FORMICIDAE POPULATIONS OF THE ECOSYSTEMS IN THE ENVIRONS OF TISZAFÜRED

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Abstract

In the inundation area and on the dam-side grasslands of Tisza-river 24 ant-species were collected. The pessimal ecological factor of the ant fauna in the woods and meadows of inundation area is the flood, while on the dam-sides the density of ant populations is regulated by other environmental factors, as shown by correlation coefficients calculated for the interdependents of abiotic factors and population density. The species differ also with regards to way feeding and the composition of the food.

Introduction

The previous publications investigating the Formicoidea fauna of the Middle-Tisza district (GALLÉ 1967, 1969) reported so far on the occurrence of 25 ant species altogether in the environs of Tiszakürt and Kisköre. In the following we are reporting on the results of the myrmecological investigations carried out in the years 1969 and 1970 in the district of Tiszafüred. The character and environmental effect of the adjacent habitats will be changed decisively by the water-basin to be brought about in the area of Kisköre. The aim of these investigations was, therefore, to obtain more knowledge about the original Formicoidea fauna of the area from ecological points of view.

The characterization of habitats

The investigations were carried out on the left bank of the Tisza, in the flood areas at Tiszafüred and Tiszaörvény. The macroclimatic conditions of the area agree with those already reported on Kisköre (GALLÉ 1969). The flood plain of the Tisza in this area is comparatively narrow, its breadth exceeds 1 km only in a single place.

The two most important habitats of the ant populations are: the wood in the flood area and the dam.

In the flood area, the gallery forest *Salicetum albae-fragilis* ISSLER is generally diffused, mainly in the environs of Tiszafüred, with *Rubus caesius* L. shrub stratum. The consocion of *Salicetum* poplars is frequent in the spots. The woods in the flood area are often interrupted by orchards planted.

The dam side is generally of N. W., resp. S. E. exposition. On the N. W. dam side, towards the Tisza, *Alopecuretum pratensis* NOWINSKI is the characteristic plant community. On the side protected, at the upper part of the dam, the vegetation is

formed by the strongly weedy *Festucetum*, with a *Salvia nemorosa* L. stand *(Salvio-Festucetum)* of large covering. The rims of the top of dam are covered only in some places by the weed association *Sclerochloo-Polygonetum avicularis* (GAMS) SOÓ that is so frequent elsewhere.

Methods

For sampling the ant populations the following methods were applied: (1) squares of 1 sq. m size for determining the nest density; (2) squares of 625 sq. cm surface for establishing the number of individuals staying at the ground surface; (3) sugar baits in plastic vessels dug in the ground in regular distances from one another for ascertaning the presence of the single species in larger areas that could not be covered with squares (1969: 60 sq. m; 1970: 56 sq. m); (4) grass net dor collecting the individuals frequentating the Aphidinae and flowers.

From among the ecological factors exerting an effect on ant populations we have endeavoured to establish the abiotic conditions. The most important of these is the climate (SOUTHWOOD 1968). In connection with the terricolous ant populations, the importance of the soil climate is to be empasized, first of all the humidity and temperature conditions, resp. — where there are differences like that — the soil binding (GALLÉ 1966). From among the microclimatic conditions we have recorded the soil, the soil-surface herb layer and the air temperature in 1 m height, the evaporation, as well as the water content of soil in every habitat synchronously for being able to compare the data.

Results

1. The species occurring in the area are: *Ponera coarctata* LATR., *Myrmica sancta* KARAW., *Myrmica ruginodis* NYL., *Myrmica rugulosoides* FOR., *Messor structor* LATR., *Solenopsis fugax* LATR., *Myrmecina graminicola* LATR., *Tetramorium caespitum* L., *Dolichoderus quadripunctatus* L., *Tapinoma erraticum* LATR., *Plagiolepis vindobonensis* LOMN., *Camponotus truncatus* SPIN., *Camponotus lateralis piceus* LEACH., *Lasius fuliginosus* LATR., *Lasius niger* L., *Lasius alienus* FÖRST., *Lasius brunneus* LATR., *Lasius flavus* F., *Lasius affinis* SCHENCK, *Lasius umbratus* NYL., *Formica fusca* L., *Formica rufibarbis* F., *Formica cunicularia* LATR., *Polyergus rufescens* LATR.

