gatunków mrówek występujących w okolicach Leżajska (Nizina Sandomierska; UTM: EA87). Łącznie odłowiono 671 okazów tych chrząszczy, wśród których wyróżniono 88 gatunków *Staphylinidae*. Najliczniejszym kusakiem zasiedlającym gniazda badanych gatunków mrówek okazał się *Thiasophila angulata*. Charakterystyczną cechą zgrupowań kusakowatych jest przeważający udział ilościowy myrmekofili, mimo że pod względem liczby gatunków stanowią one wyraźną mniejszość. Z gniazdami największej liczby gatunków mrówek związane były: *Gabrius splendidulus* i *Sepedophilus marshami*. Najlepsze warunki dla związanych z mrówkami kusakowatych stwarzają wilgotne i próchniejące pnie drzew oraz gniazda budowane w kopcach igliwia, gdzie odłowiono odpowiednio najwięcej gatunków i osobników tych chrząszczy. Największe podobieństwo gatunkowe łączy *Staphylinidae* występujące w gniazdach *Formica fusca* oraz *Myrmica ruginodis*. Wskaźnik podobieństwa jakościowego badanych zgrupowań kusakowatych miał ścisły związek z budową i lokalizacją zasiedlanych gniazd mrówek. Nie zależał on od bliskości pokrewieństwa budujących je gatunków mrówek. Sezonowa dynamika liczebności kusakowatych w gniazdach mrówek wykazuje dwa maksima (wiosenne i jesienne). Jej przebieg w dużym stopniu zależy od fluktuacji ilościowej gatunków myrmekofilnych, a także od migracji kusakowatych na zimowiska. Zaobserwowano nieodnotowane dotychczas zależności w relacji gatunek mrówki – gatunek kusaka. Spośród wszystkich stwierdzonych gatunków wyróżniono 13 interesujących po względem faunistycznym, zaś aż 73 po raz pierwszy wykazano z Niziny Sandomierskiej.

Keywords: *Formicidae*, *Coleoptera*, *Staphylinidae*, ant nests, faunistics, SE Poland.

INTRODUCTION

The relationships which are found between some species of rove-beetles (*Staphylinidae*) and ant species (*Formicidae*) belong to the most interesting ecological dependences in the world of insects. The constant presence of *Staphylinidae* in ant nests – the habitats providing specific life conditions (e.g. stable humidity and temperature in some measure, lack of light, substrate fragmented and overgrown by mycelium etc.) – favours the narrow specialization of their guests.

Because of the interaction between an ant-host and a rove-beetle-guest, myrmecophilous *Staphylinidae* connected with different ant species can be included to: synechthrans, synoeketes or symphiles (Wilson 1979).

Synechthrans (e.g. *Quedius brevis* and *Gyrophypnus atratus*) are treated as enemies by ants but due to their high abilities of moving and staying on the edges of ant nests they avoid attacks from hosts. They feed on ant larvae, sometimes they consume dead or alive insects from other systematic groups that can be found within ant nests.

Synoeketes are insects that feed on wastes in ant nests in most cases. Usually they are ignored by hosts for their high mobility or immobility and neutral smell.

Symphiles (e.g. species of the genera *Atemeles*, *Lomechusa* or *Zyras*), sometimes called “true guests,” are accepted by hosts as the members of a colony. They often show similarity with respect to colours, shapes or behaviours to ant species in ant nest of which they live. This kind of adaptation can be observed in some species of national rove-beetles (e.g. *Nothotecta flavipes* or *Thyasophila angulata*) whose colourings resemble the species of ants connected with them from the genus *Formica*. More advanced myrmecophiles (e.g. the species of the genus *Atemeles*), except for the similar colouring and shape, secrete substances produced in special glands, that enable to calm

down a worker ant and next accept a guest in the colony of a host (Hölldobler 1971). The extreme adaptation of myrmecophilous species is advanced mimicry. A rove-beetle *Ecitosius gracilis* – a guest of nomadic ants – shows striking similarity not only in general outlook but also in sculpture of body surface.

Most of rove-beetles inhabiting ant nest are predators, nevertheless, some species belonging to other trophy groups are also found. One of them is *Toracophorus corticinus* inhabiting ant nests of *Lasius brunneus* – it feeds on mycelium of sac fungi which covers the walls of corridors in the ant nests of the species mentioned above (Burakowski & Newton 1992).

