

Jirka Procházka (118 slov)

The study focuses on ant species *Liometopum microcephalum*. The key point of the work was to confirm trophobiosis of *L. microcephalum* and assess its importance. We expected that workers going down a foraging tree and up a nest tree will contain much more reducing sugars (main component of honeydew) than workers going in opposite way. The amount of total and reducing sugar and the mass of individual gasters were measured. There were statistically significant differences in amount of total and reducing sugars depending on direction of movement of ants in foraging trees and in weight of gasters of workers climbing both nest and foraging trees. We confirmed, that trophobiosis is an important part of foraging of *L. microcephalum*.

Jirka Procházka – Jiří Schlaghamerský

The aim of the study was to confirm trophobiosis of *Liometopum microcephalum* and assess its importance. We expected that workers going down a foraging tree and up a nest tree will contain much more reducing sugars (main component of honeydew) than workers going the opposite way. The amount(s) of total and reducing sugars and the mass of individual gasters were measured. The amounts of total and reducing sugars differed significantly in ants on foraging trees, depending on the ants' direction of movement . Gaster weights differed (significantly) between workers ascending and descending both on nest and foraging trees. We confirmed, that trophobiosis is an important part of foraging of *L. microcephalum*.

Jan Kašpar (140 slov)

Main objective of this study is to confirm trophobiosis in the ant *Liometopum microcephalum*. This species is mostly described as preeminently predatory ant which lives almost exclusively on animal food. Main hypothesis was that workers leaving the nest tree and climbing up a foraging tree will contain few reducing sugars, which are the main component of honeydew, than workers going down a foraging tree and up a nest tree. Ascending and descending workers were collected from nest and foraging trees and the amounts of total and reducing sugars in their gasters were measured by chemical methods. It seemst that trophobiosis is an important part of foraging in *L. microcephalum*. The amounts of reducing sugars were much more higher in workers descending foraging trees as well as total sugars which indicates that workers really visit foraging trees to collect food there.

Jan Kašpar – Jiří Schlaghamerský

The main objective of the study was to confirm trophobiosis in the ant *Liometopum microcephalum*. This species is mostly described as a preeminently predatory ant, which lives almost exclusively on animal food. Our main hypothesis was that workers leaving the nest tree and climbing up a foraging tree will contain fewer reducing sugars (the main component of honeydew), than workers going down a foraging tree and up a nest tree. Ascending and descending workers were collected from nest and foraging trees and the amounts of total and reducing sugars in their gasters were measured by chemical methods. Reducing and total sugar contents were much higher in workers descending foraging trees than ...?!, indicating that workers really visit foraging trees to collect honeydew. Trophobiosis seems to be an important part of the feeding biology of *L. microcephalum*.

Lenka Petráková (132 slov)

Arboricolous species *Liometopum microcephalum* is a predatory ant which was observed to tend aphids as well. We sampled workers climbing up and down a nest and foraging tree separately to find where the trophobiosis takes place. We also monitored the changes during the season of ants' highest activity. After each gaster was weighed, amount of total and reducing sugars was measured. The gaster weight was different by workers climbing up and down in both, nest and foraging trees. There was no difference in amount of sugars measured by workers moving up and down in nest trees but it was different in foraging trees. We conclude that trophobiosis is an important part of *L. microcephalum* food, particularly in May and June, but there is not enough evidence of collecting honeydew in nest trees.

Lenka Petráková – Jiří Schlaghamerský

Liometopum microcephalum is an arboricolous predatory ant that was also observed to tend aphids. We sampled workers climbing up and down a nest and foraging tree separately to find where the trophobiosis takes place. We also monitored the changes during the period of the ants' highest activity. Each gaster was weighed and the amounts of total and reducing sugars were measured. The gaster mass differed between workers climbing up and down in both nest and foraging trees. There was no difference in the amounts of sugars measured in workers moving up and down on nest trees but in foraging trees descending workers contained significantly more sugars. We conclude that honeydew is an important part of the diet of *L. microcephalum*, particularly in May and June, but there is not enough evidence of the collecting of honeydew in nest trees.