2. Ants of the wood in the flood area. The terricolous and meadow ant populations of the flood area were entirely exterminated by the great inundation of 1970. Only on trees there were found some individuals of *Myrmica ruginodis*, as well, in the flood area, known so far as terricolous ones. These must have belonged to acolonial stands, fragments of the original terricolous population decimated by the inundation.

In the orchards of the flood area we have found some species different from the characteristic hylophilous ant communities of willow groves (cf.: GALLÉ 1969). The environmental effect of the orchards planted mostly differs from that of all the woods in the flood area. They are generally much warmer, drier, the underwood is thinner, a shrub stratum is missing, the foliage of the fruit-trees, set regularly but not too-close to one another, is less closed. Therefore, the active microclimatic stratum that develops in the willow groves above the foliage (ANDÓ 1959) takes place in a lower level: the soil surface and not the top of the leafy crown means a substrate for the formation of the highest temperature. The foliage does not exert, therefore, any cooling effect on the stems and branches of trees that are suitable for building ant nests. Thus on the stems and thicker branches of fruit-trees there live also some thermophilous-xerophytic species like *Lasius brunneus* and *Camponotus truncatus*.

3. Ants of dam sides. The sides of dams are densely populated ant habitats. The denseness of ant nests is great, compared not only to the other habitats of the flood area but also to those in the grass-lands of similar character in other areas.

Table 1. *Dam side of N. W. exposition, Tiszaörvény, 1969, D. p. c.=percentile dominance; C=constancy; N=number of nests, resp. individuals.*

Species	Nests			Ants on the bait	
	D.p.c.	C	N/1 m²	N	D.p.c.
Ponera coarctata LATR.	15,75	3	0,33	0	0,0000
Myrmica sancta KARAW.	5,26	1	0,11	0	0,0000
Myrmica rugulosoides FOR.	5,26	1	0,11	86	2,2740
Solenopsis fugax LATR.	47,34	9	1,00	1125	29,3620
Plagiolepis vindobonensis LOMN.	0,00	0	0,00	18	0,4698
Lasius niger L.	10,52	2	0,22	2309	60,2649
Lasius flavus F.	15,75	3	0,33	0	0,0000
Formica cunicularia LATR.	0,00	0	0,00	284	7,4124
Formica fusca L.	0,00	0	0,00	2	0,0522
Polyergus rufescens LATR.	0,00	0	0,00	1	0,0261
total	99,88	—	2,10	3825	99,8614

Concerning the ecological conditions, as well as the composition and denseness of the Formicoidea fauna, some differences appear between the dam sides of different expositions. In the domains of milieu-spectrum there can be distinguished, therefore, different ant-sociological types. The general character-species of dam sides is *Solenopsis fugax* the nests of which are observed in any dam habitat with high dominance (13.30—47.34 per cent, Table 1—5). The optimum of its broad ecological amplitude is surely given in the moderately dry grass-lands of S. E. exposition. Here may the average denseness of nests achieve 2 nests/sq. m (Table 4).

Beyond the predominant species *Solenopsis fugax*, in the cooler areas (generally on the dam sides of N. W. exposition) that mean a polytype of the water content of soil and air, the *Lasius niger — Chthonolasius — Myrmica* community live (Table 1, 2).

On the dam side of S. E. exposition, in a warmer and drier milieu, *Lasius niger* yields its place to *Lasius alienus*, the predominance of *Plagiolepis vindobonensis* increases, apart from these characteristic species there appear plenty of concomitant species. This *alienus-vindobonensis* group is anyway the most saturated ant-sociological type that is the richest in species in the mesophilous grass-lands (Table 4, 5).