The occurrence of national rove-beetles in ant nests was a study subject of only a few researchers. Nawrot & Wiśniewski (1970) and Wiśniewski (19961, 1963, 1967) showed a number of rove-beetles accompanying ant nests of the following ant species: *Formica rufa*, *F. polyctena*, *Componotus ligniperdus* and *C. herculanus*. Fragmentary data on the subject was also given in papers by Koch (1989), Burakowski et al. (1979, 1980, 1981), Burakowski (1997) and Staniec (1991, 1994, 1996, 2001a, 2001b, 2001c, 2003a, 2003b, 2003c, 2004, 2006).

Due to relatively scarce data on rove-beetles of ant nests, the presented paper concerning the assemblages of this very interesting ecological group *Staphylinidae* seems to be fully justified. Moreover, the given information refer to the occurrence of these beetles on the Sandomierska Lowland where the recognition of the whole family *Staphylinidae* is far from sufficient.

MATERIALS AND METHODS

The study subject was *Staphylinidae* inhabiting ant nests of 13 ant species like: *Myrmica rubra* (Linnaeus, 1758), *M. ruginodis* (Nylander, 1846), *Tetramorium caespitum* (Linnaeus, 1758.), *Formica rufa* Linnaeus, 1761, *F. polyctena* Forster, 1850, *F. truncorum* Fabricius, 1804, *F. fusca* Linnaeus, 1758, *F. sanguinea* Latreille, 1798, *Componotus ligniperdus* (Latreille, 1802), *Lasius niger* (Linnaeus, 1758), *L. brunneus* (Latreille, 1798), *L. flavus* (Fabricius, 1782), *L. fuliginosus* (Latreille, 1798), occurring in the vicinity of villages Wola Zarczycka and Łowisko near Leżajsk. The samples were taken in three-week intervals from 26.03.2005 to 13.11.2005. Totally, in case of every ant species, from 10 to 12 samples were obtained. The number of samples was dependent on the date of the descent of ants to the deeper parts of the nest which was associated with temperature fall in the wintertime. This date varied between different ant species.

In studies the catching method insisting on sieving building material of a nest (an ant nest) through an entomological sieve. Depending on an ant species as well as the type of the nest, building material was formed by needles and plant debris (e.g. *Formica rufa*), mould (e.g. *Lasius brunneus*) or soil (e.g. *L. flavus*).

The material of nest was taken in such a way that the construction of a nest and homeostasis remained intact and disturbed. Therefore the substrate was taken mainly from the edges of an ant nest or outer parts of a nest. Additionally, the four ant nest of every examined species were selected in order not to exploit the same ant nest too intensively.

The size of sample was dependent on the size of an ant nest. From the ant nest of four species (*Formica rufa*, *F. polyctena*, *F. truncorum* and *Lasius fuliginosus*) 2 litres of building material was taken only ones, and in the case of remaining 10 species ca. 1 litre of substrate was obtained. Sieved material was tipped out on a tray on the field, next all of the observed rovebeetles were caught with an exhaustor and killed in the fumes of ethyl acetate.

Determined material was ecologically and faunistically elaborated on the basis of the papers by Koch (1989), Szujceki (1980) and Burakowski et al. (1979, 1980, 1981). Quantitative similarity between the *Staphylinidae* assemblages inhabiting ant nests of the examined species was given in Jaccard's number (Szujceki 1980).

STUDY AREA

The selected study sites (ant nests of the examined ant species) are mainly situated in the vicinities of two villages Wola Zarczycka and Łowisko (UTM: EA87, SE Poland), situated ca. 15 km west of Leżajsk. This area is located in the central part of the Sandomierska Lowland.

Chosen ant nests occurred in the surroundings of fresh pine forest and mixed forest. Additionally, the studies covered the area of dry fallow adjacent to pine forests as well as a hay-growing meadow.

Pine forests (*Dicarno-Pinetum*), the area of ca. 100 ha. In tree stand pine (*Pinus silvestris*) is dominating, moreover, common oak (*Quercus robur*) and common birch (*Betula pendula*) occur as well as robinia (*Robinia pseudoacacia*) which is quite abundant in some places. In shrub layer numerous are alder buckthorn (*Fragula alnus*) and mountain ash (*Sorbus aucuparia*), in undergrowth there are: bilberry (*Vaccinium myrtillus*), common cow-wheat (*Melampyrum pratense*) and Stag's-horn Clubmoss (*Lycopodium clavatum*) mainly.