Tomáš Budiš (109 slov)

The article is about the ants species *Liometopum microcephalum* and feeding relation between ants and aphids, called trophobiosis. The individuals of this species were collected from old forest trees near Breclav in South Moravia, Czech Republic. We measured amount of reducing and total sugar of workers` gasters in relation to direct of movement (up, down) and type of tree (foragin, nest). We confirmed our expectations that workers leaving the nest tree and climbing up a foraging tree contain few sugars. Workers going down a foraging tree and up a nest tree contain much more sugars. We also confirmed that trophobiosis is an important part of foraging of *L. microcephalum*.

Tomáš Budiš – Jiří Schlaghamerský

The article is about the ant species *Liometopum microcephalum* and (the) feeding relation(s) between ants and aphids, called trophobiosis. The individuals of this species were collected from trunks of old forest trees near Breclav in South Moravia, Czech Republic. We measured the amount of reducing and total sugars of worker gasters in relation to the direction of movement (up, down) and type of tree (foraging, nest). We confirmed our expectations that workers leaving the nest tree and climbing up a foraging tree contain few sugars. Workers going down a foraging tree and up a nest tree contain substantially/significantly?more sugars. We also confirmed that trophobiosis is an important part of foraging of *L. microcephalum*.

Kristýna Jenišová (125 slov)

The main object of this study is trophobiosis of the ant *Liometopum microcephalum* (Panzer, 1978), which is arboricolous and thermophilous species with nests in trunks of old trees, where huge colonies are formed. In our research we focused on comparison of amounts of total and reducing sugars and gaster mass of *L. microcephalum* workers, when climbing up and down nest trees or foraging trees during 4-months long period. After all measuring there were not found out any significant differences in amounts of sugars during climbing up or down the nest trees in the contrast to differences on foraging trees. The presumption of significantly higher gaster mass of workers climbing down foraging trees than workers climbing down (and the opposite result by nest trees) was confirmed.

Kristýna Jenišová – Jiří Schlaghamerský

We studied trophobiosis in the ant *Liometopum microcephalum* (Panzer, 1978), an arboricolous and thermophilous species with populous nests in trunks of old trees. We focused on the comparison of amounts of total and reducing sugars and gaster mass of *L. microcephalum* workers climbing up and down nest trees or foraging trees during a period of four months. No significant differences in amounts of sugars between ants climbing up or down the nest trees were found, whereas ants climbing down foraging trees had heavier gasters that contained more reducing/total? sugars than those ascending these trees. The presumption of significantly higher gaster mass of workers climbing down foraging trees than workers climbing down (and the opposite result by nest trees) was confirmed.

Eva Líznarová (218 slov)

The ant *Liometopum microcephalum* is arboricolous and its nests are built in trunks of old trees usually several metres above ground. Although this species lives almost exclusively on animal food, there was found that *L. microcephalum* workers tend aphids and lick up their sweet excretates. Our objectives were to confirm trophobiosis and its importance in *L. microcephalum*. We compared the amounts of total and reducing sugars in gasters of workers which we collected on nest and foraging trees in four dates, because we expected seasonal differences in the use of trophobiosis. At each sampling date, 20 workers climbing up and 20 workers climbing down were collected from trunk at a high of 1,5 m above ground from one nest tree and one foraging tree visited by the same colony. Our hypotheses suggest that workers leaving the nest tree and climbing up the foraging tree will contain few sugars and workers going down the foraging tree and up the nest tree will contain more sugars. We found out a significant difference in amount of total and reducing sugars depending on the direction of movement in foraging trees. It indicates that workers collect honeydew on foraging trees. The concentration of reducing sugars in workers collected on nest and foraging trees was significantly higher in May and June than in April.