In places of thin-sown, partly weedy vegetation, as a result of a strong insolation and a dry microclimate becoming more and more extreme, the species number decreases, the predominating role in nest-denseness is taken over by *Tetramorium caespitum*, a frequent species already in the weed verges (Table 3, and partly Table 4).

Table 2. *Dam side of N. W. exposition, Tiszaörvény, 1970.*

Species	Nests			Individuals		
	D.p.c.	C	N/1 m²	D.p.c.	C/625 cm²	N/1 m²
Ponera coarctata LATR.	4,54	1	0,1	0,00	0,0	0
Solenopsis fugax LATR.	18,18	4	0,4	2,01	0,6	3
Lasius niger L.	45,45	8	1,0	95,14	9,3	142
Lasius alienus FÖRST.	9,09	2	0,2	1,34	0,6	2
Lasius flavus F.	9,09	2	0,2	0,00	0,0	0
Lasius affinis Schenck	13,13	2	0,3	0,00	0,0	0
total	99,48	—	2,2	98,49	—	147

Table 3. *Dam side of S. E. exposition, Tiszafüred, 1969.*

Species	Nests			Individuals			ants on the bait	
	D.p.c.	C	N/1m²	D.p.c.	C/625	N/1m²	N	D.p.c.
Myrmica rugulosoides FOR.	0,00	0	0,0	0,00	0	0	4	0,3268
Solenopsis fugax LATR.	13,30	4	0,3	1,56	1	2	270	22,0590
Tetramorium caespitum LATR.	66,50	10	1,3	6,24	2	8	804	65,6868
Tapinoma erraticum LATR.	6,65	3	0,3	6,24	2	8	44	3,5948
Plagiolepis vindobonensis LOMN.	13,30	3	0,3	79,56	10	102	48	3,9216
Formica cunicularia LATR.	0,00	0	0,0	6,24	3	8	36	2,9412
Formica rufibarbis F.	0,00	0	0,0	0,00	0	0	17	1,3889
total	99,75	—	2,2	99,84	—	128	1223	99,9191

Discussion

1. The 24 ant species living in the area are distributed on the basis of our present knowledge according to ecological types in the following way: stenooecic eremophilous ones 4.16 per cent, euryoecic eremophilous ones 62.40 p. c., hyper-euryoecic intermediary ones 8.32 p. c., euryoecic intermediary ones 16.64 p. c., euryoecic hylophilous ones 8.32 p. c. On the basis of the data given about the ant populations of the single habitats it is obvious that the montanic-hylophilous species have diffused in the woods of the flood area (*Salicetum*, e. g. *Myrmica ruginodis)*, the eremophilous elements of the type in the southern area on the dam sides. The flood area of the Tisza has, therefore, a double fauna-mediating effect of opposite direction.

2. The distribution of the Formicoidea fauna, the denseness of nests is highly different in the various habitats. In the soil of woods of the flood area, and in the flood area generally, the denseness of nests is less than in any other habitat. On the dam sides, on the other hand, the ant nests take place much more densely than in other habitats (Tables 1—5), the average in sq. m being 2.2—6.6 nests. In *Stellario Deschampsietum*, PETAL (1967) found 0.195 nests per sq. m. In *Convallario-Quercetum* the mean distribution is, according to GALLÉ and GAUSZ (1968) 0.51, resp. 1.293 nests per sq. m; in *Festuco pseudovinae-Quercetum* 1.75 nests per sq. m (GALLÉ 1969);