In pine forest the ant nests of the following ant species were studied: *Formica rufa*, *F. polyctena*, *F. truncorum*, *F. fusca*, *F. sanguinea*, *Lasius fuliginosus*, *L. brunneus*, *Componotus ligniperdus* and *Myrmica ruginodis*.

Mixed forest covers the area of ca. 300 ha. In tree stand beech (*Fagus sylvatica*) and fir (*Abies alba*) are dominants. Quite numerous are also: Norway spruce (*Picea abies*), common oak (*Quercus robur*), European hornbeam (*Carpinus betulus*), common birch (*Betula pendula*), common larch (*Larix decidua*) and manmade planted pine (*Pinus silvestris*). The layer of shrubs is formed by: European elder (*Sambucus nigra*), spindle-tree (*Eunymus europaeus*) and young specimens of cherry-tree (*Cerasus avium*). In undergrowth commonly found are mainly: wood nemorose (*Anemone nemorosa*), European corydalis (*Corydalis cava*) and liverwort (*Hepatica nobilis*) as well as common ivy (*Hedera helix*) growing on tree trunks. In mixed forest the studied ant nests belonged to four ant species – *Formica rufa*, *Lasius fuliginosus*, *L. brunneus* and *Myrmica ruginodis*.

Dry fallow is mainly grown by: gray hair grass (*Corynephorus canescens*), mouseear hawkweed (*Hieracium pilosella*), common sorrel (*Rumex acetosa*), common sheep sorrel (*R. acetosella*) and numerous mosses. A few young pines from adjacent forests can also be found. Among the studied ants in the discussed environments the following were found: *Lasius flavus*, *L. niger* and *Tetramorium caespitum*.

A hay-growing meadow is of moderate-moist type with dominating species like common meadow foxtail (*Alopercurus pratensis*) and smooth meadow-grass (*Poa pratensis*), however, in its moister part there is common rush (*Juncus effusus*). The meadow is partially situated in the area of a small orchard in which such species like apple, pear and plum trees appear. In the discussed environment the studied ant nests belonged to *Myrmica rubra*.

RESULTS

During one study season (the year 2005) in ant nest of 13 ant species, 671 specimens of the family *Staphylinidae* were collected in total, among which 88 species were recorded (Tab. 1). The most numerous rove-beetle inhabiting ant nest of the examined ants was myrmecophilous *Thiasophila angulata* (146 specimens, ca. 22% of all collected rove-beetles) recorded in the nests of four species of *Formicidae*. Quite numerous caught were also: *Gabrius splendidulus*

Tab. 1. *Staphylinidae* inhabiting ant nests of varied ant species in the vicinities of Leżajsk^M – myrmecophilous species; ^S – stenotopic species; * – new species for the Sandomierska Lowland; # – ant species, in the nest of which the particular rovebeetle species has been found)

<i>Staphylinidae</i>	<i>Formicidae</i>	month												Σ			
		III	IV	V	VI	VII	VIII	IX	X	XI	XII	Σ					
^S * <i>Acidota crenata</i> (Fabr.)	<i>L. fuliginosus</i>												1	1	1		
^M * <i>Acrotoma sylvicola</i> (Kraatz)	<i>C. ligniperdus</i>				1										1	2	
* <i>Amidobia talpa</i> (Heer)	<i>L. brunneus</i>									1							
	<i>F. polycetena</i>	7		2											9	10	
	<i>F. rufa</i>	1														1	
	<i>F. polycetena</i>	2		3												5	
	<i>F. sanguinea</i>					1										1	
* <i>Amischa analis</i> (Grav.)	<i>M. rubra</i>		1							1					2	10	
	<i>L. brunneus</i>	1														1	
	<i>L. niger</i>															1	
<i>Anthobium atrocephalum</i> (Gyll.)	<i>L. brunneus</i>			3												3	4
	<i>L. fuliginosus</i>		1													1	
	<i>F. fusca</i>					1										1	1
* <i>Astenus gracilis</i> (Payk.)	<i>F. polycetena</i>												1			1	3
	<i>M. ruginodis</i>						1									1	
	<i>F. rufa</i>			2												2	
* <i>Atheta clientula</i> (Er.)	<i>L. brunneus</i>			1												1	4
	<i>L. fuliginosus</i>	1														1	
	<i>L. fuliginosus</i>			1												1	1
* <i>Atheta corvina</i> (Thomson)	<i>L. fuliginosus</i>								1							1	1
* <i>Atheta pallescens</i> (Er.)	<i>L. fuliginosus</i>															1	1
* <i>Atheta trinotata</i> (Kraatz)	<i>C. ligniperdus</i>			1												1	1
^{MS} <i>Batrissodes adnexus</i> (Hampe)	<i>L. fuliginosus</i>			1												1	1
^M * <i>Batrissodes delaportii</i> (Aubé)	<i>L. brunneus</i>						1	2								3	3
^M * <i>Batrissodes venustus</i> (Reich.)	<i>F. fusca</i>				1											1	1
* <i>Bolitochara pulchra</i> (Grav.)	<i>F. polycetena</i>		1													1	3
	<i>F. truncorum</i>																1
	<i>C. ligniperdus</i>				1											1	1
	<i>F. fusca</i>															2	4
	<i>M. rubra</i>	1											1			1	
<i>Brachyluta haemata</i> (Reich.)	<i>M. rubra</i>												1			1	1
<i>Cordulia obscura</i> (Grav.)	<i>M. rubra</i>													1	13	14	14
^S * <i>Cryptobium fracticorne</i> (Payk.)	<i>M. rubra</i>													1		1	1