Eva Líznarová – Jiří Schlaghamerský

The ant *Liometopum microcephalum* is arboricolous and its nests are built in trunks of old trees, usually several metres above ground. Although this species lives almost exclusively on animal food, *L. microcephalum* workers were also observed to tend aphids. Our objectives were to confirm trophobiosis and assess its importance in *L. microcephalum*. We compared the amounts of total and reducing sugars in gasters of workers, which we collected on nest and foraging trees once per month from April to July (2009), because we expected seasonal differences in the use of trophobiosis. On each sampling date, 20 workers climbing up and 20 workers climbing down were collected from the trunk at a high of 1.5 m above ground from one nest tree and one foraging tree visited by the same colony. Our hypothesis was that workers leaving the nest tree and climbing up the foraging tree will contain few sugars and workers going down the foraging tree and up the nest tree will contain more sugars. We found a significant difference in the amounts of total and reducing sugars in workers from foraging trees, depending on the direction of movement. This indicates that workers collect honeydew on foraging trees. The concentration of reducing sugars in workers collected on nest and foraging trees was significantly higher in May and June than in April.

Lenka Sentenská (82 slov)

The arboricolous ant *Liometopum microcephalum* is predominantly a predatory species, but it was found that individual trails also lead to bark aphid populations. We collected workers from nesting and foraging trees and measured their gaster mass and amount of total and reducing sugar. There were statistical differences in sugar amount depending on direction of movement of ants in foraging trees and in weight of gasters of workers climbing on both. It can indicate that trophobiosis is an important part of its foraging.

Lenka Sentenská – Jiří Schlaghamerský

The arboricolous ant *Liometopum microcephalum* is predominantly a predatory species, but it had been reported that individual trails also lead to bark aphid populations. We collected workers from nest(ing) and foraging trees and measured their gaster mass and the amounts of total and reducing sugars. Sugar contents differed significantly in ants on foraging trees, depending on their direction of movement. Weight of gasters differed between workers climbing up and down both on nest and foraging trees. This indicates that trophobiosis is an important part of the species' diet.

Eva Svobodová (291 slov)

The dolichoderinae ant *Liometopum microcephalum* (Panzer, 1798), the arboricolous and thermophilous ant living in floodplains was studied. This species build its nests in trunks of old trees, but not dead ones, building huge colonies ? hundreds of thousands of individuals. The food territory contains area about 600 m², with different food strategies. In this paper scheme of individual trails into bark aphid populations to get sweet excretes was studied. The objectives were to confirm trophobiosis in *L. microcephalum* and assess its importace, to confirm that foraging trees are visited (also) to collect honeydew and to assess seasonal differences in the use of trophobiosis. The amounts of total and reducing sugars (which are the main component of honeydew) in gasters of workers were compared. For this research 20 workers climbing up and 20 workers climbing down from the foraging and nest tree were collected from April to July 2009. Then methods for measurement of Total sugars, Reducing sugars and Measuring the mass of individual gasters were used. The differences between amount of total and reducing sugars in the workers walking up and down and differences in the gaster mass were tested and analyzed by Kruskal-Wallis and Mann-Whitney U tests in Statistica software. Amount of sugars in nest trees depending on the direction were not statistically significant, but in foraging trees the differences in amount of total and reducing sugars depending on the direction were statistically significant. Concentrations of total sugars on nest and foraging trees did not differ between the individual months. The concentration of reducing sugars was significantly higher in May and June than in April and gaster mass of workers climbing down nest trees was significantly lower than those of workers climbing up. More interesting results are in the paper.