Table 4. *Dam side of S. E. exposition, Tiszaörvény, 1970.*

Species	Nests			Individuals		
	D.p.c.	C/1 m²	N/1 m²	D.p.c.	C/625 cm²	N/1 m²
Ponera coarctata LATR.	3,03	2	0,2	0,51	0,6	1
Myrmica sancta KARAW.	6,06	4	0,4	68,36	6,9	136
Solenopsis fugax LATR.	30,30	10	2,0	0,00	0,0	0
Myrmecina graminicola LATR.	0,00	0	0,0	0,51	0,6	1
Tetramorium caespitum LATR.	3,03	2	0,2	0,00	0,0	0
Messor structor LATR.	3,03	2	0,2	0,00	0,0	0
Tapinoma erraticum LATR.	0,00	0	0,0	2,04	1,2	4
Plagiolepis vindobonensis LOMN.	12,12	6	0,8	12,47	7,5	25
Camponotus lateralis piceus LEACH.	3,03	2	0,2	0,00	0,0	0
Lasius niger L.	0,00	0	0,0	7,80	1,9	13
Lasius alienus FÖRST.	27,27	8	1,8	7,80	1,2	13
Lasius flavus F.	12,12	6	0,8	0,00	0,0	0
Formica rufibarbis F.	0,00	0	0,0	0,51	0,6	1
total	99,99	—	6,6	100,00	—	194

in *Artemisio-Festucetum* 1.75 nests per sq. m (GALLÉ 1969). The ant denseness on the dam side is approximated by the distribution observed in the course of investigations, so far unpublished, in a sand soil in the plant community *Astragalo-Festucetum sulcatae salicetosum rosmarinifoliae* BODROGKÖZY: 5.8 nests per sq. m, resp. in the community *Festucetum vaginatae* SOÓ: 6.4 nests per sq. m. It is proved by the data enumerated, too, that the dam sides — first of all in the protected direction — belong to the lowland habitats of the densest ant population.

3. The correlation coefficients, represented in matrix form, may be seen in Table 8. The frequency data of species were taken into consideration at the correlation calculations on the basis of the values of nest denseness. According to the Table, *Plagiolepis vindobonensis* is in a positive correlation with the species of similar ecological claim and of wide limit of tolerance (*Lasius alienus, Solenopsis fugax)*, with the degree of evaporation; and it is in a negative correlation with the water content of soil and with *Lasius niger* that is rather hygrophilic related to the biotops here. On the dam sides, it is therefore xerophilic as regards both the soil and the air. From among the coefficients of *Lasius alienus*, a strong negative correlation shown as regards the values of the water content of soil and the nest denseness of *Lasius niger*, as well as a positive reciprocity to the evaporation are conspicuous. The affinity of alienus to habitats of drier climate is indicated by coefficients $C_{2.8}$ and $C_{2.12}$. In connection with the spatial separation of *Lasius alienus* and *Lasius niger* populations it was established by BRIAN (1964) at *Callunetum* in Southern England that *Lasius niger* lives in the deeper-lying, moister places of better vegetation, while the areas populated by *Lasius alienus* are drier, higher and covered with a smaller vegetation. According to other authors, *Lasius alienus* occurs in drier, warmer places while *Lasius niger* populates any sorts of areas. Even on the basis of previous investigations along the Tisza, *Lasius alienus* proved to be a thermophilous-xerophilous species, vegetating rather with *Festuca* and nesting on dam sides of stronger insolation (GALLÉ 1967). *Lasius niger* and *Lasius alienus*, on the basis of the correlation table, are showing a correlation of opposite sign to the water content of soil. These two factors are, therefore, probably to be considered first of all as abiotic causes of the local separation of the two populations. The individuals of *Lasius niger*, producing longer ways, often visit the S. E. side of dam where they take nourishment. On these dam sides the alienus is the nesting Lasius species (Table 4, 5). The populations of the two species do not disturb each other in their activity as *Lasius niger* feeds rather on the surface of soil and *Lasius alienus* more in the soil. As a consequence of these, it is obvious that