(7.6% of all rove-beetles) and myrmecophilous *Notothecta flavipes* (7.5%), *Zyras laticollis* (5.8%) and *Oxypoda vittata* (5%).

Worth mentioning is also the fact that so characteristic of the examined habitat type myrmecophilous species comprise only ca. 21% (18 species) of the total number of rove-beetles recorded. However, in terms of quantity, they comprise as many as 54% (362 specimens) of the total number of collected specimens of all *Staphylinidae* (Tab. 1).

To rove-beetles, which were found in the nests of the highest number of ant species, belonged eurytopes like: *Gabrius splendidulus* and *Sepedophilus marshami* – each of them occurred in the ant nest of six ant species as well as *Amischa analis*, *Geostiba circellaris* and *Othius subuliformis* whose relationship which the *Formicidae* species was discovered in case of five ant species. From the other side, as many as 51 *Staphylinidae* species were found in the ant nest of only one ant species – among all 13 recorded species 12 are stenotopic taxa (Tab. 1).

On the basis of number dynamics analysis of rove-beetles found in the ant nests of selected species, two maxima were distinguished during vegetation season

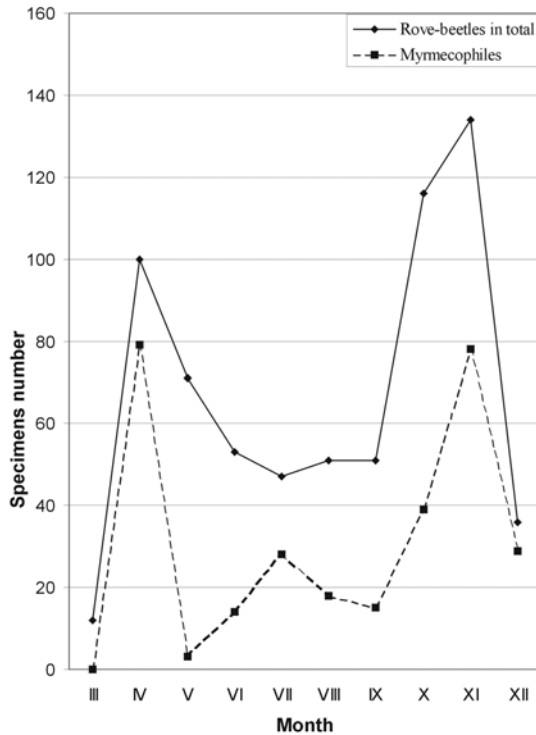


Fig. 1. Seasonal dynamics of *Staphylinidae* numbers in ant nests of the vicinity of Leżajsk

Tab. 2. Quantitative and qualitative richness of *Staphylinidae* inhabiting different types of ant nests with respect to the place of nesting and building material (* – the share of myrmecophilous species).