Eva Svobodová – Jiří Schlaghamerský

The dolichoderine ant *Liometopum microcephalum* (Panzer, 1798), an arboricolous and thermophilic ant living in floodplains, was studied. This species builds its nests in trunks of old trees, but not dead ones, building huge colonies ? hundreds of thousands of individuals. Its food territory covers an area about 600 m², with different food strategies. The objectives were to confirm trophobiosis in *L. microcephalum* and assess its importace, to confirm that foraging trees are visited (also) to collect honeydew and to assess seasonal differences in the use of trophobiosis. The amounts of total and reducing sugars (main component of honeydew) in gasters of workers were compared for workers climbing up and down the foraging and nest trees collected once per month from April to July 2009. Differences between the amounts of total and reducing sugars in the workers walking up and down and differences in the gaster mass were tested and analyzed by Kruskal-Wallis and Mann-Whitney U tests. On foraging trees the amounts of total and reducing sugars differed significantly between ants ascending and descending. The contents of reducing sugars were significantly higher in May and June than in April and (the) gaster mass of workers descending nest trees was significantly lower than those of workers ascending.

Pavel Šebek (115 slov)

The arboreal ant species *Liometopum microcephalum* builds its nests in trunks of old deciduous trees, usually several metres above the ground. The species is predominantly predatory but there is also opinion on possible symbiosis with aphids – trophobiosis. Our objectives were to confirm trophobiosis in *L. microcephalum* and assess its importance. By means of chemical methods, we compared the amounts of total and reducing sugars (part of the honeydew) in gasters of workers ascending and descending foraging and nest trees. In foraging trees the amounts of sugars were significantly higher in workers descending the tree, whereas in nest trees such pattern was not observed. This result shows that trophobiosis may play important role in ant's diet.

Pavel Šebek – Jiří Schlaghamerský

The arboricolous (arboreal) ant species *Liometopum microcephalum* builds its nests in trunks of old deciduous trees, usually several metres above the ground. The species is predominantly predatory but there are also reports suggesting symbiosis with aphids – trophobiosis. Our objectives were to confirm trophobiosis in *L. microcephalum* and assess its importance. By means of chemical methods, we compared the contents of total and reducing sugars (major component of the honeydew) in gasters of workers ascending and descending foraging and nest trees. In foraging trees the amounts of sugars were significantly higher in workers descending the tree, whereas in nest trees such a pattern was not observed. This result shows that trophobiosis may play an important role in the ant's diet.

Radek Michalko (124 slov)

The arboricolous ant *Liometopum microcephalum* is known to consume almost exclusively animal food. But some studies have mentioned that this species also use a trophobiosis. Our objectives were to confirm the trophobiosis and evaluate its importance. We measured the amounts of total and reducing (main component of honeydew) sugars in gasters of 320 workers that moved up and down on the foraging and nested trees. The differences in the amount of reducing and total sugars depending on the direction of movement were significant only on the foraging trees. The ants' gasters contained more total and reducing sugars when the ants moved down than up on the foraging trees. Based on our results we confirmed the important role of trophobiosis in diet of *L. microcephalum*.

Radek Michalko – Jiří Schläghamerský

The arboricolous ant *Liometopum microcephalum* is known to consume almost exclusively animal food. Some authors have mentioned that this species also uses a trophobiosis. Our objectives were to confirm trophobiosis in *L. microcephalum* and to evaluate its importance. We measured the amounts of total and reducing (main component of honeydew) sugars in gasters of 320 workers that moved up and down on the foraging and nest trees. The differences in the amounts of reducing and total sugars depending on the direction of movement were significant on the foraging trees only. The ants' gasters contained significantly? more total and reducing sugars when the ants moved down than up on the foraging trees. Our results confirm the important role of trophobiosis in the diet of *L. microcephalum*.

Jan Myšák (164 slov)

The aim of this study was to assess the role of trophobiosis for *Liometopum microcephalum* (Panzer, 1798). We hypothesise that foraging trees are visited by workers to collect honeydew and there are seasonal differences in the importance of trophobiosis. To test our hypothesis we compared the amounts of total and reducing sugars in gasters of specimens climbing up/down nest/foraging trees. The research was conducted on the sample of 320 specimens coming from one nest in Rendezvous NNM (S Moravia, Czech republic).