Table 5. *Dam side of S. E. expostion, Tiszaörvény, 1970.*

Species	Nests			Individuals		
	D.p.c.	C/1m²	N/1 m²	D.p.c.	C/625	N/1m²
Ponera coarctata LATR.	0,00	0	0,0	2,32	1,2	2
Solenopsis fugax LATR.	25,00	8	0,8	0,00	0,0	0
Tetramorium caespitum LATR.	37,50	8	1,2	13,92	2,4	12
Plagiolepis vindobonensis LOMN.	6,25	2	0,2	61,48	9,3	53
Camponotus lateralis piceus LEACH.	0,00	0	0,0	1,16	0,6	1
Lasius niger L.	6,25	2	0,2	13,92	2,4	12
Lasius alienus FÖRST.	18,75	4	0,6	0,00	0,0	0
Lasius flavus F.	6,25	2	0,2	0,00	0,0	0
Lasius umbratus NYL.	0,00	0	0,0	3,48	0,6	3
Formica rufibarbis F.	0,00	0	0,0	3,48	0,6	3
total	100,00	—	3,2	99,76	—	86

Lasius niger adheres to the habitats of moister soil first of all as a nesting site, *i. e.*, the wetter milieu is claimed strongly by the nymph phase. This fact is a proof for that the most stenooecic phase of its individual life falls on the juvenile period.

In connection with the values of *Tetramorium caespitum* the temperature coefficients are the most remarkable: the density of this species is showing a very strong positive correlation both with the temperature of soil and soil surface and with that of the air. We are noticing here that *Tetramorium* is attracted first of all by the weed vegetations from among the biotic factors.

The great inundation of 1970 is particularly suitable for measuring the effect of floods exerted on the Formicoidea fauna. It is unequivocally proved by the negatively correlate coefficients of the ant species and inundation that the inundation is the ecologically worst factor of the inundation area.

4. In the correlation Table, the values populated between the populations of the single species are informing us of the common inclination of both given species to occur. On the basis of the Table we should not suppose, of course, a particular connecting correlation between the populations: those with corresponding ecological claims are "associating" with each other. The species communities living together, in the same habitat, cannot be called any association in a stricter sense because — except some parasitic species, e. g., *Polyergus rufescens* — the occurrence and density of ants is influenced by the presence or absence of the proper environmental factors, and not by some "disposition" for associating with the coexistent species, resp. some uni- or bilateral interdependence. The three dam-side ant-sociological types in the vicinity of Tiszafüred (with the predominant species *Lasius niger*, *Lasius alienus* and *Tetramorium caespitum*) differ from the types of GASPAR (1971) from La Famenne in respect of their species composition. The difference may be explained with that of the two areas as a result of the part played by the *Solenopsis fugax* that has a predominant role in all the three types being, however, in Gaspar's area less important.

Table 6. *Ants staying at sugar baits, on both sides of the dam, Tiszaörvény, 1970.*

Species	N	D.p.c.
Myrmica sancta KARAW.	1	0,0670
Plagiolepis vindobonensis LOMN.	69	4,6230
Lasius niger L.	951	63,7170
Lasius alienus FÖRST.	436	29,2120
Formica cunicularia LATR.	5	0,3350
Formica rufibarbis F.	14	0,9380
Polyergus rufescens LATR.	1	0,0670
total	1478	99,1500

5. As it can be ascertained from the results of the trap method, square-method and grass-netting, there are some differences between the single ant species as to the way of their feeding. The density of the individuals hunting, feeding on the soil surface was determined with the method of small squares (625 sq. cm). If the number of individuals per square metres is divided with the number of nests, the quotient numerically characterizes the degree of activity of the individuals of a given species on the soil surface and in the soil. The value of the quotient obtained in this way, of course, depends on the meteorological factors, as well. Taking into consideration,

anyway, that our investigations were carried out in a period of maximum activity, in a synchronous way, the values of species can be compared:

$$I_{ea} = \frac{N_i}{N_n}$$

(N_i: individual/sq. m, N_n: nest/sq .m). The values of I_{ea} for the most frequent species are:

Lasius niger	101.000	*Tetramorium caespitum*	5.000
Lasius alienus	5.640	*Pl. vindobonensis*	103.474
Solenopsis fugax	3.330	*Lasius flavus*	0.000
Myrmica sancta	340.000	*Lasius affinis*	0.000

The active individuals of the species *Lasius niger*, *Myrmica sancta* and *Plagiolepis vindobonensis* are, therefore, active on the surface of soil; the *Formica species* in the same way but, owing to their thin nest density, it is difficult to give an exact numerical estimation. The individuals of *Lasius alienus* and *Tetramorium caespitum* feed mostly, those of *Lasius flavus*, *Lasius affinis* and *Solenopsis fugax* almost entirely only in the soil. These statements, in respect of the species *Lasius niger, Lasius alienus, Formica fusca* and *Tetramorium caespitum,* correspond to the results of the investigations of BRIAN, HIBBLE and STRADLING (1965).