<i>Formicidae</i> species	Place of nesting (building material)	Number of the recorded <i>Staphylinidae</i> species	
		specimens	species (*)
<i>Comptonotus ligniperdus</i> (Latreille, 1802)	moulding pine tree trunks	15	8 (1)
<i>Formica fusca</i> Linnaeus, 1758	moulding pine and birch tree trunks	12	7 (1)
<i>Formica polyctena</i> Forster, 1850,	mounds out of pine needles and twigs	176	18 (9)
<i>Formica rufa</i> Linnaeus, 1761,	mounds out of pine needles and twigs	62	17 (6)
<i>Formica sanguinea</i> Latreille, 1798	pine stumps covered with soil and twigs or soil itself	3	2
<i>Formica truncorum</i> Fabricius, 1804	mounds out of pine needles built around moulding pine stumps	119	17 (2)
<i>Lasius brunneus</i> (Latreille, 1798),	moist, moulding acacia or willow tree trunks	49	24 (6)
<i>Lasius flavus</i> (Fabricius, 1782),	ground mounds	2	2
<i>Lasius fuliginosus</i> (Latreille, 1798)	moist, moulding pine or beech tree trunks	157	33 (5)
<i>Lasius niger</i> (Linnaeus, 1758),	pine or robinia stumps, ground mounds	7	6
<i>Myrmica rubra</i> (Linnaeus, 1758),	moist tussocks of grass or moulding apple tree trunk	50	20 (2)
<i>Myrmica ruginodis</i> (Nylander, 1846),	pine tree trunks or soil	17	10
<i>Tetramorium caespitum</i> (Linnaeus, 1758)	dry tree trunks or soil	2	2

(Fig. 1). First maximum, for all of the rove-beetles and for myrmecophiles themselves, was in April. After it the gradual decrease in numbers occurred and next the systematic increase till November when the second maximum, the highest in vegetation season, was observed. In this period the numbers of myrmecophilous species reached the identical level as in the case of the spring maximum.

The most rove-beetle species were caught in the ant nests of *Lasius fuliginosus* (33 species) and *L. brunneus* (24 species). However, with respect to quantity, the richest material was collected in mounds of *Formica polyctena* (176 specimens) and *Lasius fuliginosus* (157 specimens). The poorest assemblage of *Staphylinidae*, in qualitative and quantitative aspects, was found in the ant nests of *Lasius flavus*, *Formica sanguinea* and *Tetramorium caespitum* (Tab. 2).

Taking into consideration the place of nesting and building material of the studied ant species it can be concluded that the qualitatively and quantitatively richest were the *Staphylinidae* assemblages inhabiting ant nests in moist and moulding tree trunks (the ant nests of *Lasius fuliginosus*, *L. brunneus*) and mounds of needles (the ant nests of *Formica polyctena*, *F. truncorum*, *F. rufa*). In principle, only those two kinds of the nests were inhabited by characteristic myrmecophilous species typical of the examined environments (Tab. 2). Worth mentioning is also the poverty of rove-beetles in the nest built out of soil only.

The highest species similarity (50%) joins *Staphylinidae* occurring in the ant nests of *Formica fusca* and *Myrmica ruginodis* (Fig. 2). Considerable qualitative similarity was observed between the rove-beetle assemblages associated with *Formica polyctena* and *F. rufa* (over 41%). However, no common rove-beetle species was found in the ant nests of *Lasius flavus* and nests of remaining examined ant species. Rather specific assemblages of *Staphylinidae* inhabited the ant nests of *Myrmica rubra* because only in the cases of four other ant species the common taxa were found (Fig. 2).

Among 88 species of *Staphylinidae* collected in the ant nests of selected ant species as many as 73 are new for the Sandomierska Lowland (Tab. 1).

DISCUSSION AND SUMMARY

The ant nests of the examined ant species are inhabited by the interesting and relatively rich (88 species) rove-beetle assemblages. Characteristic feature of those assemblages was significant share of myrmecophiles (over 54% of specimens), despite the fact that with respect to qualitative aspect they comprised the significant minority (only 18 species). This phenomenon was probably caused by the obligatory relationship between those species and ants which is associated with the necessity of completing development, and, as a consequence, the gathering