As expected, workers climbing up foraging trees had less amount of total sugars than down-going specimens. In contrast, almost same values of the total sugar concentration were achieved on nest trees. Measures of reducing sugars were similar. Thus, it seems that trophobiosis is quite important source of food for the ant and workers don't forage only in foraging trees but on nest trees too. Further analysis showed that differences between the individual months were non-significant, although we recorded a slight decline in July.

Jan Myšák – Jiří Schlaghamerský

The study assesses the role of trophobiosis in *Liometopum microcephalum* (Panzer, 1798). We hypothesised that foraging trees are visited by workers not only to hunt but also to collect honeydew and that there are seasonal differences in the importance of trophobiosis. To test our hypothesis we compared the amounts of total and reducing sugars in gasters, and their mass, of specimens climbing up/down nest/foraging trees. In total, 320 specimens from one colony from S Moravia (Czech Republic) were analysed.

As expected, workers climbing up foraging trees contained less total sugars than descending specimens. In contrast, the total sugar contents of ants ascending and descending nest trees did not differ. Measures of reducing sugars were similar. Trophobiosis seems to be an important source of food for the ant and workers don't forage only on foraging trees but on nest trees too. Differences between the individual months were non-significant, although we recorded a slight decline in July.

Eva Tajovská (220 slov)

The object of our study was trophobiosis in the life of arboreal predatory ant *L. microcephalum*, whose workers also tend aphids and lick up honeydew they produce. Our objectives were to confirm trophobiosis, assess its importance and seasonal differences in its use and to confirm that foraging trees are visited to collect honeydew. We compared the amount of total and reducing sugars from the honeydew in gasters of workers which we collected on nest and foraging trees in four dates (April - July 2009); forty specimen for each tree type - 320 specimen in total. Sugars were measured by chemical methods and fresh weight of individual gasters was measured. Concentrations of total sugar in workers on both types of trees did not differ between the individual months, concentrations of reducing sugars was significantly higher in May and June. Logical hypothesis about the sugar content was confirmed by the measured gaster mass, which corresponded with expected way of food transportation. Gaster mass of workers climbing down the nest trees was significantly lower than gaster mass of workers climbing up, in the foraging trees vice-versa. Measured value of total sugars showed that ants probably feed themselves also on the nest trees, value of reducing sugars on the foraging trees corresponds with our hypothesis but on the nest trees it brings new questions.

Eva Tajovská – Jiří Schläghamerský

Liometopum microcephalum is an arboreal (arboreal) predatory ant species, whose workers have also been reported to tend aphids. Our objectives were to confirm trophobiosis, assess its importance, including seasonal differences, and to confirm that foraging trees are visited to collect honeydew. We compared the amounts of total and reducing sugars in gasters of workers, which we collected on nest and foraging trees on four dates (April - July 2009); (40 specimens for either tree type, 320 specimens in total). Sugars were measured by chemical methods; individual gaster mass as fresh weight. Total sugar contents in workers from both types of trees did not differ between the individual months, contents of reducing sugars were significantly higher in May and June. Gaster mass of workers climbing down the nest trees was significantly lower than gaster mass of workers climbing up, on the foraging trees vice-versa. Total sugar values showed that the ants probably also feed on the nest trees, values of reducing sugars in workers from the foraging trees corresponded with our hypothesis but our results from the nest trees pose new questions.

Erikas Lutovinovas (101 slov)

Our objectives were to confirm trophobiosis in the single European representative of the genus *Liometopum* Mayr, 1861. For this purpose we have measured total sugars, reducing sugars and mass of individual gasters of workers of ascending and descending nests of foraging trees. On the foraging tree walking down workers have much more amount the reducing sugar than those walking up the tree, while on the nest trees the amount of reducing sugars was similar in down going workers and up going ones. Trophobiosis is an important part of foraging in *L. microcephalum* in May and June, but decline in July is non-significant.

Key Words: Hymenoptera, Formicidae, *Liometopum microcephalum*, trophobiosis

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Key Words: Hymenoptera, Formicidae, *Liometopum microcephalum*, trophobiosis