The grass-netting collections (Table 7) furnish information on the ants staying at the higher part of the herb layer, at the flowers and leaves. The recordings carried out with this method can be compared with each other quantitatively, too, but they cannot be referred to the territorial unit. In the period investigated the quantitatively important plants in blossom of the dam sides were *Salvia pratensis* L. *Daucus carota* L., *Achillea millefolium* L. For comparison I used the grass net on the dam side reaped, as well, where the flowers were missing. As seen in Table 7, for the ants the flower layer of Salvia pratensis was the most important. From there 179 individuals fall to 200 strokes with grass nets; 44 examplars from the *Achillea—Daucus* facies, 10 ones from the reaped part without flower layer. It is indicated by the results that on the dam sides — and probably also on other habitats of similar character — the ants visit the higher parts of herb layer for frequenting the flowers; the individuals staying there are to be considered as the consumers of the nectar of plants, that is to say as first-class consumers.

Table 7. *Ants collected with grass nets, related to 200 strokes, Tiszaörvény, 1970.*
1. Achillea millefolium, 2. Salvia pratensis, 3. Alopecuretum with mixed flower layer. 4. meadow, 5. reaped dam side without flower layer.

Species	1	2	3	4	5	N	D.p.c.
Tapinoma erraticum LATR.	2	5	4	—	—	11	4,312
Plagiolepis vindobonensis LOMN.	32	168	2	4	—	200	78,400
Camponotus lateralis piceus LEACH.	9	5	2	4	—	20	7,840
Lasius niger L.	—	—	4	—	6	10	3,920
Lasius alienus FÖRST.	1	—	1	3	—	5	1,960
Formica cunicularia LATR.	—	—	2	1	4	7	2,744
Formica rufibarbis F.	—	1	1	—	—	2	1,176
total	44	179	14	8	10	255	99,960

Table 8. *Correlation matrix.*

Code	Variable	13	12	11	10	9	8	7	6	5	4	3	2	1
1.	*Plagiolepis vindobonensis* LOMN.	−0.755	0.510	−0.201	0.056	0.197	−0.687	−0.817	−0.152	0.226	0.396	0.885	0.886	1.000
2.	*Lasius alienus* FOERST.	−0.700	0.498	−0.484	0.092	0.234	−0.987	−0.939	−0.147	0.512	0.397	0.989	1.000	
3.	*Solenopsis fugax* LATR.	−0.845	0.488	−0.480	0.090	0.230	−0.986	−0.818	−0.146	0.590	0.385	1.000		
4.	*Lasius flavus* F.	−0.731	0.131	−0.174	0.049	−0.149	−0.406	−0.267	−0.155	0.408	1.000			
5.	*Myrmica sancta* KARAW.	−0.750	0.276	−0.437	0.132	−0.409	−0.605	−0.871	−0.381	1.000				
6.	*Tetramorium caespitum* LATR.	−0.661	0.785	0.980	0.895	0.868	0.129	−0.711	1.000					
7.	*Lasius niger* L.	−0.093	−0.908	−0.405	−0.645	−0.280	0.681	1.000						
8.	water content of soil	0.930	−0.369	−0.059	−0.022	−0.360	1.000							
9.	temperature of soil	−0.970	0.586	0.848	0.728	1.000								
10.	temperature on the surface of soil	−0.619	0.895	0.831	1.000									
11.	temperature of air in 1 m height	−0.357	0.535	1.000										
12.	evaporation	−0.894	1.000											
13.	flood	1.000												