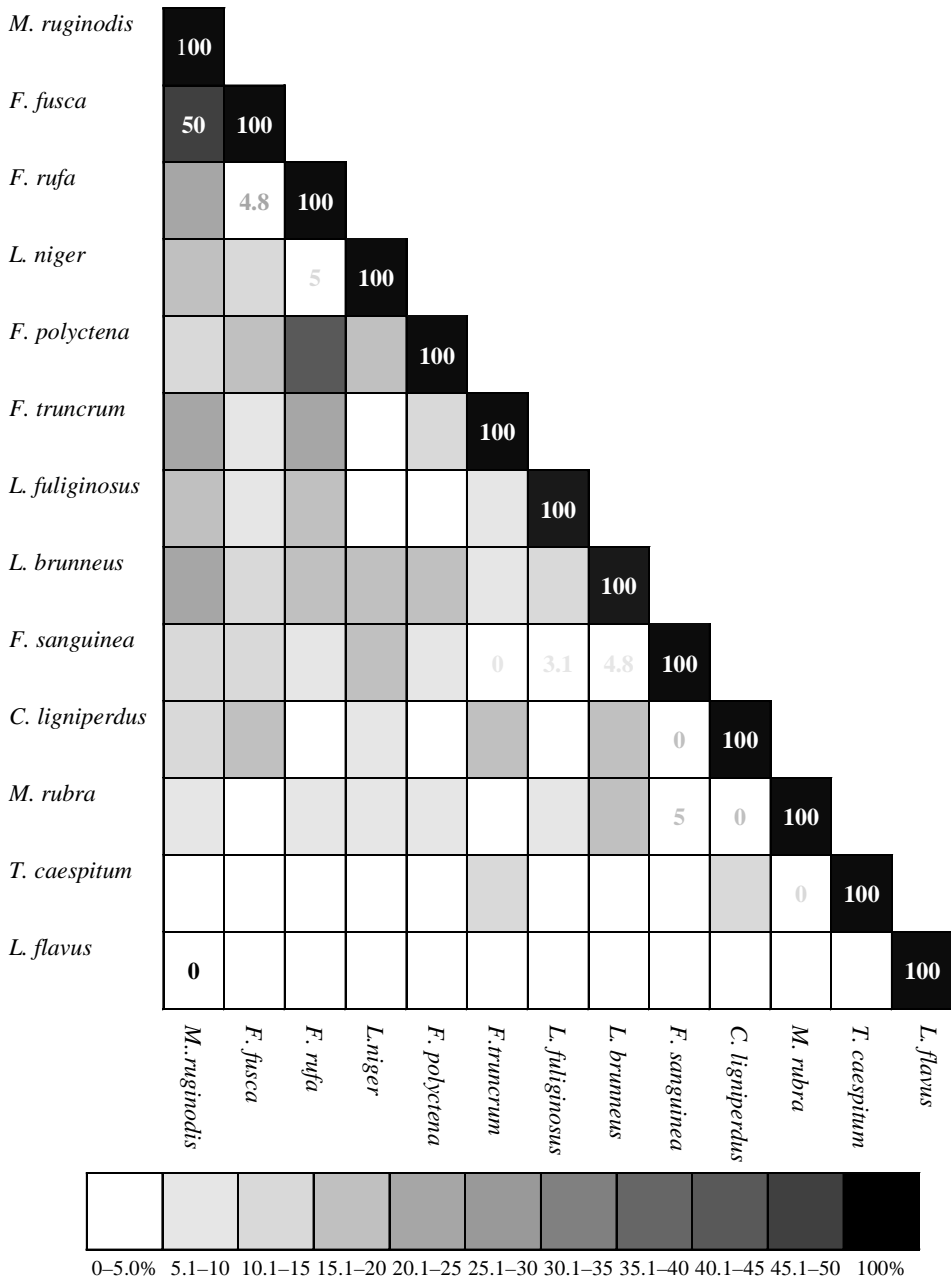


Fig. 2. Species similarity index (Jaccard's number) of the *Staphylinidae* assemblages inhabiting ant nests of the examined ant species in the vicinity of Ležajsk

of high number of myrmecophilous specimens (e.g. *Thiasophila angulata*) in relatively small habitats like ant nests.

The occurrence of other, “freely” connected with ant nest, rove-beetles was probably the matter of coincidence or facultative. It might have been the result of, for instance, temporary inhabiting of ant nests treated as one of the potential place where feeding, sheltering, undergoing aestivation or winter diapause can be provided. Hence, in this case where relatively qualitative diversity was found (70 species), the small number of specimens of particular rove-beetle species was observed.