The sugar baits, in case of a distributive evaluation, are suitable for establishing, too, in which degree the single species feed on sugar. According to the data obtained (Tables 1, 3, 6), the species *Lasius niger, Lasius alienus, Tetramorium caespitum, Formica* and *Plagiolepis vindobonensis* are sugar consumers in the highest degree. They meet their sugar requirements partly by consuming nectar, partly by breeding plant-lice. Taking into consideration all the bait investigations, the baits were visited in an obviously low degree by the *Myrmica* species.

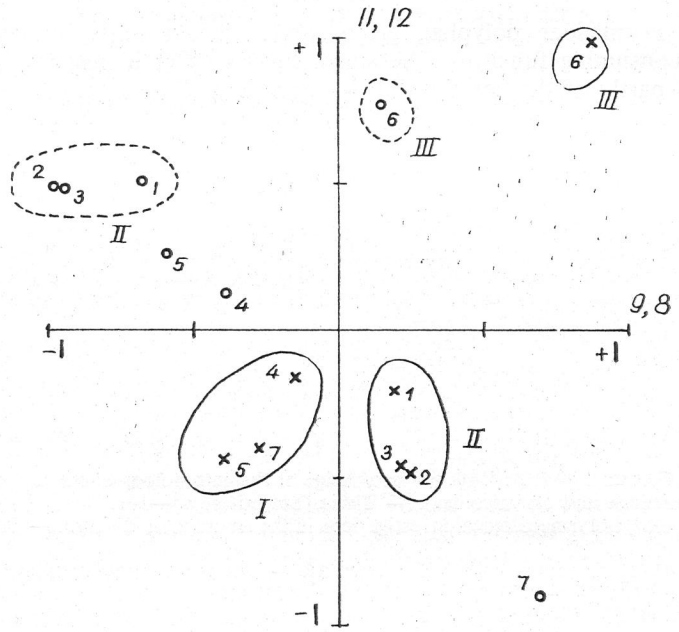

Fig. 1. Correlation coefficients in the system of co-ordinates. Method of representation according to GASPAR (1971). The figures are the code of correlation matrix. x = the correlation of species with the values 9, 11 (soil and air temperature), 0 = with the values 8, 12 (soil and air humidity). I, II, III: the predominant species of ant-sociological types. The behaviours of the members of group I *(Lasius niger)* in respect of the soil and air humidity differ from each other.

Summarizing the above data, in the ecological system of the grass coenoses of dam sides, the ant populations carry out supposedly the following activities: They are first-class consumers by consuming the *Tetramorium caespitum* (cf.: BRIAN, ELMES and KELLY, 1967) and *Messor* seeds, by the nectar consumption of the species *Plagiolepis vindobonensis, Lasius* and *Formica;* second-class consumers are, by consuming insects, all the populations, particularly the *Myrmica* (PETAL 1967, PETAL and BREYMEYER 1968) and *Formica* species; third-class consumers are, by consuming spiders, ants, predatory insects, the *Myrmica, Lasius* and *Formica* species (cf.: PONTIN 1961, PETAL and BREYMEYER 1968); recuperators are the *Lasius* and *Formica* species by consuming the secretion of tree-lice, in a less degree every species by consuming the waste matter, excreta and carrions of smaller animals. The aim of further investigations is to determine exactly the insects serving for their food.

Summary

1. In the flood-area biotops in the vicinity of Tiszafüred, the occurrence of 24 ant species proved true. The species contain the stenooecic eremophilous — euryoecic hylophylous ecological spectrum.

2. The ant populations are the most seldom in the soil of the flood-area woods, meadows, and have the gratest abundance in the dam-side grass-lands. The most important ecological factor regulating the populations is the microclimate of the nesting oecus.

3. The Formicidae polyphag group plays various parts in the biocoenosis within the consuming function. The single species differ in respect of the way of feeding and partly of the composition of food, as well.

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