The characteristics of species proposed by Koch (1989) in the range of their environmental preferences was confirmed by the results obtained above in principle. Among 13 distinguished stenotopic species as many as 12 was observed only in ant nest of only one ant species. This fact confirms the narrow specialization of the analyzed rove-beetles which should prefer specific living conditions occurring in ant nests of particular ant species as anticipated. However, the rove-beetles included by the author mentioned above to the species with wide environmental preferences (e.g. *Gabrius splendidulus*, *Sepedophilus marshami* or *Amischa analis*) were observed in a dozen or so an nest as anticipated too (Tab. 1).

Qualitative and quantitative diversity of the rove-beetle assemblages inhabiting ant nests depends on the type of nets and its building material. It seems that the best conditions for rove-beetles associated with ants are provided by moist and moulding tree trunks (the ant nests of *Lasius fuliginosus* and *L. brunneus*) where the most rove-beetle species were collected. The same conclusions were presented by Staniec (2006) who studied the rove-beetles of mouldings of south-eastern Poland. Favourable conditions are also in the ant nests built in the shapes of large mounds of needles (*Formica polycytena*, *F. rufa*, *F. truncorum*) out of which the richest quantitative material was obtained. In principle, only in two cases of ant nests the characteristic myrmecophilous taxa were found which emphasizes even more the particular meaning of both types of nests in maintenance of this interesting group of rove-beetles. From the other side, quantitative and qualitative poverty of rove-beetles in the ant nest built in dry tree trunks (e.g. *Teteramorium caespitum*) and soil (e.g. *Lasius flavus*) resulted from low humidity inside the nest as well as poor trophy conditions (Tab. 2).

Qualitative similarity index of the examined rove-beetle assemblages was generally strictly connected with the similar building and localization of a nest. Hence the most common species join usually the rove-beetle assemblages inhabiting ant nests built in similar places and from similar building material, for instance ant nests in mounds of pine needles in pine forests (Tab. 2, Fig. 2). It also seems that the size of the discussed value is not dependent on relationship degree of the examined ant species (Tab. 2).

Rove-beetles associated with ant nests in old, moulding tree trunks in south-eastern Poland were studied by Staniec (2006). His observations referred, among others, to determination of the species composition of those beetles in the ant nests of *Lasius fuliginosus* and *L. brunneus*, also included in this paper. With respect to the data of this author, a number of *Staphylinidae* species were given (myrmecophilous *Batrissodes adnexus* and *B. delaportii*, *Euryusa sinuata*, *Zyras laticollis* and *Haploglossa gentilis*, or *Medon rufiventris* among others) whose relationships with the mentioned ant species were confirmed in this research. In turn, Koch (1989) shows the relationship with ant nests of varied ant species *Geostiba circelarlis*, *Oligota pusilima* and *Astenus gracilis* which is compliant with data mentioned above (Tab. 1).

From the other side, comparing the obtained results with literature data (Wiśniewski 1963, 1967, 1970, Burakowski et al. 1979, 1980, 1981; Staniec 2006), some relationships between an ant species and a rove-beetle species have been observed for the first time. They are as follows: the occurrence of *Euryusa catanoptera* together with the ant *Formica truncorum*, previously recorded from the nests of *Lasius*; the presence of *Oxypoda formiceticola* and *Gyrophypnus atratus* in ant nests of *Myrmica rubra*, although they were known only from the nests of *Formica*; the relationship between *Thiasophila angulata* and the ant nests of *Lasius brunneus* has been discovered for the first time (Tab. 1).

Seasonal dynamics in number of rovebeetles collected in the ant nests shows two maxima – spring one (the end of March) and autumnal one (October). In case of myrmecophiles permanently living in ant nests their high number in the springtime is connected with the necessity of agglomeration in breeding period, however, autumnal maximum is the effect of the occurrence of the new generation of adults. For the significant quantitative predominance of myrmecophilous species in ant nests in comparison with the number of accidental species, there are myrmecophiles that form the character of changes of number dynamics of the *Staphylinidae* assemblages in ant nests. The changes in numbers of rove-beetles in ant nests are somewhat influenced by the possibility of migration of accidental rove-beetle “guests” to wintering sites in which they stay till the end of March.

With respect to faunistics to the most interesting rove-beetle species collected in the ant nests of 13 ant species in the vicinities of Leżajsk belonged: *Euryusa castanoptera*, *E. optabilis*, *E. sinuata*, *Medon piceus*, *M. rufiventris*, *Tachusida gracilis*, *Zyras laticollis*, *Z. lugens* and *Z. funestus*.

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